

# Calochortiana

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*Jamesia americana* var. *zionensis* (Zion jamesia), a rare endemic of Zion National Park and vicinity in southern Utah. Zion jamesia is known from approximately 20 locations in Utah, mostly associated with hanging gardens or shady sandstone cliffs and canyons. Because threats are relatively low, Zion jamesia is on the Utah Native Plant Society's "Watch List", indicating that it is a species that could become a species of concern if current conditions change and populations decline or become more threatened. Illustration by Kaye Thorne.

# *Calochortiana*

Research Journal of the Utah Native Plant Society



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**From the Editor:** Passage of the federal Endangered Species Act in 1973 spawned renewed interest in the rare plant and animal species of Utah. Stan Welsh, Duane Atwood, and James Reveal published the first annotated checklist of rare and endangered plants of the state in the *Great Basin Naturalist* in 1975. Since then, Welsh and colleagues at Brigham Young University, the Utah Native Plant Society, and the Utah Natural Heritage Program (now the Utah Conservation Data Center) have periodically issued revised checklists of the rare vascular plants of Utah. This issue of *Calochortiana* is the latest installment in this long history, and supersedes an earlier version published in Volume 1 of this journal in 2012. As with previous attempts to document the status of rare plants, this version is based on the best available information at the time it was presented for publication in February 2016. In the few months since, the Utah Native Plant Society's rare plant committee has met to make new revisions to the list which are not included here. And just two weeks ago Glenn Rink, Glenn Clifton, and I found two new (and very rare) plant species in Utah coming across the state line from Arizona which will likely warrant inclusion in the next edition. More species are likely to follow.

Rare plant lists have a short shelf life, partly by necessity and partly by design. Their very existence prompts researchers and the public to go out and find new data to fill gaps or prove past assumptions wrong. Lists are useful as benchmarks for our state of knowledge at the time they were published. Certainly our understanding of rare species has improved greatly since the first state list appeared in 1975.

In perusing the 1975 Utah rare plant list I am struck by three things: (1) how many species that we thought were rare in the 1970s turned out to be not so rare once people started looking for them; (2) how many extremely rare species were not even known back in 1975 and have only been discovered since then, in part driven by a renewed interest in documenting our flora; and (3) how many species are still rare over 40 years later—despite our best efforts to find more occurrences.

It is my hope that the current UNPS list, assembled by UNPS President and Rare Plant Committee chair Jason Alexander and colleagues, will prompt readers to go forth and seek new information to make the list more complete or correct errors, so that the next version will be even more useful. If you do find corrections or errors, or want to leave comments, please do not hesitate to notify the UNPS rare plant committee (via the [unps](http://unps.org) website, [www.unps.org](http://www.unps.org)). Happy plant hunting - Walter Fertig, 23 May 2016

## The Utah Native Plant Society Rare Plant List: Version 2

Jason Alexander, Chair, Utah Native Plant Society Rare Plant Committee

**Abstract.** Since the publication of the first version of the Utah Native Plant Society's rare plant list in 2012, several important new threats have materialized that affect the conservation priority of many species in the Utah flora. Among the most important threats are continued loss of wetlands in the Great Salt Lake and Utah Lake areas, potential loss of water in the Snake Valley area from a proposed pipeline to Las Vegas, expansion of mineral development in the Uinta Basin, and the on-going introduction of non-native mountain goats in alpine areas across the state. This paper focuses on potential impacts of mountain goat management on rare alpine plant species. Changes to the UNPS list are summarized in a series of appendices that include, for the first time in print format, summaries of the rationale for ranking decisions by the UNPS Rare Plant Committee.

### INTRODUCTION

Since the publication of the first version of the Utah Native Plant Society Rare Plant List in 2009, our understanding of the Flora of Utah has changed dramatically (Fertig 2009, 2012). Not only has the last volume of the *Intermountain Flora* been published, but also several new volumes of the *Flora of North America* have significantly changed the taxonomy of several large plant families and genera. The widespread use of the Angiosperm Phylogeny Group's molecular and cladistic-derived plant families has also made adapting this list to a new taxonomic paradigm necessary. Unfortunately, these are not the only changes that are impacting the flora of our region.

Threats to the integrity of native ecosystems and to local populations of many of Utah's most sensitive species have increased in number and intensity within the past five years. When any new threats are reported by botanists and native plant ecologists in our region, the impacted species on this list have to be reassessed and re-ranked if necessary. In the past several years, four ecoregion-wide threats have increased in magnitude: riparian habitat loss in the Great Salt Lake and Utah Lake corridors; potential riparian habitat loss due to the proposed Las Vegas Valley Water District Pipeline in the Snake Valley vicinity; expansion of the Uinta Basin oil drilling-fracking operations and oil shale mining; and additional introductions of exotic mountain goats (*Oreamnos americanus*) in alpine mountain ranges by the Utah Division of Wildlife Resources (DWR).

These new threats involved the re-assessment of a large number of sensitive species. The species being impacted by the riparian habitat loss in the Great Salt Lake, Utah Lake and Snake Valley regions will be addressed in a future article. Despite the rapid and extensive expansion of oil extraction activities in the Uinta

Basin, only two new sensitive species were identified in this list: *Boecheera selbyi* var. *thorneae* (*Arabis perennans* var. *thorneae* in A Utah Flora) and *Stenotus armerioides* var. *gramineus* (*Haplopappus armerioides* var. *gramineus* in A Utah Flora). One explanation for this result could be that studying the impacts of natural resource extraction in the Uinta Basin have been a priority for botanists in the region for over a decade. As a result, most of the sensitive species were identified prior to this recent expansion of extraction activities. The last threat, mountain goat introductions, have been until recently, largely overlooked by rare plant reviewers in ranking the species on this list. The majority of sensitive alpine plants on the 2009 list were ranked low on the scale due to the assumption that the alpine habitats were remote and had very low or no threats. These assumptions changed with the introduction of exotic mountain goats in the La Sal Mountains in 2014 by the Utah Division of Wildlife Resources (DWR).

Although the mountain goat is native to North America, its natural distribution is restricted to Montana and Idaho, westward into Oregon and Washington, and northward into Canada, and Alaska (Shafer et al. 2011; Matthews & Heath 2008; Lemke 2004; Rideout and Hoffman 1975). The DWR's goal is for the goats to establish naturalized and self-sustaining populations in alpine habitats across the state of Utah for the sole purpose of increasing revenue from trophy hunting activities (i.e. "once-per-lifetime" hunts). The mountain goat is not endangered in any portion of its range. It is listed as a species of "Least Concern in view of its wide distribution, large population, and because it is not declining at anything close to the rate required to qualify for listing in a threatened category." according to the IUCN Red List of Threatened Species (Festa-Bianchet 2008). Conservation of this species by expanding its modern range is not warranted.

The debate, regardless of your opinion on the nativity of mountain goats in the Intermountain Region, is whether or not alpine habitats should be populated with a ungulate species, justified entirely by the assertion that "mountain goat habitat exists in Utah, as indicated by the success of introduced population. . and [goats] are a legitimate part of our modern Utah faunal landscape." (Utah Division of Wildlife Resources 2013). This argument is similar to that of organizations suing the US Fish and Wildlife Service to list the wild horse as a legitimate endangered native species because it's ancestors were present during the Pleistocene in North America and later became extinct.

This issue may never be resolved, especially since no exact date of the extinction of the mountain goat can be deduced from fossil evidence. Mountain goats inhabit subalpine and alpine cliffs and talus slopes, areas that do not promote the preservation of fossils. The few sites known with fossil remains of mountain goats suggest that between 10,000 and 14,000 years ago, populations started moving northward with the retreat of the glaciers (Shafer et al. 2011). Some populations, like the ones on Vancouver Island in Canada became extinct (Nagorsen & Keddie 2000). The only other species of mountain goat native to North America, *Oreamnos harringtoni*, was native to the southwestern U.S. during the Pleistocene. Unlike its sister species, *Oreamnos americanus*, it was apparently unable to adapt to changing environments by migrating northward. It lived on the Colorado Plateau of Utah as recently as 39,000 years ago, but eventually became extinct throughout its range in Arizona, Nevada, New Mexico, and Utah (Mead et al 1987; Campos et al 2010). The Utah DWR (and the groups suing to list the wild horse ) make no distinction between a species that has had a continuous presence in North America for the entire Holocene period and a population that has been re-introduced from mixed genomic stock 10,000 years after the post-Pleistocene megafauna extinction events. In their minds, both cases are native populations. Conservation biologists (i.e. Festa-Bianchet 2008) do not use this broader definition of nativity.

With respect to conserving botanical diversity in these alpine areas, the endemic flora has adapted to alpine regions without the impact of ungulates for most of the past 10,000 years. Are these populations resistant to the modern re-introduction of large herbivores and the higher levels of habitat disturbance they bring? For Utah rare plants, the impacts of goat populations are largely unknown and understudied. Although the first introduction was started in 1967 on Lone Peak (Utah County), introductions and augmentations have been completed at regular intervals since goats were introduced at Mount Olympus (Salt Lake County) in 1981. According to the 2013 Management Plan, most of the goats introduced in Utah were from populations from Olympic National Park (which were populations introduced over a hundred years ago by Washington State wildlife managers; Matthews & Heath 2008, Lemke 2004). In 2012, 4220 resident hunters applied for 144 permits (odds 1:29.3) and 3779 non-resident hunters applied for 17 permits (odds 1:222). Hunts are intentionally managed to cull a small percentage of the more than 2000 goats in Utah populations (Utah DWR 2013), much lower than the birth rate. Due primarily to the lack of predation, human and otherwise, Utah mountain goat populations are growing steadily, at such a rate that culled animals are used in introductions to other mountain ranges in Utah and Idaho.

The Habitat management goals for the Utah DWR is limited only to preservation or enhancement of goat habitat, not the conservation of sensitive endemic species that may be impacted by introductions (Table 1).

Each of the mountain ranges in Utah where goats were introduced have a slightly different composition of sensitive and endemic species. Many have species that are endemic only to that mountain range. Although many of these sensitive species are on Forest Service and BLM sensitive species lists (and are Watch, High or Extremely High priority UNPS species), there are currently no measures in the 2013 Management Plan that mitigate disturbance on populations of these plant species. At a minimum, some form of enclosure should have been considered to protect the most sensitive

Table 1. Mountain Goat Habitat Management Goals, Objectives, and Strategies (adapted from Utah DWR 2013).

- Habitat Management Goal: Provide good quality habitat for healthy populations of mountain goats.  
 Objective: Maintain or improve sufficient mountain goat habitat to allow herds to reach population objectives  
 Strategies:
- a. Identify mountain goat habitats and work with land managers to protect and enhance these areas.
  - b. Assist land management agencies in monitoring mountain goat habitat.
  - c. Work with land managers to minimize and mitigate loss of mountain goat habitat.
  - d. Inform and educate the public concerning the needs of mountain goats.

populations of these species prior to goat introductions.

The following tables illustrate the number of rare montane and alpine plant species in Utah that are potentially at risk from ongoing or proposed mountain goat introductions. Species marked with an "x" are taxa newly added to the list in the past year.

Table 2 (below) is a list of rare montane and alpine plants from the La Sal Mountains. To date, monitoring activities have been centered around *Erigeron mancus*, a US Forest Service Sensitive species. However there are four other species that are high priorities for monitoring: *Oreoxis bakeri*, *Senecio fremontii* var. *inexpectatus*, *Symphyotrichum laeve* var. *geyeri*, and *Cypripedium calceolus* var. *parviflorum*. Three taxa (*Carex perglobosa*, *Asplenium septentrionale*, and *Synthyris alpina*) were ranked in the Medium list in 2009. However due to the introduction of mountain goats, the threats were re-ranked as "high". These changes re-ranked the taxa to the Watch List. Nineteen species for the La Sal Mountains have been added to this year's list due to this re-assessment. In all there are a total of 29 species that could be detrimentally impacted by the introduction of mountain goats.

For comparison, the second list was compiled for the Uinta Mountains (Table 3, pages 7-10). Goats were first introduced in the Uinta Mountains in 1987 at Bald Mountain with animals from the Lone Peak population. It was further augmented in 1988 with animals from Olympic National Park. Since then, ten other introductions have been completed at sites across the axis of the Uinta Mountains. In 2011, there were over 800 goats counted in the census in the Uintas. In the 2009 list, alpine plants in the Uintas were ranked mostly as having low threats. This ranking can no longer be justified. 43 species for the Uinta Mountains have been added due to this re-assessment. In all there are a total of 79 species that could be detrimentally impacted by naturalized mountain goats.

There are 4 species that should be high priority for monitoring: *Erigeron goodrichii*, *Townsendia goodrichii*, *Draba inexpectata*, and *Cypripedium calceolus* var. *parviflorum*. This mountain range has a higher number of alpine endemic (both local and regional) than all other alpine areas in Utah. The Uinta Mountains should have been a higher priority for rare plant monitoring as a result of the range-wide goat introductions.

Table 2. Rare Montane and Alpine plants of the La Sal Mountains (37 taxa)

New Taxa	Cronquist Family	Taxon Name	A Utah Flora Taxon Name	Utah Dist.	Min Score	Pot Score	Conservation Priority
x	Apiaceae	<i>Oreoxis bakeri</i>	<i>Cymopterus bakeri</i>	RegEnd	5	7	High
	Asteraceae	<i>Erigeron mancus</i>	<i>Erigeron mancus</i>	LocEnd	6	7	High
	Asteraceae	<i>Senecio fremontii</i> var. <i>inexpectatus</i>	<i>Senecio fremontii</i> var. <i>inexpectans</i> [misspelled]	LocEnd	6	7	High
	Orchidaceae	<i>Cypripedium calceolus</i> var. <i>parviflorum</i>	<i>Cypripedium calceolus</i> var. <i>parviflorum</i>	Disj	5	6	High
x	Rosaceae	<i>Potentilla paucijuga</i>	<i>Potentilla rubricaulis</i> , in part	LocEnd	6	7	High
x	Apiaceae	<i>Oxyopolis fendleri</i>	<i>Oxyopolis fendleri</i>	Periph	4	6	Watch
	Apiaceae	<i>Podistera eastwoodiae</i>	<i>Podistera eastwoodiae</i>	Periph	4	6	Watch
x	Asteraceae	<i>Erigeron elatior</i>	<i>Erigeron elatior</i>	RegEnd	4	6	Watch
x	Asteraceae	<i>Erigeron melanocephalus</i>	<i>Erigeron melanocephalus</i>	RegEnd	4	6	Watch
x	Asteraceae	<i>Helianthella parryi</i>	<i>Helianthella parryi</i>	RegEnd	5	6	Watch
x	Asteraceae	<i>Rudbeckia laciniata</i> var. <i>ampla</i>	<i>Rudbeckia laciniata</i> var. <i>ampla</i>	Periph	5	6	Watch
	Asteraceae	<i>Packera dimorphophylla</i> var. <i>intermedia</i>	<i>Senecio dimorphophyllus</i> var. <i>intermedius</i>	LocEnd	5	6	Watch
x	Asteraceae	<i>Senecio serra</i> var. <i>admirabilis</i>	<i>Senecio serra</i> var. <i>admirabilis</i>	RegEnd	5	6	Watch

Table 2, continued. Rare Montane and Alpine plants of the La Sal Mountains (37 taxa)

New Taxa	Cronquist Family	Taxon Name	A Utah Flora Taxon Name	Utah Dist.	Min Score	Pot Score	Conservation Priority
x	Asteraceae	<i>Senecio fremontii</i> var. <i>blitoides</i>	<i>Senecio fremontii</i> var. <i>blitoides</i>	Reg End	4	6	Watch
x	Asteraceae	<i>Symphyotrichum laeve</i> var. <i>geyeri</i>	<i>Aster laevis</i>	Periph	5	6	Watch
x	Callitrichaceae	<i>Callitriche heterophylla</i>	<i>Callitriche heterophylla</i>	Sparse	4	6	Watch
x	Caryophyllaceae	<i>Stellaria longifolia</i>	<i>Stellaria longifolia</i>	Sparse	4	6	Watch
	Cyperaceae	<i>Carex perglobosa</i>	<i>Carex perglobosa</i>	Reg End	5	6	Watch
x	Primulaceae	<i>Androsace chamaejasme</i> subsp. <i>lehmanniana</i>	<i>Androsace chamaejasme</i> var. <i>carinata</i>	Periph	5	6	Watch
x	Rosaceae	<i>Potentilla nivea</i>	<i>Potentilla nivea</i>	RegEnd	5	6	Watch
x	Montiaceae	<i>Claytonia megarhiza</i>	<i>Claytonia megarhiza</i>	Periph	5	6	Watch
	Polypodiaceae	<i>Asplenium septentrionale</i>	<i>Asplenium septentrionale</i>	Sparse	5	6	Watch
x	Saxifragaceae	<i>Saxifraga flagellaris</i> ssp. <i>crandallii</i>	<i>Saxifraga flagellaris</i>	Periph	5	6	Watch
x	Saxifragaceae	<i>Saxifraga cernua</i>	<i>Saxifraga cernua</i>	Periph	5	6	Watch
x	Saxifragaceae	<i>Saxifraga bronchialis</i> var. <i>austromontana</i>	<i>Saxifraga bronchialis</i> var. <i>austromontana</i>	Periph	5	6	Watch
	Scrophulariaceae	<i>Synthyris alpina</i>	<i>Besseya alpina</i>	Reg End	5	6	Watch
	Asteraceae	<i>Erigeron humilis</i>	<i>Erigeron humilis</i>	Periph	4	5	Medium
x	Asteraceae	<i>Pyrrocoma crocea</i> var. <i>crocea</i>	<i>Haplopappus croceus</i>	RegEnd	4	5	Medium
x	Asteraceae	<i>Senecio bigelovii</i> var. <i>hallii</i>	<i>Senecio bigelovii</i> var. <i>hallii</i>	RegEnd	3	5	Medium
	Brassicaceae	<i>Draba abajoensis</i>	Not in Utah <i>sensu A Utah Flora</i> (2008)	RegEnd	4	5	Medium
x	Brassicaceae	<i>Draba fladnizensis</i>	<i>Draba fladnizensis</i>	Periph	4	5	Medium
x	Campanulaceae	<i>Campanula uniflora</i>	<i>Campanula uniflora</i>	Periph	3	5	Medium
x	Caryophyllaceae	<i>Silene hitchguirei</i>	<i>Lychnis apetala</i> var. <i>montana</i>	Periph	3	5	Medium
x	Caryophyllaceae	<i>Silene scouleri</i>	<i>Silene scouleri</i> ssp. <i>hallii</i>	Periph	4	5	Medium
x	Gentianaceae	<i>Gentianopsis barbellata</i>	<i>Gentianopsis barbellata</i>	Periph	4	5	Medium
x	Orchidaceae	<i>Listera borealis</i>	<i>Listera borealis</i>	Periph	4	5	Medium
x	Poaceae	<i>Poa laxa</i> ssp. <i>banffiana</i>	Not in Utah <i>sensu A Utah Flora</i> (2008)	Disj	4	5	Medium

Table 3. Rare Montane and Alpine plants of the Uinta Mountains (85 taxa)

New Taxa	Cronquist Family	Taxon Name	A Utah Flora Taxon Name	Utah Dist.	Min Score	Pot Score	Conservation Priority
	Asteraceae	<i>Erigeron goodrichii</i>	<i>Erigeron goodrichii</i>	LocEnd	5	7	High
	Asteraceae	<i>Townsendia goodrichii</i>	<i>Townsendia goodrichii</i>	LocEnd	6	7	High
	Brassicaceae	<i>Draba inexpectata</i>	<i>Draba inexpectata</i>	Loc End	6	7	High
	Orchidaceae	<i>Cypripedium calceolus</i> var. <i>parviflorum</i>	<i>Cypripedium calceolus</i> var. <i>parviflorum</i>	Disj	5	6	High
	Adoxaceae	<i>Adoxa moschatellina</i>	<i>Adoxa moschatellina</i>	Periph	5	5	Watch
	Apiaceae	<i>Cymopterus evertii</i>	<i>Cymopterus evertii</i>	RegEnd	5	6	Watch
x	Asteraceae	<i>Antennaria pulcherrima</i> ssp. <i>pulcherrima</i>	<i>Antennaria pulcherrima</i>	Periph	5	6	Watch
	Asteraceae	<i>Arnica lanceolata</i> ssp. <i>prima</i>	<i>Arnica amplexicaulis</i> var. <i>prima</i>	Periph	4	6	Watch
	Asteraceae	<i>Artemisia campestris</i> var. <i>petiolata</i>	<i>Artemisia campestris</i> var. <i>petiolata</i>	LocEnd	5	6	Watch
	Asteraceae	<i>Erigeron radicans</i>	<i>Erigeron huberi</i>	RegEnd	4	6	Watch
	Asteraceae	<i>Eurybia sibirica</i>	<i>Aster sibiricus</i>	Periph	5	6	Watch
	Asteraceae	<i>Packera dimorphophylla</i> var. <i>intermedia</i>	<i>Senecio dimorphophyllus</i> var. <i>intermedius</i>	LocEnd	5	6	Watch
x	Brassicaceae	<i>Draba ventosa</i>	<i>Draba ventosa</i>	Periph	5	6	Watch
	Brassicaceae	<i>Lepidium huberi</i>	<i>Lepidium huberi</i>	RegEnd	5	6	Watch
x	Brassicaceae	<i>Subularia aquatica</i> ssp. <i>americana</i>	<i>Subularia aquatica</i>	Sparse	5	6	Watch
x	Callitrichaceae	<i>Callitriche hermaphroditica</i>	<i>Callitriche hermaphroditica</i>	Sparse	4	6	Watch
x	Callitrichaceae	<i>Callitriche heterophylla</i>	<i>Callitriche heterophylla</i>	Sparse	4	6	Watch
	Campanulaceae	<i>Porterella carnosula</i>	<i>Porterella carnosula</i>	Sparse	5	6	Watch
x	Caryophyllaceae	<i>Stellaria crassifolia</i>	<i>Stellaria crassifolia</i>	Periph	5	6	Watch
x	Caryophyllaceae	<i>Stellaria longifolia</i>	<i>Stellaria longifolia</i>	Sparse	4	6	Watch
x	Cyperaceae	<i>Carex bebbii</i>	<i>Carex bebbii</i>	Periph	5	6	Watch
x	Cyperaceae	<i>Carex lachenalii</i>	<i>Carex bipartita</i>	Periph	5	6	Watch
	Cyperaceae	<i>Carex lasiocarpa</i>	<i>Carex lasiocarpa</i>	Periph	5	6	Watch
x	Cyperaceae	<i>Carex leporinella</i>	<i>Carex leporinella</i>	Periph	5	6	Watch
	Cyperaceae	<i>Carex leptalea</i>	<i>Carex leptalea</i>	Periph	5	6	Watch
	Cyperaceae	<i>Carex livida</i>	<i>Carex livida</i>	Disj	5	6	Watch
	Cyperaceae	<i>Carex microglochis</i> ssp. <i>microglochis</i>	<i>Carex microglochis</i>	Disj	5	6	Watch
x	Cyperaceae	<i>Carex multicosata</i>	<i>Carex multicosata</i>	Periph	5	6	Watch
x	Cyperaceae	<i>Carex neurophora</i>	<i>Carex neurophora</i>	Periph	4	6	Watch
x	Cyperaceae	<i>Carex scopulorum</i> var. <i>bracteosa</i>	<i>Carex scopulorum</i>	Periph	5	6	Watch

Table 3, continued. Rare Montane and Alpine plants of the Uinta Mountains (85 taxa)

New Taxa	Cronquist Family	Taxon Name	A Utah Flora Taxon Name	Utah Dist.	Min Score	Pot Score	Conservation Priority
	Fabaceae	<i>Oxytropis deflexa</i> var. <i>pulcherrima</i>	<i>Oxytropis deflexa</i> var. <i>pulcherrima</i>	Reg End	4	6	Watch
	Gentianaceae	<i>Lomatogonium rotatum</i>	<i>Lomatogonium rotatum</i>	Disj	5	6	Watch
	Isoetaceae	<i>Isoetes echinospora</i>	<i>Isoetes echinospora</i>	Periph	5	6	Watch
x	Juncaceae	<i>Juncus castaneus</i>	<i>Juncus castaneus</i>	Disj	4	6	Watch
x	Juncaceae	<i>Juncus ensifolius</i> var. <i>ensifolius</i>	<i>Juncus ensifolius</i> var. <i>ensifolius</i>	Sparse	4	6	Watch
	Ophioglossaceae	<i>Botrychium multifidum</i>	<i>Botrychium multifidum</i>	Periph	5	6	Watch
	Papaveraceae	<i>Papaver uintaenese</i>	<i>Papaver uintaenese</i>	Disj	5	6	Watch
	Polygonaceae	<i>Koenigia islandica</i>	<i>Koenigia islandica</i>	Disj	5	6	Watch
x	Potamogetonaceae	<i>Potamogeton friesii</i>	<i>Potamogeton friesii</i>	Disj	5	6	Watch
x	Potamogetonaceae	<i>Potamogeton natans</i>	<i>Potamogeton natans</i>	Disj	5	6	Watch
x	Potamogetonaceae	<i>Stuckenia filiformis</i> ssp. <i>alpina</i>	<i>Potamogeton filiformis</i> var. <i>alpinus</i>	Periph	4	6	Watch
	Ranunculaceae	<i>Ranunculus pygmaeus</i>	<i>Ranunculus pygmaeus</i>	Periph	5	6	Watch
x	Ranunculaceae	<i>Ranunculus gelidus</i>	<i>Ranunculus gelidus</i>	Periph	5	6	Watch
	Rosaceae	<i>Ivesia utahensis</i>	<i>Ivesia utahensis</i>	LocEnd	5	6	Watch
x	Rosaceae	<i>Potentilla nivea</i>	<i>Potentilla nivea</i>	RegEnd	5	6	Watch
	Rosaceae	<i>Potentilla palustris</i>	<i>Potentilla palustris</i>	Periph	5	6	Watch
	Scrophulariaceae	<i>Synthyris wyomingensis</i>	<i>Besseyia wyomingensis</i>	Periph	5	6	Watch
x	Montiaceae	<i>Claytonia megarhiza</i>	<i>Claytonia megarhiza</i>	Periph	5	6	Watch
x	Saxifragaceae	<i>Saxifraga serpyllifolia</i> var. <i>chrysantha</i>	<i>Saxifraga serpyllifolia</i>	Periph	5	6	Watch
x	Saxifragaceae	<i>Saxifraga hirculus</i> ssp. <i>hirculus</i>	<i>Saxifraga hirculus</i>	Periph	5	6	Watch
x	Saxifragaceae	<i>Saxifraga flagellaris</i> ssp. <i>crandallii</i>	<i>Saxifraga flagellaris</i>	Periph	5	6	Watch
x	Saxifragaceae	<i>Saxifraga cernua</i>	<i>Saxifraga cernua</i>	Periph	5	6	Watch
x	Sparganiaceae	<i>Sparganium natans</i>	<i>Sparganium natans</i>	Periph	5	6	Watch
x	Asteraceae	<i>Arnica fulgens</i>	<i>Arnica fulgens</i>	Periph	4	5	Medium
x	Asteraceae	<i>Brickellia eupatorioides</i> var. <i>chlorolepis</i>	<i>Kuhnia eupatorioides</i> var. <i>chlorolepis</i>	Periph	4	5	Medium
	Asteraceae	<i>Cirsium eatonii</i> var. <i>murdockii</i>	<i>Cirsium murdockii</i>	LocEnd	3	4	Medium
x	Asteraceae	<i>Erigeron coulteri</i>	<i>Erigeron coulteri</i>	Periph	4	5	Medium
x	Asteraceae	<i>Senecio pudicus</i>	<i>Senecio pudicus</i>	RegEnd	4	5	Medium
	Brassicaceae	<i>Draba brachystylis</i>	<i>Draba brachystylis</i>	Reg End	4	5	Medium
x	Brassicaceae	<i>Draba fladnizensis</i>	<i>Draba fladnizensis</i>	Periph	4	5	Medium



Table 3, continued. Rare Montane and Alpine plants of the Uinta Mountains (85 taxa)

New Taxa	Cronquist Family	Taxon Name	A Utah Flora Taxon Name	Utah Dist.	Min Score	Pot Score	Conservation Priority
x	Campanulaceae	<i>Campanula uniflora</i>	<i>Campanula uniflora</i>	Periph	3	5	Medium
x	Caprifoliaceae	<i>Symphoricarpos occidentalis</i>	<i>Symphoricarpos occidentalis</i>	Periph	3	5	Medium
	Caryophyllaceae	<i>Minuartia macrantha</i>	<i>Arenaria macrantha</i>	Reg End	4	6	Medium
x	Caryophyllaceae	<i>Silene hitchguirei</i>	<i>Lychnis apetala</i> var. <i>montana</i>	Periph	3	5	Medium
x	Cyperaceae	<i>Carex atosquama</i>	<i>Carex atosquama</i>	Periph	4	5	Medium
x	Cyperaceae	<i>Carex brunnescens</i> ssp. <i>brunnescens</i>	<i>Carex brunnescens</i>	Periph	4	5	Medium
x	Cyperaceae	<i>Carex buxbaumii</i>	<i>Carex buxbaumii</i>	Periph	4	5	Medium
x	Cyperaceae	<i>Carex capitata</i>	<i>Carex capitata</i>	Periph	4	5	Medium
x	Cyperaceae	<i>Carex fuliginosa</i>	<i>Carex fuliginosa</i>	Periph	4	5	Medium
x	Cyperaceae	<i>Kobresia sibirica</i>	<i>Kobresia sibirica</i>	Periph	4	5	Medium
x	Elaeagnaceae	<i>Elaeagnus commutata</i>	<i>Elaeagnus commutata</i>	Periph	4	5	Medium
x	Gentianaceae	<i>Gentianopsis barbellata</i>	<i>Gentianopsis barbellata</i>	Periph	4	5	Medium
x	Liliaceae	<i>Lloydia serotina</i> var. <i>serotina</i>	<i>Lloydia serotina</i>	Periph	4	5	Medium
	Orchidaceae	<i>Coeloglossum viride</i>	<i>Habenaria viridis</i> var. <i>bracteata</i>	Periph	4	5	Medium
	Orchidaceae	<i>Cypripedium fasciculatum</i>	<i>Cypripedium fasciculatum</i>	Disj	4	5	Medium
x	Orchidaceae	<i>Listera borealis</i>	<i>Listera borealis</i>	Periph	4	5	Medium
x	Orchidaceae	<i>Listera cordata</i> var. <i>nephrophylla</i>	<i>Listera cordata</i>	Periph	4	5	Medium
x	Orchidaceae	<i>Platanthera obtusata</i>	<i>Habenaria obtusata</i>	Periph	4	5	Medium
	Plumbaginaceae	<i>Armeria maritima</i> ssp. <i>sibirica</i>	<i>Armeria maritima</i> var. <i>sibirica</i>	Periph	4	5	Medium
x	Poaceae	<i>Achnatherum lemmonii</i> ssp. <i>lemmonii</i>	<i>Stipa lemmonii</i>	Periph	4	5	Medium
x	Poaceae	<i>Helictotrichon mortonianum</i>	<i>Helictotrichon mortoniana</i> (misspelled)	Periph	4	5	Medium
x	Poaceae	<i>Oryzopsis asperifolia</i>	<i>Oryzopsis asperifolia</i>	Periph	4	5	Medium
x	Poaceae	<i>Schizachne purpurascens</i>	<i>Schizachne purpurascens</i>	Periph	4	5	Medium
	Polypodiaceae	<i>Asplenium septentrionale</i>	<i>Asplenium septentrionale</i>	Sparse	4	5	Medium
	Ranunculaceae	<i>Ranunculus pedatifidus</i> var. <i>affinis</i>	<i>Ranunculus pedatifidus</i> var. <i>affinis</i>	Periph	4	5	Medium

The third list was compiled for the Tushar Mountains (Table 4, below). Goats were first introduced in the Tushar Mountains in 1986 with animals from Wasatch Range populations. It was further augmented in 1988 with animals from Olympic National Park. In 2011, 240 goats were counted in the Tushar Mountains. In the 2009 list, alpine plants in the Tushars were mostly ranked as having "low" threats. This ranking can no longer be justified either. Eight species have been added due to this re-assessment. In all there are a total of 27 species that could be detrimentally impacted by the nat-

uralized mountain goats. There are 3 species that should be high priority for monitoring: *Packera castoreus*, *Draba ramulosa*, and *Draba sobolifera*. The botanical diversity of the Tushar Range is perhaps more imperiled than other mountain ranges since the DWR report states that the goats in this population have the highest population growth of all Utah populations. It has been a source for several new introductions within the state. The high population growth is a major concern for the long-term conservation of botanical diversity in this mountain range.

Table 4. Rare Montane and Alpine plants of the Tushar Mountains (27 taxa)

New Taxa	Cronquist Family	Taxon Name	A Utah Flora Taxon Name	Utah Dist.	Min Score	Pot Score	Conservation Priority
	Asteraceae	<i>Packera castoreus</i>	<i>Senecio castoreus</i>	LocEnd	6	7	High
	Brassicaceae	<i>Draba ramulosa</i>	<i>Draba ramulosa</i>	LocEnd	6	7	High
	Brassicaceae	<i>Draba sobolifera</i>	<i>Draba sobolifera</i>	LocEnd	6	7	High
	Polemoniaceae	<i>Ipomopsis spicata</i> ssp. <i>tridactyla</i>	<i>Ipomopsis tridactyla</i>	LocEnd	6	7	High
	Scrophulariaceae	<i>Castilleja parvula</i> var. <i>parvula</i>	<i>Castilleja parvula</i> var. <i>parvula</i>	LocEnd	6	7	High
	Asteraceae	<i>Townsendia condensata</i>	<i>Townsendia condensata</i>	Disj	4	6	Watch
x	Cyperaceae	<i>Carex luzulina</i> var. <i>ablata</i>	<i>Carex luzulina</i>	Periph	4	6	Watch
x	Cyperaceae	<i>Carex jonesii</i>	<i>Carex jonesii</i>	Periph	4	6	Watch
x	Cyperaceae	<i>Carex neurophora</i>	<i>Carex neurophora</i>	Periph	4	6	Watch
	Apiaceae	<i>Angelica wheeleri</i>	<i>Angelica wheeleri</i>	RegEnd	5	5	Watch
	Brassicaceae	<i>Lepidium montanum</i> var. <i>heterophyllum</i>	<i>Lepidium montanum</i> var. <i>heterophyllum</i>	LocEnd	5	6	Watch
	Fabaceae	<i>Astragalus perianus</i>	<i>Astragalus perianus</i>	Loc End	5	6	Watch
	Fabaceae	<i>Lupinus sericeus</i> var. <i>marianus</i>	<i>Lupinus sericeus</i> var. <i>marianus</i>	Loc End	4	6	Watch
	Polypodiaceae	<i>Gymnocarpium dryopteris</i>	<i>Gymnocarpium dryopteris</i>	Disj	5	6	Watch
	Ranunculaceae	<i>Aquilegia scopulorum</i> var. <i>scopulorum</i>	<i>Aquilegia scopulorum</i> var. <i>scopulorum</i>	Reg End	5	6	Watch
	Rosaceae	<i>Potentilla glandulosa</i> var. <i>pusilla</i>	<i>Potentilla glandulosa</i> var. <i>pusilla</i>	Loc End	4	6	Watch
	Scrophulariaceae	<i>Penstemon tusharensis</i>	<i>Penstemon caespitosus</i> var. <i>suffruticosus</i>	Loc End	4	6	Watch
	Asteraceae	<i>Erigeron humilis</i>	<i>Erigeron humilis</i>	Periph	4	5	Medium
x	Brassicaceae	<i>Draba fladnizensis</i>	<i>Draba fladnizensis</i>	Periph	4	5	Medium

Table 4, continued. Rare Montane and Alpine plants of the Tushar Mountains (27 taxa)

New Taxa	Cronquist Family	Taxon Name	A Utah Flora Taxon Name	Utah Dist.	Min Score	Pot Score	Conservation Priority
x	Caryophyllaceae	<i>Silene scouleri</i>	<i>Silene scouleri</i> ssp. <i>hallii</i>	Periph	3	5	Medium
x	Cyperaceae	<i>Carex geophila</i>	<i>Carex geophila</i>	Periph	3	5	Medium
x	Cyperaceae	<i>Carex stenoptila</i>	Not in A Utah Flora	Periph	3	5	Medium
	Fabaceae	<i>Trifolium eriocephalum</i> var. <i>villiferum</i>	<i>Trifolium eriocephalum</i> var. <i>villiferum</i>	Reg End	4	5	Medium
	Poaceae	<i>Achnatherum nevadense</i>	<i>Stipa nevadensis</i>	Periph	4	5	Medium
x	Poaceae	<i>Sphenopholis intermedia</i>	<i>Sphenopholis obtusata</i> , in part	Periph	3	5	Medium
	Polemoniaceae	<i>Polemonium brandegeei</i>	<i>Polemonium brandegeei</i>	Disj	3	5	Medium
x	Rosaceae	<i>Chamaerhodos erecta</i>	<i>Chamaerhodos erecta</i> var. <i>parviflora</i>	Periph	4	5	Medium

Lastly, the list for the Deep Creek Range (Table 5, page 12) is provided here as "red flag" for land managers. The 22 species currently on this list are ranked low in the threat criteria. If mountain goats are introduced in the Deep Creeks, the rank of these taxa will change. Although this range has fewer endemic taxa than other alpine ranges, it has one of the most unique floras in Utah. It shares more similarities with mountain ranges in the Great Basin of Nevada than with any of the other alpine mountains where goats have been introduced.

Due to its remote nature, the plants in this mountain range are also some of the least studied in the state. Introducing mountain goats here before adequate impact studies tailored to these rare plant species could be highly detrimental to their populations.

Overall, the goal of publishing these tables is to alert land managers to initiate studies of these sensitive plant species. If monitoring studies show that naturalized goats are not impacting a species on this list, the threats and the ranking will be downgraded accordingly.

Table 5. Rare Montane and Alpine plants of the Deep Creek Mountains (26 taxa)

New Taxa	Cronquist Family	Taxon Name	A Utah Flora Taxon Name	Utah Dist.	Min Score	Pot Score	Conservation Priority
	Boraginaceae	<i>Hackelia ibapensis</i>	<i>Hackelia ibapensis</i>	LocEnd	5	7	High
	Hydrangeaceae	<i>Jamesia americana</i> var. <i>macrocalyx</i>	<i>Jamesia americana</i> var. <i>macrocalyx</i>	LocEnd	5	7	High
	Brassicaceae	<i>Draba kassii</i>	<i>Draba kassii</i>	LocEnd	5	7	High
x	Crassulaceae	<i>Rhodiola integrifolia</i> ssp. <i>integrifolia</i>	<i>Sedum rosea</i> var. <i>integrifolium</i>	Periph	4	6	Watch
x	Cyperaceae	<i>Carex jonesii</i>	<i>Carex jonesii</i>	Periph	4	6	Watch
x	Cyperaceae	<i>Carex scopulorum</i> var. <i>bracteosa</i>	<i>Carex scopulorum</i>	Periph	5	6	Watch
x	Primulaceae	<i>Dodecatheon redolens</i>	<i>Dodecatheon redolens</i>	Periph	4	6	Watch
x	Scrophulariaceae	<i>Castilleja nana</i>	<i>Castilleja nana</i>	Periph	4	6	Watch
x	Apiaceae	<i>Lomatium nudicaule</i>	<i>Lomatium nudicaule</i>	Periph	3	5	Medium
x	Apiaceae	<i>Perideridia bolanderi</i>	<i>Perideridia bolanderi</i>	Periph	3	5	Medium
	Asteraceae	<i>Ericameria watsonii</i>	<i>Haplopappus watsonii</i> var. <i>watsonii</i>	Periph	3	5	Medium
x	Brassicaceae	<i>Draba fladnizensis</i>	<i>Draba fladnizensis</i>	Periph	4	5	Medium
	Brassicaceae	<i>Draba pedicellata</i>	Not in Utah <i>sensu A Utah Flora</i>	RegEnd	3	5	Medium
	Brassicaceae	<i>Draba pennellii</i>	Not in Utah <i>sensu A Utah Flora</i>	RegEnd	3	5	Medium
	Brassicaceae	<i>Draba brachystylis</i>	<i>Draba brachystylis</i>	Reg End	3	5	Medium
	Brassicaceae	<i>Draba novolympica</i>	<i>Draba paysonii</i> var. <i>treleasii</i>	Periph	3	5	Medium
	Fabaceae	<i>Trifolium eriocephalum</i> var. <i>villiferum</i>	<i>Trifolium eriocephalum</i> var. <i>villiferum</i>	Reg End	4	5	Medium
	Fabaceae	<i>Astragalus platytropis</i>	<i>Astragalus platytropis</i>	Periph	4	5	Medium
x	Hydrophyllaceae	<i>Hydrophyllum capitatum</i> var. <i>alpinum</i>	<i>Hydrophyllum capitatum</i> var. <i>alpinum</i>	Periph	3	5	Medium
x	Liliaceae	<i>Calochortus bruneauis</i>	<i>Calochortus bruneauis</i>	RegEnd	4	5	Medium
x	Poaceae	<i>Oryzopsis asperifolia</i>	<i>Oryzopsis asperifolia</i>	Periph	4	5	Medium
	Ranunculaceae	<i>Aquilegia scopulorum</i> var. <i>scopulorum</i>	<i>Aquilegia scopulorum</i> var. <i>scopulorum</i>	Reg End	4	5	Medium
	Rosaceae	<i>Potentilla holmgrenii</i>	Not in Utah <i>sensu A Utah Flora</i>	Reg End	4	6	Watch
x	Rosaceae	<i>Potentilla nivea</i>	<i>Potentilla nivea</i>	RegEnd	5	6	Watch
	Scrophulariaceae	<i>Penstemon humilis</i> var. <i>desereticus</i>	<i>Penstemon humilis</i> var. <i>desereticus</i>	Reg End	3	5	Medium
	Scrophulariaceae	<i>Penstemon patricus</i>	<i>Penstemon leonardii</i> var. <i>patricus</i>	Loc End	4	5	Medium

## 2016 UNPS Rare Plant List: Goals

1. To assess the rarity of native vascular plant taxa in Utah (both full species and varieties)
2. Develop a prioritized list of those taxa most in danger of extinction.
3. Identify taxa that may be at risk but for which significant data gaps exist (these species would be identified as a high priority for additional field surveys and research).

## Methods

The taxonomy of the 2009 list was based on the nomenclature of the 4<sup>th</sup> edition of *A Utah Flora* (Welsh et al. 2008). This version has departed from that standard. All taxa recognized from Utah in the published volumes of the Flora of North America, the Intermountain Flora, the 4th and 5th editions of *A Utah Flora*, and other recently published taxonomic treatments were evaluated for inclusion in this list. Where applicable, the taxonomic name recognized by *A Utah Flora* is included in a column separate from the primary taxonomic name. Hybrid taxa are listed in the taxon column as their Nothospecies name variants, if known. Also, all named hybrids, irrespective of their morphological similarity, are listed as separate species, not as synonyms of their one of their parents, as commonly done by Welsh et al. (2008). Al-Shehbaz and Windham (2006: 62) clearly elucidate that "assigning allopolyploid hybrids to the same species as one of their diploid progenitors is contrary to the [International Code of Nomenclature for algae, fungi, and plants (ICN)]... and, in a genus as complex as *Boecheria*, quickly results an unworkable taxonomy. For example, the distinctive sexual diploid *B. retrofracta* (Graham) Á. Löve & D. Löve hybridizes with at least a dozen other species. If these hybrids are included within the concept of *B. retrofracta* (as they have been in the past [and included in *Arabis holboellii* var. *retrofracta* in *A Utah Flora*]), the species eventually encompasses so much morphological variability that it becomes impossible to distinguish from other taxa." This procedure has also been applied to other genera with hybrid species such as *Atriplex*, *Quercus*, and *Populus* in Utah.

All names were added to a spreadsheet and species were ranked according to 7 rarity criteria (Tables 6, 7). Each criterion is scored based on the best available data in published treatments or based on the personal knowledge or experience of the reviewer. If a score cannot be readily assigned due to lack of adequate data, the criterion was ranked as "unknown". The numeric scores assigned for the 7 criteria for each species are summed to derive a minimum score. A second, potential score is calculated by adding any criteria ranked as "unknown" with a score of 1 to the minimum score. Each score ranges from 0 to 8.

## Ranking Justification and Comments

For the 2009 list, each reviewer of a species added brief comments to explain how they derived particular values for selected criteria and include the reviewer's name and the date the species was scored. However, not all ranking justifications were added for each category. For this revision, each of the new taxa added this year has a standardized ranking justification paragraph. The goal is to have a permanent justification for each taxon. Each year, changes will be logged as new comments and changes will be made to the ranking justification accordingly. No matter who reads this list in the future, one will have some basic information on why most fields were scored. To date, this paragraph has only been added for taxa that have been added, changed, or updated in the past year. Older justification criteria (sometimes fairly skeletal) are included for other taxa, but will need to be revised in the future.

In addition, where possible, specific specimen voucher data has been added for species that are documented for the state based on 3 or fewer specimens. These specimens were found by searching the specimen voucher data published in *A Utah Flora* or found by searching SEINet [swbiodiversity.org/seinet], the Steere Virtual Herbarium (NY) [sweetgum.nybg.org/science] or other online herbarium databases.

## Prioritization Scale

The rarity and conservation needs of species can be summarized and compared using the following scale, based on the average of the minimum and maximum score (rounded down):

- Extremely High: summary score of 7-8 points
- High: summary score of 6 points
- Watch: summary score of 5 points
- Medium: summary score of 4 points
- Low: summary score of 0-3 points.

For species with 3 or more "unknown" values, a score of "Need Data" or "Status Uncertain" is applied depending on the status of verifiable herbarium specimen records. An additional "Excluded" list has been added for species that have been falsely reported for Utah or which have important taxonomic questions that need to be resolved before their status can be evaluated.

## Results

Master List: Excel Spreadsheet and formats.

The Master UNPS list is maintained in a Microsoft Access database. It includes all species with a priority rank of Extremely High, High, Watch, or Need Data, Medium, Status Uncertain, or Excluded. This database includes values for each of the seven ranking criteria, minimum and potential scores, comments (when

Table 6. Scores for Ranking Factors.

<b>Ranking Factor</b>	<b>Category or Condition</b>	<b>Points</b>
1. Geographic Range (only taxa native to the state are scored)	Local endemic (global range less than 16,500 km <sup>2</sup> or about 1 degree of latitude x 2 degrees of longitude)	2
	Regional endemic (global range covering 16,501-250,000 km <sup>2</sup> or an area about the size of Wyoming)	1
	Disjunct (globally widespread but Utah population is isolated from the main contiguous range of the species by a gap of more than 800 km [ca 500 miles])	1
	Peripheral (globally widespread but Utah population is at the margin of its continuous range and occupies less than 5% of the state's area near state boundary)	1
	Sparse (globally widespread, but Utah distribution patchy and discontinuous in the state and covering less than 5% of the state's area)	1
	Widespread (occurs widely across North America [covering more than 250,000 km <sup>2</sup> ] and across Utah [occupying well over 5% of the area])	0
	Unknown	0-1
2. Number of Populations	Low (fewer than 25 extant populations in Utah)	1
	Medium to High (25 or more extant populations in Utah)	0
	Unknown	0-1
3. Abundance	Low (depends on life history of species, but typically less than 30,000 individuals for perennials [higher numbers allowable for annuals] or occupying an area of less than 3000 acres in Utah)	1
	Medium to High (known from well over 30,000 individuals for perennials or occupying an area greater than 3000 acres in Utah)	0
	Unknown	0-1
4. Habitat Specificity	High ("Specialist" restricted to one or a few specialized geologic substrates, soil types, or vegetation types)	1
	Medium to Low ("Generalist" found in numerous geologic substrates, soil types, or vegetation types)	0
	Unknown	0-1
5. Intrinsic Rarity	High (unusual life history, dependence on rare or specialized pollinators, poor dispersal, low fecundity, poor seedling survival, etc.)	1
	Medium to Low (no unusual life history or biological attributes limiting establishment or persistence)	0
	Unknown	0-1
6. Magnitude and Imminence of Threats	High (current or foreseeable threats significant or broad in scale or scope)	1
	Medium to Low (threats minimal or limited to small percentage of populations now or in the foreseeable future)	0
	Unknown	0-1
7. Population Trend	Decreasing (short to long-term decline in number, size, or vigor of populations)	1
	Increasing, stable, or oscillating around a mean	0
	Unknown	0-1

Table 7. Sample Ranking Form

Species			
Date Scored		Evaluators	
Ranking Factors	Scores		Comments
	Select one score per ranking factor in either column A or B		
	Column A	Column B	
1. Geographic Range	Local Endemic (2) _____ Regional Endemic, Disjunct, Peripheral, or Sparse (1) _____ Widespread (0) _____	Unknown (1) _____	
2. Number of Populations	Low (1) _____ Medium to High (0) _____	Unknown (1) _____	
3. Abundance	Low (1) _____ Medium to High (0) _____	Unknown (1) _____	
4. Habitat Specificity	High (1) _____ Medium to Low (0) _____	Unknown (1) _____	
5. Intrinsic Rarity	High (1) _____ Medium to Low (0) _____	Unknown (1) _____	
6. Magnitude and Imminence of Threats	High (1) _____ Medium to Low (0) _____	Unknown (1) _____	
7. Population Trend	Downward (1) _____ Stable, Oscillating or Upward (0) _____	Unknown (1) _____	
<b>TOTALS</b>	Sum of scores in Column A _____	Sum of scores in Column B _____	Sum of scores in Column A + B _____
<b>Conservation Priority*</b> _____	<b>Minimum</b> (based on total score in Column A) _____	<b>Potential</b> (based on sum of scores in Columns A + B) _____	<b>Averaged</b> (based on average of scores in Columns A + B rounded down) _____

**Additional Comments**

\*Conservation Priority is based on the averaged point total: Extremely high priority = total score of 7 or 8 points, High priority = total score of 6 points, Watch list = total score of 5, Medium priority = total score of 4 points, Low priority = total score of 0-3 points.

available), and a table of distribution by Utah county (Figure 1). It also includes all ranking comments that were published in the 2009 list and all new comments that have been added since.

Current ranking scores and comments are included as appendices to this paper. These are organized based on the conservation priority score (ExHigh, High, Watch, etc.). Species are listed alphabetically by family and scientific name. Ranking comments are included for each species following the summary tables for each priority category. These categories include:

1. ExHigh: only those species scored as Extremely High priority are included (score of 7-8 points).
2. High: only those species scored as High priority are included (score of 6 points).
3. Watch: only those species scored as Watch priority are included (score of 5 points).
4. Medium: only those species scored as medium priority are included (score of 4 points).
5. Need Data: species on this list are based on a report with cited herbarium specimens. Only those species scored as needing more data (with 3 or more "unknowns" in the 7 ranking criteria) are contained in this list.
6. Status Uncertain: species on this list are based on a published report without specific specimen data cited. Many have been reported for the state from sources other than *A Utah Flora*. Each species cannot be verified until herbarium specimens are relocated. In addition, each have 3 or more "unknowns" in the 7 ranking criteria. Other species on this list include ones that are cited in *A Utah Flora* but the record is based on other sources and not on specimens examined by Welsh at BRY or other herbaria.
7. Excluded: species on this list have either: (1) been documented as not occurring in Utah in the most recent floras or publications or (2) been documented as being common and widespread in Utah with a rank of 0-3. The documented evidence for this ranking is entered into the comments. These species may still be recognized as being present in Utah in the 2008 4<sup>th</sup> edition of the *Utah Flora*, since in many cases Welsh has not re-investigated the presence of these taxa based on new information or disputes the data's accuracy in *A Utah Flora*.

The results of the ranking revision process are summarized in Table 8. The total number of species on the Extremely High, High, Watch, Medium, Need Data, and Status Uncertain lists has increased from 858 in 2012 to 1214 in 2016 (an increase of nearly 30%). Much of this increase has come from species having higher potential threat levels (from water development, mineral exploration, and introduced mountain goats) than in previous years. Increase in rare species has been especially high



Figure 1. Utah Counties with three-letter codes used in the appendices. Counties include: Beaver (Bvr), Box Elder (Box), Cache (Cch), Carbon (Crb), Daggett (Dag), Davis (Dav), Duchesne (Dch), Emery (Emr), Garfield (Grf), Grand (Grn), Iron (Irn) Juab (Jub), Kane (Kan), Millard (Mil), Morgan (Mor), Piute (Piu), Rich (Rch), Salt Lake (Slk), San Juan (Snj), Sanpete (Snp), Sevier (Sev), Summit (Sum), Tooele (Toe), Uinta (Uin), Utah (Uta), Wasatch (Was), Washington (Wsh), Wayne (Way), and Weber (Web)

in counties with extensive alpine areas and in the greater Salt Lake City area. Overall, the counties with the highest number of priority species continue to be those in southern Utah with high rates of local endemism or large numbers of uncommon and vulnerable species at the edges of their range (such as Mohave endemics in Washington County).

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Many individuals have contributed to the development of the Utah Native Plant Society Rare Plant List since the project's inception in 2008. The original rare plant committee consisted of Walter Fertig (chair), Duane Atwood,, Rita [Dodge] Reisor, Robert Fitts, Ben Franklin, and Jason Alexander. Since 2009, the committee has met annually to revise existing ranks and consider new species. The following is probably an incomplete list of those who have made important contributions (our apologies—and thanks - to anyone inadvertently left off): Ron Bolander, Jessie Brunson, Debi Clark, Cheryl Decker, Larry England, Tony Frates, Leigh Johnson, Kipp Lee (UNPS), Kezia Nielson (Zion NP), Teresa Prendusi, Gary Reese, Daniela Roth, Jim Spencer, Blake Wellard, Mike Windham, Dorde Woodruff, and Elaine York.



Table 8. Summary of UNPS Rare Plant List, 2009-2012

See text for explanation and scoring of each of the ranking categories. Counties are depicted in Figure 1.

	State/County	Extremely High	High	Watch	Medium	Need Data	Status Uncertain	Total
State	Utah Statewide	38	142	419	433	89	93	1214
County	Beaver County (Bvr)	0	10	26	36	10	5	87
	Box Elder County (Box)	1	3	21	48	6	2	81
	Cache County (Cch)	0	4	40	46	2	7	99
	Carbon County (Crb)	1	3	10	8	5	1	28
	Daggett County (Dag)	1	3	30	29	4	3	70
	Davis County (Dav)	0	0	9	10	1	1	21
	Duchesne County (Dch)	6	14	65	47	9	5	146
	Emery County (Emr)	6	9	32	30	17	3	97
	Garfield County (Grf)	1	20	62	64	16	9	172
	Grand County (Grn)	2	16	51	44	13	2	128
	Iron County (Irn)	0	6	25	29	5	3	68
	Juab County (Jub)	1	8	24	29	9	4	75
	Kane County (Kan)	4	26	61	82	6	17	196
	Millard County (Mil)	1	11	29	25	14	7	87
	Morgan County (Mor)	0	0	6	5	0	1	12
	Piute County (Piu)	0	11	20	19	5	4	59
	Rich County (Rch)	0	1	18	20	5	2	46
	Salt Lake County (Slr)	0	10	41	36	2	7	96
	San Juan County (Snj)	2	19	60	100	17	17	215
	Sanpete County (Snp)	2	8	17	11	5	3	46
	Sevier County (Sev)	4	12	30	25	6	7	84
	Summit County (Sum)	0	3	45	30	5	4	87
	Tooele County (Toe)	1	5	24	29	5	3	67
	Uintah County (Uin)	8	17	63	36	10	3	137
	Utah County (Uta)	1	12	45	23	7	15	103
	Wasatch County (Was)	0	4	19	18	1	5	47
	Washington County (Wsh)	6	22	97	150	13	21	309
	Wayne County (Way)	6	13	12	30	12	1	74
	Weber County (Web)	1	5	17	12	1	5	41

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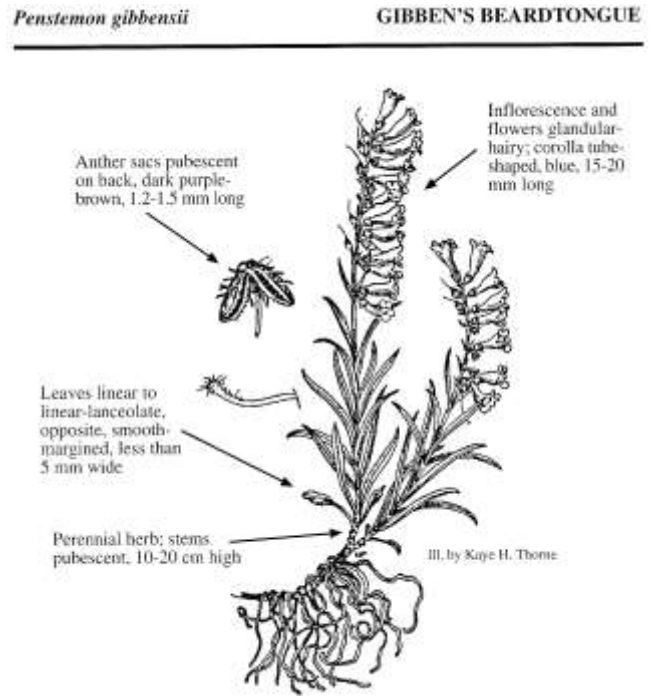


Figure 2. *Penstemon gibbensii*. From Wyoming Rare Plant Field Guide, Fertig et al. 1994

### An example of ranking a Utah species

The following example demonstrates the application of the Wyoming protocol. *Penstemon gibbensii* (Figure 2) is a narrow endemic of extreme NE Utah (Daggett County), adjacent NW Colorado, and SC Wyoming, earning it 2 points for geographic range. In Utah, it is known from a single occurrence in the Browns Park area (1 point for low number of populations) containing approximately 700 plants (1 point for low number of individuals) (Utah Division of Wildlife Resources 1998). It is restricted to barren white shales of the Browns Park Formation (1 point for high habitat specificity). Little is known about the pollination biology or life history of *P. gibbensii* (Heidel 2009), suggesting an “unknown” score is appropriate for intrinsic rarity. Threats from trampling, soil erosion, and over-collection by gardeners are high throughout its range (1 point for threats). Trends in Utah are unknown, although some populations in Wyoming appear to be declining (Heidel 2009). The minimum score for *P. gibbensii* is 6 points, while the potential score is 8. The average of the two scores is 7, earning *P. gibbensii* a place on the UNPS Extremely High priority list.—*W. Fertig*

## Appendix 1. UNPS Rare Plant List: Extremely High Priority Species

The following table lists 38 species scored as Extremely High priority for conservation attention in Utah based on the Wyoming protocol ranking system. Species are listed alphabetically by family and scientific name. Synonyms for family and species names are included in parentheses. See text for an explanation of the seven ranking criteria and scoring methods used to derive the minimum and potential scores. County codes are explained in Figure 1. Legal Status: Bureau of Land Management (BLM) and US Forest Service (USFS) Sensitive = S; US Fish and Wildlife Service (USFWS) Candidate = C, Endangered = E, Proposed = P; Threatened = T.

Family	Species	Common Name	Range	# Pops	# Indiv	Hab Spec	Intrin Rar	Threat	Trend	Min Score	Pot Score	County Dist. & Legal Status
Agavaceae (Asparagaceae)	<i>Yucca harrimane</i> var. <i>sterilis</i>	Creeping yucca	2	1	1	U	1	1	U	6	8	Dch?, Uin; BLM:S
Asclepiadaceae (Apocynaceae)	<i>Asclepias welshii</i>	Welsh's milkweed	2	1	1	1	1	1	0	7	7	Kan; USFWS:T
Asteraceae (Compositae)	<i>Lygodesmia grandiflora</i> var. <i>entrada</i>	Entrada rushpink	2	1	U	1	1	1	U	6	8	Emr, Grn
	<i>Townsendia aprica</i>	Last Chance townsendia	2	1	1	1	0	1	1	7	7	Emr, Sev, Way; USFWS: T
Brassicaceae (Cruciferae)	<i>Hesperidanthus argillaceus</i>	Clay reed-mustard	2	1	1	1	U	1	U	6	8	Uin; USFWS: T
	<i>Hesperidanthus barnebyi</i>	Barneby's reed-mustard	2	1	1	1	U	1	U	6	8	Emr, Way; USFWS: E
	<i>Hesperidanthus suffrutescens</i>	Shrubby reed-mustard	2	1	1	1	U	1	1	7	8	Dch, Uin; USFWS: E
	<i>Lepidium barnebyanum</i>	Barneby's peppercorn	2	1	1	1	U	1	U	6	8	Dch; USFWS: E
Cactaceae	<i>Pediocactus despainii</i>	Despain's pincushion cactus	2	1	1	1	1	1	1	8	8	Emr, Way?; USFWS: E
	<i>Pediocactus winkleri</i>	Winkler's pincushion cactus	2	1	1	1	1	1	1	8	8	Way; USFWS: T
	<i>Sclerocactus blainei</i>	Blaine's fishhook	1	1	1	1	1	1	1	7	7	Bvr, Irr, Mil
	<i>Sclerocactus brevispinus</i>	Pariette hookless cactus	2	1	1	1	1	1	1	8	8	Dch, Uin; USFWS: T
	<i>Sclerocactus wetlandicus</i>	Uinta Basin hookless cactus	2	1	1	1	0	1	1	7	7	Dch, Uin; USFWS:T
Chenopodiaceae	<i>Atriplex canescens</i> var. <i>gigantea</i>	Giant fourwing saltbush	2	1	1	1	U	1	U	6	8	Jub; BLM: S
Cyperaceae	<i>Carex specuicola</i>	Navajo sedge	1	1	1	1	1	1	1	7	7	Snj; USFWS:T
Fabaceae (Leguminosae)	<i>Astragalus ampullarioides</i>	Shivwits milkvetch	2	1	1	1	1	1	1	8	8	Wsh; USFWS: E
	<i>Astragalus anserinus</i>	Goose Creek milkvetch	2	1	1	1	0	1	1	7	7	Box; BLM: S; USFS: S;

Appendix 1. UNPS Rare Plant List: Extremely High Priority Species, continued												
Family	Species	Common Name	Range	# Pops	# Indiv	Hab Spec	Intrin Rar	Threat	Trend	Min Score	Pot Score	County Dist. & Legal Status
Fabaceae (Leguminosae)	<i>Astragalus holmgreniorum</i>	Holmgren's milkvetch	2	1	1	1	1	1	1	8	8	Wsh; USFWS: E
	<i>Astragalus iselyi</i>	Isely's milkvetch	2	1	1	1	0	1	1	7	7	Grn, Snj; BLM:S; USFS:S
	<i>Astragalus kelseya</i>	Kelsey's milkvetch	2	1	1	1	U	1	U	6	8	Web
	<i>Astragalus lentiginosus</i> var. <i>pohlii</i>	Pohl's milkvetch	2	1	1	1	1	1	U	7	8	Toe; BLM: S
	<i>Trifolium variegatum</i> var. <i>parunuweapensis</i>	Parunuweap clover	2	1	1	1	U	1	U	6	8	Kan; BLM: S
Gentianaceae	<i>Frasera ackermaniae</i>	Ackerman's frasera	2	1	1	1	U	1	U	6	8	Uin; BLM: S
Hydrophyllaceae	<i>Phacelia argillacea</i>	Clay phacelia	2	1	1	1	0	1	1	7	7	Utah; USFWS: E
	<i>Phacelia utahensis</i>	Utah phacelia	2	1	1	1	0	1	1	7	7	Snj, Sev; BLM:S
Iridaceae	<i>Iris pariensis</i>	Paria iris	2	1	1	U	U	1	1	6	8	Kan
Lamiaceae (Labiatae)	<i>Salvia columbariae</i> var. <i>argillacea</i>	Chinle chia	2	1	1	1	1	1	1	8	8	Kan, Wsh; BLM: S
Loasaceae	<i>Mentzelia argillosa</i>	Arapien stickleaf	2	1	1	1	0	1	1	7	7	Snj, Sev; BLM: S
Malvaceae	<i>Sphaeralcea gierischii</i>	Gierisch's globemallow	2	1	1	1	U	1	1	7	8	Wsh; BLM: S; USFWS:T
Papaveraceae	<i>Arctomecon humilis</i>	Dwarf bearclaw poppy	2	1	1	1	1	1	1	8	8	Wsh; USFWS:E
Polemoniaceae	<i>Aliciella caespitosa</i>	Rabbit Valley gilia	2	1	1	1	0	1	1	7	7	Way; BLM: S; USFS: S
Polygonaceae	<i>Eriogonum mitophyllum</i>	Lost Creek wild buckwheat	2	1	1	1	U	1	U	6	8	Sev; BLM S
Ranunculaceae	<i>Ranunculus aestivalis</i>	Autumn buttercup	2	1	1	1	1	1	1	8	8	Grf; USFWS:E
Scrophulariaceae (Plantaginaceae)	<i>Penstemon flowersii</i>	Flowers' penstemon	2	1	1	1	0	1	1	7	7	Dch, Uin
	<i>Penstemon gibbensii</i>	Gibbens' beardtongue	2	1	1	1	U	1	U	6	8	Dag; BLM: S
	<i>Penstemon grahamii</i>	Graham's penstemon	2	1	1	1	1	1	1	8	8	Crb, Dch, Uin; BLM: S; USFWS:P
	<i>Penstemon scariosus</i> var. <i>albifluvis</i>	White River penstemon	2	1	1	1	0	1	1	7	7	Uin; BLM: S; USFWS: C
Violaceae	<i>Viola clauseniana</i>	Clausen's violet	2	1	1	1	1	U	1	7	8	Wsh

UNPS Extremely High Priority Species List: Ranking Comments

*Yucca harrimaniae* var. *sterilis*

Synonym: *Yucca sterilis*

Family: Agavaceae or Asparagaceae

Comments: Local endemic. Never found in fruit - flowers but may reproduce by rhizomes. Uinta Basin endemic, may be threatened by over-collection by gardeners, poor fecundity, and impacts from development in the basin.

Scored By/Date: Fertig/2008

*Asclepias welshii*

Family: Asclepiadaceae or Apocynaceae

Comments: Local endemic. Listed as Threatened under ESA. Low sexual reproduction and seed production (loss of some fruiting plants from trampling), intrinsic rarity may be = 1, better trend data needed (may be stable in recent times).

Two populations in Utah, one on the Arizona-Utah border, and 5 in Arizona (two on Navajo Indian Reservation). 98% of known individuals (ramets) in Coral Pink Sand Dunes State Park. Primary threat ATV disturbance. Population trends difficult to document due to life history of the species. Individuals are difficult to track over time. Poor seedling survival and population dynamics of ramet survival and movement in dunes is evidence for the re-scoring of Intrinsic Rarity from "0" in the original UNPS ranking prior to 2008 to "1". Scored By/Date: UNPS Rare Plant Comm./2015  
Revisions: Moved from High Priority to Extremely High Priority.

*Lygodesmia grandiflora* var. *entrada*

Synonym: *Lygodesmia entrada*

Family: Asteraceae or Compositae

Comments: Local endemic. Only 3 specimens at BRY have been collected. It is endemic to Emery and Grand Counties. Habitat Specificity scored as "1" since it is restricted to sand dune habitats derived from Entrada Sandstone sensu FNA and A Utah Flora. Although it is reported in FNA to be "locally abundant in Arches National Park, near Moab", the abundance outside the park in Grand and Emery Counties is not well known. As a result, number of individuals is scored as "unknown". Intrinsic rarity scored as a "1" due to the reproductive biology. Sensu FNA, "chromosome counts indicate that these plants are asexual triploids." Polyploid taxa often have chromosomal or genetic anomalies that may limit reproduction. Due to grazing-related impacts, the subsequent invasion of exotic weeds, and the increased ATV disturbance in quaternary dune fields and sandy areas across the Colorado Plateau, threats are scored as a "1" Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys.

Scored By/Date: J. Alexander/2014

Revisions: New to UNPS ExHigh Priority list

*Townsendia aprica*

Synonym: Included in *T. jonesii* var. *lutea* by some authors

Family: Asteraceae (Compositae)

Comments: Local endemic. Listed Threatened under ESA. Edaphic endemic of Mancos Shale, vulnerable to trampling, populations mostly small, trend downward in recent years from drought. Known from fewer than 20 main populations. For additional information, see the USFWS five-year plan, completed in 2013.

Scored By/Date: UNPS Rare Plant Comm. (2015), D. Clark/2009

*Hesperidanthus argillaceus*

Synonym: *Schoenocrambe argillacea*, *Thelypodopsis argillacea*

Family: Brassicaceae or Cruciferae

Comments: Local endemic. Listed as Threatened under ESA. Endemic to Uinta and Green River shale formations in the Uinta Basin. Threatened by habitat loss related to mineral development. A potential habitat model was developed by Shannon Albeke (Univ WY).

Scored By/Date: UNPS Rare Plant Comm./2015

Revisions: Scientific name changed to follow FNA.

*Hesperidanthus barnebyi*

Synonym: *Schoenocrambe barnebyi*, *Thelypodopsis barnebyi*

Family: Brassicaceae or Cruciferae

Comments: Local endemic. Listed as Endangered under the ESA. Endemic to Chinle clay soils in central Utah. Some populations protected in Capitol Reef NP. Trends poorly known.

Scored By/Date: UNPS Rare Plant Comm./2008

Revisions: Scientific name changed to follow FNA

*Hesperidanthus suffrutescens*

Synonym: *Schoenocrambe suffrutescens*, *Glaucocarpum suffrutescens*

Family: Brassicaceae or Cruciferae

Comments: Local endemic. Listed as Endangered under ESA. Pollinators unknown, low recruitment according to Larry England (USFWS, retired). Restricted to calcareous shales in southern Uinta Basin and threatened by habitat loss and degradation associated with mineral development. A potential habitat model was developed at U of WY by Shannon Albeke, Matt Lewis from USU did reproductive biology and effects of dust on reproductive success.

Scored By/Date: UNPS Rare Plant Comm./2015

Revisions: Scientific name changed to follow FNA

*Lepidium barnebyanum*

Family: Brassicaceae or Cruciferae

Comments: Local endemic. Listed as Endangered under ESA. Intrinsic rarity could be a 1, recruitment is probably low (according to Duane Atwood). Edaphic endemic of white shale outcrops (Uinta Formation). Known only from Indian Canyon area at south end of Uinta Basin.

## UNPS Extremely High Priority Species List: Ranking Comments

Bioblitz survey in 2012 found additional plants but no additional populations. Recruitment still unknown. A potential habitat model was developed at U of WY by Shannon Albeke.

Scored By/Date: UNPS Rare Plant Comm./2015

*Pediocactus despainii*

Family: Cactaceae

Comments: Local endemic. Listed Endangered under ESA, threats high from ATV recreation and over-collecting. Habitat specialist of Mancos, Morrison, Carmel, & Moenkopi shales. Trend downward.

Typical *P. despainii* is not known for Wayne County. The past list had a "?" in Wayne County for this species. The specimens from Wayne County need confirmation (population marked "?" for this species), molecularly, to determine if they are this species. 8,000+ individuals in around 19 populations. Most recent population discovered in 2013. New population is farther north in Emery County, near the northern border, than previous known populations. Southern-most populations of this cactus are impacted by cactus longhorn beetle. Threats also include grazing, ATV disturbance, and climate change. A FWS Recovery plan in development.

Scored By/Date: D. Clark/2009; UNPS Rare Plant Comm./2015

*Pediocactus winkleri*

Family: Cactaceae

Comments: Local endemic. Listed Threatened under ESA, threats high from ATV recreation, over-collecting. Trends significantly downward in recent years. Restricted to fine shale clay barrens and desert shrub communities in Dakota and Curtis formations.

Over 4 populations and a total of 5,000 individuals found in latest census. Need to track down voucher information for 2015 UNPS Meeting report of this plant being found in Sevier County. Threats include grazing, ATV disturbance, climate change. Illegal collection a threat to Notom Road populations. Cactus longhorn beetle observed recently impacting this species more than *P. despainii* due to its more southern range. A FWS Recovery plan is in development.

Scored By/Date: D. Clark/2009; UNPS Rare Plant Comm./2015

*Sclerocactus blainei*

Family: Cactaceae

Comments: Regional endemic. *S. blainei* in Utah extends in valleys from south of Delta past Milford, and over through the Escalante Desert to Beryl, with an outlier at Cedar City. Sites of *blainei* in Nevada cluster in the Panaca area, and west of Ely in the Duckwater and Currant area. Recent surveys in Nevada are turning up a few scattered specimen in between. The sites from south of Delta to the area of the pig farms south of Milford are largely unknown. Where it has been known in Utah is in the Escalante Desert west of Cedar City. But most of this area is private land. A local rancher once said, "When I see one, I kick it out. The cows can't eat it." Though

scattered, it used to be more abundant in that area, though sites were still hard to find. Now plants can only be found there at 2 or 3 of the known sites. *S. blainei* in Utah is in lowlands, in valleys, with one certain site in an upland, the one above Cedar City, and a few other possible exceptions, of the sites we know. As opposed to *S. spinosior* which is in uplands, in foothills. Scleros of any two different species that are located at convergent edges of their distributions always cross, requiring careful study. Of the two upland Black Mountains sites, I located the Ben Franklin site, the only hill in the area, and no Scleros remain. The Atwood site needs to be sought, to see if the plants can be found. The Black Mountains sites are between the Milford-to-Beryl area, with several sites for *blainei*, and the outlying, isolated site at Cedar City. And distribution of *Sclerocactus* species tends to be cohesive. **There's a gap between the site closest to Milford on the north, and the ones south of Milford in the pig farms area.** The sites to the north are scattered, or something may not have been found yet, between the one shown and Milford. South of Milford, irrigated farms in the valley have wiped out habitat, so **there's a gap. The pig farms have taken habitat, but they are not continuous like the fields.** In Nevada, the Panaca area plants are in valleys, and the Duckwater/Currant sites on foothills. **So it's not really surprising that Utah plants could be in both habitats, though the lowland sites are certainly predominant in Utah.** The Duckwater-Currant area in Nevada is very remote and isolated, and has not suffered as much development as the Utah sites, [D. Woodruff 2013]; Intrinsic rarity scored as "1" due to Dorde's further comments: DNA work showed *S. blainei* and *spinosior* to be closely related sister species, and it may be impossible to distinguish them in some dried individuals. Juvenile plants are particularly difficult to distinguish, since Scleros only fully develop their array of spines as they grow. Due to the florescence of cactus-eating beetle larvae, the ongoing effects of domestic grazing over a span of a century and a half, drought, development, illegal collecting, etc., *Sclerocactus* species have been badly impacted. Gerhard on his repeat visits to sites found that they have declined to various degrees since 1998, although some are recovering somewhat, by recruitment from the seed bank. At others, Scleros can no longer be found. Few sites have many mature plants.

Scored By/Date: D. Woodruff/2014

Revisions: Moved from Watch list to ExHigh Priority list

*Sclerocactus brevispinus*

Synonym: Included in *S. whipplei* var. *ilseae*

Family: Cactaceae

Comments: Listed as Threatened under ESA. Taxonomic issues, narrow range, extreme threats from oil and gas exploration, roads, over-collection, trends unknown but probably declining as habitat has been lost (more plants being found in recent surveys due to increase in effort, not necessarily increased abundance). Trend revised to downward in 2014.

Scored By/Date: UNPS Rare Plant Comm./2008

UNPS Extremely High Priority Species List: Ranking Comments

*Sclerocactus wetlandicus*

Synonym: Included in *S. whipplei* var. *glaucus*

Family: Cactaceae

Comments: Local endemic. Listed as Threatened under ESA. Different taxonomic interpretations of the *S. glaucus* complex has resulted in much confusion. In strict sense, *S. glaucus* is not in Utah but restricted to Colorado. *S. wetlandicus* is endemic to Uintah Basin and highly threatened from mineral development, collecting [UNPS 2008]. The UNPS list recognizes *S. wetlandicus* as the appropriate name since it is under this name that the USFWS has listed it, and not the name used in A Utah Flora.

Scored By/Date: J.A. Alexander./2014

Revisions: Moved from High Priority to Ex High Priority List

*Atriplex canescens* var. *gigantea*

Family: Chenopodiaceae or Amaranthaceae

Comments: Local endemic. Known from edge of Lyndyl sand dunes - ATV area, threatened by fire from invasive cheatgrass and recreation impacts.

Scored By/Date: UNPS Rare Plant Comm./2008

*Carex specuicola*

Family: Cyperaceae

Comments: Regional endemic. Listed as Threatened. Confirmed as being in Utah by Tony Reznicek, Univ of Michigan [UNPS 2008]; Changed to ExHigh list in 2009 based on confirmed downward trend [Fertig 2009]. Threatened by dewatering of hanging garden springs and long-term drought.

Scored By/Date: UNPS Rare Plant Comm./2009

*Astragalus ampullarioides*

Synonym: *A. eremiticus* var. *ampullarioides*

Family: Fabaceae or Leguminosae

Comments: Listed as Endangered under ESA. Limited range, highly threatened at all populations (urbanization, competition from weeds, grazing, herbivory by rabbits), most populations decreasing, though Zion NP population is stable to increasing. About 76% of known plants found in Zion NP (Fertig 2010)

Scored By/Date: UNPS Rare Plant Comm./ 2008

*Astragalus anserinus*

Family: Fabaceae or Leguminosae

Comments: Local endemic. Added to USFWS candidate list in Sept 2009, but removed from list in 2015. Edaphic endemic of tuffaceous sediments, populations sharply declined after large 2007 wildfires. Restricted to Goose Creek Mountains along state lines of Utah, Nevada, and Idaho.

Population recently sustained at around 30,000 individuals after a drop from high of 60,000. Change number of individuals to a "0" if populations go back up? Are large populations fluctuations typical for this species?

Scored By/Date: UNPS Rare Plant Comm./2015

*Astragalus holmgreniorum*

Family: Fabaceae or Leguminosae

Comments: Local endemic. Listed as Endangered under ESA, Restricted to gypsiferous Moenkopi Formation, populations small, most in decline, significant amount of habitat will be lost to development despite listing under ESA [UNPS 2008]. Threatened by competition from annual herbs following wet winters (and potential wild-fire impacts), as well as impacts from off-road recreation. TNC owns a 6 acre parcel of *A. holmgreniorum* habitat in Utah adjacent to UT/AZ border (E. York 2014).

Scored By/Date: UNPS Rare Plant Comm./2008 & Elaine York 2014.

*Astragalus iselyi*

Family: Fabaceae or Leguminosae

Comments: Local endemic. Edaphic endemic of seleniferous soils, populations small, some impacted by old roads. Some sites near Moab may be vulnerable to development and off-road recreation.

Scored By/Date: UNPS Rare Plant Committee, 2008

*Astragalus kelseyae*

Family: Fabaceae or Leguminosae

Comments: Local endemic, recently named as a new species for the late Anne Kelsey. Blake Wellard visited site in 2012- few plants and habitat specificity high - scores changed from unk to 1. Species re-ranked from need data to Ex High

Scored By/Date: UNPS Rare Plant Comm./2015

Revisions: Moved from Need Data to ExHigh Priority.

*Astragalus lentiginosus* var. *pohlii*

Family: Fabaceae or Leguminosae

Comments: Local endemic. A saline sandy playa edge & dune endemic. Threats primarily due to ATV use in the small lake bed playas in Rush and Skull Valleys. Populations are small, less than a 20-30 per site, and the type locality population north of Vernon is nearly extinct due to farming and road disturbance, only 5 individuals found in marginal, disturbed habitat in 2008. Currently being studied by J. Alexander as part of a monographic treatment of *A. lentiginosus*.

Scored By/Date: J.A. Alexander/2009

*Trifolium variegatum* var. *parunuweapensis*

Family: Fabaceae or Leguminosae

Comments: Local endemic. Few populations, restricted to moist meadows associated with Navajo sand seeps, impacted by ATV recreation and cattle grazing.

Scored By/Date: UNPS Rare Plant Comm./ 2008

*Frasera ackermaniae*

Synonym: *Swertia ackermaniae*

Family: Gentianaceae

Comments: Local endemic. Recently described as a new species endemic to foothills of the Uintas in the Uinta Basin. Threats considered low at present. Population

## UNPS Extremely High Priority Species List: Ranking Comments

small and trends not documented. More information needed on potential distribution.

Threats have been changed to "1" from "0" in the original ranking from the UNPS prior to 2008. ATV's, mainly 2-wheeled dirt bikes, have been observed disturbing habitat in populations of this taxon. Scored By/Date:

UNPS Rare Plant Comm./2015

Revisions: Moved from High Priority to Extremely High Priority

*Phacelia argillacea*

Family: Hydrophyllaceae or Boraginaceae

Comments: Local endemic. Listed as Endangered under ESA. Endemic to Green River Shale outcrops in Spanish Fork Canyon. Vulnerable to road expansion and competition from exotics/habitat loss, low recruitment. Known from two populations.

Scored By/Date: UNPS Rare Plant Comm./2008

*Phacelia utahensis*

Family: Hydrophyllaceae or Boraginaceae

Comments: Local endemic. Arapien endemic, gypsum mining, oil and gas and ATV threats, pop size low but **variable (biennial), Atwood says it's the prettiest** *Phacelia*. This species has life history characteristics similar to *P. palmeri* and *P. argillacea*. Both of these have intrinsic rarity scored as "0" There is no reason not to score this as "0" instead of "unknown" for this taxon also. This downgrades this taxon to a rank of 7, which is still on the "ExHigh" list

Scored By/Date: J.A. Alexander/2014

*Iris pariensis*

Synonyms: Included in *I. missouriensis* by FNA

Family: Iridaceae

Comments: Local endemic. Sensus FNA, "A single plant found on the Pariah Plateau in Kane County, Utah, with leaves only 3–4 mm wide and a single flower stem only 4 cm long, which meant that the flower was at almost ground level, was named *Iris pariensis*. No other such specimen has been located, and this entity must be considered as just an aberrant form that was due to the desert-like conditions in which it was growing." This taxon is likely never to be relocated. It should effectively be considered extirpated, but it will not be removed from this list (along with *Isocoma humilis*) until a detailed process for the documentation of extinct taxa is developed.

Scored By/Date: J.A. Alexander./2014

*Salvia columbariae* var. *argillacea*

Family: Lamiaceae or Labiatae

Comments: Local endemic. Population trends in the Zion area are probably stable at present, but Chinle habitat is being invaded by *Bromus rubens* and *Molucella laevis* which outcompete *Salvia* for moisture during the critical early spring germination period.

Scored By/Date: J.A. Alexander/2009

*Mentzelia argillosa*

Family: Loasaceae

Comments: Local endemic. Arapien Shale endemic restricted to central Utah. Threatened by mining of gypsum-rich soils and impacts from recreation.

Scored By/Date: UNPS Rare Plant Comm./2008

*Sphaeralcea gierischii*

Family: Malvaceae

Comments: Local endemic. Edaphic endemic impacted by gypsum mining and ATV recreation in limited range along the Utah-Arizona border south of St. George [UNPS 2008]. Populations usually small. May be capable of colonizing open areas if further disturbance is kept low. Federally listed as Threatened in 2013.

Scored By/Date: UNPS Rare Plant Comm./2008; E. York /2014

Revisions: Legal status changed to Threatened

*Arctomecon humilis*

Family: Papaveraceae

Comments: Local endemic. Listed as Endangered under ESA. Pops few, small, habitat specialized (gypsum-rich Moenkopi), pollinators in decline, populations impacted by ATV recreation, weeds, urban sprawl in St. George, low recruitment and seedling survival [UNPS 2008].

Most of habitat managed by BLM (some still owned by SITLA). TNC and UDOT own 800 acres of *Arctomecon humilis* & *Pediocactus sileri* habitat at White Dome and 14 acres of ARCHUM habitat at Schnobkaib.

Scored By/Date: UNPS Rare Plant Committee 2008, & Elaine York 2014.

*Aliciella caespitosa*

Synonym: *Gilia caespitosa*

Family: Polemoniaceae

Comments: Local endemic. Former candidate for listing under ESA. Populations small, hard to census, some threats from over-collection, trend down at many sites.

Scored By/Date: D. Clark, 2005

Revisions: Scientific name changed

*Eriogonum mitophyllum*

Synonym: *E. brevicaule* var. *mitophyllum*

Family: Polygonaceae

Comments: Local endemic. Arapien Shale endemic. Status revised to Ex High in 2013. Robert Fitts reported low numbers and high threats from 2012 Heritage program studies.

Status revised to Ex High in 2013. Robert Fitts reported low numbers and high threats from 2012 Heritage program studies [Alexander & Fitts 2013]; Habitat being actively mined near Aurora near Salt Creek, S of Salina. Some portions of the population on BLM land, remaining on patented mining claims. Trend is down according to observations by R. Fitts. These changes do not re-rank this taxon from the original ranking scored by the UNPS prior to 2008.



UNPS Extremely High Priority Species List: Ranking Comments

Scored By/Date: J.A. Alexander/ 2013

Revisions: Moved from High Priority to Extremely High Priority list .

*Ranunculus aestivalis*

Synonym: *R. acris* var. *aestivalis*

Family: Ranunculaceae

Comments: Local endemic. Listed as Endangered under ESA. Downward trend, populations small, reproductive issues (low seed production and seedling survival in wild), threatened by vegetation succession (crowding by perennial wetland plants) and habitat loss (conversion of habitat to agriculture)

Scored By/Date: UNPS Rare Plant Comm./2008

*Penstemon flowersii*

Family: Scrophulariaceae or Plantaginaceae

Comments: Local endemic. Threats on populations on all private and tribal lands have increased due to Oil Drilling within the last year. Original listing was not recommended due to lack of threats, however this has changed due to these new threats. Individuals within populations have been extirpated due to disturbance from these new oil drilling activities. In 2011, USFWS dismissed petition to add *Penstemon flowersii* as a candidate for potential listing under ESA [Fertig 2016].

Scored By/Date: J. Spencer/2013

Revisions: Moved from High Priority to ExHigh Priority

*Penstemon gibbensii*

Family: Scrophulariaceae or Plantaginaceae

Comments: Local endemic. Restricted to border of Colorado, Wyoming, and Utah, threats from mineral development, ATV recreation, populations small and vulnerable to trampling. Wyoming populations may be declining from recent drought.

Scored By/Date: UNPS Rare Plant Comm./2008

*Penstemon grahamii*

Family: Scrophulariaceae or Plantaginaceae

Comments: Local endemic. Restricted to Uinta Basin within active natural gas development areas. Populations small, threats high, poor pollination, decline in recruitment, trends down. USFWS has declined to list under ESA despite losing several lawsuits, currently being managed under a Conservation Agreement between federal and local governments. Monitoring needed to ensure that stipulations under the Conservation Agreement are being undertaken and how populations are responding.

40333 individuals found in 24 populations. Neese collection at BRY for this taxon a voucher for Duchesne County. Heritage-BLM surveys have also documented this taxon for Duchesne County; low seedling recruitment a possible reason for the score of "1" in Intrinsic Rarity

Scored By/Date: UNPS Rare Plant Comm./2015

*Penstemon scariosus* var. *albifluvis*

Family: Scrophulariaceae or Plantaginaceae

Comments: Local endemic. Formerly a Candidate for listing under ESA, but withdrawn in 2014. Currently managed under a Conservation Agreement. Threatened by mineral development in narrow range in Uinta Basin. 12,215 individuals in 8 populations. Seedling recruitment higher in this taxon than in *P. grahamii*.

Scored By/Date: UNPS Rare Plant Comm./2015

*Viola clauseniana*

Family: Violaceae

Comments: Local endemic. At least one Zion population is apparently extirpated, either from competition with exotic grasses, habitat loss, or over-collection. Other populations are small and vulnerable to impacts from high tourism activity in many hanging garden sites in Zion NP.

Scored By/Date: W. Fertig/2009

## Appendix 2. UNPS Rare Plant List: High Priority Species

The following table lists 142 species scored as High Priority for conservation attention in Utah based on the Wyoming protocol ranking system. Species are listed alphabetically by family and scientific name, with synonyms in parentheses. See text for an explanation of the seven ranking criteria and scoring methods used to derive the minimum and potential scores. County codes are explained in Figure 1. Legal Status: Bureau of Land Management (BLM) and US Forest Service (USFS) Sensitive = S; US Fish and Wildlife Service (USFWS) Candidate = C, Endangered = E, Proposed = P; Threatened = T.

Family	Species	Common Name	Range	# Pops	# Indiv	Hab Spec	Intrin Rar	Threat	Trend	Min Score	Pot Score	County Dist. & Legal Status
Agavaceae (Asparagaceae)	<i>Yucca angustissima</i> var. <i>avia</i>	Bird yucca	2	1	1	1	U	0	U	5	7	Grf?, Kan?, Piu, Wsh, Way
	<i>Yucca toftiae</i>	Toft's yucca	2	1	1	1	U	0	U	5	7	Grf, Kan, Snj
Apiaceae (Umbelliferae)	<i>Cymopterus coulteri</i>	Two-leaf spring-parsley	2	1	U	1	0	1	U	5	7	Jub, Snp, Sev, Toe
	<i>Lomatium latilobum</i>	Canyonlands lomatium	2	1	1	1	0	1	U	6	7	Grn, Snj; BLM: S; USFS: S
	<i>Lomatium scabrum</i> var. <i>tripinnatum</i>	Virgin lomatium	2	1	U	1	0	1	U	5	7	Wsh
	<i>Oreoxis bakeri</i>	Baker's spring-parsley	1	1	1	1	U	1	U	5	7	Grn, Snj
Apocynaceae	<i>Cycladenia humilis</i> var. <i>jonesii</i>	Jones' cycladenia	1	1	1	1	1	1	0	6	6	Emr, Grf, Grn, Kan; USFWS:T
Asteraceae (Compositae)	<i>Ambrosia x sandersonii</i>	Sanderson's bursage	2	1	1	0	1	1	U	6	7	Wsh
	<i>Chrysothamnus scopulorum</i> "var. <i>canonis</i> "	Canyon spindly goldenbush	2	1	1	1	0	U	U	5	7	Snj
	<i>Cirsium virginense</i>	Virgin thistle	1	1	1	1	0	1	1	6	6	Wsh; BLM: S
	<i>Enceliopsis nudicaulis</i> var. <i>bairdii</i>	Baird's nakedstem	2	1	1	1	0	1	1	7	7	Wsh
	<i>Ericameria crispa</i>	Pine Valley goldenbush	2	1	1	1	0	U	U	5	7	Mil?, Wsh
	<i>Ericameria lignumviridis</i>	Greenwood goldenweed	2	1	1	1	1	0	U	6	7	Sev, BLM S
	<i>Erigeron goodrichii</i>	Goodrich's fleabane	2	1	U	1	0	1	U	5	7	Dag, Dch, Sum?, Uin, Uta
	<i>Erigeron higginsii</i>	Higgins' daisy	2	1	1	1	0	1	U	6	7	Wsh
	<i>Erigeron kachinensis</i>	Kachina daisy	2	1	1	1	0	U	U	5	7	Snj; BLM: S; USFS: S
	<i>Erigeron mancus</i>	La Sal daisy	2	1	1	1	0	1	U	6	7	Grn, Snj; USFS: S

## Appendix 2. UNPS Rare Plant List: High Priority Species, continued

Family	Species	Common Name	Range	# Pops	# Indiv	Hab Spec	Intrin Rar	Threat	Trend	Min Score	Pot Score	County Dist. & Legal Status
Asteraceae (Compositae)	<i>Erigeron vagus</i> var. <i>madsenii</i>	Madsen's daisy	2	1	1	1	1	0	U	6	7	Grf, Irn, Kan
	<i>Heliomeris soliceps</i>	Tropic goldeneye	2	1	0	1	1	1	0	6	6	Kan
	<i>Packera castoreus</i>	Beaver Mountain groundsel	2	1	1	1	0	1	U	6	7	Bvr, Piu; USFS: S
	<i>Packera malmstenii</i>	Podunk groundsel	2	1	1	1	1	0	U	6	7	Grf, Irn, Kan; USFS: S
	<i>Packera musiniensis</i>	Musinea groundsel	2	1	1	1	U	0	U	5	7	Snj; USFS: S
	<i>Senecio fremontii</i> var. <i>inexpectans</i>	Unexpected groundsel	2	1	1	1	0	1	U	6	7	Grn, Snj
	<i>Stenotus armerioides</i> var. <i>gramineus</i>	Grass goldenweed	2	1	U	1	0	1	U	5	7	Dch, Uit
	<i>Thelesperma subnudum</i> var. <i>maliterrimum</i>	Uinta greenthread	2	1	1	1	0	U	U	5	7	Dch, Uin; BLM: S; USFS: S
	<i>Townsendia goodrichii</i>	Goodrich's townsendia	2	1	1	1	0	1	U	6	7	Dch, Uin
	<i>Townsendia jonesii</i> var. <i>lutea</i>	Sigurd townsendia	2	1	1	1	0	1	U	6	7	Jub, Piu, Sev; BLM: S; USFS: S
	<i>Townsendia strigosa</i> var. <i>prolixa</i>	Strigose townsendia	2	1	U	1	0	1	U	5	7	Dch, Grn; BLM: S
	<i>Xylorhiza cronquistii</i>	Cronquist's woodyaster	2	1	1	1	1	0	U	6	7	Grf, Kan
<i>Xylorhiza glabriuscula</i> var. <i>linearifolia</i>	Moab woodyaster	2	1	U	1	0	1	U	5	7	Grf, Grn, Snj, Way	
Boraginaceae	<i>Cryptantha barnebyi</i>	Barneby's cryptanth	2	1	U	1	0	1	U	5	7	Uin; BLM: S
	<i>Cryptantha grahamii</i>	Graham's cryptanth	2	1	U	1	0	1	U	5	7	Dch, Uin; BLM: S
	<i>Cryptantha semiglabra</i>	Pipe Spring cryptanth	2	1	1	1	0	1	U	6	7	Wsh?
	<i>Hackelia ibapensis</i>	Deep Creek stickseed	2	1	1	1	0	U	U	5	7	Jub
Brassicaceae (Cruciferae)	<i>Boechera duchesnensis</i>	Duchesne rockcress	2	1	1	0	1	1	U	6	7	Dch
	<i>Boechera falcatoria</i>	Falcate rockcress	2	1	1	0	1	U	U	5	7	Box; USFS: S
	<i>Boechera harrisonii</i>	Harrison's rockcress	2	1	1	U	1	0	U	5	7	Slt, Uta, Was

## Appendix 2. UNPS Rare Plant List: High Priority Species, continued

Family	Species	Common Name	Range	# Pops	# Indiv	Hab Spec	Intrin Rar	Threat	Trend	Min Score	Pot Score	County Dist. & Legal Status
Brassicaceae (Cruciferae)	<i>Boechera vivariensis</i>	Park rockcress	2	1	1	1	1	0	U	6	7	Uin
	<i>Draba inexpectata</i>	Uinta Mountains draba	2	1	1	1	0	1	U	6	7	Sum, Uin
	<i>Draba kassii</i>	Kass' rockcress	2	1	1	1	0	U	U	5	7	Toe
	<i>Draba ramulosa</i>	Belknap Peak draba	2	1	1	1	0	1	U	6	7	Bvr, Piu; USFS: S
	<i>Draba santaquinensis</i>	Santaquin Draba	2	1	1	1	0	U	U	5	7	Uta
	<i>Draba sobolifera</i>	Creeping draba	2	1	1	1	0	1	U	6	7	Bvr, Piu; USFS: S
	<i>Lepidium integrifolium</i>	Entire-leaf pepperwort	1	1	1	1	0	1	1	6	6	Bvr, Rch, Snp, Sev, Uin
	<i>Lepidium montanum</i> var. <i>alpinum</i>	Wasatch pepperwort	2	1	1	1	0	U	U	5	7	Sl; USFS: S
	<i>Lepidium montanum</i> var. <i>stellae</i>	Stella's pepperwort	1	1	1	1	1	1	U	6	7	Grf, Kan
	<i>Lepidium ostleri</i>	Ostler's pepperwort	2	1	1	1	0	1	U	6	7	Bvr; BLM: S; USFWS: C
	<i>Physaria chambersii</i> var. <i>canaanii</i>	Canaan Peak twinpod	2	1	1	1	0	U	U	5	7	Grf
	<i>Physaria grahamii</i>	Graham's twinpod	2	1	1	1	0	U	U	5	7	Dch, Grn, Uin, Uta, Was
	<i>Physaria hemiphysaria</i> ssp. <i>lucens</i>	Tavaputs bladderpod	2	1	1	1	0	U	U	5	7	Crb
	<i>Physaria tumulosa</i>	Kodachrome bladderpod	2	1	1	1	0	1	U	6	7	Kan; USFWS:E
	<i>Thelypodopsis ambigua</i> var. <i>erecta</i>	Kanab thelypody	2	1	1	1	0	1	U	6	7	Kan, Wsh?; BLM: S
Cactaceae	<i>Ferocactus acanthodes</i>	Desert barrel cactus	1	1	1	1	0	1	1	6	6	Wsh
	<i>Pediocactus sileri</i>	Siler's pincushion cactus	1	1	1	1	0	1	1	6	6	Kan, Wsh; USFWS:T
	<i>Sclerocactus pubispinus</i>	Great Basin fishhook	1	1	1	1	U	1	1	6	7	Bvr, Box, Irn, Jub, Mil, Toe
	<i>Sclerocactus spinosior</i>	Desert valley fishhook	1	1	1	1	U	1	1	6	7	Jub, Mil, Sev
	<i>Sclerocactus wrightiae</i>	Wright's fishhook cactus	2	0	0	1	1	1	1	6	6	Emr, Way; USFWS: E

## Appendix 2. UNPS Rare Plant List: High Priority Species, continued

Family	Species	Common Name	Range	# Pops	# Indiv	Hab Spec	Intrin Rar	Threat	Trend	Min Score	Pot Score	County Dist. & Legal Status
Capparaceae (Cleomaceae)	<i>Cleomella hillmanii</i> var. <i>goodrichii</i>	Goodrich's stink- weed	2	1	1	1	0	1	U	6	7	Uin; BLM: S
Chenopodiaceae	<i>Krascheninnikovia</i> <i>lanata</i> var. <i>ruinina</i>	Ruin Park winter- fat	2	1	1	1	0	1	U	6	7	Grn, Snj
Crassulaceae	<i>Dudleya arizonica</i>	Arizona live- forever	1	1	1	1	0	1	1	6	6	Wsh
Cuscutaceae (Convolvul- aceae)	<i>Cuscuta warneri</i>	Warner's dodder	1	1	1	U	1	1	1	6	7	Mil
Cyperaceae	<i>Carex haysii</i>	Hays' sedge	2	1	1	1	0	1	U	6	7	Wsh
Fabaceae (Leguminosae)	<i>Astragalus ampullarius</i>	Gumbo milkvetch	1	1	1	1	1	1	U	6	7	Kan, Wsh; BLM: S
	<i>Astragalus cronquistii</i>	Cronquist's milkvetch	2	1	1	1	0	1	0	6	6	Snj; BLM: S
	<i>Astragalus cutleri</i>	Cutler's milkvetch	2	1	1	1	0	U	U	5	7	Snj
	<i>Astragalus desereticus</i>	Deseret milkvetch	2	1	1	1	U	1	0	6	7	Uta; USFWS:T
	<i>Astragalus diversifolius</i>	Meadow milkvetch	1	1	1	1	0	1	1	6	6	Jub, Toe; USFS: S
	<i>Astragalus equisolensis</i>	Horseshoe milkvetch	2	1	1	1	0	1	U	6	7	Uin; BLM: S
	<i>Astragalus hamiltonii</i>	Hamilton's milkvetch	2	1	1	1	0	1	U	6	7	Uin; BLM: S
	<i>Astragalus harrisonii</i>	Harrison's milkvetch	2	1	1	1	0	1	U	6	7	Grf, Way
	<i>Astragalus lentiginosus</i> var. <i>ursinus</i>	Mokiak milkvetch	2	1	1	1	0	1	U	6	7	Wsh
	<i>Astragalus loanus</i>	Glenwood milkvetch	2	1	1	1	0	U	U	5	7	Sev; BLM: S
	<i>Astragalus sabulosus</i> var. <i>sabulosus</i>	Cisco milkvetch	2	1	1	1	0	1	U	6	7	Grn; BLM: S
	<i>Astragalus sabulosus</i> var. <i>vehiculus</i>	Stage milkvetch	2	1	1	1	0	1	U	6	7	Grn; BLM: S
	<i>Astragalus serpens</i>	Plateau milkvetch	2	1	1	1	0	U	U	5	7	Piu, Sev, Way
	<i>Astragalus striatiflorus</i>	Escarpment milkvetch	2	1	1	1	0	1	U	6	7	Kan, Wsh; BLM: S
	<i>Astragalus welshii</i>	Welsh's milkvetch	2	1	1	1	0	U	U	5	7	Grf, Irn, Kan, Mill Piu, Way; BLM: S
	<i>Trifolium friscanum</i>	Frisco clover	2	1	1	1	0	1	U	6	7	Bvr, Mil; BLM: S; USFWS: C

## Appendix 2. UNPS Rare Plant List: High Priority Species, continued

Family	Species	Common Name	Range	# Pops	# Indiv	Hab Spec	Intrin Rar	Threat	Trend	Min Score	Pot Score	County Dist. & Legal Status
Fagaceae	<i>Quercus gambelii</i> var. <i>bonina</i>	Goodhope oak	2	1	1	0	1	1	U	6	7	Snj
Fumariaceae	<i>Corydalis caseana</i> var. <i>brachycarpa</i>	Case's corydalis	2	1	1	0	0	1	1	6	6	Sl, Uta, Was, Web; USFS: S
Gentianaceae	<i>Frasera gypsicola</i>	White River swertia	2	1	1	1	0	1	U	6	7	Mil; BLM: S
Hydrangeaceae (Saxifragaceae)	<i>Jamesia americana</i> var. <i>macrocalyx</i>	Wasatch jamesia	2	1	1	1	0	U	U	5	7	Jub, Sl, Uta, Was; USFS: S
Hydrophyllaceae (Boraginaceae)	<i>Phacelia argylensis</i>	Argyle Canyon phacelia	2	1	1	1	0	1	U	6	7	Dch; BLM: S
	<i>Phacelia cephalotes</i>	Chinle phacelia	1	1	1	1	1	1	U	6	7	Kan, Snj, Wsh
	<i>Phacelia cronquistiana</i>	Cronquist's phacelia	1	1	1	1	1	1	U	6	7	Kan; BLM: S
	<i>Phacelia demissa</i> var. <i>heterotricha</i>	Brittle phacelia	2	1	0	1	1	1	U	6	7	Piu, Sev, Way
	<i>Phacelia demissa</i> var. <i>minor</i>	Brittle phacelia	2	1	0	1	1	1	U	6	7	Dch, Uin
	<i>Phacelia indecora</i>	Bluff phacelia	2	1	1	1	0	1	U	6	7	Snj; BLM: S;
	<i>Phacelia pulchella</i> var. <i>atwoodii</i>	Atwood's pretty phacelia	2	1	0	1	1	1	0	6	6	Kan; BLM: S
	<i>Phacelia pulchella</i> var. <i>gooddingii</i>	Goodding's pretty phacelia	1	1	1	1	1	1	U	6	7	Wsh
	<i>Phacelia sabulorum</i>	Tompkins phacelia	2	1	0	1	1	1	U	6	7	Grf, Kan
Loasaceae	<i>Mentzelia shultziorum</i>	Shultz's stickleaf	2	1	1	1	0	1	U	6	7	Grn; BLM: S
	<i>Petalonyx parryi</i>	Parry's sandpaper-plant	1	1	1	1	0	1	1	6	6	Wsh; BLM: S
Malvaceae	<i>Sphaeralcea fumariensis</i>	Smoky Mountain globemallow	2	1	1	1	0	1	U	6	7	Kan: BLM: S
	<i>Sphaeralcea janeae</i>	Jane's globe-mallow	2	1	1	1	0	U	U	5	7	Grn, Snj, Way; BLM: S
	<i>Sphaeralcea psoraloides</i>	Scurfpea globemallow	2	1	1	1	0	U	U	5	7	Emr, Grn, Way; BLM: S

## Appendix 2. UNPS Rare Plant List: High Priority Species, continued

Family	Species	Common Name	Range	# Pops	# Indiv	Hab Spec	Intrin Rar	Threat	Trend	Min Score	Pot Score	County Dist. & Legal Status
Onagraceae	<i>Camissonia exilis</i>	Meager camissonia	1	1	1	1	1	1	U	6	7	Kan
	<i>Oenothera caespitosa</i> var. <i>stellae</i>	Stella's evening-primrose	2	1	1	1	0	1	U	6	7	Emr, Grf, Kan, Snp
	<i>Oenothera murdockii</i>	Murdock's evening-primrose	2	1	1	1	0	1	U	6	7	Kan, Wsh; BLM: S
Ophioglossaceae	<i>Botrychium lineare</i>	Slender moonwort	1	1	1	U	1	1	U	5	7	Slt; USFS: S
Orchidaceae	<i>Cypripedium calceolus</i> var. <i>parviflorum</i>	Large yellow ladies-slipper	1	1	1	0	1	1	1	6	6	Cch, Grn, Slt, Sum, Uta, Web; USFS: S
	<i>Spiranthes diluvialis</i>	Ute ladies-tresses	1	1	0	1	1	1	1	6	6	Cch, Dag, Dch, Grf, Slt, Toe, Uin, Uta, Way, Web; USFWS:T
Poaceae	<i>Leymus simplex</i>	Alkali wildrye	1	1	1	1	0	1	1	6	6	Dag
Polemoniaceae	<i>Aliciella latifolia</i> ssp. <i>imperialis</i>	Cataract gilia	2	1	1	1	0	U	U	5	7	Emr, Grf, Kan, Snj, Way
	<i>Aliciella tenuis</i>	Mussentuchit gilia	2	1	1	1	0	U	U	5	7	Emr, Sev; BLM: S
	<i>Ipomopsis congesta</i> var. <i>ochroleuca</i>	Arapien gilia	2	1	U	1	0	1	U	5	7	Snp, Sev
	<i>Ipomopsis spicata</i> ssp. <i>tridactyla</i>	Cedar Breaks gilia	2	1	1	1	0	1	U	6	7	Irn, Piu
	<i>Phlox hoodii</i> var. <i>madsenii</i>	Madsen's carpet phlox	2	1	1	1	0	U	U	5	7	Way
Polygonaceae	<i>Eriogonum ammophilum</i>	Ibex wild buckwheat	2	1	1	1	0	U	U	5	7	Mil; BLM: S
	<i>Eriogonum artificis</i>	Kaye's wild buckwheat	2	1	1	1	0	U	U	5	7	Bvr
	<i>Eriogonum brevicaule</i> var. <i>caelitum</i>	Heavenly wild buckwheat	2	1	1	1	0	U	U	5	7	Snp, Sev
	<i>Eriogonum brevicaule</i> var. <i>cottamii</i>	Cottam's wild buckwheat	2	1	1	1	0	U	U	5	7	Jub, Mil, Slt, Toe, Uta
	<i>Eriogonum brevicaule</i> var. <i>huberi</i>	Huber's wild buckwheat	2	1	1	1	0	U	U	5	7	Dch
	<i>Eriogonum brevicaule</i> var. <i>nanum</i>	Dwarf wild buckwheat	2	1	1	1	0	U	U	5	7	Box, Web
	<i>Eriogonum brevicaule</i> var. <i>promiscuum</i>	Mount Bartles wild buckwheat	2	1	1	1	0	U	U	5	7	Crb

## Appendix 2. UNPS Rare Plant List: High Priority Species, continued

Family	Species	Common Name	Range	# Pops	# Indiv	Hab Spec	Intrin Rar	Threat	Trend	Min Score	Pot Score	County Dist. & Legal Status
Polygonaceae	<i>Eriogonum corymbosum</i> var. <i>aureum</i>	Golden wild buckwheat	2	1	0	1	U	1	1	6	7	Wsh
	<i>Eriogonum corymbosum</i> var. <i>heilii</i>	Heil's wild buckwheat	2	1	1	1	0	1	U	6	7	Way
	<i>Eriogonum cronquistii</i>	Cronquist's wild buckwheat	2	1	1	1	0	U	U	5	7	Grf
	<i>Eriogonum domitum</i>	House Range wild buckwheat	2	1	1	1	0	U	U	5	7	Mil
	<i>Eriogonum lancifolium</i>	Lanceleaf wild buckwheat	2	1	1	1	0	U	U	5	7	Crb, Emr
	<i>Eriogonum microthecum</i> var. <i>phoeniceum</i>	Scarlet wild buckwheat	2	1	1	1	0	U	U	5	7	Jub, Mil
	<i>Eriogonum racemosum</i> "var. <i>nobilis</i> "	Bluff wild buckwheat	2	1	1	1	0	U	U	5	7	Kan, Snj; BLM: S
	<i>Eriogonum smithii</i>	Flat top wild buckwheat	2	1	1	1	0	U	U	5	7	Emr, Way; BLM: S
	<i>Eriogonum soledium</i>	Frisco wild buckwheat	2	1	1	1	0	1	U	6	7	Bvr; BLM: S USFWS: C
Portulacaceae (Montiaceae)	<i>Phemeranthus thompsonii</i>	Thompson's talinum	2	1	1	1	0	U	U	5	7	Emr; BLM: S
Primulaceae	<i>Dodecatheon dentatum</i> var. <i>utahense</i>	Hooker's shooting-star	2	1	1	1	1	0	0	6	6	Slt; USFS: S
	<i>Primula domensis</i>	House Range primrose	2	1	1	1	0	U	U	5	7	Mil; BLM: S
	<i>Primula maguirei</i>	Maguire's primrose	2	1	1	1	1	0	U	6	7	Cch; USFWS:T
Ranunculaceae	<i>Aquilegia holmgrenii</i>	Holmgren's columbine	2	1	1	1	0	U	U	5	7	Grf
	<i>Aquilegia rubicunda</i>	Link Trail columbine	2	1	1	1	0	U	U	5	7	Emr, Sev; USFS: S
	<i>Aquilegia scopulorum</i> var. <i>goodrichii</i>	Goodrich's columbine	2	1	1	1	0	U	U	5	7	Dch; BLM: S
Rosaceae	<i>Ivesia shockleyi</i> var. <i>ostleri</i>	Shockley's ivesia	2	1	1	1	0	U	U	5	7	Bvr; BLM: S
	<i>Potentilla paucijuga</i>	La Sal cinquefoil	2	1	1	1	0	1	U	6	7	Grn, Snj



## Appendix 2. UNPS Rare Plant List: High Priority Species, continued

Family	Species	Common Name	Range	# Pops	# Indiv	Hab Spec	Intrin Rar	Threat	Trend	Min Score	Pot Score	County Dist. & Legal Status
Scrophulariaceae (Orobanchaceae, Plantaginaceae)	<i>Castilleja aquariensis</i>	Aquarius paintbrush	2	1	0	1	1	1	0	6	6	Grf, USFS: S
	<i>Castilleja parvula</i> var. <i>parvula</i>	Tushar paintbrush	2	1	1	1	0	1	U	6	7	Bvr, Grf, Piu; USFS: S
	<i>Castilleja parvula</i> var. <i>revealii</i>	Reveal's paintbrush	2	1	1	1	1	0	U	6	7	Grf, Irn, Kan; USFS: S
	<i>Penstemon duchesnensis</i>	Duchesne penstemon	2	1	0	1	0	1	1	6	6	Dch
	<i>Penstemon goodrichii</i>	Goodrich's penstemon	2	1	1	1	0	1	U	6	7	Dch, Uin; BLM: S
	<i>Penstemon x jonesii</i>	Fuchsia penstemon	2	1	1	0	1	U	U	5	7	Kan, Wsh
	<i>Penstemon pinorum</i>	Pinyon penstemon	2	1	1	1	0	1	U	6	7	Irn; BLM: S; USFS: S
	<i>Penstemon tidestromii</i>	Tidestrom's penstemon	2	1	1	1	0	1	U	6	7	Jub, Snp, Uta
	<i>Penstemon wardii</i>	Ward's penstemon	2	1	1	1	0	1	U	6	7	Mil, Piu, Snp, Sev; BLM: S; USFS: S
Violaceae	<i>Viola beckwithii</i>	Beckwith's violet	1	1	1	U	U	1	1	5	7	Box, Cch, Slr, Uta, Web

## UNPS High Priority Species List: Ranking Comments

*Yucca angustissima* var. *avia*

Synonym: Included in *Y. kanabensis* by some authors  
Family: Agavaceae or Asparagaceae  
Comments: Local endemic. A taxon not included in previous versions of the UNPS Rare Plant list, but its apparent rarity in Utah warrants inclusion. This variety was lumped as a synonym of *Y. angustissima* in A Utah Flora. However, treatments in FNA have followed that of IMF and not the more conservative treatment in A Utah Flora. This taxon's limited range, variable populations (rare to locally common), and habitat specialization (higher elevation loamy, rocky soils unlike var. *kanabensis* which occurs in sandy soils) warrants recognition as a separate taxon. Intrinsic rarity scored as "unknown" due to the lack of information about the status of its moth pollinator. Threats are probably low since populations considered this taxon are within Zion N.P. This variety has not been recognized as a distinct taxon in recent floristic studies and therefore its distribution in Utah is relatively unknown. Threats to this taxon may be primarily from grazing-related impacts, but it scored as unknown. Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys.

Scored By/Date: J.A. Alexander/2014

Revisions: New to High Priority list

*Yucca toftiae*

Synonym: *Y. angustissima* var. *toftiae*  
Family: Agavaceae or Asparagaceae  
Comments: Local endemic. More populations in Rainbow Bridge area than reported, but tend to be small, often in wet seeps and hanging gardens, most sites prob not threatened, trend could be down following creation of Glen Canyon Reservoir [Fertig, Apr 2009]. Trend changed to unknown. It has been several decades since the creation of Glen Canyon Dam. Although it may have caused an initial downward trend, the effects of climate change and the repeat filling and draining of the reservoir due to extreme droughts has not been investigated. Intrinsic rarity changed to "unknown" due to the lack of information about the status of its moth pollinator.

Scored By/Date: J.A. Alexander/2014

Revisions: Moved from Watch list to High Priority

*Cymopterus coulteri*

Family: Apiaceae or Umbelliferae  
Comments: Local endemic, Mostly restricted to Arapien Shale and other barren clay sites. Known from ca 12 occurrences, all in the Great Basin of western Utah. Information needed on abundance and trend.

Scored By/Date: Fertig/2009

*Lomatium latilobum*

Synonym: *Aletes latilobus*  
Family: Apiaceae or Umbelliferae  
Comments: Local endemic. Found mostly on Entrada Sandstone in the Navajo Basin (Moab and vicinity). Some populations may be threatened by recreational climbers. Populations small, trend unknown.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Lomatium scabrum* var. *tripinnatum*

Family: Apiaceae or Umbelliferae  
Comments: Regional endemic. Restricted to Virgin River drainage of SW Utah and N Arizona on sandy soils and sandstone. Abundance and trends not known. Seven main populations in Utah.  
Scored By/Date: Fertig/2009.

*Oreoxis bakeri*

Synonym: *Cymopterus bakeri*  
Family: Apiaceae or Umbelliferae  
Comments: Regional endemic. It has been found in the La Sal Mountains in Utah. Primary range is in Colorado and New Mexico. The recent introduction of naturalized mountain goats in the La Sal Mountains threatens all of the alpine endemics in this mountain range. Climate change is also a threat. Droughts and rapid snowmelt due to wind-blown sediments are melting snowpack earlier than normal in our region. This is the primary reason for the upgrade of the threats to this species to a "1". Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys. In multiple molecular cladistic studies, *Cymopterus* has been found not to be a natural, monophyletic genus. Instead it is spread throughout a complex clade with *Lomatium*. As a result, many of the segregate generic names are coming back into use, such as *Oreoxis*, *Pteryxia*, and *Aletes*. This change is reflected herein with this taxon by recognizing the genus name *Oreoxis*.  
Scored By/Date: J.A. Alexander/2014  
Revisions: Moved from Medium to High Priority list

*Cycladenia humilis* var. *jonesii*

Synonym: *C. jonesii*  
Family: Apocynaceae  
Comments: Regional endemic. Listed as Threatened under ESA. Pops mostly small, habitat specialized, important reproductive bottlenecks, pops stable? (perhaps should be scored higher on trend), many pops are in areas receiving few human impacts.

Genetic data suggests that this variety in Utah is distinct from the population in California, which has not been named as a separate taxon yet. The population in Pipe Spring area of northern Arizona is still considered var. *jonesii*. Only a few populations are accessible by ATV or cattle. Most are in remote areas.

Scored By/Date: UNPS Rare Plant Comm./2015

UNPS High Priority Species List: Ranking Comments

*Ambrosia x sandersonii*

Synonyms: *Hymenoclea sandersonii*

Family: Asteraceae or Compositae

Comments: Local endemic. Hybrid origin - may have intrinsic rarity if fecundity low, threats not known, few pops, habitat does not seem unusual based on description in UT Flora (08). Similar hybrids occur in CA and NV (wherever the parent species come together), but have not been named - range may not be a local endemic. Better info needed on trends, reproductive biology, life history, and taxonomic status.

Scored By/Date: J.A. Alexander & Fertig/2009

***Chrysothamnus scopulorum* "var. *canonis*"**

Synonym: *Haplopappus scopulorum* var. *canonis*

Family: Asteraceae or Compositae

Comments: Local endemic. Described in 2003, only known from one pop restricted to Canyonlands NP (The Neck), threats possible from tourists?

Scored By/Date: UNPS Rare Plant Comm./2008

Revisions: Name changed to *Chrysothamnus scopulorum* following taxonomy of FNA, but combination *C. scopulorum* var. *canonis* has apparently not been published.

*Cirsium virginense*

Synonym: Included in *Cirsium mohavense* by some authors

Family: Asteraceae or Compositae

Comments: Regional endemic. Taxonomic questions (= *C. mohavense*?), habitat spec, threats from water diversion, expansion of St. George [UNPS 2008]. The characters that differentiate *C. virginense* from *C. mohavense* appear to be consistent and worthy of taxonomic recognition. Perhaps it should be recognized at the varietal level, being distinguished at by the same level of variability as varieties of *C. eatonii*. FNA did not take that route and synonymized the taxon within *C. mohavense*. Statistical morphological analysis is warranted in order to support the assertion that these extralimital populations determined as "*C. virginense*" in southern Utah, northern Arizona and southeastern Nevada are distinct [Alexander 2014]

Scored By/Date: UNPS Rare Plant Comm./2008, J.A. Alexander/2014

*Enceliopsis nudicaulis* var. *bairdii*

Family: Asteraceae or Compositae

Comments: Local endemic. Found in small low-sloping gypsum horizons and benches between limestone and sandstone outcrops in Beaver Dam Mts. It grows in less weathered substrates with more bedrock than the gypsum knolls occupied by *E. argophylla*. Essentially this plant is intermediate between *E. nudicaulis* (it has this taxon's leaf pubescence) and *E. argophylla* (it has the flower, stem, and leaf size of this taxon). It is possible that the single Washington Co. population of *E. argophylla* is a variant of var. *bairdii*. The majority of the

populations endangered by the growth of St. George have been determined as var. *bairdii*. Trend is downward due to the impact of current and future construction, recreational, and grazing disturbance in this area. One population in 2005 was observed within the boundaries of a small gypsum quarry just a few miles north of the Cedar Pockets exit of I-5. It also grows in areas ideal for off-road ATV use[2009].

All varieties of *E. nudicaulis* were placed within synonymy in FNA, including the threatened Nevada endemic, var. *corrugata*. "Plants with strongly corrugate leaf margins from Ash Meadows, Nevada, are var. *corrugata*. Cronquist believed that corrugate-leaved plants from other areas in southern Nevada were a result of drying in press; D. L. Sanders (unpubl.) showed a gradual drop-off in corrugation of living leaves in the region to the east of Ash Meadows." The var. *bairdii* was also treated as a synonym and therefore can be assumed to be a locally robust ecotype of *E. nudicaulis* not worthy of recognition at the infraspecific level. If var. *corrugata* is not recognized as a variety, certainly var. *bairdii* is not sufficiently differentiated from typical *E. nudicaulis* and worthy of infraspecific recognition. Specimens from the Gold Butte area of eastern Clark County Nevada at UNLV match the type of var. *bairdii* and should be considered a southern population of this taxon. It should still be recognized as a local endemic despite this smaller peripheral population in Nevada. The Nevada Native Plant Society discussed this taxon in 2014 and decided it was not sufficiently differentiated from other robust forms of *E. nudicaulis* to be recognized at the infraspecific level. Inclusion of it on the NNPS rare plant list was rejected. Ultimately, further study is needed within *Enceliopsis* as a whole to resolve these issues [2014].

Scored By/Date: J.A. Alexander/2009 & 2014

*Ericameria crispa*

Synonym: *Haplopappus crispus*

Family: Asteraceae or Compositae

Comments: Local endemic. Number of Individuals rescored as "1" from "unknown" due to the limited habitat and distribution of this taxon in Utah. Threats to this taxon may be primarily from grazing-related impacts, but it scored as unknown due to uncertainty. Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys.

Scored By/Date: J.Alexander/2014

Revisions: Moved from Need Data to High Priority List.

*Ericameria lignumviridis*

Synonym: *Haplopappus lignumviridis*

Family: Asteraceae or Compositae

Comments: Local endemic. The taxonomic issues surrounding this taxon have been tentatively resolved. Nesom has recognized this taxon as a species in *Ericameria* and it is treated as a local endemic in FNA. Not much more is known now, however, than when Welsh

## UNPS High Priority Species List: Ranking Comments

first described this species. Additional populations have not been discovered.

Scored By/Date: J.A. Alexander/2014

Revisions: Scientific name changed

*Erigeron goodrichii*

Family: Asteraceae or Compositae

Comments: Local endemic. 24 specimens at BRY have been collected in Utah, all of which were collected in the Uinta Mountains and Wasatch Mountains in Daggett, Duchesne, Salt Lake, Uintah, and Utah Counties. Only the description in A Utah Flora suggests that this might be an edaphic endemic ("Engelmann spruce krummholz and meadow communities, often on rock outcrops or talus (at least sometimes on limestone)"). It may occur on more than limestone substrates and therefore not be an edaphic endemic. Habitat left scored a "1" as in the 2008 list despite this discrepancy. Further population level research may indicate a down ranking of this taxon to a "0" with Habitat Specificity scored as "0". Threats to this taxon include grazing-related impacts from cattle and naturalized mountain goats. Climate change is also a threat. These are the primary reasons for the upgrade of threats to a "1". Trends are scored as "unknown".

Scored By/Date: J.A. Alexander/2014

Revisions: Moved from Watch List to High Priority List.

*Erigeron higginsii*

Synonym: Included in *Erigeron canaani* in FNA.

Family: Asteraceae or Compositae

Comments: Local endemic. Newly described in 2003, Pine Valley Mountain endemic, granite. Site threatened by fire [2008]. *Sensu* FNA: "*Erigeron higginsii* may prove to be a distinct entity. It was described as differing from *E. canaani* in having smaller involucre (4.5–5.5 × 7.5–11 mm) with fewer rays (7–12); it occurs at 2900–3120 m in the Pine Valley Mountains of southwestern Utah." [2014].

Scored By/Date: UNPS Rare Plant Comm./2008; J.A. Alexander/2014

*Erigeron kachinensis*

Family: Asteraceae or Compositae

Comments: Local endemic. Hanging garden endemic, numerous populations, but all small, threats probably low (though animals accessing water could be an impact) [UNPS 2008]. Threats were scored as both a "1" and a "0" and scored as both High and Watch in the 2009 list, without any substantiation why or when it was changed. There is very little substantiation of threats in the original comments, therefore it has been rescored as unknown [2014]

Scored By/Date: UNPS Rare Plant Comm./2008; J.A. Alexander/2014

*Erigeron mancus*

Synonym: *Erigeron pinnatisectus* var. *insolens*

Family: Asteraceae or Compositae

Comments: Local endemic. 15 specimens at BRY have been collected, all of which were collected in the La Sal Mountains, Grand and San Juan Counties. It is a La Sal Mountains Endemic. Habitat Specificity scored as "1" due to its status as a subalpine rock crevice and meadow species according to FNA ("Rocky slopes, boulder fields, ridge tops, alpine meadows, openings in subalpine fir"). Threats to this taxon include grazing-related impacts from cattle and naturalized mountain goats. Climate change is also a threat. These are the primary reasons for the upgrade of threats to a "1". Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys.

Scored By/Date: J.A. Alexander/2014

Revisions: Moved from Need Data to High Priority list.

*Erigeron vagus* var. *madsenii*

Family: Asteraceae or Compositae

Comments: Local endemic. Claron endemic, populations at Cedar Breaks all very small, on specialized habitat. Known from fewer than 10 populations.

Scored By/Date: UNPS Rare Plant Comm./2008

*Heliomeris soliceps*

Synonym: *Viguiera soliceps*

Family: Asteraceae or Compositae

Comments: Local endemic. Tropic Shale endemic, ephemeral annual - super abundant one year, none above ground other years, recreation impacts in many areas, trends probably oscillating around a stable mean

Scored By/Date: UNPS Rare Plant Comm./2008

Revisions: Scientific name changed

*Packera castoreus*

Synonym: *Senecio castoreus*

Family: Asteraceae or Compositae

Comments: Local endemic. Only 10 specimens at BRY have been collected. It has been found in the Tushar Mountains in Piute and Beaver Counties. Habitat Specificity scored as "1" due to its status as an igneous rock crevice species according to FNA ("Ridges, spruce-fir communities, igneous soils") and A Utah Flora ("windswept ridges"). Threats include grazing-related impacts from naturalized mountain goats. Climate change is also a threat. Droughts and rapid snowmelt due to wind-blown sediments are melting snowpack earlier than normal in our region. This is the primary reason for the scoring of the threats to this species to a "1". Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys.

Scored By/Date: J.A. Alexander/2015

Revisions: Scientific name changed

UNPS High Priority Species List: Ranking Comments

*Packera malmstenii*

Synonym: *Senecio malmstenii*

Family: Asteraceae or Compositae

Comments: Local endemic. Claron endemic, restricted to steep slopes with low rock cover and rills, populations small, threats probably low. Only about 1500 plants observed in survey of Cedar Breaks NM in 2007-08 by Fertig & Reynolds.

Scored By/Date: Fertig/2010

Revisions: Scientific name changed

*Packera musiniensis*

Synonym: *Senecio musiniensis*

Family: Asteraceae or Compositae

Comments: Local endemic. Restricted to Flagstaff Limestone in southern Wasatch Plateau. Only 7 collections known at BYU. Threats probably low, trends not known.

Scored By/Date: UNPS Rare Plant Comm./2008

Revisions: Scientific name changed

*Senecio fremontii* var. *inexpectatus*

Family: Asteraceae or Compositae

Comments: Local endemic. Threats to this taxon include grazing-related impacts from cattle and naturalized mountain goats. Climate change is also a threat.

Droughts and rapid snowmelt due to wind-blown sediments are melting snowpack earlier than normal in our region. These are the primary reasons for the upgrade of the threats to this species to a "1". Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys. Threats are high in at least the Uinta Mountains.

Scored By/Date: J. Alexander/2014

Revisions: Moved from Watch to High Priority list.

*Stenotus armerioides* var. *gramineus*

Synonym: *Haplopappus armerioides* var. *gramineus*

Family: Asteraceae or Compositae

Comments: Local endemic. A Utah endemic restricted to shales of the Green River Formation in the Uintah Basin, Duchesne and Uintah counties. This taxon is another of several that may have been significantly impacted by energy development in the Uintah Basin but have been overlooked by agencies. Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys. Trends are likely downward due to the energy development disturbance.

Scored By/Date: J.A. Alexander./2014

Revisions: Scientific name changed

*Thelesperma subnudum* var. *maliterrimum*

Synonym: Included in *T. pubescens* by some authors

Family: Asteraceae or Compositae

Comments: Local endemic. Newly reconfigured taxonomy in 2008 - Green River shale endemic- allied with *T. pubescens* of WY, lots of misconceptions about the WY taxa - they are different (*T. caespitosum* & *T. pubescens* are not the same—see survey reports posted online by WY Natural Diversity Database, Univ. of Wyoming by Fertig and Heidel), threats not well understood.

Scored By/Date: UNPS Rare Plant Comm./2008

*Townsendia goodrichii*

Family: Asteraceae or Compositae

Comments: Local endemic. Threats include grazing-related impacts from cattle and naturalized mountain goats. Climate change is also a threat. Droughts and rapid snowmelt due to wind-blown sediments are melting snowpack earlier than normal in our region. These are the primary reasons for the upgrade of the threats to this species to a "1". Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys. This change does not move this species to a higher ranked list.

Scored By/Date: J.A. Alexander/2014

*Townsendia jonesii* var. *lutea*

Family: Asteraceae or Compositae

Comments: Local endemic. Arapen shale and other substrates - some threat from ATVs, competition from cheatgrass, possibly from gypsum mining. Populations small.

Scored By/Date: UNPS Rare Plant Comm./2009

*Townsendia strigosa* var. *prolixa*

Family: Asteraceae or Compositae

Comments: Local endemic. Welsh (2008) splits var. *prolixa* from typical *strigosa* based on broad and persistent basal leaf blades and technical features of the flowering heads. More study may be needed to determine if this phase from Grand and Duchesne counties is taxonomically distinct enough. FNA (2006) does not recognize var. *prolixa* as distinct. More information needed on abundance and trend—and perhaps other ranking factors—**may be better treated as "Need Data"**

Scored By/Date: Fertig/2011

*Xylorhiza cronquistii*

Synonym: *Machaeranthera cronquistii*

Family: Asteraceae or Compositae

Comments: Local endemic. Populations in Grand Staircase Escalante NM are small, often intermixed with other *Xylorhiza* spp. Known from 3 populations, all restricted to Kaiparowits and Chinle barrens. Being of hybrid origin may confer low fecundity, but otherwise threats seem low. Trends not known.

Scored By/Date: Fertig/2008

## UNPS High Priority Species List: Ranking Comments

*Xylorhiza glabriusculaa* var. *linearifolia*

Synonym: *Machaeranthera linearifolia*, *Xylorhiza linearifolia*

Family: Asteraceae or Compositae

Comments: Local endemic. Restricted to Chinle and Moenkopi soils in east-central Utah, with fewer than 10 populations. May be threatened by off road recreation. Trends not known.

Scored By/Date: UNPS Rare Plant Comm./2008

*Cryptantha barnebyi*

Family: Boraginaceae

Comments: Local endemic. Green River shale endemic of Uintah Basin, threats present from mineral exploration, pop size not known [UNPS 2008]. The previous comments indicate that population sizes of this taxa are not known, therefore the number of individuals was changed from "0" to "unknown".

Scored By/Date: J.A. Alexander/2014

Revisions: Moved from Watch to High priority list

*Cryptantha grahamii*

Family: Boraginaceae

Comments: Local endemic. Green River shale endemic of Uintah Basin, threats present from mineral exploration, pop size not known. Abundance and trends not known.

Scored By/Date: UNPS Rare Plant Comm./2008

*Cryptantha semiglabra*

Family: Boraginaceae

Comments: Local endemic. Edaphic endemic of red claybed soils below low cliffs, Populations in Arizona are mostly small, threatened by ATV recreation [UNPS 2008]. Only 1 specimen has been cited in A Utah Flora for Utah at BRY. The voucher was collected in Washington Co. This specimen is currently not databased, and is not found on SEINet. All other specimens of this taxon have been collected in Arizona (Mohave and Coconino Counties). It is possible that this specimen was mislabeled.

Scored By/Date: J.A. Alexander/2015

*Hackelia ibapensis*

Family: Boraginaceae

Comments: Local endemic. Restricted to granite rock outcrops, limited range, threats not known- perhaps low? [UNPS 2008]. Only 3 specimens at BRY have been collected. It has been found in the Deep Creek Range in Juab County. Habitat Specificity scored as "1" due to its status as a granite rock crevice species according to A Utah Flora ("Exposed granite outcrops in mountain brush and Douglas fir communities"). At least in the Deep Creek Range, this is one of several taxa that will be threatened by the proposed introduction of naturalized mountain goats by the State of Utah. Climate change is also a threat. Although the climate threats alone do not warrant changes, threats will be upgraded to "1" if the introductions proceed. Trends are scored as "unknown"

due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys.

Scored By/Date: J.A/ Alexander/2015

Revisions: Moved from Watch to High Priority list

*Boechera duchesnensis*

Synonym: *Arabis pulchra* var. *pallens*, *B. formosa* x *B. thompsonii*

Family: Brassicaceae or Cruciferae

Comments: Local endemic. Sensu FNA, this taxon is a apomictic triploid hybrid between *Boechera formosa* and *B. pallidifolia*. Recent unpublished molecular results suggest a different parentage (See Windham's comments below). This species was delimited as *Arabis pulchra* var. *duchesnensis* by Rollins. The type was collected 2.8 miles E of Duchesne in Duchesne County in 1979 (Rollins 79113 GH, NY). *Boechera duchesnensis* is similar to and has been confused with *B. pulchra* and *B. pallidifolia*. Other than their disjunct distribution, *B. pulchra* and *B. duchesnensis* differ most notably in the distribution of pubescence on the pods (Windham & Al-Shehbaz, 2007). *Boechera pulchra* in the strict sense did not play a part in the formation of this taxon. *Boechera formosa* has been called *A. pulchra* var. *pallens* in previous treatments, but Al-Shehbaz & Windham in FNA have provided evidence "that the two species are easily separated. *Boechera formosa* has white to lavender (versus mostly purple) petals, fruiting pedicels that are not abruptly recurved at the base, narrower (1.6-3 versus 2.5-4 mm wide), mostly non-appressed fruits, and narrower (1-1.2 versus 1.5-2.2 mm wide) seeds. The two taxa are separated by more than 500 km, with *B. formosa* found only on the Colorado Plateau and *B. pulchra*, in the strict sense, restricted to S California, W Nevada, and NW Mexico." As a result, it has been reclassified as to a peripheral taxon from a local endemic. Habitat Specificity has been rescored as "0" from "unknown" since the habitat does not seem unusual according to FNA (sandy soil on rocky slopes, mostly in pinyon-juniper woodlands). Number of individuals rescored as "1" from "unknown". Intrinsic Rarity rescored as a "1" due to it being an apomictic triploid hybrid. Polyploid taxa often have chromosomal or genetic anomalies that may limit reproduction. It has been documented in molecular and morphological studies by Windham & Al-Shehbaz and Windham & Allphin that this hybrid will no longer arise in Utah's current climate regime. One of the parents, *Boechera thompsonii*, is no longer sympatric, which suggests that this is a relict Pleistocene hybrid population. Other populations in the southwestern U.S. formerly determined as this taxon are no longer considered the same hybrid. Once *B. thompsonii* was split from *B. pallidifolia* recently as per Windham comments, hybrids between these two taxa and *B. formosa* are different species. This restricts *B. duchesnensis* to Utah and it becomes a "local endemic" instead of "disjunct". These changes re-rank this taxon from "Need Data" to the "High" list [Alexander, Mar 2015];

## UNPS High Priority Species List: Ranking Comments

Known only from two populations a few km apart in Duchesne County. This is an easily-recognized diploid hybrid between *Boecheera formosa* and *B. thompsonii* reproducing through apomixis [M. Windham, March 2015]

Scored By/Date: J.A. Alexander & M. Windham/2015

Revisions: Moved from Need Data to High priority list

*Boecheera falcatoria*

Synonym: *Arabis falcatoria*, *B. cusickii* x *B. kelseyana* x *B. pendulina*

Family: Brassicaceae or Cruciferae

Comments: Local endemic. Sensus FNA, this taxon is a apomictic triploid hybrid between *Boecheera cusickii* and *B. pendulina*. Recent unpublished molecular results suggest a different parentage (See Windham's comments below). Welsh (2008: 295) continues to insist that *Arabis falcatoria* is "remarkably similar to *A. perennans*" and that he is not convinced that *A. falcatoria* "deserves taxonomic status" based on the specimens he has examined. Windham & Al-Shehbaz (2006b) provide morphological evidence that *B. falcatoria* is neither related nor is morphologically similar to *B. perennans*. Holmgren (2005) included hybrid populations from Juab County, Utah and Elko County, Nevada in his concept of *B. falcatoria*. Again, Windham & Al-Shehbaz (2006b) state that Holmgren's vouchers are unrelated hybrids of different parentage than that of *Boecheera falcatoria*. With the high frequency of misidentification of putative *B. falcatoria* populations by all authors except Windham & Al-Shehbaz (2006b), it seems identifying true *B. falcatoria* outside the type populations in the Grouse Creek Mountains will be difficult to substantiate. However, the type populations are adjacent to Idaho and Nevada, suggesting that it may eventually be found in either of those states. The previous scoring included Juab County in the distribution of this species. This has been removed based on the FNA treatment by Al-Shehbaz & Windham. Habitat Specificity was scored a "1" in the original scoring of this taxon. It has been rescored a "0" since the habitat in FNA ("rock outcrops and gravelly soil in sagebrush and mountain shrub communities") does not seem unusual. Intrinsic Rarity rescored as a "1" due to it being an apomictic triploid hybrid. Polyploid taxa often have chromosomal or genetic anomalies that may limit reproduction. It is not known whether or not the parents of this hybrid are still sympatric, which means that this hybrid may not arise again under current climate conditions in Utah [Alexander, Aug. 2014]; The Juab County record is incorrect, which means that this is a Grouse Creek/Goose Creek endemic. Last I knew, it was still on the Utah BLM list. It is an apomictic triploid (*B. cusickii* x *kelseyana* x *pendulina*) with inherently lower conservation priority (though the probability of the three parents ever interacting again is nil) [M. Windham, March 2015]

Scored By/Date: J.A. Alexander & M. Windham/2015

*Boecheera harrisonii*

Synonym: *Arabis harrisonii*, *B. microphylla* var. *harrisonii*

Family: Brassicaceae or Cruciferae

Comments: Local endemic. This taxon is a apomictic triploid hybrid between *B. microphylla* and *B. perennans*. A Utah Flora (2008) restricts this taxon to Utah County. Windham & Al-Shehbaz (2007) include a record from Wasatch County based on a single historical collection: Ripley & Barneby 10625 (CAS), Provo Canyon near Wildwood, 8 June 1951 at 5000 m. elevation. Windham reports this taxon from Salt Lake County based on his molecular results (the list is updated herein to reflect his changes). The specific vouchers for this report have not been published. This taxon is reported from two very different substrate types (limestone and quartzite) in the FNA treatment by Al-Shehbaz & Windham. This suggests that it is not an edaphic endemic as scored in the original list. The low number of specimens of this hybrid and the wide distribution of its parents in Utah warrants re-scoring this taxon to "unknown" for Habitat Specificity. Intrinsic Rarity rescored as a "1" due to it being an apomictic triploid hybrid. Polyploid taxa often have chromosomal or genetic anomalies that may limit reproduction. *Boecheera microphylla* and *B. perennans* are common species in Utah and the hybrids between the two should be expected anywhere both are present. This taxon is restricted to rock crevices in its currently known range which both make its difficult to survey and shield it from threats from development and recreation in Provo Canyon. Threats have been rescored to "0". Climate change could be an additional threat to this taxon. Extant populations should be relocated to confirm the threats and trends.

Scored By/Date: J. Alexander & M. Windham/2015

*Boecheera vivariensis*

Synonym: *Arabis vivariensis*, *B. fernaldiana* ssp. *vivariensis*

Family: Brassicaceae or Cruciferae

Comments: Local endemic. If included in *A. fernaldiana*, this would be a RegEnd (1). Edaphic endemic of limestone, pops mostly moderate sized, well-mapped in DINO, threats prob low [UNPS Rare Plant Comm. 2008].

This taxon is a sexual diploid. It is restricted to Dinosaur National Monument in Moffat County, Colorado and Uintah County, Utah. Intrinsic Rarity rescored as a "1" due to this taxon being a sexual diploid with a limited distribution. Sexual diploids are the reservoirs in which the varied hybrid taxa have formed and should be protected with a higher level of effort than most of the apomictic triploid taxa. Habitat Specificity has been kept as "1" since this taxon appears to be an edaphic endemic restricted sandstone rock outcrops, talus and other rocky, sandy soils. More closely related to *Boecheera thompsonii* than *B. fernaldiana* thus the change in taxonomy [Windham, Mar 2015].

## UNPS High Priority Species List: Ranking Comments

Scored By/Date: J. Alexander & M. Windham/2015

Revisions: Moved from Watch to High priority list

*Draba inexpectata*

Family: Brassicaceae or Cruciferae

Comments: Local endemic. Only 7 specimen at BRY have been collected in Utah. It is known only from the Uinta Mountains (Uinta and Summit Cos.). The habitat does not seem unusual based on the description in A Utah Flora ("Subalpine fir, krummholz, and fell fields"), however, it is lacking in detail for a precise scoring. According to FNA, this taxon is a subalpine talus species, although it cannot be labeled an edaphic endemic since neither FNA or A Utah Flora provide precise geological substrate data. Following FNA, Habitat Specificity was rescored as "1". Threats to this taxon include grazing-related impacts from naturalized mountain goats. Climate change is also a threat. These are the primary reasons for the upgrade of the threats to this species to a "1". Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys.

Scored By/Date: J.Alexander/2015

Revisions: Moved from Medium to High priority list

*Draba kassii*

Family: Brassicaceae or Cruciferae

Comments: Local endemic. Only 5 specimens at BRY have been collected. It is endemic to the Deep Creek Range in Tooele County. Habitat Specificity scored as "1" due to its status as a granite rock crevice species according to A Utah Flora ("Pinyon-juniper, white fir, and mountain brush communities, mainly in crevices in granite, sometimes growing in mossy tufts"). Threats scored a "0" in the original list, which is a score no longer justifiable. In the Deep Creek Range, this is one of several taxa that will be threatened by the proposed introduction of naturalized mountain goats by the State of Utah. Climate change is also a threat. Droughts and rapid snowmelt due to wind-blown sediments are melting snowpack earlier than normal in our region. Although the climate threats alone do not warrant changes, threats will be upgraded to "1" if the introductions proceed. Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys.

Scored By/Date: J. Alexander/2015

Revisions: Moved from Watch to High priority list

*Draba ramulosa*

Family: Brassicaceae or Cruciferae

Comments: Local endemic. Only 6 specimens at BRY have been collected. It has been found in the Tushar Mountains in Piute and Beaver Counties. Habitat Specificity scored as "1" due to its status as an igneous, alpine talus species according to A Utah Flora ("Alpine plant communities in talus and scree slopes comprised of thermally modified Tertiary ash-flow tuffs, Marysvale

volcanic centrum"). Threats to this taxon include grazing-related impacts from naturalized mountain goats. Climate change is also a threat. Droughts and rapid snowmelt due to wind-blown sediments are melting snowpack earlier than normal in our region. This is the primary reason for the scoring of the threats to this species to a "1". Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys.

Scored By/Date: J. Alexander/2015

*Draba santaquinensis*

Family: Brassicaceae or Cruciferae

Comments: Local endemic. In FNA, this taxon was reported from "Limestone outcrops and rocky slopes in mixed conifer communities. Although *Draba santaquinensis* was included within *D. brachystylis* by previous authors, I. A. Al-Shehbaz and M. D. Windham (2007) have shown that it is distinct both morphologically and chromosomally. It is currently known only from Utah County (American Fork, Provo, and Santaquin canyons) in north-central Utah." It appears that this taxon is an edaphic endemic restricted to limestone canyons in Utah County. It has both a limited range low enough population sizes to be re-classified. Number of Individuals, Populations, and Habitat Specificity is rescored as "1" from "unknown". Threats and Trends are still unknown. These changes re-rank this taxon to the "High" list [Alexander Mar 2015]; Known only from limestone outcrops in the canyons of the central Wasatch. Known range extending from Santaquin Canyon on the south to American Fork Canyon on the north (i.e., entirely within Utah County; this is a very rare sexual diploid species that is one of the parents (along with *D. albertina*) of *D. brachystylis* [Windham Mar 2015].

Scored By/Date: J. Alexander & M. Windham/2015

Revisions: Moved from Need Data to High Priority list

*Draba sobolifera*

Family: Brassicaceae or Cruciferae

Comments: Local endemic. 22 specimens at BRY have been collected. It has been found in the Tushar Mountains in Piute and Beaver Counties. Habitat Specificity scored as "1" due to its status as an igneous, alpine talus species according to A Utah Flora ("Alpine plant communities in talus and scree slopes comprised of thermally modified Tertiary ash-flow tuffs, Marysvale volcanic centrum"). Threats to this taxon include grazing-related impacts from naturalized mountain goats. Climate change is also a threat. Droughts and rapid snowmelt due to wind-blown sediments are melting snowpack earlier than normal in our region. This is the primary reason for the scoring of the threats to this species to a "1". Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys.

Scored By/Date: J. Alexander/2015



UNPS High Priority Species List: Ranking Comments

*Lepidium integrifolium*

Synonym: *Lepidium integrifolium* var. *integrifolium*

Family: Brassicaceae or Cruciferae

Comments: Regional endemic. Mostly extirpated in UT? Rare in WY, though recently discovered in more locations there [UNPS 2008]. Reports from Arizona are questionable (probably misidentified) [Fertig 2010].

Sensu A Utah Flora, "The populations in central Utah are known mainly from historic collections, where they were taken evidently in low elevation, seasonally moist meadows, now long under private ownership and heavily utilized for grazing. This distinctive entity has been collected only rarely, possibly because the habitat type has been exploited as marginal pastureland in Utah and Wyoming, and probably because its habitat is now occupied by the similar *Cardaria draba*, which is bypassed by most collectors. However, it was rediscovered by N. D. Atwood (31182 BRY!) on 2 June 2005 "just w. of Thermo Hot Springs . . . Greasewood Comm. on clay playa," evidently in habitat similar to that recorded for collections from Railroad Valley, Nye Co., Nevada. Modern occurrences are yet to be discovered in Sanpete and Sevier counties."

Scored By/Date: J. Alexander/2014

*Lepidium montanum* var. *alpinum*

Family: Brassicaceae or Cruciferae

Comments: Local endemic. Sensu FNA, "some of the varieties (e.g., *alpinum*, *coloradense*, *montanum*, *neeseae*, and *stellae*), all of which were accepted by both R. C. Rollins (1993) and N. H. Holmgren (2005b), are distinct enough, and merit recognition at some rank. As indicated by Rollins, var. *neeseae* is quite distinct from the rest and should perhaps be treated as a separate species, but we have seen only two isotypes, and neither had fully developed fruits. Without a painstaking study of this entire species complex, we prefer not to accept formally only a small fraction of its enormous variation." The varieties from A Utah Flora will still be recognized until a more conclusive study of the types and populations of this proposed taxon has been done.

Scored By/Date: J. Alexander/2014

*Lepidium montanum* var. *stellae*

Synonym: Included in *Lepidium montanum* var. *cinereum* by some authors

Family: Brassicaceae or Cruciferae

Comments: Regional endemic. Gypsum endemic, habitat impacted by ATV recreation, livestock trampling, pop numbers may fluctuate, acts like an annual. May be Local endemic? [Fertig 2008]. See comments under *L. montanum* var. *alpinum* [Alexander 2014].

Scored By/Date: W. Fertig/2008 & J. Alexander/2014

*Lepidium ostleri*

Family: Brassicaceae or Cruciferae

Comments: Local endemic. Populations small, restricted to limestone outcrops in San Francisco Mountains of Beaver County, Utah. Occur near mine sites though habitat not presently being mined [UNPS 2008]. Designated as a Candidate for potential listing under the Endangered Species Act, but determined as "warranted but precluded" for listing in 2011.

Scored By/Date: Elaine York/2014

*Physaria chambersii* var. *canaani*

Family: Brassicaceae or Cruciferae

Comments: Local endemic. Restricted to Canaan Peak area of Garfield County on Claron outcrops. May just be an odd growth phase [Fertig 2008].

Sensu FNA "*Physaria chambersii* has been divided into three varieties based on whether the fruit is stipitate (var. *canaani*) or not, and whether the caudex elongates (var. *sobolifera*) or not (var. *chambersii*). In this species and in some others, e.g., *P. newberryi*, the latter character often depends on substrate and microclimate. Shifting substrates, such as moving sand and talus, often cause caudices to elongate." It is possible that some of these characteristics are genetic and not just phenotypic changes due to the environment. It seems reasonable to keep each of the varieties of *P. chambersii* recognized by Welsh as separate entities until a more conclusive study is performed.

Scored By/Date: J. Alexander/2014

*Physaria grahamii*

Synonym: Includes *Physaria acutifolia* var. *repanda* & var. *purpurea* in Intermountain Flora (2005).

Family: Brassicaceae or Cruciferae

Comments: Local endemic. Sensu FNA, "*Physaria grahamii* is difficult to evaluate due to the paucity of collections. The tentative recognition by N. H. Holmgren (2005b) is followed here." It seems reasonable to keep each of the varieties of *P. acutifolia* recognized by Welsh as separate entities until a more conclusive study is performed.

Scored By/Date: J. Alexander/2014

*Physaria hemiphysaria* ssp. *lucens*

Synonym: Family: Brassicaceae or Cruciferae

Comments: Local endemic. Number of Individuals rescored as "1" from unknown. Unlike var. *hemiphysaria*, var. *lucens* does appear to be an edaphic endemic, it is reported in FNA to be restricted to "Shale outcrops and sandy soils of sagebrush-woodland areas". It is known only from the West Tavaputs Plateau and is more restricted in range than var. *hemiphysaria*. These changes re-rank this taxon to the "High" list.

Scored By/Date: J. Alexander/2014

Revisions: Moved from Need Data to High priority list

## UNPS High Priority Species List: Ranking Comments

*Physaria tumulosa*

Synonyms: *Lesquerella tumulosa*, *Physaria rubicundula* var. *tumulosa*

Family: Brassicaceae or Cruciferae

Comments: Local endemic. Listed as Endangered under ESA. Carmel endemic S of Cannonville, threats from ATV recreation, trends probably slightly down to stable, not occupying all available habitat [UNPS 2008]. Sensu FNA "*Physaria tumulosa* is morphologically similar to *P. navajoensis* of northeastern Arizona and northwestern New Mexico, and differing very subtly. It has been long treated as an infraspecific taxon of *P. hitchcockii*; unpublished molecular data do not support that disposition. It has been found on knolls of the Winsor Member of the Carmel Formation."

Scored By/Date: J. Alexander/2014

*Thelypodopsis ambigua* var. *erecta*

Family: Brassicaceae or Cruciferae

Comments: Local Endemic. Populations near Kanab are small and restricted to Chinle soils. Plants are not present every year. Threatened by competition from exotic plants and ATV recreation. Range in Arizona is quite limited, making this species a local rather than regional endemic.

Scored By/Date: UNPS Rare Plant Comm./2008; Fertig /2016

Revisions: Moved from Watch List to High Priority

*Ferocactus acanthoides*

Synonym: *Ferocactus cylindraceus* var. *lecontei*

Family: Cactaceae

Comments: Peripheral. Still relatively common on limestone outcrops and cliffs in the Beaver Dam Mountains, but increasingly threatened by wildfire and over-collection of plants for horticulture. Trend probably downward.

Scored By/Date: J. Alexander & W. Fertig/2009

*Pediocactus sileri*

Family: Cactaceae

Comments: Regional endemic. Listed as Threatened under ESA. Many populations in Kanab area in sharp decline in recent years (drought, herbivory), threatened by collection, some populations larger near St. George [UNPS 2008]. Long-term trends being studied at several sites in Arizona and Utah by Lee Hughes (now retired) of BLM. Populations had been increasing for a time, but beetle mortality becoming more of an issue in recent years [Fertig 2010]

TNC and UDOT own 800 acres of *Arctomecon humilis*-*Pediocactus sileri* habitat at White Dome [E. York, 2014].

Scored By/Date: UNPS Rare Plant Comm./2008 & E. York/2014

*Sclerocactus pubispinus*

Synonym: *Sclerocactus pubispinus* var. *pubispinus*

Family: Cactaceae

Comments: Regional endemic. They are badly predated by the cactus beetle borer. Worse than that, they are badly impacted by continued grazing. As long as grazing continues to degrade the environment, this will continue. I am doing a project right now of repeat photography with my 1968 study sites. But just by visiting sites, almost none had any Scleros at all any more. In general, they had no cryptogams, or maybe just the black moss that comes back fast. And so much cheat grass and other weeds. Much changed since 1968. Being ignorant of the long term, I thought at that time that the damage had been done by grazing - by the historic immense herds - and didn't realize it was so ongoing. There are many less than there were in 1968. Sites have always been scattered, so without previous information it is now hard to find them. At that time, I knew about where to look for the first one, because Benson had told me where he found *spiniosior*... Also an acquaintance had an uncle in Nephi that collected cacti for his garden. She told me he had complained he could hardly find any Scleros in his favorite site anymore; she told him, "Of course, you have taken them all." I also was able to access the area of the original collection site of *S. pubispinus* in far western Utah. *Pubispinus* had been collected for an herbarium once, quite by chance, before I started my work, since the original site. When a cactophile from Las Vegas stopped for the night and happened to find it there. *Spiniosior* had been collected a few times, because it grows near Richfield, and Marcus Jones collected there. Gerhard [a German cactus enthusiast and friend of Dorde's] has noted that all Scleros are more rare since 1998. That was a good year... the big drought was in '03. Some sites are recovering, but they are in the minority. At some of his [sites], there are no longer any Scleros. All of this damage from weather, beetles, and grazing must be recovered from by recruitment, and that is difficult for cacti, their tiny new plants are very vulnerable. Benson added *spiniosior* and *pubispinus* to the provisional list for listed plants. But Welsh said they were not so rare but scattered. In my opinion, it is global warming that has sent it farther north [from Arizona into Utah]. It was here in the late 60s, but not in such abundance."

Scored By/Date: D. Woodruff/2014

Revisions: Moved from Need data to High priority

*Sclerocactus spiniosior*

Synonym: *Sclerocactus pubispinus* var. *spiniosior*

Family: Cactaceae

Comments: Regional endemic. See comments by Woodruff under *S. pubispinus*.

Scored By/Date: D. Woodruff./2014

Revisions: Moved from Need Data to High priority list.

UNPS High Priority Species List: Ranking Comments

*Sclerocactus wrightiae*

Family: Cactaceae

Comments: Local endemic. Listed Endangered under ESA, high degree of threats from over-collection, ATV recreation, road building, droughts, and grazing in limited habitat in central Utah. Numerous populations but trend is declining.

D. Rooks, 2011-2013 survey, found 12,000 individuals on BLM from 151 localities of 500 known sites. 71 individuals on average per locality. This taxon is also present in E Sevier County based on this survey. Total estimate of all populations is 35,000+ individuals. D. Clark's original ranking estimate was low and did not include many of the above sites. Numbers of individuals rescored as "0" from "1". Occurs on many different geological substrates, not just the Mancos shale. Habitat Specificity rescored as "0" from "1". Threat from cattle and ATV disturbance may be lower in contribution than other cacti. 15 of 17 sites that were scored as extirpated in previous inventories were found recently to have viable populations. These changes re-rank this taxon from the "ExHigh" to the "High" List.

Scored By/Date: D. Clark./2009; UNPS Rare Plant Comm./2015

Revisions: Moved from Ex High Priority to High Priority

*Cleomella hillmanii* var. *goodrichii*

Family: Capparaceae or Cleomaceae

Comments: Local endemic. UT material is disjunct from main range in ID, considered a separate variety in UT Flora (2008) so scored as local endemic. More data needed on threats - could be high in Uinta Basin. Known from approximately 8 locations in Utah.

Scored By/Date: UNPS Rare Plant Comm./2008

*Krascheninnikovia lanata* var. *ruinina*

Family: Chenopodiaceae or Amaranthaceae

Comments: Local endemic. Taxonomic questions, small range, threats poorly known (winterfats can be vulnerable to over-browsing). Var. *ruinina* is restricted to deep sandy soils in Canyonlands area of eastern Utah. Variety not recognized in FNA.

Scored By/Date: UNPS Rare Plant Comm./2008

*Dudleya arizonica*

Synonym: *Dudleya pulverulenta* var. *arizonica*

Family: Crassulaceae

Comments: Disjunct. Rare on limestone outcrops and cliffs in the Beaver Dam Mountains and highly threatened by over-collection for horticulture, as well as impacts from recreation and urban growth. Trends probably down. Perhaps should be ranked as a regional endemic.

Scored By/Date: J. Alexander/2009

Revisions: Scientific name changed

*Cuscuta warneri*

Synonym: *Cuscuta indecora* var. *warneri*

Family: Cuscutaceae or Convolvulaceae

Comments: Disjunct. Now known from New Mexico (UT population disjunct?). Last observed in UT in 1957, possibly extirpated. Lone Utah population found in weedy area, habitat requirements not fully known. Parasite dependent on *Phyla cuneifolia*—may have high intrinsic rarity.

Scored By/Date: UNPS Rare Plant Comm./2008

*Carex haysii*

Synonym: Included in *C. curatorum* by some authors

Family: Cyperaceae

Comments: Local endemic. One of the few locally endemic sedges, Zion NP - populations protected but threatened by competition from exotic species in wetland sites [UNPS 2008]. Threats upgraded to High and a score of "1" due to the threats from exotic grass species [i.e. *Festuca pratensis*] invading the hanging gardens in Zion, in gardens becoming a near monoculture and chocking out most of the natives (especially the gardens near trails with heavy visitor traffic). Although this species has a tendency to grow higher up on the sandstone walls away from the thatch of exotic grasses, there is not much anyone could do to weed these inaccessible sites if the exotics to spread upward along the canyon walls. This taxon has been kept in the "High" category.

Scored By/Date: J. Alexander/2014

*Astragalus ampullarius*

Family: Fabaceae or Leguminosae

Comments: Regional endemic. Nearly a local endemic restricted to Chinle Formation, population numbers fluctuate a lot from year to year but are mostly small. One population N of the town of Washington is extirpated, some threatened by ATV recreation. Much potential habitat is not occupied. Trends not well known.

Scored By/Date: UNPS Rare Plant Comm./2008

*Astragalus cronquistii*

Family: Fabaceae or Leguminosae

Comments: Local endemic. Restricted to seleniferous soils of Cutler and Morrison formations, known from about 15 occurrences, populations small, threatened by ATV recreation.

Scored By/Date: UNPS Rare Plant Comm./2008

*Astragalus cutleri*

Synonyms: *Astragalus preussii* var. *cutleri*

Family: Fabaceae or Leguminosae

Comments: Local endemic. Known from about 5 sites in the Glen Canyon area (San Juan arm). Populations small, edaphic endemic of Chinle and Moenkopi formations, threats and trends not well known.

Scored By/Date: UNPS Rare Plant Comm./2008

UNPS High Priority Species List: Ranking Comments

*Astragalus desereticus*

Family: Fabaceae or Leguminosae  
Comments: Local endemic. Listed Threatened under ESA. Single population, restricted to Moroni Formation near Birdseye (Utah County), population of moderate size but limited in area, threats from road expansion, trend stable? USFWS proposed to delist this species in 2007.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Astragalus diversifolius*

Synonym: *Astragalus diversifolius* var. *diversifolius*  
Family: Fabaceae or Leguminosae  
Comments: Regional endemic. Critically rare in Wyoming and Nevada (both S1) and uncommon in Idaho (S2). Restricted to saline wetlands. Infrequently collected. Desert saline wetlands often highly threatened by development and dewatering.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Astragalus equisolensis*

Synonyms: *Astragalus desperatus* var. *neeseae*  
Family: Fabaceae or Leguminosae  
Comments: Local endemic. Former candidate for listing under ESA (dropped in 2006). Restricted to Uinta Basin and disjunct in W CO, on Duchesne River Formation. Like other Uinta Basin species, potentially threatened by mineral exploration and development. Trends not known.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Astragalus hamiltonii*

Family: Fabaceae or Leguminosae  
Comments: Local endemic. Edaphic endemic in Uinta Basin, populations mostly small, with typical Uinta Basin threats. In 2011, USFWS rejected a petition to add this species to the Candidate list for potential listing under the Endangered Species Act.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Astragalus harrisonii*

Family: Fabaceae or Leguminosae  
Comments: Local endemic. Limited to sandy soils below sandstone cliffs of Kayenta, Navajo, and Wingate formations (rarely on Chinle clays). Small populations, mostly in Capitol Reef area, populations in Grand Staircase NM have not been relocated (despite search in 2005), trends probably down, Capitol Reef populations impacted by hiking trails  
Scored By/Date: UNPS Rare Plant Comm./2008

*Astragalus lentiginosus* var. *ursinus*

Synonyms: *Astragalus lentiginosus* var. *mokiacensis*, *Astragalus mokiacensis*  
Family: Fabaceae or Leguminosae  
Comments: Local endemic. Research by Alexander (Brittonia 57:320-333, 2005 and 2008 OSU Ph.D. thesis) supports splitting *A. lentiginosus* var. *ursinus* from *A. lentiginosus* var. *mokiacensis*. The holotype of *A.*

*mokiacensis* was collected in the Grand Wash Cliffs in AZ and not the Beaver Dam Mountains of UT. Utah pop's of this plant are present in only the wettest years and are perennial and entirely dependant on seed for survival due to prevalence of extreme droughts in its habitat and being restricted to a few low elevation limestone ridgetops and talus [Alexander 2009].

Phylogeographic molecular data continues to support the separation of the Utah populations as a variety separate from *A. l.* var. *mokiacensis*. The two taxa have been on separate evolutionary lineages for over 10,000 years and currently do not interbreed via pollen or seed long-distance dispersal. There is no morphological or molecular support for Welsh's treatment of this taxon in A Utah Flora. The geography of the Virgin Mountains and the Virgin River Gorge have been an effective barrier to the transport of genetic material. The 2009 recommendations by Alexander have been fully implemented herein.  
Scored By/Date: J.A. Alexander./2014  
Revisions: Scientific name changed, moved from Watch list to High Priority list

*Astragalus loanus*

Family: Fabaceae or Leguminosae  
Comments: Local endemic. Occurs on igneous gravels, only in the Loa area of central Utah at about 7 main sites, populations probably small, threats and trends poorly known.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Astragalus sabulosus* var. *sabulosus*

Family: Fabaceae or Leguminosae  
Comments: Local endemic. Selenophyte of Cisco area, not occupying all available habitat, threats may be from ATV recreation. Trends poorly known.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Astragalus sabulosus* var. *vehiculus*

Synonym: *Astragalus vehiculus*  
Family: Fabaceae or Leguminosae  
Comments: Local endemic. Locally abundant, but very limited in area and numbers fluctuate. Only known from Courthouse Wash area near Moab. Habitat specialist of selenium-rich soils of Morrison Formation. Road bisects population.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Astragalus serpens*

Family: Fabaceae or Leguminosae  
Comments: Local endemic. Populations often small, but can be abundant some years, edaphic endemic of volcanic soils in central Utah, information needed on threats.  
Scored By/Date: UNPS Rare Plant Comm./2008

UNPS High Priority Species List: Ranking Comments

*Astragalus striatiflorus*

Family: Fabaceae or Leguminosae  
Comments: Local endemic. Populations small, mostly on Navajo bedrock covered by thin blowing dunes, threatened by ATV recreation. Report from Zion National Park is probably based on an erroneous label. Trend data needed.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Astragalus welshii*

Synonyms: Included in *Astragalus loanus* by some authors  
Family: Fabaceae or Leguminosae  
Comments: Local endemic. About 20 occurrences scattered across a limited area in central Utah (centered on the Loa area). Restricted to igneous gravels in sagebrush, aspen, and pinyon-juniper communities. Better data needed on potential threats and trends.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Trifolium friscanum*

Synonym: *Trifolium andersonii* var. *friscanum*  
Family: Fabaceae or Leguminosae  
Comments: Local endemic. Edaphic endemic of volcanic gravel and limestone in mountains in the Great Basin of western Utah. Some populations threatened by limestone mining. Designated as a Candidate for potential listing under the Endangered Species Act, but determined as “warranted but precluded” for listing in 2011.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Quercus gambelii* var. *bonina*

Family: Fagaceae  
Comments: Local endemic. Known only from Goodhope Bay area of Lake Powell and recognized by significantly larger acorns and more rapid and arborescent growth form than typical var. *gambelii*. Taxon not recognized by FNA. Habitat specificity ranked as O, but may be restricted to alluvium over Chinle clays. Trends poorly known. Good candidate for phylogeographic research.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Corydalis caseana* ssp. *brachycarpa*

Family: Fumariaceae or Papaveraceae  
Comments: Local endemic. Subspecies *brachycarpa* is restricted to aspen, spruce-fir, and montane shrub communities in the mountains of northern Utah. Threats are high from habitat destruction and development. Intrinsic rarity scored as O, but data needed on pollination biology and fecundity.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Frasera gypsicola*

Synonym: *Swertia gypsicola*  
Family: Gentianaceae  
Comments: Local Endemic. A road bisects the single Utah occurrence. The main populations are in Nevada in Nye County. Although slightly disjunct in Utah, the overall global range is small enough to be considered a local endemic.  
Scored By/Date: J. Alexander/2014; W. Fertig/2016  
Revisions: Scientific name changed. Moved from Watch to High Priority

*Jamesia americana* var. *macrocalyx*

Family: Hydrangeaceae or Saxifragaceae  
Comments: Local endemic. Only 14 specimens at BRY have been collected. It has been found in the Deep Creek Range and in the Wasatch Range in Juab, Salt Lake, Utah, and Wasatch Counties. Habitat Specificity scored as “1” due to its status as a rock cliff and crevice species according to A Utah Flora (“Mountain brush and spruce-fir communities, mostly on cliffs and other rocky places”). At least in the Deep Creek Range, this is one of several taxa that will be threatened by the proposed introduction of naturalized mountain goats by the State of Utah. Climate change is also a threat. Droughts and rapid snowmelt due to wind-blown sediments are melting snowpack earlier than normal in our region. Although the climate threats alone do not warrant changes, threats will be upgraded to “1” if the introductions proceed. Trends scored as “unknown”.  
Scored By/Date: J. Alexander/2015

*Phacelia argylensis*

Family: Hydrophyllaceae or Boraginaceae  
Comments: Local endemic. Limited to Green River Shale in Argyle Canyon area of West Tavaputs Plateau, a site that is a hotbed of local endemism. Newly described in 2003. Found mostly on private land –where new homes are being constructed. Trends not known.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Phacelia cephalotes*

Family: Hydrophyllaceae or Boraginaceae  
Comments: Regional endemic. Chinle endemic, population size fluctuates widely year to year but individual colonies are usually small in area. Total numbers probably relatively low for an annual. Threatened by disturbance of Chinle sites, off-road recreation, competition from exotic annuals in wet years. Some populations protected in Zion NP.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Phacelia cronquistiana*

Family: Hydrophyllaceae or Boraginaceae  
Comments: Regional endemic. Restricted to S UT and AZ Strip; Populations small, limited to gypsum-rich Carmel Formation. Annual with variable population size depending on precipitation. Threats from ATV recreation.  
Scored By/Date: UNPS Rare Plant Comm./2008

UNPS High Priority Species List: Ranking Comments

*Phacelia demissa* var. *heterotricha*

Family: Hydrophyllaceae or Boraginaceae  
Comments: Local endemic. The single voucher for the Tushar Mountains in Piute County (*Taye et al. 3104*, 14 August 1984, BRY, UTC) is only determined to species, but only var. *heterotricha* has been found in Piute County according to A. Utah Flora. It is not known why this taxon is not listed in Taye's 1995 checklist titled Alpine Vascular Flora of the Tushar Mountains, Utah (*Great Basin Naturalist* 55: 225-236). The current determination on the BRY specimen is not known. A duplicate of this collection at UTC is on SEINet. It is possible this voucher is misidentified.  
Scored By/Date: J. Alexander/2014

*Phacelia demissa* var. *minor*

Family: Hydrophyllaceae or Boraginaceae  
Comments: Local endemic. Known from Morrison, Duchesne River, and Mancos formations in desert shrub communities. Restricted to Uinta Basin. Populations locally abundant, but trends not known.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Phacelia indecora*

Family: Hydrophyllaceae or Boraginaceae  
Comments: Local endemic. Threats to hanging garden sites along San Juan River higher than previously suspected, some loss of habitat: changed from Watch to High  
Scored By/Date: UNPS Rare Plant Comm./2008

*Phacelia pulchella* var. *atwoodii*

Family: Hydrophyllaceae or Boraginaceae  
Comments: Local endemic. Small range, gypsiferous Moenkopi endemic, populations large in wet years, absent in dry years, some threats from trampling, ATV recreation, mining.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Phacelia pulchella* var. *gooddingii*

Family: Hydrophyllaceae or Boraginaceae  
Comments: Regional endemic. Known from a single collection in the Harrisburg Formation in Washington Co, Utah (also in adjacent Arizona, Nevada, and California). Trend data needed. Threats high from recreation, mining, and urban sprawl.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Phacelia sabulorum*

Synonym: *Phacelia pulchella* var. *sabulorum*  
Family: Hydrophyllaceae or Boraginaceae  
Comments: Local endemic. Populations small, abundant in wet years, limited to Tropic Shale and Straight Cliffs Formations, some threat from weeds, ATV recreation.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Mentzelia shultziorum*

Family: Loasaceae  
Comments: Local endemic. Found in Chinle, Moenkopi, Cutler, and Paradox soils in limited area NE of Moab. Trend data needed.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Petalonyx parryi*

Family: Loasaceae  
Comments: Regional Endemic. Uncommon in gypsum outcrops in the vicinity of St. George. Trend considered downward due to impacts from current and future construction, recreation, and grazing disturbance in the area. **Type locality is “within a stone’s throw of the great Mormon temple” in St. George, a site that is no longer suitable habitat.**  
Scored By/Date: UNPS Rare Plant Comm./2008

*Sphaeralcea fumariensis*

Synonym: *Sphaeralcea grossulariifolia* var. *fumariensis*  
Family: Malvaceae  
Comments: Local endemic. Populations often small, habitat mostly clinker (coal seams that burned below ground) associated with the Straight Cliffs and Dakota formations. Some sites impacted by road construction, though most habitat is very remote on the Kaiparowits Plateau in Grand Staircase-Escalante NM. Trends not known.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Sphaeralcea janeae*

Family: Malvaceae  
Comments: Local endemic. Limited to the Moenkopi and Cutler formations, especially in the White Rim area in Canyonlands National Monument and vicinity (restricted to SE Utah). Threats and trends not well understood.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Sphaeralcea psoraloides*

Family: Malvaceae  
Comments: Local endemic. Population size appears to be cyclical depending on weather. Found on variety of saline and gypsiferous formations in EC Utah around Hanksville and vicinity. Threats and trends not well known.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Camissonia exilis*

Synonym: *Chylismia exilis*  
Family: Onagraceae  
Comments: Local endemic. Populations small, numbers fluctuate annually, restricted to gypsum rich Moenkopi Formation, threatened by ATV recreation. Also uncommon in northern Arizona.  
Scored By/Date: UNPS Rare Plant Comm./2008

UNPS High Priority Species List: Ranking Comments

*Oenothera caespitosa* var. *stellae*

Family: Onagraceae

Comments: Local endemic. Few populations, on Claron, Carmel, and Arapien shale, some populations threatened by ATV recreation. Trends not known. Named by Stan Welsh for his wife.

Scored By/Date: UNPS Rare Plant Comm./2008

*Oenothera murdockii*

Family: Onagraceae

Comments: Local endemic. Few populations, restricted to Chinle Formation, odd growth form, populations can be very small, even in "good" years, impacted by ATV recreation.

Scored By/Date: UNPS Rare Plant Comm./2008

*Botrychium lineare*

Family: Ophioglossaceae

Comments: Sparse. Former candidate for listing under ESA (dropped in 2007). Not recognized in 2008 edition of A Utah Flora. Only known population in Utah is based on an historical collection by Garrett from Big Cottonwood Canyon outside Salt Lake City that has not been relocated.

Scored By/Date: UNPS Rare Plant Comm./2008

*Cypripedium calceolus* var. *parviflorum*

Synonyms: *Cypripedium pubescens*

Family: Orchidaceae

Comments: Disjunct. The master list was scored differently than the High list for this taxon, without adequate documentation of who did the rescoring. The intrinsic rarity was scored as both "1" and "unknown" without any support in the comments. The value of "unknown" is retained in herein. It is assumed that the comment "many extirpated pops" was a justification for the scoring Trends for this taxon as "1". The published distributions lean toward this species being a slight disjunct from the main body of the western populations in the Rocky Mountains. Threats include disturbance from the grazing-related impacts of cattle and naturalized mountain goats. Climate change is also a threat. These are the primary reasons for the upgrade of the threats to this species to a "1". Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys. It is a high priority to monitor these alpine endemics that may be impacted by naturalized animals introduced by the State of Utah.

Scored By/Date: J. Alexander/2014

*Spiranthes diluvialis*

Synonyms: *Spiranthes romanzoffiana* var. *diluvialis*

Family: Orchidaceae

Comments: Sparse. Listed as Threatened under ESA. May be locally abundant, though there is a correlation between population size and survey effort. Known from at least 28 major populations in Utah and an estimated 48,000 individuals in 2005. Restricted to early seral riparian habitats, where it can be threatened by vegetation succession, water development, urban sprawl, and competition from exotic plants. Life history is unusual with a period of prolonged dormancy complicating efforts to census or monitor populations. Some populations have probably been extirpated.

Scored By/Date: Fertig/2011

*Leymus simplex*

Synonym: *Elymus simplex*

Family: Poaceae

Comments: Regional endemic. Very rare in WY, (2 vars rec) prob not in CO, 1 coll in UT - threats from mineral dev, weeds, grazing- This is one that really slips through the cracks [Fertig 2008]

Only 1 specimen at BRY has been collected. It has been along the Green River (Daggett County) in Utah. A Utah Flora does not list the single voucher. This taxon's primary range is in Wyoming. The determination of the voucher at BRY needs to be confirmed. Habitat Specificity scored as "1" since it is restricted to riparian or sandy habitats sensu FNA ("meadows and drifting sand"). Intrinsic Rarity scored a "0" from "unknown". There is no indication that this or most of the other *Elymus* species have a trait that fits this category. Threats are scored as "1" since habitat modification and disturbance from the grazing-related impacts of cattle are threats to this species. Trends scored as "unknown" due to uncertainty of the magnitude and types of disturbance on extant populations and the lack of population-level surveys. These changes do not affect the ranking of this taxon.

Scored By/Date: J. Alexander/2014

Revisions: Scientific name changed.

*Aliciella latifolia* ssp. *imperialis*

Synonyms: *Gilia imperialis*, *G. latifolia* var. *imperialis*

Family: Polemoniaceae

Comments: Local endemic. Known from south-central Utah, especially near the Colorado River and tributaries in desert shrub communities and barren steep rocky slopes. Populations tend to have few individuals. Threats and trends poorly known.

Scored By/Date: UNPS Rare Plant Comm./2008

Revisions: Scientific name changed.

## UNPS High Priority Species List: Ranking Comments

*Aliciella tenuis*

Synonyms: *Gilia tenuis*

Family: Polemoniaceae

Comments: Local endemic. Small populations, restricted to desert shrub communities in the San Rafael Swell/Capitol Reef area. Trends and threats need to be determined.

Scored By/Date: UNPS Rare Plant Comm./2008

Revisions: Scientific name changed.

*Ipomopsis congesta* var. *ochroleuca*

Family: Polemoniaceae

Comments: Local endemic. Restricted to Arapien Shale in the Sevier Valley of central Utah. Abundance and trends not known. Numerous endemics in this area, all potentially threatened by gypsum mining or off road recreation and habitat destruction.

Scored By/Date: UNPS Rare Plant Comm./2008

Revisions: Scientific name changed.

*Ipomopsis spicata* ssp. *tridactyla*

Synonyms: *Ipomopsis tridactyla*, *Gilia tridactyla*

Family: Polemoniaceae

Comments: Local endemic. Populations moderate to small in Cedar Breaks, habitat specialized, threats low [UNPS 2008]. 16 specimens at BRY have been collected. It has been found in Iron and Piute Counties. At least in the Tushar Mountains, naturalized mountain goats are a threat. Climate change is also a threat. Droughts and rapid snowmelt due to wind-blown sediments are melting snowpack earlier than normal in our region. This is the primary reason for the scoring of the threats to this species to a "1". The threats are low for the populations protected within Cedar Breaks N.M., however. It is not known if these threats are consistent in the remainder of its range in Utah. Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys.

Scored By/Date: J. Alexander/2015

Revisions: Moved from Watch list to High priority

*Phlox hoodii* var. *madsenii*

Family: Polemoniaceae

Comments: Local endemic. Newly described in 2003, on volcanic sites on Awapa Plateau. Few populations known, abundance low. Threats and trends poorly known.

Scored By/Date: UNPS Rare Plant Comm./2008

*Eriogonum ammophilum*

Synonyms: *Eriogonum nummularia* var. *ammophilum*

Family: Polygonaceae

Comments: Local endemic. Restricted to sand dunes and stabilized sand. Only known from a few populations in Millard County. Threats and trends poorly known.

Scored By/Date: UNPS Rare Plant Comm./2008

Revisions: Scientific name changed.

*Eriogonum artificis*

Synonyms: Included in *Eriogonum spathulatum* var. *kayeeae* by some authors

Family: Polygonaceae

Comments: Local endemic. Since A Utah Flora recognizes this taxon as a synonym, it is difficult to determine how many specimens at BRY have been collected. It has been found only in at the type locality near Frisco in Beaver County. People surveying for this species will undoubtedly have a difficult time determining this taxon from *E. spathulatum*: "Care must be taken not to confuse Kaye's wild buckwheat with glabrous forms of *E. spathulatum* that occur nearby"). Additionally, Kaye's buckwheat is also the common name ascribed to Welsh's *E. spathulatum* var. *kayeeae*, the glabrous form mentioned by Reveal that is not recognized taxonomically in FNA. Habitat Specificity scored as "1" since this taxon appears to be an edaphic endemic restricted to sandy soils on volcanic slopes according to FNA ("Sandy to somewhat gravelly, volcanic slopes"). Disturbance related to grazing activities may be a threat to this species, however it is scored as "unknown" due to uncertainty. Trends are scored as "unknown" due to uncertainty of the magnitude and types of disturbance on extant populations and the lack of population-level surveys.

Scored By/Date: J. Alexander/2015

Revisions: Moved from Need Data to High Priority

*Eriogonum brevicaule* var. *caelitum*

Synonyms: Included in *Eriogonum brevicaule* var. *laxifolium* by some authors

Family: Polygonaceae

Comments: Local endemic. Since A Utah Flora recognizes this taxon as a synonym, it is difficult to determine how many specimens at BRY have been collected. It has been found only in Sanpete and Sevier County in Utah. Habitat Specificity scored as "1" since this taxon appears to be an edaphic endemic restricted to montane limestones according to FNA ("Gravelly to rocky, mostly limestone soil, high-elevation sagebrush communities, subalpine conifer woodlands... restricted to the limestone Flagstaff Formation on the high mesa tops"). Disturbance related to grazing activities may be a threat to this species, however it is scored as "unknown" due to uncertainty. Trends are scored as "unknown" due to uncertainty of the magnitude and types of disturbance on extant populations and the lack of population-level surveys. This taxon is ranked on the "High" list.

Scored By/Date: J. Alexander/2015

Revisions: New to High Priority list

*Eriogonum brevicaule* var. *cottamii*

Synonyms: Included in *Eriogonum brevicaule* var. *laxifolium* by some authors

Family: Polygonaceae

Comments: Local endemic. Since A Utah Flora recognizes this taxon as a synonym, it is difficult to determine how many specimens at BRY have been collected. It has been found only in Juab, Millard, Salt Lake, Utah, and



UNPS High Priority Species List: Ranking Comments

Tooele counties in Utah. Habitat Specificity scored as "1" since this taxon appears to be an edaphic endemic restricted to montane limestones according to FNA ("Gravelly limestone slopes and clay hills, sagebrush communities, oak and pinyon-juniper woodlands... infrequent in the desert ranges west of the Wasatch Range"). Disturbance related to grazing activities may be a threat to this species, however it is scored as "unknown" due to uncertainty. Trends are scored as "unknown" due to uncertainty of the magnitude and types of disturbance on extant populations and the lack of population-level surveys.

Scored By/Date: J. Alexander/2015

Revisions: New to High Priority list

*Eriogonum brevicaule* var. *huberi*

Family: Polygonaceae

Comments: Local endemic. Newly described in 2003. Restricted to shale barrens of Uinta Formation in Duchesne County. Threats and trends poorly known.

Scored By/Date: UNPS Rare Plant Comm./2008

*Eriogonum brevicaule* var. *nanum*

Family: Polygonaceae

Comments: Local endemic. A Utah Flora indicated a much broader range in Utah for this taxon than Reveal in FNA. Reveal in FNA restricts this taxon to Box Elder and Weber Counties, which is the range used herein. A Utah Flora also restricts this taxon to Utah. Range changes from a "RegEnd" to a "LocEnd". It is not known why this taxon was scored as a regional endemic originally. Habitat Specificity re-scored as "1" since this taxon appears to be an edaphic endemic restricted to montane limestones according to FNA ("Gravelly to rocky, mostly limestone slopes and ridge tops, high-elevation sagebrush communities, subalpine conifer woodlands"). Disturbance related to grazing activities may be a threat to this species, however it is re-scored from a "0" to "unknown" due to uncertainty. Trends are scored as "unknown" due to uncertainty of the magnitude and types of disturbance on extant populations and the lack of population-level surveys.

Scored By/Date: J. Alexander/2015

Revisions: Moved from Medium to High priority list.

*Eriogonum brevicaule* var. *promiscuum*

Family: Polygonaceae

Comments: Local endemic. Restricted to the Green River shale and Uinta Formation in the Mt. Bartles area of Carbon County. Threats and trends poorly known.

Scored By/Date: UNPS Rare Plant Comm./2008

*Eriogonum corymbosum* var. *aureum*

Synonyms: *Eriogonum corymbosum* var. *glutinosum*

Family: Polygonaceae

Comments: Local endemic. The biggest problem with this group is the confusion of what actually is var. *nilesii*, var. *aureum*, and var. *glutinosum* and the lack of intensive, population-level, statistical morphological studies. Welsh's lumping of everything Reveal does into other taxa has not aided in the ability to distinguish between these taxa and others in *Eriogonum*. Washington County populations with the var. *aureum* genetic signature from Mark Ellis's study have been considered var. *glutinosum* even by Reveal, with var. *aureum* being only a small population in the vicinity of Shivwits. Clearly the genetic data presented by Ellis' study shows var. *glutinosum* is restricted to southeastern Utah and is not found west of the Hurricane Cliffs. Even material east of the Hurricane cliffs is introgressed with *Eriogonum thompsoniae* and not definitively var. *glutinosum*. I eagerly await a molecular paper on this, because I know there were more interesting details I am not remembering. In any case, there the morphologica data is too ambiguous and poor in quality to recognize all of the Washington County material as var. *aureum* and to be able to write a key to distinguish it from the more eastern var. *glutinosum* and Nevada's var. *nilesii*. With the inclusion of most of western Washington County and northwestern Arizona populations into var. *aureum*, Reveals morphological key does not work. Effectively, until the population-level morphology is sorted out, we are currently in the realm of a geographic-ID-based-on-genetic-data situation. Reveal's key will not work as currently written to differentiate Mark Ellis' population-level genetic delimitation of var. *aureum* from var. *nilesii* and var. *glutinosum*. Unfortunately, since Reveal passed away in January of 2015, he never had a chance to comment on any future published research in this group. Number of Individuals: Although I have not surveyed for this taxon exclusively, I have researched other taxa in these areas which are sympatric with this variety on both sides of the border in Washington County, especially the sites that are being heavily impacted by development south of St. George, Washington, and Hurricane. I have included this taxon as an associate at many sites and have noticed that although this variety has a low number of populations, the populations are geographically large and have a high number of individuals at each site. It fits the pattern of a locally abundant neoendemic taxon. I recommend changing this from an unknown to a 0. Intrinsic Rarity: I really do not think we can safely place a 0 in this category. We really have no clue what specialist pollinators or other factors that are influencing populations of this variety to make a judgment of 0. As a whole, perhaps *E. corymbosum* has little or no factors that make it intrinsically rare, but I would bet that these local restricted, rare variants would have some unique trait to them that differentiates them from *E. corymbosum* as a whole. For this reason I suggest changing this from a 0 to unknown. I might even suggest the fact that there are

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more southerly populations that for the nexus populations that link var. *nilesii* to var. *aureum* might be classified as an intrinsically rare characteristic. Perhaps, these populations are a pipeline of that promotes gene exchange via the Virgin River corridor. We really do not have any idea what would happen if these intermediate populations were lost. They could be a genetically diverse population crucial for the long-term survival of these two taxa. Threats: I think with the development being planned in St. George including the addition of 40,000 additional people living in the southern parkway corridor over the next decade or so, we have enough data to show a high threat for population disturbance and impacts in the future. This has been changed from an "unknown" to a "1". Trend: The trend has already on its way down with regards to population loss in this area and with the subdivisions and ATV use expanding southward, more impacts will be in store in the future. This has been changed from an "unknown" to a "1".  
Scored By/Date: J. Alexander/2015  
Revisions: Moved from Watch list to High Priority

*Eriogonum corymbosum* var. *heilii*

Family: Polygonaceae

Comments: Local endemic. Newly described in FNA in 2004 from Thousand Lake Mountain-Capitol Reef. Some sites being impacted by ATVs. Only known from Carmel Formation.

Scored By/Date: UNPS Rare Plant Comm./2008

*Eriogonum cronquistii*

Synonyms: *Eriogonum corymbosum* var. *cronquistii*

Family: Polygonaceae

Comments: Local endemic, restricted to Henry Mountains. Few populations, abundance low, threats and trends poorly understood.

Scored By/Date: UNPS Rare Plant Comm./2008

Revisions: Scientific name changed

*Eriogonum domitum*

Synonyms: *Eriogonum ovalifolium* var. *nivale*

Family: Polygonaceae

Comments: Local endemic. Robert Fitts surveyed 368 plants at 2 sites in House Range in 2012; score changed from unk to 1 for # indiv; habitat specificity changed to 1; summary rank changed from need data to High

Scored By/Date: UNPS Rare Plant Comm./2012

Revisions: Moved from Need Data to High Priority list

*Eriogonum lancifolium*

Synonyms: Included in *Eriogonum corymbosum* var. *corymbosum* by some authors, *E. corymbosum* var. *davidsei*

Family: Polygonaceae

Comments: Local endemic. Since A Utah Flora recognizes this taxon as a synonym, it is difficult to determine how many specimens at BRY have been collected. It has been found only in Carbon and Emery counties in Utah. Habitat Specificity scored as "1" since this taxon

appears to be an edaphic endemic restricted to "Mancos Shale hills and flats" according to FNA ("Heavy clay flats and slopes, mixed grassland and saltbush communities, juniper woodlands"). Disturbance related to grazing activities may be a threat to this species, however it is scored as "unknown" due to uncertainty. Trends are scored as "unknown" due to uncertainty of the magnitude and types of disturbance on extant populations and the lack of population-level surveys.

Scored By/Date: J. Alexander/2015

Revisions: New to High Priority list

*Eriogonum microthecum* var. *phoeniceum*

Synonym: *Eriogonum phoeniceum*

Family: Polygonaceae

Comments: Local endemic. Since A Utah Flora recognizes this taxon as a synonym, it is difficult to determine how many specimens at BRY have been collected. It has been found only in Juab and Millard counties in Utah. Habitat Specificity scored as "1" since this taxon appears to be an edaphic endemic restricted to tuff outcrops according to FNA ("Tuffaceous ash outcrops [in] sagebrush communities, pinyon-juniper woodlands"). Disturbance related to grazing activities may be a threat to this species, however it is scored as "unknown" due to uncertainty. Trends are scored as "unknown" due to uncertainty of the magnitude and types of disturbance on extant populations and the lack of population-level surveys.

Scored By/Date: J. Alexander/2015

Revisions: New to High Priority list

*Eriogonum racemosum* "var. *nobilis*"

Synonyms: Included in *Eriogonum zionis* var. *zionis* by some authors

Family: Polygonaceae

Comments: Local endemic. May be a yellow-flowered phase of *E. racemosum* var. *zionis* (*E. zionis*), but taxonomic combination placing this variety in *E. zionis* has not been made. Restricted to San Juan County, Utah, where disjunct from populations of var. *zionis*.

Scored By/Date: UNPS Rare Plant Comm./2008

*Eriogonum smithii*

Synonyms: *Eriogonum corymbosum* var. *smithii*

Family: Polygonaceae

Comments: Local endemic. Found on sand dunes associated with the Entrada Formation at 4-5 main sites in the San Rafael and Hanksville areas. May be of hybrid origin between *Eriogonum corymbosum* and *E. leptocladon* according to Welsh et al. (2008).

Scored By/Date: UNPS Rare Plant Comm./2008

Revisions: Scientific name changed

*Eriogonum soredium*

Family: Polygonaceae

Comments: Local endemic. Restricted to white limestone outcrops in the San Francisco Mountains of Beaver County, Utah. Threatened by potential mining

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(several historic mines exist in immediate area). Designated as a Candidate for potential listing under the **Endangered Species Act, but determined as "warranted but precluded" for listing in 2011.**

Scored By/Date: UNPS Rare Plant Comm./2014

*Phemeranthus thompsonii*

Synonyms: *Talinum thompsonii*

Family: Portulacaceae or Montiaceae

Comments: Local endemic. Restricted to Cedar Mountain Formation in small area of central Utah. Taxonomic questions - may also occur in Arizona.

Scored By/Date: UNPS Rare Plant Comm./2008

Revisions: Scientific name changed

*Dodecatheon dentatum* var. *utahense*

Family: Primulaceae

Comments: Local endemic. Several new populations have been discovered (10 new sites since 2007), including in Little Cottonwood Canyon. Populations usually with less than 1000 plants, some sites impacted by hikers, but most secure due to rugged habitat, trends have been monitored for 5 years, stable. Propagated at Red Butte and successfully restored.

Scored By/Date: UNPS Rare Plant Comm./2008

*Primula domensis*

Synonyms: *Primula cusickiana* var. *domensis*

Family: Primulaceae

Comments: Local endemic. Only found in limestone crevices in the House Range.

Scored By/Date: UNPS Rare Plant Comm./2008

*Primula maguirei*

Synonyms: *Primula cusickiana* var. *maguirei*

Family: Primulaceae

Comments: Local endemic. Listed as Threatened under ESA. Threats poorly known, but may be low. Trend data needed.

Scored By/Date: UNPS Rare Plant Comm./2008

*Aquilegia holmgrenii*

Synonyms: Included in *A. elegantula* by some authors

Family: Ranunculaceae

Comments: Local endemic. Newly described taxon in 2008, split from *A. elegantula*, taxonomic questions in past, more information needed, recently relocated in Grand Staircase Escalante National Monument. Uncommon in slickrock sandstone canyons. Threats not well documented, but might be low. Trends not known.

Scored By/Date: UNPS Rare Plant Comm./2008

*Aquilegia rubicunda*

Synonyms: *Aquilegia flavescens* var. *rubicunda*

Family: Ranunculaceae

Comments: Local endemic. Garfield County material split out as new species, *A. holmgrenii*, in 2008. Taxonomy complicated (lumped in *A. micrantha* by some), populations small, habitat specialized, threats and trends not documented. Usually on Mesa Verde Sandstone.

Scored By/Date: UNPS Rare Plant Comm./2008

*Aquilegia scopulorum* var. *goodrichii*

Synonyms:

Family: Ranunculaceae

Comments: Local endemic. Green River shale endemic of Argyle Canyon. Disjunct from var. *scopulorum* and differing in having white rather than blue flowers and in habitat preferences.

Scored By/Date: UNPS Rare Plant Comm./2008

*Ivesia shockleyi* var. *ostleri*

Family: Rosaceae

Comments: Local endemic. On quartz outcrop in pine forests in Needle and Wah Wah ranges. Populations few and small. Threats scored as 0 but may be low. Trend not known.

Scored By/Date: UNPS Rare Plant Comm./2008

*Potentilla paucijuga*

Synonyms: *Potentilla pensylvanica* var. *paucijuga*

Family: Rosaceae

Comments: Local endemic. Since A Utah Flora 5th ed. recognizes this taxon as a synonym, it is difficult to determine how many specimens at BRY have been collected. The 5th edition treatment of *P. rubricaulis* is an agglomeration of high elevation forms that are considered 4 different taxa in FNA (*P. saximontana*, *P. hookeriana*, *P. paucijuga*, *P. rubricaulis*). In the first edition of A Utah Flora, these forms were split into 2 different taxa, much closer to the FNA treatment. Of all of these, *P. paucijuga* was known from 3 specimens in the 1st edition of A Utah Flora (however the range was reported from 6 counties) In FNA, *P. rubricaulis* is restricted to northern Canada and Alaska and does not occur in the western U.S; and *P. paucijuga* is restricted to the La Sal Mountains in Grand and San Juan Counties. The bulk of the material called *P. rubricaulis* in A Utah Flora is *P. hookeriana* in FNA. *Sensu* FNA, it is a "is a distinctive species endemic to the La Sal Mountains in Grand and San Juan counties" and plants outside of this range in Utah and Colorado are now delimited as *P. pensylvanica* and *P. jepsonii*. Habitat Specificity scored as "1" since it is alpine tundra species according to FNA ("Alpine tundra, patches of turf in talus"). Threats to this taxon include grazing-related impacts from naturalized mountain goats. Goats were introduced by the State of Utah for trophy hunters. Climate change is also a threat. Droughts and rapid snowmelt due to wind-blown sediments are melting snowpack earlier than normal in our

## UNPS High Priority Species List: Ranking Comments

region. These are the primary reasons for the upgrade of the threats to this species to a "1". Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys. It is a high priority to monitor these alpine endemics that may be impacted by naturalized animals introduced by the State of Utah.  
Scored By/Date: J. Alexander/2015  
Revisions: New to High priority list

*Castilleja aquariensis*

Family: Scrophulariaceae or Orobanchaceae  
Comments: Local endemic. Former candidate for listing under ESA. Populations oscillate in size, plants appear to be long-lived with prolonged dormancy, not occupying all suitable habitat. Largest populations occur in old Forest Service range enclosures where they are protected from sheep grazing. Trends currently appear stable.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Castilleja parvula* var. *parvula*

Synonyms: *Castilleja parvula*  
Family: Scrophulariaceae or Orobanchaceae  
Comments: Local endemic. 31 specimens at BRY have been collected. It has been found in the Tushar Mountains in Piute and Beaver Counties with an outlier in Garfield County. Habitat Specificity scored as "1" due to its status as an igneous rock crevice species according to A Utah Flora ("Alpine ridgetops and talus slopes above timberline on tertiary igneous sandy gravel"). Threats to this taxon include grazing-related impacts from naturalized mountain goats. Goats were introduced by the State of Utah for trophy hunters. Climate change is also a threat. Droughts and rapid snowmelt due to wind-blown sediments are melting snowpack earlier than normal in our region. This is the primary reason for the upgrade of the threats to this species to a "1". Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys. It is a high priority to monitor these alpine endemics that may be impacted by naturalized animals introduced by the State of Utah.  
Scored By/Date: J. Alexander/2015  
Revisions: Moved from Watch list to High Priority

*Castilleja parvula* var. *revealii*

Synonyms: *Castilleja revealii*  
Family: Scrophulariaceae or Orobanchaceae  
Comments: Local endemic. Claron endemic, populations typically very small and with few individuals, threats seem low, many populations protected in Bryce Canyon NP and Cedar Breaks NM. Trends not known.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Penstemon duchesnensis*

Synonym: *Penstemon dolius* var. *duchesnensis*  
Family: Scrophulariaceae or Plantaginaceae  
Comments: Local Endemic. As far as known, this taxon is present only on private and tribal lands. Unlike *P. flowersii*, there are no known populations on federal lands. New drilling development is more common within this taxon's range and is impacting the integrity of these populations. The exact number of populations and individuals that have been impacted from oil & gas development is not known. Trends re-scored a "1" from "unknown" in the original UNPS ranking prior to 2008  
Scored By/Date: UNPS Rare Plant Comm./2015  
Revisions: Moved from Watch List to High Priority

*Penstemon goodrichii*

Family: Scrophulariaceae or Plantaginaceae  
Comments: Local endemic. Restricted to the Dueschne River Formation in the Uinta Basin, where potentially threatened by mineral exploration and development. Trends not well known.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Penstemon x jonesii*

Family: Scrophulariaceae or Plantaginaceae  
Comments: Local endemic. Hybrid of *Penstemon laevis* x *P. eatonii* var. *undosus*. Occurs sporadically in Zion NP. Found on Navajo sandstone slickrock primarily. Potential threats from collectors need to be assessed. May not be a true taxon but just a series of independent hybridization events where the parents co-occur.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Penstemon pinorum*

Family: Scrophulariaceae or Plantaginaceae  
Comments: Local endemic. Found mostly on Claron limestone and alluvial soils. Threatened by wildfire and disturbance from tree and shrub-thinning activities in its limited range west of Cedar City.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Penstemon tidestromii*

Family: Scrophulariaceae or Plantaginaceae  
Comments: Local endemic. Found in sagebrush and pinyon-juniper sites in limited area of central Utah at the south end of the Wasatch Plateau—habitat may not be specific (currently scored 1). Includes *P. leptanthus*, known only from the type collection of Ward in 1875 collected within the known range of *P. tidestromii* and differing in some floral measurements.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Penstemon wardii*

Family: Scrophulariaceae or Plantaginaceae  
Comments: Local endemic. Restricted to Arapien Shale in central Utah. These sites are threatened by gypsum mining, oil and gas development, and off-road recreation. Trends not well known.  
Scored By/Date: UNPS Rare Plant Comm./2008

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*Viola beckwithii*

Family: Violaceae

Comments: Peripheral. Found on alluvial benches in mountain brush and grassland communities in the foothills of the Wasatch Range within the Salt Lake City metropolitan area. Much known and potential habitat has been lost to urban development. Low reproductive output, may have pollinator or fecundity problems (intrinsic rarity scored 1). [UNPS 2008]; Blake Wellard - resurvey ca 600 at visited sites. More in Tremonton area?

Scored By/Date: UNPS Rare Plant Comm./2008

Revisions: Weber County added to range

## Appendix 3. UNPS Rare Plant List: Watch List

The following table lists 419 species on the Watch List for potential conservation attention in Utah based on the Wyoming protocol ranking system. Species are listed alphabetically by family and scientific name, with synonyms in parentheses. See text for an explanation of the seven ranking criteria and scoring methods used to derive the minimum and potential scores. County codes are explained in Figure 1. Legal Status: Bureau of Land Management (BLM) and US Forest Service (USFS) Sensitive = S; US Fish and Wildlife Service (USFWS) Candidate = C, Endangered = E, Proposed = P; Threatened = T.

Family	Species	Common Name	Range	# Pops	# Indiv	Hab Spec	Intrin Rar	Threat	Trend	Min Score	Pot Score	County Dist. & Legal Status
Adoxaceae	<i>Adoxa moschatellina</i>	Moschatel	1	1	1	1	0	U	1	5	6	Dch? Snj, Sum?, Uin?
Agavaceae (Asparagaceae)	<i>Agave utahensis</i> var. <i>utahensis</i>	Utah century plant	1	1	1	1	0	1	U	5	6	Wsh
	<i>Nolina microcarpa</i>	Beargrass	1	1	1	0	0	1	1	5	5	Wsh
	<i>Yucca angustissima</i> var. <i>kanabensis</i>	Kanab yucca	1	1	1	1	1	0	U	5	6	Kan, Wsh
	<i>Yucca brevifolia</i>	Joshua tree	1	1	1	0	U	1	1	5	6	Wsh
	<i>Yucca schidigera</i>	Splinter yucca	1	1	1	0	0	1	1	5	5	Wsh
	<i>Yucca utahensis</i>	Utah yucca	1	1	0	1	U	1	U	4	6	Irn, Wsh
Apiaceae (Umbelliferae)	<i>Angelica kingii</i>	Nevada angelica	1	1	0	U	1	U	1	4	6	Jub, Toe?
	<i>Angelica wheeleri</i>	Utah angelica	1	1	1	0	0	1	1	5	5	Cch, Jub, Piu, Slt, Sev, Uta; USFS:S
	<i>Cymopterus beckii</i>	Beck's spring-parsley	1	1	0	1	0	1	1	5	5	Kan, Snj, Way; BLM: S; USFS: S
	<i>Cymopterus evertii</i>	Evert's spring-parsley	1	1	1	1	0	U	U	4	6	Uin
	<i>Cymopterus glomeratus</i> var. <i>parvus</i>	Small spring-parsley	2	1	U	1	0	0	U	4	6	Mil, Toe
	<i>Cymopterus "higginsii"</i>	Higgins' spring-parsley	2	1	U	1	0	1	0	5	6	Kan
	<i>Cymopterus minimus</i>	Least spring-parsley	2	1	1	1	0	0	U	5	6	Grf, Irn, Kan; USFS: S
	<i>Hydrocotyle verticillata</i>	Water pennywort	1	1	1	1	0	1	U	5	6	Wsh
	<i>Lomatium graveolens</i> var. <i>clarkii</i>	Clark's lomatium	2	1	1	1	0	0	0	5	5	Wsh
	<i>Lomatium junceum</i>	Rush lomatium	2	1	1	0	0	U	U	4	6	Emr, Grf, Sev, Way
	<i>Musineon lineare</i>	Utah musineon	2	1	1	1	0	0	U	5	6	Box, Cch
	<i>Oreoxis trotteri</i>	Trotter's spring-parsley	2	1	1	1	0	0	U	5	6	Grn; BLM: S
	<i>Oxypolis fendleri</i>	Fendler's cowbane	1	1	U	1	0	1	U	4	6	Grn?, Snj, Sev

## Appendix 3. UNPS Rare Plant List: Watch List, continued

Family	Species	Common Name	Range	# Pops	# Indiv	Hab Spec	Intrin Rar	Threat	Trend	Min Score	Pot Score	County Dist. & Legal Status
Apiaceae (Umbelliferae)	<i>Podistera eastwoodiae</i>	Eastwood's podistera	1	1	U	1	0	1	U	4	6	Grn?, Snj
Asclepiadaceae (Apocynaceae)	<i>Asclepias cutleri</i>	Cutler's milkweed	1	1	1	1	0	1	U	5	6	Grn, Snj
	<i>Cynanchum utahense</i>	Swallow-wort	1	1	1	0	0	1	1	5	5	Wsh
Aspleniaceae	<i>Asplenium septentrionale</i>	Forked spleenwort	1	1	1	1	0	1	U	5	6	Dag, Grn, Snj, Uin, Wsh
	<i>Cystopteris bulbifera</i>	Bulblet bladder fern	1	1	1	1	0	U	U	4	6	Slt, Snj, Wsh
	<i>Gymnocarpium dryopteris</i>	Oak fern	1	1	1	1	0	U	U	4	6	Piu
	<i>Polystichum kruckebergii</i>	Krukeberg's holly-fern	1	1	1	1	0	U	U	4	6	Box
Asteraceae (Compositae)	<i>Antennaria pulcherrima</i> ssp. <i>pulcherrima</i>	Showy pussytoes	1	1	1	1	0	1	U	5	6	Dag, Dch, Grf, Sum
	<i>Arida parviflora</i>	Small-flower aster	1	1	U	1	0	1	U	4	6	Snj
	<i>Arnica lanceolata</i> ssp. <i>prima</i>	Streambank arnica	1	1	U	1	0	1	U	4	6	Dch
	<i>Artemisia campestris</i> var. <i>petiolata</i>	Petiolate wormwood	2	1	1	0	0	U	U	4	6	Dch; USFS: S
	<i>Artemisia nova</i> var. <i>duchesnicola</i>	Duchesne sagebrush	2	1	1	1	0	0	U	5	6	Uin
	<i>Baccharis sergilioides</i>	Squaw waterweed	1	1	U	1	0	1	U	4	6	Wsh
	<i>Baccharis viminea</i> var. <i>atwoodii</i>	Atwood's seep-willow	2	1	U	0	0	1	U	4	6	Emr, Grn, Snj
	<i>Bidens tenuisecta</i>	Slim-lobe beggarsticks	1	1	U	1	0	1	U	4	6	Grf
	<i>Cirsium barnebyi</i>	Barneby's thistle	1	1	U	1	0	1	U	4	6	Dch, Uin
	<i>Cirsium joannae</i>	Joanna's thistle	2	1	1	1	0	0	U	5	6	Kan, Wsh
	<i>Cirsium ownbeyi</i>	Ownbey's thistle	1	1	1	1	0	1	U	5	6	Dag, Uin
	<i>Cirsium scariosum</i> var. <i>thorneae</i>	Thorne's thistle	1	U	1	1	0	1	U	4	6	Bvr, Grf, Irn, Kan, Mil, Piu, Web
	<i>Crepis runcinata</i> ssp. <i>runcinata</i>	Meadow hawk-beard	1	1	1	1	0	1	U	5	6	Slt, Uta
	<i>Dicoria canescens</i>	Gray sandplant	1	1	1	1	0	1	U	5	6	Wsh
	<i>Enceliopsis argophylla</i>	Silverleaf enceliopsis	1	U	U	1	0	1	1	4	6	Wsh
	<i>Ericmeria cervina</i>	Antelope goldenbush	1	1	1	1	0	U	U	4	6	Bvr, Irn, Mil

## Appendix 3. UNPS Rare Plant List: Watch List, continued

Family	Species	Common Name	Range	# Pops	# Indiv	Hab Spec	Intrin Rar	Threat	Trend	Min Score	Pot Score	County Dist. & Legal Status
Asteraceae (Compositae)	<i>Ericameria nauseosa</i> var. <i>iridis</i>	Rainbow rabbit-brush	2	1	0	1	0	1	U	5	6	Snj, Sev
	<i>Ericameria nauseosa</i> var. <i>psilocarpa</i>	Huntington rabbit-brush	2	1	1	0	0	U	U	4	6	Crb, Dch, Emr, Sev, Was
	<i>Ericameria zionis</i>	Cedar Breaks goldenweed	2	1	1	1	0	0	U	5	6	Grf, Irn, Kan; BLM: S
	<i>Erigeron arenarioides</i>	Wasatch daisy	2	1	1	1	0	0	0	5	5	Box, Slr, Toe, Uta, Web
	<i>Erigeron canaani</i>	Canaan daisy	2	1	1	1	0	0	0	5	5	Kan, Wsh
	<i>Erigeron carringtoniae</i>	Carrington's daisy	2	1	1	1	0	0	U	5	6	Emr, Snp; USFS: S
	<i>Erigeron cronquistii</i>	Cronquist's daisy	2	1	1	1	0	0	U	5	6	Cch; BLM: S; USFS: S
	<i>Erigeron elatior</i>	Tall daisy	1	1	U	1	0	1	U	4	6	Grn, Snj
	<i>Erigeron garrettii</i>	Garrett's daisy	2	1	1	1	0	0	U	5	6	Slr, Uta, Was; USFS: S
	<i>Erigeron maguirei</i>	Maguire's daisy	2	1	1	1	0	0	0	5	5	Emr, Way; BLM: S;
	<i>Erigeron melanocephalus</i>	Black-head daisy	1	1	U	1	0	1	U	4	6	Grn, Snj
	<i>Erigeron radicans</i>	Taproot fleabane	1	1	U	1	0	1	U	4	6	Dch
	<i>Erigeron religiosus</i>	Religious daisy	2	0	1	1	0	1	0	5	5	Grf, Kan, Snj, Wsh
	<i>Erigeron sionis</i> var. <i>sionis</i>	Zion daisy	2	1	1	1	0	0	0	5	5	Grf, Irn, Kan, Wsh
	<i>Erigeron sionis</i> var. <i>trilobatus</i>	Three-lobed Zion daisy	2	1	1	1	0	0	0	5	5	Grf, Irn, Kan, Wsh
	<i>Erigeron untermannii</i>	Untermann's daisy	2	1	0	1	0	U	U	4	6	Dch; BLM: S; USFS: S
	<i>Erigeron ursinus</i> var. <i>meyerae</i>	Meyer's daisy	2	1	1	0	U	0	U	4	6	Wsh
	<i>Eurybia sibirica</i>	Siberian aster	1	1	1	1	0	1	U	5	6	Sum
	<i>Eutrochium maculatum</i> var. <i>bruneri</i>	Spotted Joe-Pye weed	1	1	U	1	0	1	1	5	6	Box, Cch, Dav, Kan, Slr, Uin, Uta, Web
	<i>Geraea canescens</i>	Desert sunflower	1	1	1	0	0	1	1	5	5	Wsh
<i>Gutierrezia pomariensis</i>	Orchard snake-weed	2	1	U	1	0	0	U	4	6	Dch, Uin	
<i>Helianthella parryi</i>	Parry's little sunflower	1	1	1	1	0	1	U	5	6	Grn, Snj	



## Appendix 3. UNPS Rare Plant List: Watch List, continued

Family	Species	Common Name	Range	# Pops	# Indiv	Hab Spec	Intrin Rar	Threat	Trend	Min Score	Pot Score	County Dist. & Legal Status
Asteraceae (Compositae)	<i>Herrickia kingii</i> var. <i>barnebyana</i>	Barneby's aster	2	1	1	1	0	0	U	5	6	Jub, Mil; USFS: S
	<i>Herrickia kingii</i> var. <i>kingii</i>	King's aster	2	1	1	1	0	0	U	5	6	Slt, Uta; USFS: S
	<i>Heterotheca jonesii</i>	Jones' golden-aster	2	1	1	1	0	0	0	5	5	Grf, Kan, Wsh; USFS: S
	<i>Hymenoxys helenioides</i>	Sneezeweed hymenoxys	1	1	1	0	1	U	U	4	6	Crb, Emr, Grf, Snp, Sev, Way
	<i>Hymenoxys lemmonii</i>	Alkali hymenoxys	1	1	1	1	0	U	U	4	6	Uin
	<i>Layia platyglossa</i>	Coastal tidytips	1	1	1	1	0	U	1	5	6	Snj
	<i>Lepidospartum latisquamum</i>	Nevada broom	1	1	U	1	0	1	U	4	6	Mil
	<i>Lygodesmia juncea</i>	Rush skeletonplant	1	1	U	0	1	1	U	4	6	Emr, Jub
	<i>Packera dimorphophylla</i> var. <i>intermedia</i>	La Sal groundsel	2	1	1	0	0	U	U	4	6	Dch, Grn, Snj, Snp, Sum
	<i>Packera hartiana</i>	Hart's groundsel	1	1	1	1	0	1	U	5	6	Emr, Grf, Kan
	<i>Packera wernerifolia</i> "var. <i>barkleyi</i> "	Barkley's groundsel	2	1	1	1	0	0	U	5	6	Grf, Kan
	<i>Pectis angustifolia</i> var. <i>angustifolia</i>	Narrowleaf pectis	1	1	U	1	0	1	U	4	6	Grf, Kan, Snj
	<i>Perityle emoryi</i>	Emory's rock-daisy	1	1	1	0	0	1	1	5	5	Wsh
	<i>Perityle specuicola</i>	Alcove rock-daisy	2	1	1	1	0	0	U	5	6	Grn, Snj; BLM: S
	<i>Petradoria pumila</i> var. <i>graminea</i>	Grassy rock goldenrod	1	1	1	1	0	U	U	4	6	Emr, Grf, Kan, Wsh
	<i>Peucephyllum schottii</i>	Pygmy-cedar	1	1	1	1	0	1	U	5	6	Wsh
	<i>Platyschkuhria integrifolia</i> var. <i>oblongifolia</i>	San Juan bahia	1	1	1	1	0	U	U	4	6	Snj
	<i>Psilocarphus brevissimus</i> var. <i>brevissimus</i>	Dwarf woolly-heads	1	1	1	1	0	1	U	5	6	Cch, Slt
	<i>Psilostrophe tagetina</i>	Woolly paperflower	1	1	U	1	0	1	U	4	6	Grn, Snj
	<i>Pyrrocoma hirta</i> var. <i>lanulosa</i>	Tacky goldenweed	1	1	1	1	0	1	U	5	6	Box
<i>Pyrrocoma racemosa</i> var. <i>paniculata</i>	Paniculata goldenweed	1	1	1	1	0	1	U	5	6	Cch, Dch, Mil?, Uta	
<i>Pyrrocoma racemosa</i> var. <i>sessiliflora</i>	Racemose goldenweed	1	1	1	1	0	U	U	4	6	Mil	

## Appendix 3. UNPS Rare Plant List: Watch List, continued

Family	Species	Common Name	Range	# Pops	# Indiv	Hab Spec	Intrin Rar	Threat	Trend	Min Score	Pot Score	County Dist. & Legal Status
Asteraceae (Compositae)	<i>Rudbeckia laciniata</i> var. <i>ampla</i>	Cutleaf coneflower	1	1	1	1	0	1	U	5	6	Grn, Snj
	<i>Rudbeckia montana</i>	Montane coneflower	1	1	U	1	0	1	U	4	6	Irn, Wsh
	<i>Senecio fremontii</i> var. <i>blitoides</i>	Fremont's groundsel	1	1	U	1	0	1	U	4	6	Cch, Grn, Slt, Snj, Toe, Uta
	<i>Senecio hydrophiloides</i>	Foetid groundsel	1	1	1	1	0	U	U	4	6	Box
	<i>Senecio serra</i> var. <i>admirabilis</i>	Saw-toothed groundsel	1	1	1	1	0	1	U	5	6	Grn, Snj
	<i>Solidago spectabilis</i>	Nevada goldenrod	1	1	U	1	0	1	U	4	6	Mil, Wsh
	<i>Sphaeromeria ruthiae</i>	Ruth's chickensage	2	1	1	1	0	0	0	5	5	Kan, Wsh
	<i>Stephanomeria tenuifolia</i> var. <i>myrioclada</i>	Slender wire-lettuce	1	1	1	1	0	U	U	4	6	Box
	<i>Stephanomeria tenuifolia</i> var. <i>uintahensis</i>	Uinta wire-lettuce	2	1	1	0	0	U	U	4	6	Uin
	<i>Symphyotrichum ericoides</i> var. <i>pansum</i>	White heath aster	1	1	1	1	0	U	U	4	6	Dag, Grn, Snj, Uin, Uta, Wsh
	<i>Symphyotrichum foliaceum</i> var. <i>apricum</i>	Spruce aster	1	1	1	1	0	U	U	4	6	Dch, Grf, Snp, Sum
	<i>Symphyotrichum leave</i> var. <i>geyeri</i>	Smooth aster	1	1	1	1	0	1	U	5	6	Grn, Snj
	<i>Symphyotrichum subulatum</i> var. <i>parviflorum</i>	Annual saltmarsh aster	1	1	1	1	0	1	U	5	6	Wsh
	<i>Symphyotrichum welshii</i>	Welsh's aster	1	1	1	1	0	1	U	5	6	Bvr, Dch, Grf, Irn, Kan, Piu, Sum, Uta, Wsh, Way
	<i>Tetranuris "lapidicola"</i>	Rock hymenoxys	2	1	1	1	0	0	0	5	5	Uin; BLM: S
	<i>Townsendia condensata</i>	Cushion townsendia	1	1	1	1	0	1	U	5	6	Bvr, Piu
	<i>Townsendia mensana</i>	Plateau townsendia	2	0	U	1	0	1	U	4	6	Dch, Uin
	<i>Townsendia minima</i>	Bryce Canyon townsendia	2	1	1	1	0	0	U	5	6	Grf, Irn, Kan, Wsh
<i>Townsendia montana</i> var. <i>caelilinesis</i>	Skyline townsendia	2	1	0	1	0	U	U	4	6	Dch, Snp, Was	

## Appendix 3. UNPS Rare Plant List: Watch List, continued

Family	Species	Common Name	Range	# Pops	# Indiv	Hab Spec	Intrin Rar	Threat	Trend	Min Score	Pot Score	County Dist. & Legal Status
Asteraceae (Compositae)	<i>Townsendia strigosa</i> var. <i>strigosa</i>	Hairy townsendia	1	1	U	1	0	1	U	4	6	Dag, Dch?, Grn?, Uin
	<i>Xylorhiza confertifolia</i>	Henrieville woody-aster	2	1	0	1	0	1	U	5	6	Grf, Kan, Way
Boraginaceae	<i>Cryptantha compacta</i>	Mound cryptanth	2	1	0	1	0	U	U	4	6	Bvr, Mil, Toe; BLM: S
	<i>Cryptantha creutzfeldtii</i>	Creutzfeldt's cryptanth	2	1	0	1	0	1	U	5	6	Crb, Emr; BLM: S; USFS: S
	<i>Cryptantha elata</i>	Tall cryptanth	1	1	1	1	0	U	U	4	6	Grn
	<i>Cryptantha johnstonii</i>	Johnston's cryptanth	2	1	1	0	0	1	U	5	6	Emr
	<i>Cryptantha jonesiana</i>	San Rafael cryptanth	2	1	0	1	0	U	U	4	6	Emr
	<i>Cryptantha ochroleuca</i>	Yellowish cryptanth	2	1	1	1	0	0	0	5	5	Grf; USFS: S
Brassicaceae (Cruciferae)	<i>Boechera goodrichii</i>	Goodrich's rock-cress	1	1	1	0	1	U	U	4	6	Bvr, Irn
	<i>Boechera lasiocarpa</i>	Wasatch rockcress	1	1	1	0	1	U	U	4	6	Box, Cch, Rch, Slt, Toe, Uta, Web
	<i>Boechera lincolnensis</i>	Lincoln's rock-cress	1	1	1	0	1	U	U	4	6	Bvr?, Irn?, Jub?, Mil, Toe
	<i>Boechera puberula</i>	Puberulent rock-cress	1	1	1	0	1	U	U	4	6	Box, Jub, Rch
	<i>Boechera schistacea</i>	Schist rockcress	1	1	1	0	1	U	U	4	6	Grf
	<i>Boechera selbyi</i> var. <i>thorneae</i>	Thorne's rockcress	2	1	1	0	0	U	U	4	6	Uin
	<i>Boechera shockleyi</i>	Shockley's rock-cress	1	1	1	1	0	U	U	4	6	Bvr, Jub, Mil, Toe
	<i>Cardamine breweri</i>	Brewer's bitter-cress	1	1	U	1	0	1	U	4	6	Mor, Slt, Sum, Toe, Uta, Was, Web
	<i>Descurainia incisa</i> ssp. <i>paysonii</i>	Payson's tansymustard	1	1	1	1	0	U	U	4	6	Grn, Snj, Uin
	<i>Draba burkei</i>	Burke's draba	2	1	1	1	0	0	U	5	6	Box, Mor, Web; USFS: S
	<i>Draba maguirei</i>	Maguire's draba	2	1	U	1	0	0	U	4	6	Box, Cch, Web; USFS: S
	<i>Draba ventosa</i>	Wind River draba	1	1	1	1	0	1	U	5	6	Dch, Sum
	<i>Lepidium huberi</i>	Huber's pepperwort	1	1	1	1	0	U	U	4	6	Uin; BLM: S

## Appendix 3. UNPS Rare Plant List: Watch List, continued

Family	Species	Common Name	Range	# Pops	# Indiv	Hab Spec	Intrin Rar	Threat	Trend	Min Score	Pot Score	County Dist. & Legal Status
Brassicaceae (Cruciferae)	<i>Lepidium montanum</i> var. <i>claronense</i>	Claron pepperwort	2	1	1	1	0	0	U	5	6	Grf, Kan, Piu
	<i>Lepidium montanum</i> var. <i>heterophyllum</i>	Cedar Canyon pepperwort	2	1	1	0	0	1	U	5	6	Irn, Mil, Piu, Sev
	<i>Lepidium montanum</i> var. <i>neeseae</i>	Neese's pepperwort	2	1	1	1	0	0	U	5	6	Grf, USFS: S
	<i>Lepidium nanum</i>	Low pepperwort	1	1	1	1	0	U	U	4	6	Toe
	<i>Physaria acutifolia</i> var. <i>purpurea</i>	Purple twinpod	2	1	1	1	0	0	U	5	6	Emr, Grn, Sev, Way
	<i>Physaria arizonica</i>	Arizona bladderpod	1	1	1	1	0	U	U	4	6	Grf, Kan, Wsh
	<i>Physaria chambersii</i> var. <i>sobolifera</i>	Claron twinpod	2	1	1	1	0	0	U	5	6	Grf
	<i>Physaria floribunda</i>	Mesa twinpod	1	1	1	1	0	U	U	4	6	Grn
	<i>Physaria garrettii</i>	Garrett's twinpod	2	1	1	1	0	0	U	5	6	Dav, Slt, Uta, Was; USFS: S
	<i>Physaria hemiphysaria</i> ssp. <i>hemiphysaria</i>	Skyline bladderpod	2	1	1	0	0	U	U	4	6	Dch, Emr, Snp, Uta, Was
	<i>Physaria neeseae</i>	Neese's twinpod	2	1	1	0	0	U	U	4	6	Grf, Wsh?
	<i>Rorippa sinuata</i>	Spreading yellowcress	1	1	U	1	0	1	U	4	6	Snj, Uin
	<i>Rorippa sphaerocarpa</i>	Round-pod yellowcress	1	1	1	1	0	1	U	5	6	Grf, Piu, Uta
	<i>Subularia aquatica</i> ssp. <i>americana</i>	American water awlwort	1	1	1	1	0	1	U	5	6	Dch
	<i>Thelypodium flexuosum</i>	Zigzag thelypody	1	1	1	1	0	U	U	4	6	Bvr, Toe
<i>Thelypodium sagittatum</i> var. <i>ovalifolium</i>	Palmer's thelypody	1	1	1	1	0	U	U	4	6	Grf, Irn, Jub, Kan, Mil	
Buddlejaceae	<i>Buddleja utahensis</i>	Utah butterflybush	1	1	1	1	0	1	0	5	5	Wsh
Cactaceae	<i>Cylindropuntia echinocarpa</i>	Pale cholla	1	1	1	0	0	1	1	5	5	Bvr?, Wsh
	<i>Echinomastus johnsonii</i>	Johnson's neolloydia	1	1	1	0	0	1	1	5	5	Wsh
	<i>Grusonia pulchella</i>	Sand cholla	1	1	U	1	0	1	U	4	6	Box, Jub, Mil, Toe, Wsh?
	<i>Mamillaria tetrancistra</i>	Pincushion cactus	1	1	1	0	0	1	1	5	5	Wsh

## Appendix 3. UNPS Rare Plant List: Watch List, continued

Family	Species	Common Name	Range	# Pops	# Indiv	Hab Spec	Intrin Rar	Threat	Trend	Min Score	Pot Score	County Dist. & Legal Status
Callitrichaceae (Plantaginaceae)	<i>Callitriche hermaphroditica</i>	Secret water-starwort	1	U	1	1	0	1	U	4	6	Bvr, Cch, Dag, Slt, Sev, Sum, Uin, Uta
	<i>Callitriche heterophylla</i>	Larger water-starwort	1	U	1	1	0	1	U	4	6	Dag?, Dav, Dch, Grn, Piu, Sev, Uin, Uta, Wsh
Campanulaceae	<i>Downingia laeta</i>	Shore downingia	1	1	U	1	0	1	U	4	6	Cch, Dav, Rch, Slt, Uta
	<i>Porterella carnosula</i>	Fleshy porterella	1	1	1	1	0	1	U	5	6	Rch, Sev, Sum
Capparaceae (Cleomaceae)	<i>Cleomella plocasperma</i>	Alkali stinkweed	1	1	U	1	0	1	U	4	6	Bvr, Im, Mil
Caryophyllaceae	<i>Loeflingia squarrosa</i>	Loeflingia	1	1	U	1	0	1	U	4	6	Kan, Wsh
	<i>Minuartia macrantha</i>	Large-flower sandwort	1	1	U	1	0	1	U	4	6	Dag, Dch?, Uin
	<i>Silene nachlingerae</i>	Jan's catchfly	1	1	1	1	0	U	U	4	6	Bvr; USFS: S
	<i>Stellaria crassifolia</i>	Thick-leaved starwort	1	1	1	1	0	1	U	5	6	Dag, Dch?, Sum, Uin?
	<i>Stellaria longifolia</i>	Long-leaved starwort	1	1	1	1	0	U	U	4	6	Cch, Dch, Grn, Rch, Slt, Sev, Uin, Uta, Was
Chenopodiaceae	<i>Atriplex x bonnevillensis</i>	Bonneville saltbush	1	1	U	1	0	1	U	4	6	Jub, Mil
	<i>Atriplex hymenelytra</i>	Desert holly	1	1	1	1	0	1	U	5	6	Wsh
	<i>Atriplex obovata</i>	New Mexico saltbush	1	1	U	1	0	1	U	4	6	Snj
	<i>Atriplex pleiantha</i>	Four Corners orach	1	1	1	1	0	U	U	4	6	Snj
	<i>Atriplex polycarpa</i>	Desert saltbush	1	1	U	1	0	1	U	4	6	Wsh
	<i>Atriplex wolfii</i> var. <i>tenuissima</i>	Slender orach	1	1	1	1	0	U	U	4	6	Crb, Dch, Emr, Grf, Piu, Snp, Sev, Uin
	<i>Corispermum welshii</i>	Welsh's bugseed	1	1	U	1	0	1	U	4	6	Grf, Kan, Mil, Snj?
	<i>Nitrophila occidentalis</i>	Niterwort	1	1	1	1	0	1	U	5	6	Box?, Jub, Mil, Toe?
Crassulaceae	<i>Crassula aquatica</i>	Pygmyweed	1	1	1	1	0	U	U	4	6	Dag, Uin?
	<i>Rhodiola integrifolia</i> ssp. <i>integrifolia</i>	Roseroot stonecrop	1	1	1	1	0	U	U	4	6	Box, Jub

## Appendix 3. UNPS Rare Plant List: Watch List, continued

Family	Species	Common Name	Range	# Pops	# Indiv	Hab Spec	Intrin Rar	Threat	Trend	Min Score	Pot Score	County Dist. & Legal Status
Cuscutaceae (Convolvulaceae)	<i>Cuscuta appianata</i>	Winged dodder	1	1	1	0	1	U	U	4	6	Wsh
	<i>Cuscuta cuspidata</i>	Toothed dodder	1	1	1	0	1	U	U	4	6	Slt, Uta, Web
Cyperaceae	<i>Carex alma</i>	Alma sedge	1	1	1	1	0	U	U	4	6	Wsh
	<i>Carex atherodes</i>	Awned sedge	1	1	U	1	0	1	U	4	6	Sev, Uta
	<i>Carex bebbii</i>	Bebb's sedge	1	1	1	1	0	1	U	5	6	Uin
	<i>Carex crawei</i>	Crawe's sedge	1	1	1	1	0	U	U	4	6	Kan
	<i>Carex curatorum</i>	Canyonlands sedge	1	1	1	1	0	U	U	4	6	Kan, Snj, Uin
	<i>Carex diandra</i>	Lesser paniced sedge	1	1	1	1	0	U	U	4	6	Dch, Grf?
	<i>Carex idaho</i>	Idaho sedge	1	1	U	1	0	1	U	4	6	Was
	<i>Carex jonesii</i>	Jones' sedge	1	1	U	1	0	1	U	4	6	Bvr, Jub, Slt
	<i>Carex lachenalii</i>	Arctic hare-foot sedge	1	1	1	1	0	U	U	4	6	Dch, Sum
	<i>Carex lasiocarpa</i>	Slender sedge	1	1	1	1	0	U	U	4	6	Dag, Sev?, Uin
	<i>Carex leporinella</i>	Sierran hare sedge	1	1	1	1	0	1	U	5	6	Dch, Sum, Was
	<i>Carex leptalea</i>	Bristly-stalk sedge	1	1	1	1	0	U	U	4	6	Dag, Dch, Uin
	<i>Carex livida</i>	Pale sedge	1	1	1	1	0	U	U	4	6	Dch, Uin
	<i>Carex luzulina</i> var. <i>ablata</i>	Woodrush sedge	1	1	1	1	0	1	U	5	6	Bvr, Piu, Slt
	<i>Carex microglochin</i>	Subulate sedge	1	1	1	1	0	U	U	4	6	Dag, Dch, Emr
	<i>Carex multicosata</i>	Many-ribbed sedge	1	1	1	1	0	1	U	5	6	Cch, Dag, Sum, Uin
	<i>Carex neurophora</i>	Alpine nerved sedge	1	1	U	1	0	1	U	4	6	Bvr, Cch, Emr, Slt, Was
	<i>Carex perglobosa</i>	Mount Baldy sedge	1	1	1	1	0	1	U	5	6	Grn, Snj
	<i>Carex retrorsa</i>	Retrorse sedge	1	1	1	1	0	U	U	4	6	Uta, Was, Web
	<i>Carex scirpoidea</i> ssp. <i>scirpoidea</i>	Slender sedge	1	1	1	1	0	U	U	4	6	Emr, Grf, Irn
	<i>Carex scopulorum</i> var. <i>bracteosa</i>	Rock sedge	1	1	1	1	0	1	U	5	6	Box, Dag, Jub
	<i>Carex sheldonii</i>	Sheldon's sedge	1	1	1	1	0	U	U	4	6	Sum
	<i>Carex stipata</i> var. <i>stipata</i>	Prickly sedge	1	1	1	1	0	1	U	5	6	Dav, Slt, Web
<i>Cladium californicum</i>	Saw-grass	1	1	U	1	0	U	1	4	6	Kan, Snj	

## Appendix 3. UNPS Rare Plant List: Watch List, continued

Family	Species	Common Name	Range	# Pops	# Indiv	Hab Spec	Intrin Rar	Threat	Trend	Min Score	Pot Score	County Dist. & Legal Status
Cyperaceae	<i>Cyperus acuminatus</i>	Taper-tip flat-sedge	1	1	1	1	0	1	U	5	6	Mil
	<i>Cyperus bipartitus</i>	Shining flat-sedge	1	1	1	1	0	1	U	5	6	Uta, Web?
	<i>Eleocharis bella</i>	Pretty spikerush	1	1	1	1	0	U	U	4	6	Wsh
	<i>Eleocharis flavescens</i> var. <i>flavescens</i>	Yellow spikerush	1	1	1	1	0	U	U	4	6	Cch
	<i>Lipocarpa aristulata</i>	Slender-rush	1	1	1	1	0	1	U	5	6	Kan
	<i>Scirpus nevadensis</i>	Nevada bulrush	1	1	1	1	0	U	U	4	6	Jub, Rch
Euphorbiaceae	<i>Chamaesyce ocellata</i> var. <i>arenicola</i>	Eyed spurge	1	1	U	1	0	1	U	4	6	Mil, Toe, Uta
	<i>Euphorbia nephradenia</i>	Utah spurge	1	1	1	1	0	1	U	5	6	Emr, Grf, Kan, Way; BLM: S
Fabaceae (Leguminosae)	<i>Astragalus argophyllus</i> var. <i>stocksii</i>	Dana's milkvetch	2	1	1	0	0	U	U	4	6	Grf, USFS: S
	<i>Astragalus calycosus</i> var. <i>monophyllidus</i>	One-leaf milkvetch	1	1	1	1	0	U	U	4	6	Sev
	<i>Astragalus chloodes</i>	Grass milkvetch	2	1	0	1	0	U	U	4	6	Uin
	<i>Astragalus concordius</i>	Hairy-pod milkvetch	2	1	U	0	0	1	U	4	6	Irn, Wsh
	<i>Astragalus detritalis</i>	Debris milkvetch	1	1	1	1	0	1	U	5	6	Dch, Uin
	<i>Astragalus jejunos</i>	Starveling milkvetch	1	1	1	1	0	U	U	4	6	Rch; USFS: S
	<i>Astragalus limnocharis</i> var. <i>limnocharis</i>	Navajo Lake milkvetch	2	1	1	1	0	0	U	5	6	Irn, Kan; USFS: S
	<i>Astragalus limnocharis</i> var. <i>tabulaeus</i>	Table Cliff milkvetch	2	1	1	1	0	0	U	5	6	Grf, USFS: S
	<i>Astragalus lutosus</i>	Dragon milkvetch	1	1	1	1	0	1	U	5	6	Dch, Uin, Uta, Was
	<i>Astragalus malacoides</i>	Kaiparowits milkvetch	2	1	1	1	0	0	U	5	6	Grf, Kan
	<i>Astragalus montii</i>	Heliotrope milkvetch	2	1	0	1	0	U	U	4	6	Snj, Sev; USFWS: T
	<i>Astragalus monumentalis</i>	Monument milkvetch	2	1	0	1	0	U	U	4	6	Grf, Snj
	<i>Astragalus naturitensis</i>	Naturita milkvetch	1	1	1	1	0	U	U	4	6	Snj
	<i>Astragalus perianus</i>	Rydberg's milkvetch	2	1	0	1	0	1	U	5	6	Bvr, Grf, Irn, Kan, Piu, Sev
<i>Astragalus piscator</i>	Fisher milkvetch	2	1	1	1	0	0	U	5	6	Grn, Snj, Way	
<i>Astragalus platytropis</i>	Broad-keeled milkvetch	1	1	1	1	0	U	U	4	6	Bvr, Kan, Mil, Toe	

## Appendix 3. UNPS Rare Plant List: Watch List, continued

Family	Species	Common Name	Range	# Pops	# Indiv	Hab Spec	Intrin Rar	Threat	Trend	Min Score	Pot Score	County Dist. & Legal Status	
Fabaceae (Leguminosae)	<i>Astragalus saurinus</i>	Dinosaur milkvetch	2	1	0	1	0	U	U	4	6	Uin	
	<i>Astragalus uncialis</i>	Currant milkvetch	2	1	1	0	0	1	U	5	6	Mil; USFS: S	
	<i>Astragalus wetherillii</i>	Wetherill's milkvetch	1	1	1	0	0	U	U	1	4	6	Grn
	<i>Astragalus zionis</i> var. <i>vigulus</i>	Guard milkvetch	2	1	1	0	0	1	U	5	6	Wsh; USFS: S	
	<i>Hedysarum boreale</i> var. <i>gremiale</i>	Rollins' sweetvetch	2	1	1	0	0	U	U	4	6	Uin	
	<i>Hedysarum occidentale</i> var. <i>canone</i>	Coal Cliffs sweetvetch	2	1	1	0	0	U	U	4	6	Crb, Dch, Emr; USFS: S	
	<i>Lupinus sericeus</i> var. <i>marianus</i>	Marysvale lupine	2	1	U	0	0	1	U	4	6	Bvr, Grf, Piu, Sev	
	<i>Oxytropis besseyi</i> var. <i>obnapiformis</i>	Maybell locoweed	1	1	U	1	0	1	U	4	6	Dag	
	<i>Oxytropis deflexa</i> var. <i>pulcherrima</i>	Pretty locoweed	1	1	U	1	0	1	U	4	6	Dag, Dch, Sum	
	<i>Oxytropis oreophila</i> var. <i>jonesii</i>	Jones' locoweed	2	1	U	1	0	0	U	4	6	Emr, Grf, Grn, Irn, Snp, Uin	
	<i>Pedimelum aromaticum</i> var. <i>aromaticum</i>	Aromatic breadroot	1	1	U	1	0	1	1	5	6	Emr?, Grn	
	<i>Pedimelum aromaticum</i> var. <i>barnebyi</i>	Barneby's breadroot	1	1	1	1	0	1	U	5	6	Kan, Wsh; BLM: S	
	<i>Pedimelum aromaticum</i> var. <i>tuhyi</i>	Tuhy's breadroot	2	1	0	1	0	U	U	4	6	SnJ; BLM: S	
	<i>Pedimelum castoreum</i>	Beaver breadroot	1	1	1	1	0	1	U	5	6	Wsh?	
	<i>Pedimelum epipsilum</i>	Kane breadroot	2	1	0	1	0	1	U	5	6	Kan; BLM: S	
	<i>Pedimelum mephiticum</i>	Skunk breadroot	1	1	1	0	0	1	1	5	5	Wsh	
	<i>Pedimelum pariense</i>	Paria breadroot	2	1	1	1	0	0	U	5	6	Grf, Kan; USFS: S	
	<i>Pedimelum retrorsum</i>	Peach Springs breadroot	1	1	U	1	0	1	U	4	6	Wsh	
	<i>Psoralidium lanceolatum</i> var. <i>stenostachys</i>	Rydberg's scurf-pea	2	1	U	1	0	0	U	4	6	Dav, Jub, Mil, Slt, Toe, Web	
	<i>Psorothamnus arborescens</i> var. <i>pubescens</i>	Beauty indigo-bush	1	1	1	1	0	U	U	4	6	Kan	
<i>Psorothamnus nummularius</i>	Jones' indigo-bush	2	1	0	1	0	U	U	4	6	Emr; BLM: S		



## Appendix 3. UNPS Rare Plant List: Watch List, continued

Family	Species	Common Name	Range	# Pops	# Indiv	Hab Spec	Intrin Rar	Threat	Trend	Min Score	Pot Score	County Dist. & Legal Status
Fabaceae (Leguminosae)	<i>Psorothamnus polydenius</i> var. <i>polydenius</i>	Glandular indigo-bush	1	1	U	1	0	1	U	4	6	Wsh
	<i>Trifolium beckwithii</i>	Beckwith's clover	1	1	1	0	0	1	1	5	5	Piu?, Sev
Gentianaceae	<i>Lomatogonium rotatum</i>	Marsh felwort	1	1	1	1	0	1	U	5	6	Dag
Hydrangeaceae (Saxifragaceae)	<i>Jamesia americana</i> var. <i>zionis</i>	Zion jamesia	2	1	1	1	0	0	0	5	5	Kan, Wsh; USFS: S
	<i>Jamesia tetrapetala</i>	Basin jamesia	1	1	1	1	0	U	U	4	6	Mil; BLM: S; USFS: S
Hydrophyllaceae (Boraginaceae)	<i>Nama hispida</i>	Hairy nama	1	1	1	1	0	1	U	5	6	Snj
	<i>Nama retrorsa</i>	Howell's nama	1	1	1	1	0	1	U	5	6	Grf, Grn, Kan, Snj
	<i>Phacelia austromontana</i>	Southern phacelia	1	1	1	0	0	1	1	5	5	Wsh
	<i>Phacelia cottamii</i>	Cottam's phacelia	2	1	0	1	0	1	U	5	6	Crb, Emr, Sev
	<i>Phacelia glandulosa</i>	Glandular scorpion-weed	1	1	U	1	0	1	U	4	6	Grn, Uin
	<i>Phacelia mammillarensis</i>	Nipple Bench phacelia	2	1	0	1	0	1	U	5	6	Grf, Kan
	<i>Phacelia palmeri</i>	Palmer's phacelia	1	1	1	1	0	1	0	5	5	Wsh
	<i>Phacelia perityloides</i> var. <i>laxiflora</i>	Crevice phacelia	1	1	1	1	0	1	0	5	5	Wsh
	<i>Phacelia salina</i>	Bitter Creek scorpion-weed	1	1	1	1	0	U	U	4	6	Snj, Toe
	<i>Phacelia splendens</i>	Eastwood's phacelia	1	1	U	1	0	1	U	4	6	Gra
	<i>Phacelia tetramera</i>	Four-parted phacelia	1	1	1	0	1	U	U	4	6	Web
<i>Tricardia watsonii</i>	Three hearts	1	1	1	0	U	1	1	5	6	Wsh	
Iridaceae	<i>Olsynium douglasii</i> var. <i>inflatum</i>	Purple-eyed grass	1	1	1	0	0	1	1	5	5	Toe
Isoetaceae	<i>Isoetes echinospora</i>	Spiny quillwort	1	1	1	1	0	1	U	5	6	Dch, Sum
	<i>Isoetes howellii</i>	Howell's quillwort	1	1	1	1	0	U	U	4	6	Cch, Wsh
Juncaceae	<i>Juncus brevicaudatus</i>	Tweedy's rush	1	1	1	0	0	1	1	5	5	Box
	<i>Juncus castaneus</i>	Chestnut rush	1	1	U	1	0	1	U	4	6	Dch, Snj, Sum, Uin
	<i>Juncus ensifolius</i> var. <i>ensifolius</i>	Swordleaf rush	1	1	U	1	0	1	U	4	6	Dag, Rch, Slr, Toe, Uin
	<i>Juncus macrophyllus</i>	Largeleaf rush	1	1	U	1	0	1	U	4	6	Wsh
Lamiaceae (Labiatae)	<i>Stachys rothrockii</i>	Rothrock's hedge-nettle	1	1	U	1	0	1	U	4	6	Kan

## Appendix 3. UNPS Rare Plant List: Watch List, continued

Family	Species	Common Name	Range	# Pops	# Indiv	Hab Spec	Intrin Rar	Threat	Trend	Min Score	Pot Score	County Dist. & Legal Status
Lemnaceae (Araceae)	<i>Lemna gibba</i>	Humped duckweed	1	1	U	1	0	1	U	4	6	Irn, Uta, Wsh
	<i>Lemna valdiviana</i>	Pale duckweed	1	1	U	1	0	1	U	4	6	Cch, Uta, Wsh, Web
	<i>Spirodela polyrhiza</i>	Giant ducksmeat	1	1	U	1	0	1	U	4	6	Cch, Dav, Slt, Uta
	<i>Wolffia borealis</i>	Wolffia	1	1	U	1	0	1	U	4	6	Crb, Mor, Web
Lentibulariaceae	<i>Utricularia intermedia</i>	Flat-leaf bladderwort	1	1	U	1	0	1	U	4	6	Cch, Rch, Way
	<i>Utricularia minor</i>	Lesser bladderwort	1	1	U	1	0	1	U	4	6	Cch, Rch, Sum, Uin, Uta
Liliaceae	<i>Allium geyeri</i> var. <i>chatterleyi</i>	Chatterley's onion	2	1	1	0	0	U	U	4	6	Snj; USFS: S
	<i>Allium passeyi</i>	Passey's onion	2	1	0	1	0	U	U	4	6	Box
	<i>Calochortus ciscoensis</i>	Cisco mariposa	2	1	0	1	0	U	U	4	6	Dch, Emr?, Grn, Uin
Loasaceae	<i>Eucnide urens</i>	Desert rock-nettle	1	1	1	1	0	1	U	5	6	Wsh
	<i>Mentzelia goodrichii</i>	Goodrich's stickleaf	2	1	1	1	0	0	U	5	6	Dch; BLM: S; USFS: S
	<i>Mentzelia multicaulis</i> var. <i>flumensevera</i>	Sevier Canyon stickleaf	2	1	1	1	0	0	U	5	6	Piu, Sev
	<i>Mentzelia multicaulis</i> var. <i>uintahensis</i>	Uinta Basin stickleaf	1	1	U	1	0	1	U	4	6	Dch, Uin
Malvaceae	<i>Sphaeralcea caespitosa</i> var. <i>caespitosa</i>	Jones' globemallow	2	1	0	1	0	1	0	5	5	Bvr, Mil; BLM: S
Menyanthaceae	<i>Menyanthes trifoliata</i>	Buckbean	1	1	U	1	0	1	U	4	6	Dch, Kan, Sum, Uin, Wsh
Najadaceae	<i>Najas flexilis</i>	Fish Lake naiad	1	1	1	0	U	1	1	5	6	Sev; USFS: S
	<i>Najas guadalupensis</i> ssp. <i>guadalupensis</i>	Southern water-nymph	1	1	1	1	0	1	U	5	6	Cch, Dch, Slt
	<i>Najas marina</i>	Pond naiad	1	1	1	1	0	1	U	5	6	Cch, Jub, Toe
Nyctaginaceae	<i>Abronia villosa</i>	Sticky sand-verbena	1	1	1	1	0	1	U	5	6	Wsh
Oleaceae	<i>Menodora spinescens</i>	Spiny menodora	1	1	1	1	0	1	0	5	5	Wsh
Onagraceae	<i>Boisduvalia densiflora</i>	Dense spike-primrose	1	1	1	1	0	1	U	5	6	Cch, Web
	<i>Boisduvalia glabella</i>	Smooth spike-primrose	1	1	1	1	0	1	U	5	6	Cch, Slt, Uin, Uta
	<i>Camissonia atwoodii</i>	Atwood's camissonia	2	1	0	1	0	1	U	5	6	Kan

## Appendix 3. UNPS Rare Plant List: Watch List, continued

Family	Species	Common Name	Range	# Pops	# Indiv	Hab Spec	Intrin Rar	Threat	Trend	Min Score	Pot Score	County Dist. & Legal Status
Onagraceae	<i>Camissonia bairdii</i>	Baird's camissonia	1	1	1	1	0	1	U	5	6	Wsh; BLM: S
	<i>Camissonia claviformis</i> var. <i>aurantiaca</i>	Clubpod camissonia	1	1	1	0	0	1	1	5	5	Wsh
	<i>Camissonia claviformis</i> var. <i>claviformis</i>	Clubpod camissonia	1	1	1	0	0	1	1	5	5	Wsh
	<i>Camissonia claviformis</i> var. <i>cruciformis</i>	Clubpod camissonia	1	1	1	0	0	1	1	5	5	Wsh
	<i>Camissonia gouldii</i>	Gould's camissonia	1	1	1	1	0	1	U	5	6	Mil, Wsh; BLM: S
	<i>Epilobium glaberrimum</i> var. <i>fastigiatum</i>	Glaucous willow-herb	1	1	1	1	0	1	U	5	6	Wsh
	<i>Epilobium leptophyllum</i>	Slender willow-herb	1	1	1	1	0	1	U	5	6	Cch, Dag, Dch, Kan, Uin, Uta
	<i>Epilobium nevadense</i>	Nevada willow-herb	1	1	1	1	0	U	U	4	6	Irn, Mil, Wsh; BLM: S; USFS: S
	<i>Epilobium palustre</i>	Marsh willow-herb	1	1	1	1	0	1	U	5	6	Dch, Uin?
	<i>Oenothera deltoidea</i> var. <i>decumbens</i>	St. George evening-primrose	1	1	U	1	0	1	U	4	6	Wsh
Ophioglossaceae	<i>Botrychium multifidum</i>	Leathery grape fern	1	1	1	0	1	U	U	4	6	Dch
Orchidaceae	<i>Cypripedium fasciculatum</i>	Clustered lady's-slipper	1	1	1	0	1	1	U	5	6	Dag, Slt, Sum, Uin
	<i>Platanthera zothecina</i>	Alcove bog-orchid	1	1	1	1	0	1	U	5	6	Emr, Grf, Grn, Snj, Uin
Papaveraceae	<i>Eschscholzia mexicana</i>	Mexican golden-poppy	1	1	1	0	0	1	1	5	5	Wsh
	<i>Papaver uintaense</i>	Alpine Rocky Mountain poppy	1	1	1	1	0	U	U	4	6	Dag, Dch, Sum; USFS: S
	<i>Platystemon californicus</i>	Creamcups	1	1	1	0	0	1	1	5	5	Wsh
Poaceae (Gramineae)	<i>Achnatherum arnowiae</i>	Arnow's ricegrass	1	1	1	0	1	U	U	4	6	Grf, Grn, Irn, Jub, Kan, Uin, Wsh
	<i>Andropogon glomeratus</i>	Bushy bluestem	1	1	1	1	0	U	U	4	6	Grf, Kan, Snj, Way
	<i>Deschampsia danthonioides</i>	Annual hairgrass	1	1	1	1	0	U	U	4	6	Cch, Dav, Slt
	<i>Eragrostis hypnoides</i>	Teal lovegrass	1	1	1	1	0	1	U	5	6	Box, Cch, Slt, Uin, Uta, Was
	<i>Festuca dasyclada</i>	Utah fescue	1	1	1	1	0	1	U	5	6	Emr, Grf, Snp, Was

## Appendix 3. UNPS Rare Plant List: Watch List, continued

Family	Species	Common Name	Range	# Pops	# Indiv	Hab Spec	Intrin Rar	Threat	Trend	Min Score	Pot Score	County Dist. & Legal Status
Poaceae (Gramineae)	<i>Imperata brevifolia</i>	Satintail	1	1	1	1	0	U	U	4	6	Kan, Snj
	<i>Muhlenbergia mexicana</i>	Mexican muhly	1	1	1	1	0	U	U	4	6	Grn, Uta
	<i>Panicum hallii</i>	Hall's panicgrass	1	1	1	0	U	U	1	4	6	Bvr
	<i>Spartina pectinata</i>	Prairie cordgrass	1	1	1	1	0	1	U	5	6	Box, Cch, Grn
Polemoniaceae	<i>Ipomopsis spicata</i> var. <i>spicata</i>	Spike gilia	1	1	1	1	0	U	U	4	6	Dag
	<i>Navarretia saximontana</i>	Rocky Mountain navarretia	1	1	1	1	0	U	U	4	6	Grf
	<i>Phlox lutescens</i>	Yellowish phlox	2	1	1	0	0	U	U	4	6	Grf, Grn, Snj
	<i>Phlox opalensis</i>	Opal phlox	1	1	1	1	0	1	U	5	6	Dag
Polygonaceae	<i>Eriogonum acaule</i>	Stemless wild buckwheat	1	1	1	1	0	U	U	4	6	Rch
	<i>Eriogonum aretioides</i>	Widtoe wild buckwheat	2	1	1	1	0	0	U	5	6	Emr, Grf; USFS: S
	<i>Eriogonum cernuum</i> var. <i>psammophilum</i>	Sand Dune nodding wild buckwheat	2	1	U	1	0	0	U	4	6	Grf, Kan, Snj;
	<i>Eriogonum ephedroides</i>	Ephedra wild buckwheat	2	1	0	1	0	1	U	5	6	Uin
	<i>Eriogonum eremicum</i>	Hermit wild buckwheat	2	1	1	0	0	U	U	4	6	Bvr, Mil
	<i>Eriogonum exaltatum</i>	Ladder wild buckwheat	1	1	1	1	0	1	0	5	5	Irn, Kan, Wsh
	<i>Eriogonum heermannii</i> var. <i>subspinosum</i>	Tabeau Peak wild buckwheat	1	1	1	1	0	1	0	5	5	Wsh
	<i>Eriogonum loganum</i>	Logan wild buckwheat	2	1	1	0	0	U	U	4	6	Cch, Mor, Rch; USFS: S
	<i>Eriogonum panguicense</i> var. <i>alpestre</i>	Cedar Breaks wild buckwheat	2	1	0	1	0	U	U	4	6	Irn
	<i>Eriogonum saurinum</i>	Dinosaur wild buckwheat	2	1	0	1	0	1	U	5	6	Uin
	<i>Eriogonum scabrellum</i>	Westwater wild buckwheat	1	1	1	1	0	U	U	4	6	Emr, Grf, Grn, Kan, Snj
	<i>Eriogonum thompsoniae</i> var. <i>albiflorum</i>	Virgin wild buckwheat	1	1	U	1	0	1	U	4	6	Wsh
	<i>Eriogonum wrightii</i> var. <i>wrightii</i>	Wright's wild buckwheat	1	1	U	1	0	1	U	4	6	Wsh
	<i>Koenigia islandica</i>	Koenigia	1	1	1	1	0	U	U	4	6	Dch

## Appendix 3. UNPS Rare Plant List: Watch List, continued

Family	Species	Common Name	Range	# Pops	# Indiv	Hab Spec	Intrin Rar	Threat	Trend	Min Score	Pot Score	County Dist. & Legal Status
Polygonaceae	<i>Polygonum minimum</i>	Broadleaf knotweed	1	1	1	1	0	1	U	5	6	Dch, Slt, Sum, Uta
	<i>Pterostegia drymarioides</i>	Pterostegia	1	1	U	1	0	1	U	4	6	Wsh
Portulacaceae (Montiaceae)	<i>Claytonia megarhiza</i>	Alpine spring-beauty	1	1	1	1	0	1	U	5	6	Dch, Grn, Snj, Sum, Uin
	<i>Lewisia triphylla</i>	Threelaf bitter-root	1	1	1	1	0	1	U	5	6	Cch, Dav, Dch, Mor, Rch, Slt, Sum
	<i>Portulaca halimoides</i>	Dwarf purslane	1	1	1	1	0	1	U	5	6	Kan, Snj
Potamogetonaceae	<i>Potamogeton epihydrus</i>	Ribbon-leaf pondweed	1	U	1	1	0	1	U	4	6	Slt
	<i>Potamogeton foliosus</i> ssp. <i>fibrillosus</i>	Fibrous pondweed	1	U	1	1	0	1	U	4	6	Cch, Grn, Sum
	<i>Potamogeton friesii</i>	Fries' pondweed	1	1	1	1	0	1	U	5	6	Sev, Sum
	<i>Potamogeton illinoensis</i>	Illinois pondweed	1	1	1	1	0	1	U	5	6	Cch, Sev
	<i>Potamogeton natans</i>	Floating pondweed	1	1	1	1	0	1	U	5	6	Dch, Rch, Uin, Uta
	<i>Potamogeton robbinsii</i>	Robbins' pondweed	1	1	1	1	0	1	U	5	6	Dag?, Rch?, Sev
	<i>Potamogeton zosteriformis</i>	Eelgrass pondweed	1	1	1	1	0	1	U	5	6	Sev
	<i>Stuckenia filiformis</i> ssp. <i>alpina</i>	Slenderleaf pondweed	1	U	1	1	0	1	U	4	6	Slt, Sum, Wsh
	<i>Stuckenia striata</i>	Broadleaf pondweed	1	1	1	1	0	1	U	5	6	Box
<i>Stuckenia vaginata</i>	Sheathed pondweed	1	U	1	1	0	1	U	4	6	Box?, Grf, Snp?, Sum?, Uta, Wsh	
Primulaceae	<i>Androsace chamaejasme</i> ssp. <i>lehmanniana</i>	Sweet-flowered rock-jasmine	1	1	1	1	0	1	U	5	6	Grn?, Snj
	<i>Androsace filiformis</i>	Slender-stem rock-jasmine	1	1	1	1	0	1	U	5	6	Cch, Dch, Emr, Rch, Slt, Was
	<i>Dodecatheon pulchellum</i> var. <i>zionense</i>	Zion shooting-star	1	1	1	1	0	0	1	5	5	Crb, Grn, Kan, Snj?, Wsh
	<i>Dodecatheon redolens</i>	Hall's shooting-star	1	1	1	1	0	U	U	4	6	Jub, Toe
	<i>Primula incana</i>	Silvery primrose	1	1	1	1	0	1	U	5	6	Dag, Grn
	<i>Primula specuicola</i>	Cave primrose	1	1	1	1	0	1	U	5	6	Grf, Grn, Kan, Snj, Way
	<i>Samolus parviflorus</i>	Water-pimpernel	1	1	1	1	0	1	U	5	6	Slt, Wsh

## Appendix 3. UNPS Rare Plant List: Watch List, continued

Family	Species	Common Name	Range	# Pops	# Indiv	Hab Spec	Intrin Rar	Threat	Trend	Min Score	Pot Score	County Dist. & Legal Status
Pteridaceae (Polypodiaceae)	<i>Adiantum pedatum</i> var. <i>aleuticum</i>	Northern maiden-hair fern	1	1	1	1	1	0	U	5	6	Grf, Slr, Wsh
	<i>Cryptogramma stelleri</i>	Steller's rock-brake	1	1	1	1	0	1	U	5	6	Sum?, Uta
	<i>Myriopteris wootonii</i> ( <i>Cheilanthes wootonii</i> )	Wooton's lip-fern	1	1	1	1	0	1	0	5	5	Wsh
Ranunculaceae	<i>Anemone parviflora</i>	Northern anemone	1	1	1	1	0	1	U	5	6	Dch, Slr, Sum
	<i>Aquilegia atwoodii</i>	Atwood's columbine	2	1	1	1	0	0	U	5	6	Uin; BLM: S
	<i>Aquilegia barnebyi</i>	Shale columbine	1	1	1	1	0	1	U	5	6	Dch, Uin
	<i>Aquilegia chrysantha</i>	Golden columbine	1	1	1	1	0	U	U	4	6	Wsh
	<i>Aquilegia desolaticola</i>	Desolation Canyon columbine	2	1	1	1	0	0	U	5	6	Grn; BLM: S
	<i>Aquilegia fosteri</i>	Foster's columbine	2	1	1	1	0	0	0	5	5	Wsh
	<i>Aquilegia grahamii</i>	Graham's columbine	2	1	1	1	0	0	U	5	6	Uin; USFS: S
	<i>Aquilegia loriae</i>	Lori's columbine	2	1	1	1	0	0	0	5	5	Kan
	<i>Aquilegia scopulorum</i> var. <i>scopulorum</i>	Rock columbine	1	1	1	1	0	1	U	5	6	Grf, Jub, Kan, Piu, Snp, Sev
	<i>Ranunculus flabellaris</i>	Yellow water buttercup	1	1	1	1	0	1	U	5	6	Cch, Dch, Slr, Sum
	<i>Ranunculus gelidus</i>	Tundra buttercup	1	1	1	1	0	1	U	5	6	Dch, Sum, Uin
	<i>Ranunculus gmelinii</i>	Lesser yellow water buttercup	1	1	1	1	0	1	U	5	6	Dag, Dch, Mor, Piu, Rch, Snp, Sev, Sum, Web
	<i>Ranunculus hyperboreus</i>	Floating buttercup	1	1	1	1	0	1	U	5	6	Dch, Rch, Sum, Uin
<i>Ranunculus pygmaeus</i>	Pygmy buttercup	1	1	1	1	0	1	U	5	6	Dch, Sum	
<i>Trautvetteria carolinensis</i>	Carolina tassel-rue	1	1	1	1	0	U	U	4	6	Snj	
Rhamnaceae	<i>Ceanothus vestitus</i> var. <i>franklinii</i>	Franklin's desert-lilac	2	1	1	0	0	U	U	4	6	Grf?, Grn, Snj
Rosaceae	<i>Crataegus saligna</i>	Duchesne hawthorn	2	1	1	0	0	U	U	4	6	Dch, Uin, Was
	<i>Geum aleppicum</i>	Erect avens	1	1	1	1	0	1	U	5	6	Crb, Grf, Grn, Slr, Snj, Sum, Uta, Was
	<i>Ivesia utahensis</i>	Utah ivesia	2	1	1	0	0	1	U	5	6	Slr, Sum, Uta, Was; USFS: S

## Appendix 3. UNPS Rare Plant List: Watch List, continued

Family	Species	Common Name	Range	# Pops	# Indiv	Hab Spec	Intrin Rar	Threat	Trend	Min Score	Pot Score	County Dist. & Legal Status
Rosaceae	<i>Potentilla angelliae</i>	Angell's cinquefoil	2	1	1	0	0	1	U	5	6	Way; USFS: S
	<i>Potentilla glandulosa</i> var. <i>pusilla</i>	Small cinquefoil	2	1	U	0	0	1	U	4	6	Bvr, Piu, Sev
	<i>Potentilla holmgrenii</i>	Holmgren's cinquefoil	1	1	1	1	0	U	U	4	6	Jub, Toe?
	<i>Potentilla nivea</i>	Snow cinquefoil	1	1	1	1	0	1	U	5	6	Grn, Jub, Snj, Sum
	<i>Potentilla palustris</i>	Marsh cinquefoil	1	1	1	1	0	1	U	5	6	Uin
	<i>Rubus neomexicanus</i>	New Mexico thimbleberry	1	1	1	1	0	U	U	4	6	Grf, Snj
Salicaceae	<i>Salix arizonica</i>	Arizona willow	1	1	1	1	0	1	U	5	6	Grf, Irn, Snp, Sev; USFS: S
Saururaceae	<i>Anemopsis californica</i>	Yerba mansa	1	1	1	1	0	U	U	4	6	Uta, Wsh
Saxifragaceae	<i>Boykinia jamesii</i> var. <i>heucheriformis</i>	James' saxifrage	1	1	1	1	0	U	U	4	6	Cch
	<i>Saxifraga bronchialis</i> var. <i>austromontana</i>	Spotted saxifrage	1	1	1	1	0	1	U	5	6	Grn, Snj
	<i>Saxifraga cernua</i>	Nodding saxifrage	1	1	1	1	0	1	U	5	6	Grn, Snj, Sum
	<i>Saxifraga flagellaris</i> ssp. <i>crandallii</i>	Whiplash saxifrage	1	1	1	1	0	1	U	5	6	Dav, Grn, Snj, Sum
	<i>Saxifraga hirculus</i> ssp. <i>hirculus</i>	Yellow marsh saxifrage	1	1	1	1	0	1	U	5	6	Dag
	<i>Saxifraga nidifica</i> var. <i>nidifica</i>	Peak saxifrage	1	1	1	1	0	U	U	4	6	Cch, Sum
	<i>Saxifraga serpyllifolia</i> var. <i>chrysantha</i>	Golden saxifrage	1	1	1	1	0	1	U	5	6	Dch, Sum
Scrophulariaceae (Orobanchaceae, Phrymaceae, Plantaginaceae)	<i>Castilleja nana</i>	Dwarf paintbrush	1	1	1	1	0	U	U	4	6	Jub, Toe?
	<i>Lindernia dubia</i>	Yellowseed false pimpernel	1	1	1	1	0	U	U	4	6	Uta
	<i>Maurandya antirrhiniflora</i>	Maurandya	1	1	1	0	0	1	1	5	5	Wsh
	<i>Mimulus bigelovii</i> var. <i>cuspidatus</i>	Bigelow's monkeyflower	1	1	1	0	0	1	1	5	5	Wsh
	<i>Mohavea breviflora</i>	Desert snapdragon	1	1	1	0	0	1	1	5	5	Wsh
	<i>Penstemon abietinus</i>	Firleaf penstemon	2	1	1	0	0	U	U	4	6	Sev, Uta
<i>Penstemon acaulis</i> var. <i>acaulis</i>	Stemless penstemon	2	1	0	1	0	1	U	5	6	Dag; BLM: S; USFS: S	

## Appendix 3. UNPS Rare Plant List: Watch List, continued

Family	Species	Common Name	Range	# Pops	# Indiv	Hab Spec	Intrin Rar	Threat	Trend	Min Score	Pot Score	County Dist. & Legal Status
Scrophulariaceae (Orobanchaceae, Phrymaceae, Plantaginaceae)	<i>Penstemon ammophilus</i>	Sandloving penstemon	2	1	1	1	0	0	U	5	6	Grf, Kan, Wsh
	<i>Penstemon angustifolius</i> var. <i>vernalensis</i>	Vernal penstemon	2	1	1	0	0	1	U	5	6	Dag, Uin
	<i>Penstemon atwoodii</i>	Atwood's penstemon	2	1	1	1	0	0	U	5	6	Grf, Kan
	<i>Penstemon barbatus</i> var. <i>trichander</i>	Scarlet penstemon	1	1	1	1	0	U	U	4	6	Snj
	<i>Penstemon bracteatus</i>	Red Canyon penstemon	2	1	1	1	0	0	U	5	6	Grf, USFS: S
	<i>Penstemon compactus</i>	Bear River penstemon	2	1	1	1	0	0	U	5	6	Cch; USFS: S
	<i>Penstemon franklinii</i>	Franklin's penstemon	2	1	1	0	0	1	U	5	6	Irn; BLM: S
	<i>Penstemon idahoensis</i>	Idaho penstemon	1	1	1	1	0	U	U	4	6	Box; BLM: S; USFS: S
	<i>Penstemon marcusii</i>	Marcus Jones' penstemon	2	1	U	1	0	1	U	5	7	Crb, Emr
	<i>Penstemon navajoa</i>	Navajo Mountain penstemon	2	1	1	0	0	1	U	5	6	Snj
	<i>Penstemon petiolatus</i>	Crevice penstemon	1	1	1	1	0	1	0	5	5	Wsh
	<i>Penstemon scariosus</i> var. <i>cyanomontanus</i>	Blue Mountain penstemon	2	1	1	1	0	0	U	5	6	Uin
	<i>Penstemon sepalulus</i>	Littlecup penstemon	2	1	U	1	0	0	U	4	6	Jub, Uta, Wsh?
	<i>Penstemon tusharensis</i>	Tushar penstemon	2	1	U	0	0	1	U	4	6	Bvr, Grf, Irn, Kan?, Piu
	<i>Synthyris alpina</i>	Alpine kittentails	1	1	1	1	0	1	U	5	6	Grn, Snj
<i>Synthyris wyomingensis</i>	Wyoming kitten-tails	1	1	U	1	0	1	U	4	6	Box, Dch	
Selaginellaceae	<i>Selaginella utahensis</i>	Utah spike-moss	2	1	1	1	0	0	0	5	5	Kan, Wsh
Sparganiaceae (Typhaceae)	<i>Sparganium natans</i>	Small burr-reed	1	1	1	1	0	1	U	5	6	Dch, Sum, Uin
Violaceae	<i>Viola frank-smithii</i>	Bear River Range violet	2	1	1	1	0	0	U	5	6	Cch; USFS: S
	<i>Viola purpurea</i> var. <i>charlestonensis</i>	Charleston Mountain violet	1	1	1	1	0	1	0	5	5	Kan, Wsh; USFS: S
Zygophyllaceae	<i>Fagonia laevis</i>	Fagonia	1	1	1	1	0	1	U	5	6	Wsh



UNPS Watch List: Ranking Comments

*Adoxa moschatellina*

Family: Adoxaceae

Comments: Peripheral. One historical population in Abajo Mountains, threats not known - might rate higher [UNPS 2008]. This taxon is reported for the Abajo Mountains (*Rydberg 9719*, 17 August 1911, RENO, NY?) and Uinta Mountains, based on two historical specimens. The Uinta Mountains record has not been relocated. Habitat Specificity scored a "1" based on habitat preferences in adjacent states, where this species is strongly associated with cold drainage and limestone bedrock (often at the mouths of small caves). Information in *A Utah Flora* ("woods and thickets") seems too general. Threats include grazing-related impacts from cattle and naturalized mountain goats. Climate change is also a threat. Droughts and rapid snowmelt due to wind-blown sediments are melting snowpack earlier than normal in our region. These are the primary reasons for the upgrade of the threats to a "1". Trends scored as "1" since this species has not been found since 1911 and botanical surveys of the region have not found new populations. Scored By/Date: J. Alexander/2014; W. Fertig 2016

*Agave utahensis* var. *utahensis*

Family: Agavaceae or Asparagaceae

Comments: Regional endemic. Locally common in limestone areas of Beaver Dam Mountains, but threatened by increased incidence of wildfire with annual weed proliferation and over-harvest for horticulture. Trends may be downward. Scored By/Date: Fertig & Alexander/2009

*Nolina microcarpa*

Family: Agavaceae or Asparagaceae

Comments: Peripheral. Reported for Utah from 2 localities: vicinity of Springdale near Zion Canyon (reported as extinct since 1925) and between St. George and the Beaver Dam Mountains in 1987 (Welsh et al 2008). It has been reported to be confined to outcrops of Navajo Sandstone. Both sites have been searched by me and others at UVU without relocating the population. Off-road disturbance and horticultural collectors could have easily extirpated the population between St. George and the foothills of the Beaver Dam Mountains in the last 20 years. This plant could be one of the first confirmed records of extirpation of a species with modern populations from Utah. Scored By/Date: J. Alexander/2009

*Yucca angustissima* var. *kanabensis*

Synonym: *Yucca kanabensis*

Family: Agavaceae or Asparagaceae

Comments: Regional endemic. Small range, populations small to locally common, habitat specialized (stabilized sand dunes), ca 15-20 occurrences, threats probably low [Fertig 2009]. Intrinsic rarity originally scored as "1" without any justification, despite all other *Y. angustissima* varieties being scored as "0". Intrinsic rarity re-scored as "unknown" due to lack of information about

the status of its moth pollinator status (see also other varieties of *Y. angustissima*); var. *kanabensis* s.s. occurs at low elevations in sandy soils.

Scored By/Date: J. Alexander/2014

Revisions: Scientific name changed

*Yucca brevifolia*

Family: Agavaceae or Asparagaceae

Comments: Peripheral. Populations in the foothills of the Beaver Dam Mountains (Bulldog Canyon and Mo-toqua areas for example) are vulnerable to wildfires, The small range, although larger and more numerous than *Y. schidigera*, makes this species potentially vulnerable to threats due to climate change and grass fires caused by invasion of cheatgrass.

Scored By/Date: J. Alexander/2014

Revisions: Moved from Medium Priority to Watch list

*Yucca schidigera*

Family: Agavaceae or Asparagaceae

Comments: Peripheral. Population in Beaver Dam Mountains very small and vulnerable to wildfire, over-collection of seeds or individual plants for horticulture. Trend downward, [Alexander, May 2009]. Habitat specificity is not restricted elsewhere in its distribution and should probably not be a "1" as in 2009 list. It is rescored as "0." That each species of *Yucca* has its own moth pollinator species could be considered as evidence for Intrinsic Rarity. Additionally these plants in Utah may not flower often and may become extinct if there is a lack of Mojave yucca-specific moths in the area. The Utah population has not been observed in flower. Intrinsic Rarity changed to "unknown" due to possibility of a missing pollinator in this species in Utah. Scored By/Date: J. Alexander/2014

*Yucca utahensis*

Synonym: *Y. elata* var. *utahensis*

Family: Agavaceae or Asparagaceae

Comments: Although considered common in Washington County by *A Utah Flora*, threats have increased due to development and disturbance of the sandy washes and stabilized sand dune valleys in which this species inhabits in Washington County. Intrinsic rarity changed to "unknown" due to the lack of information about the status of its moth pollinator. Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of state-wide surveys, but are probably downward. Relocation of populations has not been attempted recently to determine how many are threatened by development.

Scored By/Date: J.A. Alexander & W. Fertig/2015

Revisions: Moved from Medium Priority to Watch

## UNPS Watch List: Ranking Comments

*Angelica kingii*

Family: Apiaceae or Umbelliferae

Comments: Regional endemic. Found in the Deep Creek Range in Utah. Only 8 specimens at BRY have been collected, all from the Juab County. The primary distribution is from California, Nevada and Idaho. Threats are primarily from riparian habitat modification and disturbance from the grazing-related impacts of cattle. In the Deep Creek Range, this is one of several taxa that may be detrimentally impacted by the proposed introduction of mountain goats by the State of Utah.

Scored By/Date: J. Alexander/2014

Revisions: Moved from Medium Priority to Watch List.

*Angelica wheeleri*

Family: Apiaceae or Umbelliferae

Comments: Regional endemic. 20 specimens at BRY have been collected. It has been found in the Cache, Juab, Piute, Salt Lake, Sevier, and Utah Counties. Threats to this taxon include grazing-related impacts from cattle. At least in the highest elevation populations in the Tushar Mountains and Wasatch Range, naturalized mountain goats are also a threat. Climate change is also a threat. This is the primary reason for re-scoring threats to this species to a "1".

Scored By/Date: J. Alexander/2015

*Cymopterus beckii*

Family: Apiaceae or Umbelliferae

Comments: Regional endemic. Surveys by interagency BLM-NPS team in central UT have greatly increased the number of known individuals (over 30,000). Formerly thought to be endemic to SE Utah, but recently documented in NE Arizona. Typically restricted to shady sandstone canyon habitats.

Scored By/Date: UNPS Rare Plant Comm./2008

*Cymopterus evertii*

Family: Apiaceae or Umbelliferae

Comments: Regional endemic. Only 3 specimens at BRY have been collected in Utah. This taxon is also found in NW Wyoming, disjunct from the Utah populations. Habitat Specificity scored as "1" due to its status as an edaphic endemic to A Utah Flora ("gravelly places on limestone outcrops"). Threats to this taxon include grazing-related impacts from livestock and naturalized mountain goats. Climate change is also a threat. Droughts and rapid snowmelt due to wind-blown sediments are melting snowpack earlier than normal in our region. These are the primary reasons for the upgrade of threats to a "1". Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys. It is a high priority to monitor these alpine endemics that may be impacted by naturalized animals introduced by the State of Utah.

Scored By/Date: J. Alexander/2015

*Cymopterus glomeratus* var. *parvus*

Synonym: *Cymopterus acaulis* var. *parvus*

Family: Apiaceae or Umbelliferae

Comments: Local endemic. Perhaps should be scored as a RegEn. Mostly on aeolian sand dunes - threats probably low overall, but could be impacted by recreation [UNPS 2008]. See comments under *C. higginsii* for taxonomic issues regarding this variety. Unlike *C. higginsii*, populations of var. *parvus* are disjunct from all other populations of *C. glomeratus*.

Scored By/Date: J. Alexander/2014

Revisions: Scientific name changed.

*Cymopterus "higginsii"*

Synonym: Included in *Cymopterus glomeratus* var. *fendleri* by some authors

Family: Apiaceae or Umbelliferae

Comments: Local endemic. Limited range, edaphic endemic, pops moderate sized most years (perhaps = 0), some populations threatened by ATV recreation [UNPS 2008].

At the species level, *Cymopterus glomeratus* is the valid name for this complex, not *Cymopterus acaulis*. Unfortunately, the paper making this taxonomic revision, also subsumed all former varieties of *C. acaulis* into *C. glomeratus* without recognizing any varieties or making any new combinations. There is no morphological support for Welsh's recognition of this taxon as a species (Sun et al. 2005. A multivariate analysis of *Cymopterus glomeratus*, formerly known as *C. acaulis* (Apiaceae) *Rhodora* 107:359-385). Despite their conclusions, the 2005 morphometric study suggests other varieties could be recognized in this complex including var. *parvus* and var. *higginsii*, following the characters used by Goodrich to delimit them in his 1986 treatment. After 2005, Ron Hartman has made new combinations in *Cymopterus*. He made only one new combination in this complex, *Cymopterus glomeratus* var. *fendleri*. Since IMF 2007 recognizes this taxon as part of the *C. acaulis* var. *fendleri* complex, Hartman's new combination may be the only valid taxonomic name for *C. acaulis* var. *higginsii* at the level of variety. *C. higginsii* is even more problematic than var. *parvus* due to populations being sympatric with populations of var. *fendleri*. Since the original comments stated there was ambiguity whether populations size should be scored as "1" or "0", this was rescored as "unknown".

Scored By/Date: J. Alexander/2014

Revisions: Moved from High priority to Watch list

*Cymopterus minimus*

Family: Apiaceae or Umbelliferae

Comments: Local endemic. Claron endemic, often widely distributed but populations often small, threats seem low, many populations protected (including several in Cedar Breaks NM). Fertig & Reynolds (2009) estimated at least 12,500 plants at Cedar Breaks in 2007-08 surveys.

Scored By/Date: Fertig/2009

UNPS Watch List: Ranking Comments

*Hydrocotyle verticillata*

Family: Apiaceae or Araliaceae

Comments: Peripheral. The recent widespread development in Washington County, and the disturbance, re-channeling and potential loss of spring-fed streams, justifies including this taxon in the rare plant list. This plant has been found in clear-running shallow streams and spring outflows in the Mojave Desert region, habitats that are becoming significantly degraded by development, ATV-recreational disturbance, and grazing impacts. This plant has only been collected at BRY 6 times, all from Washington County. Species of small, water-dependent herbs are generally overlooked by botanists. Despite this, the habitat for this species is very limited and population sizes are characteristically small for this taxon in the Mojave Desert, which is the reason for the scores of "1" in this taxon's ranking categories instead of "unknown". It is a high priority to check to see if these populations still exist. Until this has been attempted, it is just an educated guess to say that the trend of this species is downward.

Scored By/Date: J.A. Alexander/2014

Revisions: Moved from Medium to Watch list

*Lomatium graveolens* var. *clarkii*

Family: Apiaceae or Umbelliferae

Comments: Local endemic. Population size small (ca 3000) at one surveyed site in Zion NP that has since burned. Park populations in areas not significantly impacted by tourist activities. Trends probably stable in Zion, not known elsewhere. This may be a regional endemic as populations in the Virgin Mountains of AZ and NV are nearly indistinguishable

Scored By/Date: Alexander & Fertig/2009

*Lomatium junceum*

Family: Apiaceae or Umbelliferae

Comments: Local endemic. Found in variety of habitats in San Rafael Swell area (habitat specificity = 0), better information needed on potential threats, trends, ca 20-25 occurrences known.

Scored By/Date: UNPS Rare Plant Comm./2008

*Musineon lineare*

Family: Apiaceae or Umbelliferae

Comments: Local endemic. Restricted to the Bear River Range and Wellsville Range in NE Utah and adjacent Idaho. Restricted to limestone or dolomite cliffs and slopes (threats probably low). Better information needed on trends.

Scored By/Date: UNPS Rare Plant Comm./2008

*Oreoxis trotteri*

Synonym: *Cymopterus trotteri*

Family: Apiaceae or Umbelliferae

Comments: Local endemic. Restricted to Moab area in Grand County, UT and found on Navajo Sandstone slickrock. Threats probably low, trends not known.

Scored By/Date: UNPS Rare Plant Comm./2008

Revisions: Scientific name changed.

*Oxypolis fendleri*

Family: Apiaceae or Umbelliferae

Comments: Peripheral. Only 5 specimens at BRY have been collected. This taxon's primary range is in Colorado, New Mexico, and Wyoming. It has been found on the Fish Lake Plateau, the Abajo Mountains, and La Sal Mountains in Utah. Habitat Specificity scored as "1", since this a riparian species that reportedly grows on stream banks. The recent introduction of naturalized mountain goats in the La Sal Mountains threatens all alpine riparian endemics in this mountain range. Climate change is also a threat. Droughts and rapid snowmelt due to wind-blown sediments are melting snowpack earlier than normal in our region. These are the primary reasons for the upgrade of the threats to this species to a "1". Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys.

Scored By/Date: J. Alexander/2014

Revisions: Moved from Medium Priority to Watch list

*Podistera eastwoodiae*

Family: Apiaceae or Umbelliferae

Comments: Peripheral. Only 2 specimens at BRY have been collected. This taxon's primary range is in Colorado and New Mexico. It has been found in the La Sal Mountains in Utah. The recent introduction of naturalized mountain goats by the state of Utah in the La Sal Mountains threatens all alpine endemics in this mountain range. Climate change is also a threat. Droughts and rapid snowmelt due to wind-blown sediments are melting snowpack earlier than normal in our region. This is the primary reason for the upgrade of the threats to this species to a "1". Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys.

Scored By/Date: J. Alexander/2014

Revisions: Moved from Medium Priority to Watch List

*Asclepias cutleri*

Family: Asclepiadaceae or Apocynaceae

Comments: Regional endemic. Only 8-10 populations known, populations small, sand dune species, some threats from roads.

Scored By/Date: UNPS Rare Plant Comm./2008

*Cynanchum utahense*

Family: Asclepiadaceae or Apocynaceae

Comments: Regional endemic. Locally common (though numbering less than 30,000) in deep sandy soils from weathered sandstone in the valleys surrounding St. George, Washington, Hurricane, and Leeds. In average years, only a few individuals will be found, if at all. One of the largest populations was severely impacted due to the construction of Sand Hollow Reservoir and the ATV use attracted by the subsequent creation of Sand Hollow State Park near Hurricane. Trend is probably downward

## UNPS Watch List: Ranking Comments

due to the impact of current and future construction, recreational, and grazing disturbance in this area.  
Scored By/Date: J. Alexander/2009

*Asplenium septentrionale*

Family: Aspleniaceae or Polypodiaceae  
Comments: Sparse. Only 4 specimen at BRY have been collected in Utah. It is known Daggett, Grand, San Juan, Uintah, and Washington Counties. It has been most commonly found in the Uinta Mountains. The Grand County Record is from the vicinity of the Warner Guard Station in the Las Sal Mountains (Maguire et al 4341, 09 July 1933, UTC). It is not known if it has been collected since. Found primarily in the Southern U.S. and northern Mexico. Habitat Specificity scored a "1" due to its status as a rock crevice species according to A Utah Flora, although it does not appear to be an edaphic endemic like some fern species. Threats include grazing-related impacts from cattle and naturalized mountain goats. Climate change is also a threat. These are the primary reasons for the upgrade of threats to a "1". Trends scored as "unknown" due to uncertainty of the magnitude of impacts of disturbance on extant populations and the lack of population-level surveys.  
Scored By/Date: J. Alexander/2015  
Revisions: Moved from Medium priority to Watch List

*Cystopteris bulbifera*

Family: Aspleniaceae, Polypodiaceae or Dryopteridaceae  
Comments: Disjunct. The Salt Lake County record is questionable and repeated searches of the few suitable habitats have failed to locate this species [Windham, Mar 2015]. A "?" has replaced the "x" for Salt Lake County. UT-Distribution changed from "peripheral" to **"disjunct" by Windham. These revisions do not change the rank of this taxon.**  
Scored By/Date: J. Alexander & M. Windham/2015

*Gymnocarpium dryopteris*

Family: Aspleniaceae, Polypodiaceae or Dryopteridaceae  
Comments: Disjunct. Only 1 specimen at BRY have been collected. It has been found in the Tushar Mountains in Piute County (Taye 4014, 23 July 1988, BRY). Threats to this taxon may be primarily from the grazing-related impacts of cattle and naturalized mountain goats. Climate change is also a threat. Droughts and rapid snow-melt due to wind-blown sediments are melting snow-pack earlier than normal in our region. This is the primary reason for the re-scoring of threats to a "1". It is not known if these threats are consistent in the remainder of its range in Utah. Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys.  
Scored By/Date: J. Alexander/2015

*Polystichum kruckebergii*

Family: Aspleniaceae, Polypodiaceae or Dryopteridaceae  
Comments: Disjunct. Only 3 specimens at BRY have been collected. It has been found only in Box Elder County in Utah. This taxon's primary range is in Pacific Northwest, California and Idaho. Populations of this taxon are characteristically difficult to determine since "populations sometimes consist of only two or three dwarfed plants that are difficult to distinguish from *P. scopulinum*, with which they may occur. The spreading teeth of equal size at the pinna apex will usually distinguish this species. *Polystichum kruckebergii* is a tetraploid presumed to be of hybrid origin, with *P. lonchitis* and *P. lemmonii* as its diploid progenitors" according to FNA. Habitat Specificity scored a "1" due to its status as a rock crevice species according to FNA ("Rocks and cliffs in subalpine to alpine habitats") and A Utah Flora ("crevices other mesic sites"), although it does not appear to be an edaphic endemic like some fern species. Threats and Trends are scored as "unknown" due to uncertainty of the magnitude and types of threats on extant populations and the lack of population-level surveys.  
Scored By/Date: J. Alexander/2015  
Revisions: Moved from Medium Priority to Watch list

*Antennaria pulcherrima* ssp. *pulcherrima*

Family: Asteraceae or Compositae  
Comments: Peripheral. Only 9 specimens at BRY have been collected in Utah. This taxon's primary range is in the eastern United States and Canada. Habitat Specificity scored as "1" due to its status as a subalpine riparian species according to A Utah Flora ("Sedge-rush meadows, stream sides, and bogs"). Threats to this taxon include grazing-related impacts from cattle, sheep, and naturalized mountain goats. Climate change is also a threat. These are the primary reasons for the upgrade of threats to a "1". Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys.  
Scored By/Date: J. Alexander/2014  
Revisions: Moved from Medium priority to Watch list.

*Arida parviflora*

Synonym: *Machaeranthera parviflora*  
Family: Asteraceae or Compositae  
Comments: Peripheral. Only 2 specimens at BRY have been collected, all of which were collected in San Juan County. The two specimens examined were collected a few miles apart along U.S. Highway 191, north of Bluff (*Arnold Clifford et al.* 16 Sep 2003, BRY). This taxon's primary range is in the southwestern U.S. and Mexico. Habitat Specificity scored as "1" since it is restricted to sandy-saline habitats sensu FNA ("saline flats, playas, swales, sandy areas, river margins"). Occasionally this species has been found on roadsides and other disturbed areas where the saline sandy soils were not removed, as

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is the case with the two Utah collections. The number of individuals is scored as "unknown" due to the lack of population-level data for this taxon in Utah. Due to the increased ATV disturbance and grazing-related impacts along rivers, washes and playas where this taxon occurs, threats are scored as a "1". Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys.

Scored By/Date: J. Alexander/2014

Revisions: Moved from Medium Priority to Watch list

*Arnica lanceolata* ssp. *prima*

Synonym: *Arnica amplexicaulis* var. *prima*

Family: Asteraceae or Compositae

Comments: Peripheral. The specimen cited from A Utah Flora (*S. Goodrich 15101, 27 Aug 1980, BRY*) is from "Engelmann spruce woods along a stream course in the Uinta Mts., s. fork of Rock Creek, at 2625 m, in Duchesne Co." This specimen is now annotated as "*Arnica lanceolata* subsp. *amplexicaulis*" in SEINet. In FNA, all of these names are synonyms of *Arnica lanceolata* ssp. *prima*. Primary range is in the Pacific Northwest and western Canada. Habitat Specificity scored as "1" due to its status as a subalpine riparian and meadow species according to A Utah Flora ("Moist areas, along stream banks, snow-melt areas, montane to alpine meadows"). Number of individuals scored as "unknown" since this record is based on a single specimen. Additional records and surveys are needed, along with a confirmation of this specimen by a expert, in order to score this category. Threats include grazing-related impacts from cattle, sheep, and naturalized mountain goats. Climate change is also a threat. These are the primary reasons for the upgrade of threats to a "1". Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys.

Scored By/Date: J. Alexander/2014

Revisions: Moved from Medium Priority to Watch list

*Artemisia campestris* var. *petiolata*

Synonym: Included in *A. campestris* ssp. *pacifica* by some authors.

Family: Asteraceae or Compositae

Comments: Local endemic. This taxon, and other varietal segregates of *A. campestris* from our region are recognized as a synonym of *A. campestris* ssp. *pacifica* in FNA. Threats include grazing-related impacts from cattle and naturalized mountain goats. Climate change is also a threat. Droughts and rapid snowmelt due to wind-blown sediments are melting snowpack earlier than normal in our region. These are the primary reasons for the upgrade of threats to a "1". Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys.

Scored By/Date: J. Alexander/2014

*Artemisia nova* var. *duchesnicola*

Synonym: Variety not recognized by some authors

Family: Asteraceae or Compositae

Comments: Regional endemic. Possible hybrid, often dominant in limited range, threats not known [UNPS 2008].

The only known populations of this taxon in Utah are found on the Duchesne River Formation in Uintah County. It has been documented as being restricted to xeric habitats and a polyploid derivative (2n=54) of typical *A. nova* (2n=18). Shultz (2009, Systematic Botany Monographs 89:67) states that this xeric polyploid form occurs sporadically in other populations in California, Nevada, and Utah. She did not recognize this at any taxonomic level due to need for more population-level genetic study. Due to these data, this taxon is no longer considered a local endemic. It has a much wider range than originally described and is rescored as a regional endemic with a "1". Further investigation could re-classify this taxon as "Sparse" instead of a "regional endemic" due to its potential, multi-state distribution. Intrinsic Rarity was rescored from "0" to "unknown". Polyploid taxa often have chromosomal or genetic anomalies that may limit reproduction. More genetic study is needed to rescore this variable. This taxon has been left on the watch list at this time.

Scored By/Date: J. Alexander/2014

*Baccharis sergiloides*

Family: Asteraceae or Compositae

Comments: Peripheral. The recent widespread development in Washington County, and the disturbance, re-channeling and potential loss of spring-fed streams, justifies including this taxon in the rare plant list. This plant has been found in riparian habitats and spring outflows throughout the Mojave Desert region. This plant has been collected at BRY 17 times, all from riparian areas in Washington County. Threats scored as a "1" since its habitat is becoming significantly degraded by development, recreational use, and grazing. Although the trends in the St. George area is down due to development disturbance, it is not known whether other disturbances have effected more remote populations in the Beaver Dam Mountains and Beaver Dam Wash. This species is more widely distributed than other rare riparian taxa in Washington County. Population size is scored as unknown due to the lack of information on the numbers of individuals in populations in its range in Utah.

Scored By/Date: J. Alexander/2014

Revisions: Moved from Medium Priority to Watch list

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*Baccharis viminea* var. *atwoodii*

Synonym: Included in *Baccharis salicifolia* by some authors

Family: Asteraceae or Compositae

Comments: Local endemic. Described in 2003, endemic to Colorado River drainage in SE UT, info needed on pop size, threats probably habitat loss along rivers (competition), on waterline of river - not impacted by tamarisk yet [UNPS 2008]. Sensu FNA: "By tagging and measuring individual plants throughout the year, D. H. Wilken (1972) demonstrated that *B. salicifolia* has distinct seasonal forms. The North American plants were once known as *B. glutinosa* or *B. viminea*, which were differentiated from each other by differences in woodiness, leaf size and serration, and flowering time." The flowering time of individuals is interpreted in FNA as a dimorphism not indicative of taxonomic differentiation and therefore spring flowering plants determined as *B. viminea* are treated as a form of *B. salicifolia*. *B. glutinosa* is a name that is now only applied to coastal marsh populations in California. The application of this name to interior populations in the southwestern U.S. is considered misapplied. There is currently no combination for this taxon within the species *B. salicifolia*, therefore var. *atwoodii* can only be recognized as an taxonomically insignificant variant of *B. salicifolia* when *B. viminea* is recognized as a synonym. It is not known whether the form considered by Welsh as "var. *atwoodii*" occurs in Arizona or Nevada in the lower Colorado River basin. The differential character used by Welsh to distinguish this taxon (leaf size) are ones Wilken classified as variable seasonal dimorphisms, which suggests this character is not taxonomically reliable. More research is needed before this taxon can be reclassified as a taxonomically insignificant variant from a local endemic as recognized in A Utah Flora.

Scored By/Date: J. Alexander/2014

*Bidens tenuisecta*

Family: Asteraceae or Compositae

Comments: Peripheral. Only 1 specimen has been collected (not at BRY). It has been found in the Sevier River Valley near Panguitch in Garfield County. This taxon's primary range is in Arizona, Colorado, New Mexico and Mexico. Habitat Specificity scored as "1" due to its status as a riparian species according to A Utah Flora ("Moist places, often where disturbed") and FNA ("Meadows, along streams"). It should be noted that this taxon is reported for the same habitat and geographic location as the listed species *Ranunculus aestivalis*. Riparian habitat modification and disturbance from the grazing-related impacts of cattle are still a threat to this species. Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys. Number of Individuals is scored as "unknown" since no one has relocated this population recently. It may be in other montane meadows or riparian stream habitats in Utah.

Scored By/Date: J. Alexander/2014

Revisions: Moved from Medium Priority to Watch list

*Cirsium barnebyi*

Family: Asteraceae or Compositae

Comments: Regional Endemic. Close to a local endemic (barely in WY, Piceance Basin, CO), Green River shale endemic, may be locally common, abundance and trends not known.

Scored By/Date: Fertig/2009

*Cirsium joannae*

Family: Asteraceae or Compositae

Comments: Local endemic. Recently described, 2nd population in Zion NP discovered in 2007, more data needed on abundance and taxonomic issues. Can co-occur with *Cirsium calcareum* and may be a large-leaved variant of that species (plants without leaves are difficult to separate). Protected in Zion NP. Restricted to hanging gardens and shaded streamsides.

Scored By/Date: Fertig/2009

*Cirsium ownbeyi*

Family: Asteraceae or Compositae

Comments: Regional endemic. Green River shale endemic in WY, but often found in riparian areas in NE Utah. Threats from ATV recreation & mineral development. Bio-control beetles have been found eating *C. ownbeyi*. Reports from the House Range need to be confirmed.

Scored By/Date: Fertig/2009

*Cirsium scariosum* var. *thorneae*

Family: Asteraceae or Compositae

Comments: Regional endemic. Only 14 specimens at BRY have been collected. It is a regional endemic that is also found in similar habitats in Nevada, Idaho and Colorado. Threats to this taxon may be primarily from grazing-related impacts related to stream, meadow, and spring disturbance and improvements. *Cirsium scariosum* has a tendency to have low populations due to its restriction to meadows, seeps and riparian areas, this var. is assumed to have the same trends and is scored as a "1" However, the number of populations in Utah may be greater than 25, and this value is scored as unknown as a result. Although this taxon is reported to be endemic to Utah in A Utah Flora, FNA reports that the taxon is more widespread. The distribution in the FNA treatment was used to score this taxon as a regional endemic instead of a local endemic.

Scored By/Date: J. Alexander/2014

Revisions: Moved from Medium priority to Watch list.

*Crepis runcinata* ssp. *runcinata*

Family: Asteraceae or Compositae

Comments: Peripheral. Only 3 specimens at BRY have been collected. It has been found in Salt Lake and Utah Counties. Primary range is in the eastern United States, and Canada. Habitat Specificity scored as "1" due to its

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status as a bog or meadow riparian species according to A Utah Flora ("bogs") and FNA ("Moist meadows, low wet areas, swales, bogs"). Threats should be considered a "1" due to impacts to wetland habitats from urban development in the Salt Lake Valley and Utah Valley regions. Trend is scored as unknown since populations of this taxon have not been recently relocated in Utah, but it could be assumed that the trend is downward. A specimen from USUUB (*Goodrich 973*, Half Moon Park, Daggett County) was determined as this taxon in 1981 by S. Goodrich. It is from meadows on the north slope of the Uinta Mountains. The specimen may be misidentified since no records from Daggett County were reported in A Utah Flora.

Scored By/Date: J.A. Alexander/2014

Revisions: Moved from Medium Priority to Watch list

*Dicoria canescens*

Family: Asteraceae or Compositae

Comments: Regional endemic. Locally common in deep sandy soils and dunes in Washington Co. Trend may be downward [UNPS Rare Plant Comm. 2008].

Scored By/Date: J. Alexander/2014

Revisions: Moved from Medium Priority to Watch list

*Enceliopsis argophylla*

Family: Asteraceae or Compositae

Comments: Regional endemic. Reports for Utah may be based on an erroneous interpretation of the type locality of Palmer from 1870. This specimen was collected somewhere between the Beaver Dam Mountains of Utah or Arizona southwest towards St. Thomas, Nevada. It is only found on gypsum clay knolls and gypsum derived alluvium fans. It is also possible that it was extirpated. More info needed.

Scored By/Date: J. Alexander/2009

*Ericameria cervina*

Synonym: *Haplopappus cervinus*

Family: Asteraceae or Compositae

Comments: Regional endemic. Only 17 specimens at BRY have been collected and it is endemic to the Great Basin ecoregion. It has been found in Beaver, Iron, and Millard Counties. This taxon is also found in Nevada. Habitat Specificity scored as "1" due to its status as a rock crevice and talus species according to A Utah Flora ("Black sagebrush, shadscale, pinyon-juniper, mountain brush, and Douglas fir-bristlecone pine communities often on limestone or dolomite"). It appears, in part to be an edaphic endemic restricted to limestone, dolomites, with a few atypical populations on ash-flow tuffs. However, Nesom in FNA states that this species is often on granitic outcrops and soils. It is possible that the FNA treatment is in error. Threats to this taxon may be primarily from ATV-recreation and grazing-related impacts, but it scored as unknown due to uncertainty. Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys.

Scored By/Date: J. Alexander/2014

Revisions: Moved from Medium Priority to Watch list.

*Ericameria nauseosa* var. *iridis*

Synonym: *Chrysothamnus nauseosus* var. *iridis*

Family: Asteraceae or Compositae

Comments: Local endemic. Arapien shale endemic, populations locally large, threats from ATV recreation

Scored By/Date: UNPS Rare Plant Comm./2008

Revisions: Scientific name changed

*Ericameria nauseosa* var. *psilocarpa*

Synonym: *Chrysothamnus nauseosus* var. *psilocarpus*

Family: Asteraceae or Compositae

Comments: Local endemic. A "?" was placed in the Piute County column to represent the location for the type of *Ericameria nauseosa* var. *glareosa*, which has no certain taxonomic affinity but it has been placed with specimen determined as var. *psilocarpa* by three authorities, Loran Anderson, Arthur Cronquist, and Lowell Urbatsch et al (FNA).

Scored By/Date: J. Alexander/2014

Revisions: Scientific name changed

*Ericameria zionis*

Synonym: *Haplopappus zionis*

Family: Asteraceae or Compositae

Comments: Local endemic. Populations tend to be small but occur on steep slopes with relatively low threats. Restricted to limestone-derived rocky soils, such as the Claron Formation. At least 4100 plants located in Cedar Breaks NM in 2007-08 surveys by Fertig & Reynolds. No occurrences are known from Zion NP, despite the specific epithet.

Scored By/Date: Fertig/2009

Revisions: Scientific name changed

*Erigeron arenarioides*

Family: Asteraceae or Compositae

Comments: Local endemic. Locally common in Wasatch Range on limestone or quartzite. Range centered on the canyons between Salt Lake City and Provo, with a few outliers towards the Newfoundland Range and Lakeside Mountains. Threats considered low and populations appear stable.

Scored By/Date: UNPS Rare Plant Comm./2008

*Erigeron canaani*

Family: Asteraceae or Compositae

Comments: Local endemic. Populations in Zion NP found to be large in recent surveys, most found in areas not being significantly impacted by tourist trampling. Highest impacts were found in population nearest roadside parking areas where tourist buses regularly stop. Trend in Zion is stable.

Scored By/Date: J. Alexander/2009

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*Erigeron carringtoniae*

Family: Asteraceae or Compositae

Comments: Local endemic. Restricted to Flagstaff Limestone in central Utah, populations few (11 collections cited in Welsh et al. 2008), but threats probably low and trends not known.

Scored By/Date: UNPS Rare Plant Comm./2008

*Erigeron cronquistii*

Family: Asteraceae or Compositae

Comments: Local endemic. Restricted to the Bear River Range on limestone and dolomite cliffs, threats low, trends not known, occurrences few.

Scored By/Date: UNPS Rare Plant Comm./2008

*Erigeron elatior*

Family: Asteraceae or Compositae

Comments: Regional endemic. Only 8 specimens at BRY have been collected, all of which were collected in the La Sal Mountains, Grand and San Juan Counties. Primary range is in the Rocky Mountains. Habitat Specificity scored as "1" due to its status as a subalpine meadow species according to FNA ("Mountain brush, alpine and subalpine meadows, openings in spruce-fir"). Threats include grazing-related impacts from cattle and naturalized mountain goats. Climate change is also a threat. Droughts and rapid snowmelt due to wind-blown sediments are melting snowpack earlier than normal in our region. These are the primary reasons for the upgrade of the threats to this species to a "1". Trends are unknown due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys.

Scored By/Date: J. Alexander/2014

Revisions: Moved from Medium Priority to Watch list.

*Erigeron garrettii*

Family: Asteraceae or Compositae

Comments: Local endemic. Restricted to limestone cliffs in the Wasatch Mountains, threats scored as low but could be impacted by recreational climbing. Trends not known.

Scored By/Date: UNPS Rare Plant Comm./2008

*Erigeron maguirei*

Family: Asteraceae or Compositae

Comments: Local endemic. Formerly listed as Threatened under ESA, but de-listed in 2011. Known from 18 main sites in Capitol Reef area and San Rafael Swell. Populations small, though numbers have increased since it was listed under ESA, threats minimal in Navajo slickrock habitat, trends stable to increasing.

Scored By/Date: UNPS Rare Plant Comm./2008

*Erigeron melanocephalus*

Family: Asteraceae or Compositae

Comments: Regional endemic. Only 10 specimens at BRY have been collected, all of which were collected in the La Sal Mountains, Grand and San Juan Counties. This taxon's primary range is in the Rocky Mountains. Habitat Specificity scored as "1" due to its status as a subalpine talus and meadow species according to FNA ("Rocky slopes, talus, alpine and subalpine meadows, subalpine spruce-fir"). It does not appear to be an edaphic endemic, however. Threats include grazing-related impacts from cattle and naturalized mountain goats. Climate change is also a threat. These are the primary reasons for the upgrade of the threats to this species to a "1". Trends are unknown due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys.

Scored By/Date: J. Alexander/2014

Revisions: Moved from Medium Priority to Watch list

*Erigeron radicans*

Synonym: *Erigeron huberi*

Family: Asteraceae or Compositae

Comments: Regional endemic. Sensu FNA: "*Erigeron radicans* often is essentially scapiform at relatively high elevation (2700–3400 m) in Idaho, Montana, Utah, and Wyoming" Therefore one of the primary differentiating characteristic Welsh uses to substantiate this plant as a taxon is present in populations outside of Utah also. The issue here though, and one that Welsh does not provide any evidence, is whether *E. huberi* is morphologically different than *E. radicans* or whether Welsh gave the populations in Utah the name *E. huberi* without consideration of taxonomy or morphology of populations outside of the state. Since *E. radicans* is not in A Utah Flora, recognizing this taxon as *E. radicans* only changes the status of this species from a local endemic to a regional endemic. There is currently no morphological differences that can be used to differentiate *E. radicans* from *E. huberi*. This change places this taxon on the medium list. If future research shows there are morphological differences, then recognition of *E. huberi* as a distinct taxon should be reevaluated. Habitat Specificity scored as "1" due to its status as limestone rock crevice edaphic endemic of limestone talus with scattered spruce krummholz.. Threats include grazing-related impacts from naturalized mountain goats. Climate change is also a threat. Droughts and rapid snowmelt due to wind-blown sediments are melting snowpack earlier than normal in our region. These are the primary reasons for the upgrade of the threats to this species to a "1". Trends scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys.

Scored By/Date: UNPS Rare Plant Comm./2008

Revisions: Scientific name changed



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*Erigeron religiosus*

Family: Asteraceae or Compositae

Comments: Local endemic. Known from 25-30 occurrences in sandy areas and sand-seep wetlands in southern Utah. Populations often small, those in Zion NP mostly not threatened. Populations in sand seep habitats in Kane County may be impacted by roads and recreation.

Scored By/Date: Alexander & Fertig/2009

*Erigeron sionis* var. *sionis*

Family: Asteraceae or Compositae

Comments: Local endemic. Populations in Zion NP found mostly in sandstone crevices and mostly not affected by trampling. [Fertig & Alexander 2009]. The original record for *E. sionis* was split to recognize the two varieties in this species treated in FNA. The ranking remains the same whether or not the varieties are split. Both taxa are mostly protected within National Parks or Monuments.

Scored By/Date: J. Alexander & Fertig/2014

Revisions: Varieties now recognized

*Erigeron sionis* var. *trilobatus*

Synonym: *Erigeron proselyticus*

Family: Asteraceae or Compositae

Comments: Local endemic. Populations in Cedar Breaks are small (less than 5000 plants observed in 2007-08 survey), mostly in wet Claron sites with low impacts at present [Fertig & Alexander 2009]. The original record for *E. sionis* was split to recognize the two varieties in this species treated in FNA. The ranking remains the same whether or not the varieties are split. Both taxa are mostly protected within National Parks or Monuments. The species status for this taxon first proposed by Nesom was placed back at the varietal level by him in FNA.

Scored By/Date: J. Alexander/2014

Revisions: Varieties now recognized

*Erigeron untermannii*

Family: Asteraceae or Compositae

Comments: Local endemic. Populations large, edaphic endemic (calcareous Uinta and Green River formations) of Tavaputs Plateau. May be threatened by oil development on USFS lands.

Scored By/Date: UNPS Rare Plant Comm./2008

*Erigeron ursinus* var. *meyerae*

Family: Asteraceae or Compositae

Comments: Local endemic. Described in 2003, 2 populations in Zion NP, may be intermediate between *ursinus* x *nauseosus* [Fertig 2008]. This taxon is recognized as a synonym of *E. ursinus*, which is not further split into infraspecific taxa.

Scored By/Date: J. Alexander/2014

*Eurybia sibirica*

Synonym: *Aster sibiricus*, *Aster meritus*, *Eurybia merita*

Family: Asteraceae or Compositae

Comments: Peripheral. Only 5 specimens at BRY have been collected in Utah, all of which were collected in the Uinta Mountains in Summit County. This taxon is distributed in the northern Rocky Mountains north into Canada. Habitat Specificity scored as "1" due to its status as a subalpine talus species according to A Utah Flora. It may be a limestone edaphic endemic, however A Utah Flora also states it has been found on quartzite. Threats to this taxon include grazing-related impacts from naturalized mountain goats. Climate change is also a threat. These are the primary reasons for the upgrade of the threats to this species to a "1". Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys.

Scored By/Date: J. Alexander/2015

Revisions: Moved from Medium Priority to Watch List

*Eutrochium maculatum* var. *bruneri*

Synonyms: *Eupatorium maculatum* var. *bruneri*, *Eupatoriadelphus maculatus* var. *bruneri*

Family: Asteraceae or Compositae

Comments: Peripheral. According to Blake Wellard and Tony Frates, the distribution is primarily limited to the Wasatch Front. Welsh's note that the species is relatively common in the northern part of the state dates back to the earliest Utah Floras. The latest Uinta Basin flora confirms again that the species is known from just a few specimens in the Tidwell/LaPoint area and it appears that a lot of that habitat has been significantly impacted. Wellard has located a Bottle Hollow population; someone else indicated finding an occurrence near Neola but without further information. The Kane County report in A Utah Flora has not been relocated and its current status is unknown. In Utah County, most known occurrences are under current threat or have been lost. The UVU occurrence was bulldozed for the athletic practice field expansion. The Lehi shopping center occurrence has significant and imminent threats. The east shore Utah Lake occurrences are threatened by new road construction. In Salt Lake County, Frates and Wellard still know of only one extant occurrence; that location has had some impacts and it has an uncertain future (close to a superfund site). Davis County has the highest number of known occurrences. Most are threatened. One site is in the southeast corner of the county at 6,000 ft. There are 50 plants with a *Phragmites* threat. There are four sites between Centerville and Ogden, sandwiched in about a 10 mile length area: (a) two tiny occurrences next to each other, less than 30 plants, weed and development threats in North Centerville; (b) two adjoining occurrences in south Farmington, one has been lost due to a housing development, the other consisting of 5 to 10 plants; (c) a small population in a weedy pasture in north Farmington; (d) A cluster of five occurrences in

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the Layton area with extensive teasel and burdock and *Phragmites* threats - only two of these are relatively stable. One site has only five plants, with over half of the former population was lost at another due to Antelope Dr. construction in the past two years. The few scattered occurrences in Cache, Weber, and Box Elder Counties are in areas that have been impacted and some are believed to be lost by road construction and other development. Blake has only been able to confirm two extant Box Elder occurrences and knows of no extant Weber occurrence. He indicates that there were large populations from the 1970's reported in the vicinity of Farr West but there is so much private property, that has been difficult to investigate. This is why Blake and Tony thought it should be getting tracked by the UNHP. Based on these data, Habitat Specificity scored as "1" due to its status as a riparian species according to A Utah Flora ("River and canal banks, wet meadows, bogs, and seeps") and FNA ("Stream and canal banks, wet meadows, bogs, and seeps, calcareous soils"). Threats scored as "1" since riparian habitat modification and disturbance related to residential-highway development and farming impacts are degrading wetlands at least within the Wasatch Front portion of its range in Utah. Trends are scored as "1" based on comments by Frates & Wellard. Number of Individuals scored as "unknown". Although this species is widespread and common in the eastern US, it is on the edge of its range in Utah. Perhaps in the past, Number of Populations could have been scored as a "0" since wetland sites were much more common in the past. There was likely more than 25 populations known in Utah. Frates and Wellard make a case for the number of populations (and therefore the trend also) to be shrinking dramatically over the past ten years due to development. As delimited above, this taxon is estimated herein to have not much fewer than 25 populations and is on the borderline for a "1" in this category.

Scored By/Date: Jason Alexander & Tony Frates/2016  
Revisions: Moved from Medium to Watch list

*Geraea canescens*

Family: Asteraceae or Compositae  
Comments: Peripheral. Locally common in the vicinity of Beaver Dam Wash. Trend downward due to impact of current and future construction, recreational, and grazing disturbance in this area.  
Scored By/Date: J. Alexander/2009

*Gutierrezia pomariensis*

Synonym: *Xanthocephalum sarothrae* var. *pomariensis*  
Family: Asteraceae  
Comments: Local endemic. Mostly an edaphic endemic of Quaternary alluvium and Duchesne River, Uinta, Wasatch & Frontier Formations in Uinta Basin and near Dinosaur National Monument. Abundance and trends poorly known, threats assumed to be low.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Helianthella parryi*

Family: Asteraceae or Compositae  
Comments: Regional endemic. Although no specimens are present at BRY, it has been found in the La Sal Mountains in Utah and vouchered by Al Schneider and Bill Gray (Grand Co., Gold Knob, Las Sal Mountains, 31 July 2010). It is also reported for the Abajo Mountains in A Utah Flora based on observations by Schneider. This taxon's primary range is in the Rocky Mountains. Habitat Specificity scored as "1" due to its status as an alpine and subalpine meadow species according to A Utah Flora ("meadows at edge of conifer patches") but it may have a more variable habitat in the rest of its range sensu FNA ("Upper montane forests"), which does not include Utah in its distribution. Threats include grazing-related impacts from cattle and naturalized mountain goats. Climate change is also a threat. These are the primary reasons for the upgrade of threats to a "1". Trends scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys.  
Scored By/Date: J. Alexander/2015  
Revisions: Added to Watch List, not previously ranked

*Herrickia kingii* var. *barnebeyana*

Synonym: *Aster kingii* var. *barnebeyana*, *Tonestus kingii* var. *barnebyana*  
Family: Asteraceae or Compositae  
Comments: Local endemic. This variety is not recognized as a substantial taxon in A Utah Flora 4th ed. Although he does not directly synonymize it, Welsh does not segregate out the two varieties into a subsection and key like other varieties he accepts. Also he states, "perhaps var. *barnebyana* is nothing more than an growth form of the species, and it may not be worth taxonomic recognition."  
Scored By/Date: J. Alexander/2014  
Revisions: Scientific name changed

*Herrickia kingii* var. *kingii*

Synonym: *Aster kingii* var. *kingii*, *Tonestus kingii* var. *kingii*  
Family: Asteraceae or Compositae  
Comments: Local endemic. Restricted to limestone crevices in shady canyons. Welsh questions whether **populations at south end of range ("var. *barnebyana*"** are sufficiently distinct to recognize. Threats presumed to be low. Trends not well known.  
Scored By/Date: UNPS Rare Plant Comm./2008  
Revisions: Scientific name changed

*Heterotheca jonesii*

Synonym: *Chrysopsis jonesii*  
Family: Asteraceae or Compositae  
Comments: Local endemic. Populations in Zion NP may be large, mostly in areas with few impacts, much available potential habitat. Trend probably stable, at least in Zion.  
Scored By/Date: J. Alexander/2009  
Revisions: Scientific name changed

UNPS Watch List: Ranking Comments

*Hymenoxys helenioides*

Synonym: *Picradenia helenioides*

Family: Asteraceae or Compositae

Comments: Regional endemic. Often found on limestone or sandstone-derived soils in montane forests, brush, and meadows. Populations small and mostly sparse, probably under-collected, information needed on potential threats.

Scored By/Date: Fertig/2009

*Hymenoxys lemmonii*

Family: Asteraceae or Compositae

Comments: Peripheral. Found in specialized habitat (saline meadows), threats and trends not well known, population size presumed to be small, few occurrences (4 collections cited in 2008 Utah Flora).

Scored By/Date: UNPS Rare Plant Comm./2008

*Layia platyglossa*

Synonym: *Layia platyglossa* var. *brevisetata*

Family: Asteraceae or Compositae

Comments: Peripheral. Single known collection was last observed in 1927 and may be mislabeled according to Welsh in A Utah Flora (2008). Found in sand dunes.

Scored By/Date: UNPS Rare Plant Comm./2008

*Lepidospartum latisquamum*

Family: Asteraceae or Compositae

Comments: Peripheral. Known from a single population in a sandy wash in the Pine Valley. Better information needed on abundance and trends.

Scored By/Date: UNPS Rare Plant Comm./2008

*Lygodesmia juncea*

Family: Asteraceae or Compositae

Comments: Peripheral. Only 3 specimens at BRY have been collected, all of which were collected in Emery and Juab Counties. This taxon's primary range is in the Midwestern U.S. and Canada. Habitat Specificity scored as "1" since it is restricted to sand dune habitats sensu A Utah Flora. Intrinsic rarity scored as a "1" due to the unusual reproductive biology of this taxon. Sensu FNA, "mature cypselae are rarely found on this species, and the plants are presumably sterile and reproduce mainly by vegetative means." It is not known if this provides this taxon with a reproductive benefit or disadvantage. Outside of Utah however, this species is widespread and abundant, often occurring in "disturbed sites, railroads, roadsides, barren areas" as well as natural habitats. Due to grazing-related impacts, the subsequent invasion of exotic weeds, and the increased ATV disturbance in quaternary dune fields and sandy areas across the Colorado Plateau and Great Basin, threats are scored as a "1".

Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys.

Scored By/Date: J. Alexander/2014

Revisions: Moved from Medium Priority to Watch list

*Packera dimorphophylla* var. *intermedia*

Synonym: *Senecio dimorphophyllus* var. *intermedius*

Family: Asteraceae or Compositae

Comments: Local endemic. Previously thought to be a La Sal Mountains endemic. This taxon's primary range is in the Uinta Mountains and in a disjunct population on the Wasatch Plateau. A Utah Flora 4th ed. states it is a "Uinta-Navajo-southern plateaus endemic." Threats to this taxon include grazing-related impacts from cattle, sheep, and naturalized mountain goats. Climate change is also a threat. These are the primary reasons for the upgrade of the threats to this species to a "1". Trends scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys.

Scored By/Date: J. Alexander/2014

Revisions: Scientific name changed.

*Packera hartiana*

Synonym: *Senecio hartianus*

Family: Asteraceae or Compositae

Comments: Peripheral. Only 11 specimens at BRY have been collected, all of which were collected in the montane plateaus in Emery and Garfield County and a disjunct population in Kane County. This taxon's primary range is in Arizona, New Mexico and Texas. Habitat Specificity scored as "1" due to its status as a montane riparian species found in "meadows or open areas, woodlands, along streams" sensu FNA. riparian habitat modification and disturbance from the grazing-related impacts of cattle are a threat to this species. Climate change is also a threat. Droughts and rapid snowmelt due to wind-blown sediments are melting snowpack earlier than normal in our region. This is the primary reason for the scoring of the threats as a "1". Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys.

Scored By/Date: J. Alexander/2014

Revisions: Scientific name changed. Moved from Medium Priority to Watch list.

*Packera wernerifolia* "var. *barkleyi*"

Synonym: *Senecio wernerifolius* var. *barkleyi*

Family: Asteraceae or Compositae

Comments: Local endemic. Claron endemic, described in 2003, populations I've seen are small, but better info needed, threats probably low

Scored By/Date: Fertig/2008

Revisions: Scientific name changed to *Packera*, but combination of *O. wernerifolia* var. *barkleyi* apparently has not been published.

*Pectis angustifolia* var. *angustifolia*

Family: Asteraceae or Compositae

Comments: Peripheral. Only 8 specimens at BRY have been collected of this taxon, all of which were collected in Garfield, Kane, and San Juan Counties. Number of individuals is scored as "unknown" since population

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level data for this taxa has yet to be investigated adequately. The local populations of this taxon may be high since *Pectis* is a fall annual with that responds to abundantly to summer rains. This species may be under represented in herbaria in Utah due to lack of people collecting during the late summer and the unpredictability of wet summer monsoon seasons. Habitat Specificity scored as "1" since it is restricted to sandy habitats sensu A Utah Flora ("Sandy sites in four-wing saltbush, *Vandervea*, yucca, ephedra, blackbrush, and sand dropseed communities"). Due to grazing-related impacts, the subsequent invasion of exotic weeds, and the increased ATV disturbance in quaternary dune fields and sandy areas across the Colorado Plateau, threats are scored as a "1". Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys.  
Scored By/Date: J. Alexander/2014  
Revisions: Moved from Medium Priority to Watch list

*Perityle emoryi*

Family: Asteraceae or Compositae  
Comments: Peripheral. FNA states "*Perityle emoryi* is a widespread polyploid of diverse habitats and is often weedy. It is variable; none of the variation appears to have population significance and does not require taxonomic recognition. The range of *P. emoryi* appears to be gradually expanding." It is likely the specimen at BRY (*Tanner s.n.*, 27 Apr 1941) collected near the Toquerville Exit of I-15 was a weedy waif that has not persisted, especially since it has not been collected since 1941 at this easily accessible site. The only collections near the Utah border in SEINet were collected between 1980 and 2012 along the Colorado River between Pearce Ferry and Lees Ferry in Arizona and along the Muddy River near Overton in Nevada.  
Scored By/Date: J. Alexander/2014

*Perityle specuicola*

Family: Asteraceae or Compositae  
Comments: Local endemic. Restricted to hanging garden communities in sandstone and limestone cliffs along the Colorado and San Juan Rivers, where threats appear to be low. Range and number of populations is low, but trends are not known.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Petradoria pumila* var. *graminea*

Family: Asteraceae or Compositae  
Comments: Peripheral. Only 7 specimens at BRY have been collected of this taxon, all of which were collected in Emery, Garfield, Kane, and Washington Counties. Number of Individuals and Number of Populations are scored as "unknown" since population level data for this taxa has yet to be investigated adequately. It may be that this species has locally common populations like var. *pumila*. Habitat Specificity scored as "1" since it is restricted mostly to limestone or calciferous substrates in Utah sensu A Utah Flora. It does not appear to be

restricted to this habitat type in the remainder of its range since FNA states that it occurs in "dry, open, rocky habitats." Threats may be primarily from grazing-related impacts, but it scored as unknown due to uncertainty. Trends scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys.  
Scored By/Date: J. Alexander/2014  
Revisions: Moved from Medium Priority to Watch list.

*Peucephyllum schottii*

Family: Asteraceae or Compositae  
Comments: Peripheral. In UT, known only from the Beaver Dam Mountains, where often found in talus or wash alluvium with a medium to high lime or gypsum content. Rarely found in roadside ditches. Trend may be downward.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Platyschukhria integrifolia* var. *oblongifolia*

Synonym: *Bahia nudicaulis* var. *oblongifolia*  
Family: Asteraceae or Compositae  
Comments: Regional endemic. Restricted to the Four Corners region in salt desert shrub communities, usually on Morrison Formation (Welsh et al. 2008). Information needed on threats and trends.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Psilocarphus brevissimus* var. *brevissimus*

Family: Asteraceae or Compositae  
Comments: Peripheral. Only 6 specimens at BRY have been collected all of which were collected in the Cache and Salt Lake Counties. This taxon's primary range is in the Pacific Northwest and Canada. Habitat Specificity scored as "1" due to its status as a riparian species of drying margins of seasonally inundated sites (vernal pools, ditches), sometimes alkaline sensu FNA. In Utah, this species occurs naturally along margins of lakes and has spread to the margins of man-made reservoirs (A Utah Flora 2008). Riparian habitat modification and disturbance from farming, residential-highway development and the grazing-related impacts of cattle are a threat to this species. Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys.  
Scored By/Date: J. Alexander/2014  
Revisions: Moved from Medium Priority to Watch List

*Psilostrophe tagetina*

Family: Asteraceae or Compositae  
Comments: Peripheral. Only 4 specimens at BRY have been collected of this taxon, all of which were collected in Grand and San Juan Counties. Number of individuals is "unknown". Habitat Specificity scored as "1" since it is restricted to sandy habitats sensu A Utah Flora. Due to grazing-related impacts, the subsequent invasion of exotic weeds, and the increased ATV disturbance in quaternary dune fields and sandy areas across the Colorado

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Plateau, threats are scored as a "1". Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys. A Utah Flora reports that this species has been collected as an ornamental in Washington County. There is no indication that these ornamentals have escaped. Any such escape would be considered an introduction and not tracked on this list  
Scored By/Date: J.Alexander/2014  
Revisions: Moved from Medium Priority to Watch List

*Pyrracoma hirta* var. *lanulosa*

Synonym: *Haplopappus hirtus*  
Family: Asteraceae or Compositae  
Comments: Peripheral. Only 4 specimens at BRY have been collected, all of which were collected in wetlands and meadows in Box Elder County. This taxon's primary range is in the Pacific Northwest and Canada. Habitat Specificity scored as "1" due to its status as a wetland and meadow riparian species according to A Utah Flora ("Wet meadows or seasonally wet ones, with sedges, grasses, and rushes"). FNA suggests this species is a mesic or upland taxon inhabiting "Dry meadows, pine forests, brushy slopes." This contradiction is only resolvable by field observations of the habitat in extant populations in Utah. Threats scored as a "1" due to continuing threats of riparian habitat modification and disturbance from the grazing-related impacts of cattle and due to increasing threats from hay farming-related and municipal (i.e. Las Vegas Valley Water District) water pumping and pipeline activities in the Great Basin. Trend scored as "unknown" since the impacts of these modifications on the populations of this species have not been studied.  
Scored By/Date: J. Alexander/2014  
Revisions: Scientific name changed. Moved from Medium Priority to Watch List

*Pyrracoma racemosa* var. *paniculata*

Synonym: *Haplopappus racemosus* var. *paniculatus*  
Family: Asteraceae or Compositae  
Comments: Peripheral. A Utah Flora 4th ed. does not list the counties in which this variety occurs in Utah. From this, one cannot discern an accurate distribution of this variety in Utah. However, since var. *prionophyllus* is placed herein as a synonym of this variety, var. *paniculata* is the only other variety of this species in Utah. It can therefore be assumed that this taxon can be found in the counties reported by Welsh, with the exception of Millard County. It is not known if *paniculata* occurs with var. *sessiliflora* in that county (thus the "?" for Mil. Threats re-scored as a "1" due to modification and disturbance from the grazing-related impacts of cattle and residential development. Trend scored as "unknown" since the impacts of these modifications on the populations of this species have not been studied.  
Scored By/Date: J. Alexander/2014  
Revisions: Scientific name changed. Moved from Need Data to Watch List

*Pyrracoma racemosa* var. *sessiliflora*

Synonym: *Haplopappus racemosus* var. *sessiliflorus*  
Family: Asteraceae or Compositae  
Comments: Peripheral. Threats re-scored as a "1" due to continuing threats of riparian habitat modification and disturbance related to grazing activities and due to increasing threats from hay farming-related and municipal (i.e. Las Vegas Valley Water District) water pumping and pipeline activities in the Great Basin. Trend is scored as "unknown" since the impacts of these modifications on the populations of this species have not been studied. A Utah Flora does not list the counties in which this variety occurs in Utah, instead Welsh states only an example specimen from Millard County. From this, one cannot discern accurate distribution of this variety in Utah and "?" are placed in the other counties this species is reported by Welsh.  
Scored By/Date: J.Alexander/2014  
Revisions: Scientific name changed.

*Rudbeckia laciniata* var. *ampla*

Family: Asteraceae or Compositae  
Comments: Peripheral. Only 5 specimens at BRY have been collected, all of which were collected in Grand and San Juan Counties. It has been found in the La Sal Mountains in Utah. This taxon's primary range is in the Rocky Mountains and Canada. Habitat Specificity scored as "1" since it is restricted to riparian sites and meadows in the foothills sensu A Utah Flora. Threats to this taxon include riparian habitat modification and disturbance from the grazing-related impacts of cattle and naturalized mountain goats. Climate change is also a threat. These are the primary reasons for the upgrade of the threats to this species to a "1". Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys.  
Scored By/Date: J. Alexander/2014  
Revisions: Moved from Medium Priority to Watch List

*Rudbeckia montana*

Family: Asteraceae or Compositae  
Comments: Regional Endemic. Only 6 specimens at BRY have been collected. It has only been collected in Cedar Canyon (Iron Co.), the Pine Valley Mountains (Washington Co.), and in Zion N.P. (Washington Co.). This taxon's primary range is in Colorado. Habitat Specificity scored as "1" since it is restricted to montane riparian sites along seeps, streams, and meadows sensu FNA and A Utah Flora. Outside of the protected populations in Zion, riparian habitat modification and disturbance from the grazing-related impacts of cattle are a threat to this species. Climate change is also a threat. Droughts and rapid snowmelt due to wind-blown sediments are melting snowpack earlier than normal in our region. This is the primary reason for the scoring of the threats to this species as a "1". Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of

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population-level surveys.

Scored By/Date: J. Alexander/2014

Revisions: Moved from Medium Priority to Watch List

*Senecio fremontii* var. *blitoides*

Family: Asteraceae or Compositae

Comments: Regional endemic. Only 3 specimens at BRY have been collected. It is known from Cache, Grand, Salt Lake, San Juan, Tooele, and Utah Counties in Utah. This taxon's primary range is in the Rocky Mountains.

Threats are high in at least the La Sal Mountains, but it is not known if that holds true throughout this species' range in Utah. Goats were introduced by the State of Utah for trophy hunters. Climate change is also a threat. Droughts and rapid snowmelt due to wind-blown sediments are melting snowpack earlier than normal in our region. These are the primary reasons for the upgrade of the threats to this species to a "1". Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys. It is a high priority to monitor these alpine endemics that may be impacted by naturalized animals introduced by the State of Utah.

Scored By/Date: J. Alexander/2014

Revisions: Moved from Medium Priority to Watch list.

*Senecio hydrophiloides*

Family: Asteraceae or Compositae

Comments: Peripheral. Only 1 specimen at BRY has been collected from the Raft River Mountains in Box Elder County. (*Goodrich 17824*, 30 Aug 1982). This taxon's primary range is in the Rocky Mountains, Pacific Northwest, and Canada. Habitat Specificity is scored as "1" since it has been found mostly in wet meadows and seeps sensu FNA and A Utah Flora. Threats to this taxon may be primarily from grazing-related impacts, but it scored as unknown due to uncertainty. Number of Individuals and Trends are unknown.

Scored By/Date: J. Alexander/2014

Revisions: New to Watch List

*Senecio serra* var. *admirabilis*

Family: Asteraceae or Compositae

Comments: Regional endemic. Only 8 specimens at BRY have been collected. This species has been collected in the La Sal Mountains in Grand and San Juan Counties. This taxon's primary range is in the Rocky Mountains. Habitat Specificity is scored as "1" since it has been found mostly in subalpine wet meadows, stream banks, seeps and open coniferous woodlands sensu FNA and A Utah Flora. Threats include grazing-related impacts from cattle and naturalized mountain goats. Goats were introduced by the State of Utah for trophy hunters. Climate change is also a threat. Droughts and rapid snowmelt due to wind-blown sediments are melting snowpack earlier than normal in our region. These are the primary reasons for the upgrade of threats to a "1". Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant

populations and the lack of population-level surveys. It is a high priority to monitor these alpine endemics that may be impacted by naturalized animals introduced by the State of Utah.

Scored By/Date: J. Alexander/2014

Revisions: Moved from Medium priority to Watch list

*Solidago spectabilis*

Family: Asteraceae or Compositae

Comments: Peripheral. Restricted to saline wetlands at few sites in western Utah [and reported from San Juan County in SEINet], population size and trends not known. Only 6 collections cited in Welsh et al. (2008).

Scored By/Date: UNPS Rare Plant Comm./2008

*Sphaeromeria ruthiae*

Synonym: *Artemisia ruthiae*

Family: Asteraceae or Compositae

Comments: Local endemic. Populations in Zion NP tend to be very small and scattered in the cool shaded canyons throughout the park. Probably more common than previously thought because most individuals are sympatric with and easily confused with *Artemisia ludoviciana*. Highest impacts were found in populations in Refrigerator Canyon and The Narrows. More populations have been found in Parunuweap Canyon and outside the park [Alexander 2009]. Threats mostly low and trends apparently stable to increasing (at least along masonry walls in Walters Wiggles on trail in Refrigerator Canyon) [Fertig 2011].

Scored By/Date: Alexander/2009; W. Fertig/2011

*Stephanomeria tenuifolia* var. *myrioclada*

Family: Asteraceae or Compositae

Comments: Regional endemic. Known from 2 populations in Goose Creek and Bovine Mountains in rock crevices. Threats and trends are not known. Some taxonomic questions.

Scored By/Date: UNPS Rare Plant Comm./2008

*Stephanomeria tenuifolia* var. *uintahensis*

Family: Asteraceae or Compositae

Comments: Local endemic. Restricted to foothills of the Uinta Range. Population size and number of occurrences low, but habitat not unusual. Threats and trends not known. Some taxonomic questions.

A Utah Flora incorrectly spells this var. as "*uintahensis*". Although Welsh may be correcting for an error made in the type publication, *Tropicos* retains the valid spelling "*uintaensis*". Misspellings of this type cannot be corrected even if it is a misspelling of a geographic feature or even someone's proper name [Alexander 2014].

Scored By/Date: UNPS Rare Plant Comm./2008

UNPS Watch List: Ranking Comments

*Symphotrichum ericoides* var. *pansum*

Synonym: *Aster ericoides* var. *pansus*, *Aster pansus*

Family: Asteraceae or Compositae

Comments: Peripheral. Only 16 specimens at BRY have been collected. It has been found in Daggett, Grand, San Juan, Uintah, Utah, and Washington Counties in Utah. Primary range is in California, the Rocky Mountains, and the Pacific Northwest. Habitat Specificity scored as "1" due to its status as a riparian spring, seep and hanging garden species according to A Utah Flora ("meadows in spruce-fir forest"), however, it is variable in FNA ("Prairies and lower elevations in mountains, hillsides, lake shores, salt flats, stream banks and bars, railroad rights-of-way, roadsides, disturbed soils, seasonally dry grounds"). The habitat score raises this taxon to the "watch" list, although marginally. Its range in Utah is restricted to hanging gardens, seeps and springs, although it has a broader habitat in the remainder of its range and can become weed-like invading disturbed areas. The loss of species due to drying of hanging gardens and the development of springs is a concern in Utah, which raises the concern for species such as this one. Threats to this taxon may be primarily from grazing-related impacts, development of springs, and drying of hanging gardens, but it scored as "unknown" due to uncertainty. Trends are scored as "unknown" due to uncertainty of the magnitude of disturbance on extant populations and the lack of population-level surveys.

Scored By/Date: J. Alexander/2015

Revisions: Moved from Medium Priority to Watch list. Scientific name changed.

*Symphotrichum foliacum* var. *apricum*

Synonym: *Aster foliaceus* var. *apricus*

Family: Asteraceae or Compositae

Comments: Sparse. Only 13 specimens at BRY have been collected. It has been found in Garfield, Duchesne, Sanpete, and Summit Counties in Utah. Its range in Utah is restricted to the Uinta Mountains and the Wasatch Plateau. This primary range is in California, the Rocky Mountains, and the Pacific Northwest. Habitat Specificity scored as "1" due to its status as an alpine and subalpine meadow species according to A Utah Flora ("meadows in spruce-fir forest") and FNA ("Alpine and subalpine meadows"). Threats may be primarily from grazing-related impacts from cattle, sheep, and introduced goats, but it scored as "unknown" due to uncertainty.

Scored By/Date: J. Alexander/2015

Revisions: Moved from Medium Priority to Watch list. Scientific name changed.

*Symphotrichum laeve* var. *geyeri*

Synonym: *Aster laevis*

Family: Asteraceae or Compositae

Comments: Peripheral. Only 6 specimens at BRY have been collected all of which were collected in the La Sal Mountains, Grand and San Juan Counties. Primary range is in the Rocky Mountain, Great Plains, and

Canada. Habitat Specificity scored as "1" due to its status as a montane riparian species according to A Utah Flora, but it apparently has an affinity for more variable habitat types in the remainder of its range sensu FNA ("Open, dry habitats, mixed- and tallgrass prairies, open pine forests, montane meadows, edges of aspen groves, edges of montane forests, clearings, roadsides"). Although this taxon is from lower elevation riparian areas that are likely not directly impacted by naturalized mountain goats, riparian habitat modification and disturbance from the grazing-related impacts of cattle are still a threat to this species. Climate change is also a threat. Droughts and rapid snowmelt due to wind-blown sediments are melting snowpack earlier than normal in our region. These are the primary reasons for the upgrade of the threats to "1". Trends are "unknown".

Scored By/Date: J.A. Alexander./2014

Revisions: Scientific name changed following FNA. Moved from Medium to Watch list

*Symphotrichum subulatum* var. *parviflorum*

Synonym: *Aster exilis*

Family: Asteraceae or Compositae

Comments: Peripheral. Only 14 specimens at BRY have been collected. It has been found in Washington County. This taxon's primary range is in the southern United States, Central America, and South America. The name *Aster exilis* used by A Utah Flora has been applied to two different varieties of *Symphotrichum subulatum* and should not be applied to Utah specimens. From FNA: "The status of this name is uncertain; the type specimen has been lost and the description of the plant is inadequate for determining the taxon to which the name should be applied (Nesom 1994; Sundberg 2004)." Habitat Specificity scored as "1" due to its status as a desert riparian species according to A Utah Flora. Grazing-related impacts, off-road recreation, and development in the St. George area are impacting the integrity of wetland habitats and threats should be considered a "1". Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys.

Scored By/Date: J. Alexander/2014

Revisions: Moved from Medium Priority to Watch list. Scientific name changed.

*Symphotrichum welshii*

Synonym: *Aster welshii*

Family: Asteraceae or Compositae

Comments: Regional Endemic. Probably under-collected and more widespread and in a wider variety of wetland habitats than currently known (not restricted to hanging gardens). Threats probably low overall - many protected. Range is much larger than typically thought according to FNA, but this may be based on misidentification of extralimital material.

Scored By/Date: UNPS Rare Plant Comm./2008

Revisions: Scientific name changed.

## UNPS Watch List: Ranking Comments

*Tetranneuris "lapidicola"*

Synonym: *Hymenoxys lapidicola*, included in *Tetranneuris torreyana*

Family: Asteraceae or Compositae

Comments: Local endemic. Restricted to Weber Sandstone in limited area of Uintah County. Lumped in *Tetranneuris torreyana* by some authors. No combination has been published for *lapidicola* if transferred to genus *Tetranneuris* at the species or varietal level.

Threats considered low and trends stable.

Scored By/Date: UNPS Rare Plant Comm./2008

*Townsendia condensata*

Family: Asteraceae or Compositae

Comments: Disjunct. Core of range is in Wyoming where it is usually associated with volcanic substrates. Utah populations small, information needed on threats and trends [Fertig 2008].

Only 3 specimens at BRY have been collected. It has been found in the Tushar Mountains in Piute (Taye 3064, 7 Aug 1984 BRY,UTC) and Beaver (Taye & Frost 2586, 3 Jul 1984 BRY) Counties. This taxon's primary range is in Wyoming and Montana. Habitat Specificity scored as "1" due to its status as an igneous, alpine talus species according to FNA ("Rocky slopes and talus"), however the habitat in A Utah Flora is quite different ("Alpine grass-forb tundra") and may indicate it may be more variable. Threats to this taxon include grazing-related impacts from naturalized mountain goats. Goats were introduced by the State of Utah for trophy hunters. Climate change is also a threat. Droughts and rapid snowmelt due to wind-blown sediments are melting snowpack earlier than normal in our region. This is the primary reason for the scoring of the threats to this species to a "1". Trends scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys.

Scored By/Date: J. Alexander/2015

*Townsendia mensana*

Family: Asteraceae or Compositae

Comments: Local endemic. Frequently collected but restricted to Uintah Basin on Duchesne River, Uinta, and Green River formations. Population size and trends not known.

Scored By/Date: UNPS Rare Plant Comm./2008

*Townsendia minima*

Synonym: *Townsendia montana* var. *minima*, *T. alpigena* var. *minima*

Family: Asteraceae or Compositae

Comments: Local endemic. Restricted to redbed clays and limestone of Claron Formation, mostly in vicinity of Bryce Canyon (but also on Canaan Mountain in Washington Co.), populations usually small, but threats probably low. Trends not known.

Scored By/Date: UNPS Rare Plant Comm./2008

Revisions: Scientific name changed

*Townsendia montana* var. *caelilimensis*

Synonym: *Townsendia montana* var. *caelilimensis*

Family: Asteraceae or Compositae

Comments: Local endemic. Restricted to southern Wasatch Plateau in central Utah, limited to Flagstaff limestone and Uinta & Green River shales. May be locally common. Threats and trends not well known.

Scored By/Date: UNPS Rare Plant Comm./2008

*Townsendia strigosa* var. *strigosa*

Family: Asteraceae or Compositae

Comments: Regional endemic. Only 19 specimens at BRY have been collected. It has been found in Daggett, Duchesne, Grand, and Uintah Counties in Utah. This taxon's primary range is in Wyoming, Colorado and New Mexico. The absolute range of this taxon in Utah is not known. Welsh split some populations in Duchesne and Grand Co. as "var. *prolixa*" without a statement of how many *T. strigosa* specimens at BRY he determined as this variant. It is not known if the typical variety is also found in Duchesne or Grand Counties. These counties are scored as a "?" as a result. Trends are unknown. Threats to this taxon may be primarily from grazing-related impacts and ATV recreation, but it is scored as "unknown" due to uncertainty.

Scored By/Date: J. Alexander/2015

Revisions: Moved from Medium to Watch List.

*Xylorhiza confertifolia*

Synonym: *Machaeranthera confertifolia*

Family: Asteraceae or Compositae

Comments: Local endemic. Populations may be locally abundant on barren substrates (especially shales, such as the Kaiparowits, Morrison, Moenkopi, & Chinle formations), threatened by road construction, ATV recreation. Known from only 20-25 occurrences.

Scored By/Date: UNPS Rare Plant Comm./2008

*Cryptantha compacta*

Family: Boraginaceae

Comments: Local endemic. Mostly on Sevey Dolomite. Some authorities include *C. ochroleuca* within *C. compacta* and give it a broader range and ecological amplitude. Information needed on threats and trends. Known from ca 25-30 occurrences in western Utah—range may be large enough to re-score as a regional endemic.

Scored By/Date: UNPS Rare Plant Comm./2008

*Cryptantha creutzfeldtii*

Family: Boraginaceae

Comments: Local endemic. Known from 10-15 occurrences in desert shrub communities on Mancos Shale in north-central Utah. Considered locally abundant (0). Trends not known.

Scored By/Date: UNPS Rare Plant Comm./2008



UNPS Watch List: Ranking Comments

*Cryptantha elata*

Family: Boraginaceae

Comments: Regional endemic. Restricted to Mancos Shale sites at two main sites in eastern Grand County (also in adjacent Colorado). Outlying reports from Daggett and Sevier counties probably misidentified. Abundance low, threats and trends poorly known.

Scored By/Date: UNPS Rare Plant Comm./2008

*Cryptantha johnstonii*

Family: Boraginaceae

Comments: Local endemic. Twelve main population clusters in San Rafael Swell area in desert shrub and pinyon-juniper (habitat specificity low). Threats may be high from recreation impacts. Trends not known.

Scored By/Date: UNPS Rare Plant Comm./2008

*Cryptantha jonesiana*

Family: Boraginaceae

Comments: Local endemic. Found on Moenkopi Formation in central Utah. Locally abundant. Threats and trends not well known.

Scored By/Date: UNPS Rare Plant Comm./2008

*Cryptantha ochroleuca*

Family: Boraginaceae

Comments: Local endemic. Found on Claron outcrops in Ponderosa and Bristlecone pine forests in Garfield County. Sometimes included in *C. compacta*. Threats seem low and trends stable at present. Report from Iron County needs confirmation.

Scored By/Date: UNPS Rare Plant Comm./2008

*Boecheera goodrichii*

Synonym: *Arabis goodrichii*, *Boecheera exilis* x *B. gracilipes*

Family: Brassicaceae or Cruciferae

Comments: Regional Endemic. This taxon is a apomictic triploid hybrid between *B. gracilipes* and *B. retrofracta*. Reports of this taxon in Millard County, Utah (Welsh, 2008) are based on a typographical error on the type specimen label. The types were actually collected in Beaver County, Utah (Holmgren, 2005). Since the Mountain Home Range extends north into Millard County, *B. goodrichii* will likely be found in that county with further field investigation. Windham reports this taxon from Iron County based on his molecular results (the list is updated herein to reflect his changes). The specific vouchers for this report have not been published. This hybrid has been found in multiple populations in Nevada in the FNA treatment by Al-Shehbaz & Windham. It has been reclassified as a regional endemic, instead of a local endemic. Habitat Specificity was scored a "unknown" in the original scoring of this taxon. It has been rescored a "0" since the habitat in FNA ("rocky slopes in sagebrush, pinyon-juniper woodlands, oak thickets") does not seem unusual. Intrinsic Rarity rescored as a "1" due to it being a apomictic triploid hybrid. Polyploid taxa often have chromosomal or genetic

anomalies that may limit reproduction. *B. gracilipes* is a common species in Nevada and Utah and the hybrids should be expected elsewhere, including nearly all mountain ranges in Clark, Lincoln, and White Pine Counties in Nevada and Iron and Washington Counties in Utah.

Scored By/Date: J. Alexander & M. Windham/2015

Revisions: Moved from Need Data to Watch List

*Boecheera lasiocarpa*

Synonym: *Arabis lasiocarpa*

Family: Brassicaceae or Cruciferae

Comments: Regional endemic. This taxon is a sexual diploid. In FNA, it was reported to be restricted to the Bear River Mountains and northern Wasatch Range in north-central Utah. Molecular studies by Windham (see below) have expanded its range to Tooele and Weber Counties. The voucher details for these records are not known, but the county distribution was amended herein. As delimited by Rollins (1993) and Holmgren (2005), this species included one population from Idaho in the vicinity of Galena Summit. The Idaho population, in which the types are the only known specimens, was split to form *Boecheera rollinsiorum* by Windham & Al-Shehbaz (2006a). The difference between the two species is small. Cauline leaf blade auricles are present in the types of *B. rollinsiorum* and are absent in all the known populations of *B. lasiocarpa*. Habitat Specificity has been rescored as "0" since the habitat does not seem unusual according to FNA (Rocky ridges and slopes with dwarf sagebrush) and A Utah Flora (sagebrush, mountain brush, aspen, and spruce-fir communities). Intrinsic Rarity rescored as a "1" due it being a sexual diploid with a limited distribution. Sexual diploids are the reservoirs in which the varied hybrid taxa have formed and should be protected with a higher level of effort than most of the apomictic triploid taxa. [Alexander, Mar 2015]; Now known from two additional counties: Tooele and Weber [Windham, Mar 2015]

Scored By/Date: J. Alexander & M. Windham/2015

Revisions: Moved from Need Data to Watch List

*Boecheera lincolnensis*

Synonym: *Arabis pulchra* var. *munciensis*

Family: Brassicaceae or Cruciferae

Comments: Windham & Al-Shehbaz (2006a) report that "this taxon has been subsumed under *Arabis pulchra* var. *munciensis* (Rollins, 1941, 1993b; Holmgren 2005 [as *Boecheera*]). Recent morphological, molecular, and cytogenetic work suggests that it is more appropriately treated as a distinct species... We have chosen to apply a new name... at the species level so the taxon may be based on a more widely distributed series of type specimens that have been subject to both molecular and chromosomal analyses. The holotype, isotypes, and paratypes are all proven sexual diploids. *Boecheera lincolnensis* is essentially a Great Basin endemic, found throughout most of southern and central Nevada and barely extending into California and Utah. It is distin-

## UNPS Watch List: Ranking Comments

guished from the primarily Californian *B. pulchra* s. str. by its ascending-divaricate, straight or gently curved (vs. sharply reflexed and geniculate) fruiting pedicels; it differs from the Colorado Plateau endemic *B. formosa* by having lavender (vs. white) petals and longer (10–25 vs. 4–10 mm) fruiting pedicels." The one paratype from Utah was collected in Millard County: "Windham 3012, 2 May 2004, SSE of Garrison near UT 21 in the Halfway Hills, 38°37'06"N, 113°50'29"W (ASU, MO, NMC, NY, UT)." It has recently been reported for Tooele County by Windham based on recent molecular results, but the voucher is not currently known. The specimen from Washington County (Windham 2355, 25 April 2001, ESE of Hurricane near base of Smithsonian Butte, NMC) is a hybrid and not this species (see Windham's comments below). The treatment in A Utah Flora for *A. pulchra* var. *gracilis* is entirely unusable taxonomically. It confuses multiple apomictic and diploid taxa into *A. pulchra*. *Arabis pulchra* var. *gracilis* is recognized in FNA as *Boecheera xylopoda* [*Boecheera perennans* x *B. pulchra*], an apomictic taxon widespread in California and Nevada. It has yet to be documented from Utah. The reports in A Utah Flora of var. *munciensis* or var. *gracilis* from Kane County could be one of several different *Boecheera* species, but not these two. At the current level of knowledge (and since Al-Shehbaz & Windham kept no exsiccatae list for their FNA treatment), Number of Individuals and Number of Populations in Utah are scored as "1". This may change as more specimens of this taxon are confirmed from Utah. Due to its distribution in Nevada, it is to be looked for in Beaver, Iron, and Juab Counties (all of which were reported for var. *gracilis* in A Utah Flora). Habitat Specificity has been scored as "0" since the habitat does not seem unusual according to FNA ("rocky slopes and gravelly soil with sagebrush and other shrubs") and it does not appear to be an edaphic endemic since the holotype and paratypes were collected on multiple different substrates. Intrinsic Rarity rescored as a "1" due to this taxon being a sexual diploid with a limited, peripheral distribution in Utah. It has a broader distribution in Nevada. Sexual diploids are the reservoirs in which the varied hybrid taxa have formed and should be protected with a higher level of effort than most of the apomictic triploid taxa. These changes re-rank this taxon to the "Watch" list [Alexander Mar 2015]; Specimens of this taxon reported for Washington county are hybrids and not this diploid species. Specimens of this taxon have been documented for Tooele County based on recent molecular research [Windham Mar 2015]  
Scored By/Date: J. Alexander & M. Windham/2015  
Revisions: Moved from Need Data to Watch List

*Boecheera puberula*

Synonym: *Arabis puberula*

Family: Brassicaceae or Cruciferae

Comments: Peripheral. The boundaries between *B. puberula* and *B. subpinnatifida*, as described by Al-Shehbaz & Windham, are not as substantial as their other species. Al-Shehbaz & Windham separate the two

based primarily on the tendency of *B. puberula* to have white or pale lavender flowers and *B. subpinnatifida* to have pale or dark lavender flowers. Secondarily, Al-Shehbaz & Windham differentiate them by the width of the pods. *Boecheera puberula* has a tendency for narrower pods (1.9-2.2 mm) than in *B. subpinnatifida* (1.5-3 mm). However, all of these morphological characters are overlapping. The other morphological characters described in Al-Shehbaz & Windham (2010) do not substantially differentiate these taxa either. Al-Shehbaz & Windham (2010) place *B. beckwithii* within their broader concept of *B. puberula*. Though Holmgren recognizes *B. beckwithii* as a distinct species, his delimitation of it is complicated by the inclusion of the type of the apomictic triploid taxon, *A. holboellii* var. *derensis*. There is not currently any more recent information of this distribution of this taxon in Utah than what has been published in A Utah Flora. However, Windham (see below) disputes the accuracy of the determinations of the Rich County specimens in A Utah Flora. Intrinsic Rarity rescored as a "1" due it being a sexual diploid with a limited, peripheral distribution in Utah. It has a broader distribution in Nevada, California, and Oregon. Sexual diploids are the reservoirs in which the varied hybrid taxa have formed and should be protected with a higher level of effort than most of the apomictic triploid taxa. These changes re-rank this taxon to the "Watch" list [Alexander, Mar 2015]; specimens from Rich County are highly unlikely! [Windham Mar 2015].

Scored By/Date: J. Alexander & M. Windham/2015

Revisions: Moved from Need Data to Watch List

*Boecheera schistacea*

Synonym: *Arabis schistacea*

Family: Brassicaceae or Cruciferae

Comments: Regional Endemic. *Boecheera schistacea* is similar to and has been confused with *B. oxylobula* [= *B. demissa*]. In Nevada, it is known from the Monitor Range, Toiyabe Range, and Toquima Range. It has a disjunct distribution in Utah with populations in the Needle Range of Beaver County and populations in the plateaus of Garfield County (Holmgren, 2005). Intrinsic Rarity rescored as a "1" due to it being a sexual diploid with a limited, peripheral distribution in Utah. It has a broader distribution in Nevada. Sexual diploids are the reservoirs in which the varied hybrid taxa have formed and should be protected with a higher level of effort than most of the apomictic triploid taxa.

Scored By/Date: UNPS Rare Plant Comm./2008

Revisions: Scientific name changed. Moved from Medium Priority to Watch List.

*Boecheera selbyi* var. *thorneae*

Synonym: *Arabis perennans* var. *thorneae*

Family: Brassicaceae or Cruciferae

Comments: Local Endemic. The types of *A. perennans* var. *thorneae* have yielded divergent taxonomic treatments. Welsh has consistently placed the types as a variety of *A. perennans*. He believes that the type specimens have pubescence similar to that of *A. perennans*, but are

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otherwise morphologically similar to *A. demissa* (*B. oxylobula* sensu Windham & Al-Shehbaz). Windham & Al-Shehbaz (2007) placed *A. perennans* var. *thorneae* as a synonym of *B. gracilenta*, after having confirmed that it too was a apomictic hybrid with the same parentage as *B. selbyi* and *B. gracilenta*. Holmgren's (2005) placement of *B. gracilenta* as a synonym of *B. perennans* and Welsh's (2008:301) continued assertion that *B. selbyi* "would be treated better at infraspecific level" within *B. perennans* are unsupportable. Recent molecular results by Windham have confirmed that this is a tri-genomic hybrid between *Boecheera gracilipes*, *B. pendulina* & *B. thompsonii* (see below) that is only found in a single population in Utah. Typically, the names for these hybrids have been at the species level in Windham's treatments. It is assumed that *B. selbyi* var. *selbyi* has a different parentage than this taxon. Windham may be using this name as the most currently valid name for this taxon and it may not be the one used in future treatments. Until a revised treatment is published by Windham, most categories are left as originally scored. Habitat Specificity has been rescored as "0" since the habitat does not seem unusual according to FNA ("rocky slopes and sandy soil in pinyon-juniper woodlands and mountain shrub communities") or A Utah Flora ("Scattered pinyon, juniper, and sagebrush"). Intrinsic Rarity rescored as a "1" due to it being an apomictic triploid hybrid. Polyploid taxa often have chromosomal or genetic anomalies that may limit reproduction. These changes re-rank this taxon to the "Watch" list [Alexander Mar 2015]; Currently known from a single population, microsatellite analyses indicate that "*Boecheera selbyi* var. *thorneae*" is an apomictic triploid hybrid containing genomes derived from *Boecheera gracilipes*, *B. pendulina* & *B. thompsonii* [Windham Mar 2015].

Scored By/Date: J. Alexander & M. Windham/2008  
Revisions: Moved from Need Data to Watch List

*Boecheera shockleyi*

Synonym: *Arabis shockleyi*

Family: Brassicaceae or Cruciferae

Comments: Regional Endemic. This taxon is a sexual diploid that is widespread in western Utah and westward to Nevada and California. Habitat Specificity has been kept as "1" since this taxon appears to be an edaphic endemic restricted to limestone or dolomitic substrates sensu FNA ("Rock outcrops (primarily dolomite) and gravelly soil in desert scrub, sagebrush, and pinyon-juniper woodlands") and A Utah Flora ("Shadscale-galleta, ephedra-matchweed, sagebrush, mountain mahogany, and pinyon-juniper communities, often on limestone or dolomitic outcrops or gravels")

Scored By/Date: J. Alexander/2014

*Cardamine breweri*

Family: Brassicaceae or Cruciferae

Comments: Peripheral. Only 6 specimens at BRY have been collected. It has been collected in Morgan, Tooele, Salt Lake, Summit, Wasatch, Utah, and Weber Counties. This taxon's primary range is in the Great Basin and Pacific Northwest. Habitat Specificity scored as "1" due to its status as a stream and seep riparian species according to A Utah Flora. Threats should be considered a "1" due to the impacts to the integrity of wetland habitats from urban development in the Park City, Salt Lake Valley and Utah Valley regions. Grazing related riparian disturbances are also a threat. Trend is scored as unknown since populations of this taxon have not been recently relocated in Utah therefore it is unknown how development has impacted this taxon. It could be assumed that the trend is downward.

Scored By/Date: J. Alexander/2015

Revisions: Moved from Medium Priority to Watch List

*Descurainia incisa* ssp. *paysonii*

Synonym: *Descurainia pinnata* var. *paysonii*

Family: Brassicaceae or Cruciferae

Comments: Peripheral. Mostly in sand dunes in Wyoming, habitat apparently more variable in Utah. Few collections, but may be under-sampled or misidentified (similar to other *Descurainia* varieties but with more elongated pedicels). Thorough review needed of Utah specimens. Threats and trends poorly known.

Scored By/Date: Fertig/2010

*Draba burkei*

Synonym: *Draba maguirei* var. *burkei*

Family: Brassicaceae or Cruciferae

Comments: Local Endemic. Restricted to 6-7 main occurrences on talus slopes in the Wellsville and Wasatch ranges of northern Utah. Threats probably low at present. Trend data lacking.

Scored By/Date: UNPS Rare Plant Comm./2008

*Draba maguirei*

Synonym: *Draba maguirei* var. *maguirei*

Family: Brassicaceae or Cruciferae

Comments: Local Endemic. FNA treatment by Windham states that this taxon has been found only in the Bear River Range in Cache County. A Utah Flora cited records for Box Elder, Utah, and Weber Counties. Windham (see below) has determined the Box Elder and Weber records to be *D. burkei*. The Utah County report in A Utah Flora is yet uncertain. Windham's delimitation is used herein. These changes have been made to this record and do not effect the prior ranking to the "Watch" list [Alexander Mar 2015]; Specimens reported for Box Elder and Weber Counties are *D. burkei* [Windham Mar 2015].

Scored By/Date: J. Alexander & M. Windham/2015

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*Draba ventosa*

Family: Brassicaceae or Cruciferae

Comments: Peripheral. Only 4 specimens at BRY have been collected in Utah. It has been found in the Uinta Mountains in Duchesne and Summit Counties. This taxon's primary range is in the Rocky Mountains, Alaska, and Canada. Habitat Specificity scored a "1" since this taxon appears to be restricted to tundra and talus on Red Pine Shale and quartzite formations, at least in Utah. Threats to this taxon include grazing-related impacts naturalized mountain goats. Climate change is also a threat. Droughts and rapid snowmelt due to wind-blown sediments are melting snowpack earlier than normal in our region. These are the primary reasons for the upgrade of the threats to this species to a "1". Trends scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys. Scored By/Date: J. Alexander/2014

Revisions: Moved from Medium Priority to Watch List

*Lepidium huberi*

Family: Brassicaceae or Cruciferae

Comments: Regional Endemic. 11 specimens at BRY have been collected in Utah, all of which were collected in the Uinta Mountains and West Tavaputs Plateau in Uintah County. It also occurs in extreme western Colorado. Threats to this taxon include grazing-related impacts from cattle and naturalized mountain goats. As this taxon has a very broad elevation range, only the highest elevation populations in the Uinta Mountains are threatened by goats. Climate change is also a threat. These are the primary reasons for the upgrade of the threats to this species to a "1". Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys.

Scored By/Date: J. Alexander/2015

*Lepidium montanum* var. *claronense*

Family: Brassicaceae or Cruciferae

Comments: Local Endemic. Often cited as a Claron endemic, but usually found on alluvial terraces in dry washes below Claron Formation slopes. Populations small but threats seem low. Trend not known. [See comments under *Lepidium montanum* var. *alpinum* (High Priority list) for additional information on treatment of *L. montanum* varieties in FNA—J. Alexander 2014].

Scored By/Date: Fertig/2010

*Lepidium montanum* var. *heterophyllum*

Synonym: *Lepidium integrifolium* var. *heterophyllum*

Family: Brassicaceae or Cruciferae

Comments: Local Endemic. 16 specimens at BRY have been collected. It has been found in the Iron, Millard, Piute, and Sevier Counties. Threats to this taxon may be primarily from habitat modification and disturbance from the grazing-related impacts of cattle. At least in the

highest elevation populations in the Tushar Mountains, naturalized mountain goats are also a threat. Climate change is also a threat. Droughts and rapid snowmelt due to wind-blown sediments are melting snowpack earlier than normal in our region. This is the primary reason for the scoring of the threats to this species to a "1". It is not known if these threats are consistent in the remainder of its range in Utah. Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys.

Scored By/Date: J. Alexander/2014

Revisions: See comments under *Lepidium montanum* var. *alpinum* (High Priority list) for additional information on treatment of *L. montanum* varieties in FNA

*Lepidium montanum* var. *neeseae*

Family: Brassicaceae or Cruciferae

Comments: Local Endemic. Narrow habitat (Navajo sstone with shallow sand), but threats seem low- new location in 2008 in Deer Creek drainage E of Boulder (Dixie NF). Can be difficult to distinguish from some other vars of *L. montanum*.

Scored By/Date: Fertig/2010

Revisions: See comments under *Lepidium montanum* var. *alpinum* (High Priority list) for additional information on treatment of *L. montanum* varieties in FNA [J. Alexander 2014].

*Lepidium nanum*

Family: Brassicaceae or Cruciferae

Comments: Regional Endemic. Single collection in Utah according to Welsh et al. (2008), restricted to white tuffaceous Salt Lake Formation in Tooele Co. Threats and trends poorly known.

Scored By/Date: Fertig/2010

*Physaria acutifolia* var. *purpurea*

Synonym: included in *Physaria grahamii* by some authors.

Family: Brassicaceae or Cruciferae

Comments: Local Endemic. Restricted to Straight Cliffs Formation in Book Cliffs area of E Utah. Taxonomic issues [UNPS 2008].

Sensu FNA, "*Physaria grahamii* is difficult to evaluate due to the paucity of collections. The tentative recognition by N. H. Holmgren (2005b) is followed here." It seems reasonable to keep each of the varieties of *P. acutifolia* recognized by Welsh as separate entities until a more conclusive study is performed.

Scored By/Date: J. Alexander/2014

*Physaria arizonica*

Synonym: *Lesquerella arizonica*

Family: Brassicaceae or Cruciferae

Comments: Regional Endemic. Usually on reddish limey rubble, populations medium sized, threats seem low despite grazing, woodcutting, ATV recreation. Known from 8-10 main occurrences in southern Utah.

Scored By/Date: UNPS Rare Plant Comm./2008

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*Physaria chambersii* var. *sobolifera*

Family: Brassicaceae or Cruciferae

Comments: Local Endemic. May be a growth form adapted to shifting loose talus (Claron Formation) and with branching (soboliferous) caudex branches rather than a simple caudex. This variety is not recognized in FNA vol 7 (2010) [Fertig 2011].

It seems reasonable to keep each of the varieties of *P. chambersii* recognized by Welsh as separate entities until a more conclusive study is performed (See also *Physaria chambersii* var. *canaani* [High Priority list] for more information). [Alexander 2014]

Scored By/Date: J. Alexander/2014

*Physaria floribunda*

Family: Brassicaceae or Cruciferae

Comments: Regional Endemic. One Utah record from vicinity of Sege (Grand Co.), considered a misidentified specimen of *P. grahamii* in *Intermountain Flora*. Information needed on threats and trends. Better info needed on abundance and identity—may be more appropriate for the Need Data list.

Scored By/Date: Fertig/2011

*Physaria garrettii*

Synonym: *Lesquerella garrettii*

Family: Brassicaceae or Cruciferae

Comments: Local Endemic. On Limestone, granite, or quartz talus or rock outcrops in Wasatch Mountains. Threats probably low, trends not known.

Scored By/Date: UNPS Rare Plant Comm./2008

*Physaria hemiphysaria* ssp. *hemiphysaria*

Family: Brassicaceae or Cruciferae

Comments: Local Endemic. Number of Individuals rescored as "1" from unknown. Although this taxon does not appear to be an edaphic endemic, it is reported in FNA to be restricted to "stony meadows of the Wasatch Plateau". Welsh reports an extension of this taxon to the eastern rim of the Uinta Mountains. These changes re-rank this taxon to the "Watch" list.

Scored By/Date: J. Alexander/2014

Revisions: Moved from Need Data to Watch List.

*Physaria neeseae*

Family: Brassicaceae or Cruciferae

Comments: Local Endemic. Newly described in 2008. Number of Individuals rescored as "1" from unknown. Only 17 specimens at BRY have been collected. It has been found in the Henry Mountains in Garfield County. This taxon's primary range is in the Southwestern United States and Mexico. Habitat Specificity is scored as "0" since the habitat does not seem unusual according to A Utah Flora ("Oak, ponderosa pine, pinyon-juniper, sagebrush, and rarely in blackbrush"). Threats to populations in Garfield County may be primarily from grazing-related and ATV recreation impacts, but it is scored as "unknown" due to uncertainty. Trends scored as "unknown" due to uncertainty of the magnitude of

the impacts of disturbance on extant populations and the lack of population-level surveys. A report in the original type description of a low elevation collection of this taxon near Motoqua in Washington County (*Meyer 518 BRY*) is highly suspect. It is likely that Welsh is mistaken in his determination, especially since this habitat, elevation and ecoregion type at this site is entirely unlike that reported for *P. neeseae* and its relatives.

Scored By/Date: J. Alexander/2014

Revisions: Moved from Need Data to Watch List.

*Rorippa sinuata*

Family: Brassicaceae or Cruciferae

Comments: Sparse. Only 9 specimens at BRY have been collected. It has been found in San Juan and Uintah Counties. This taxon's primary range is in the Western and Midwestern U.S. and Canada. Habitat Specificity scored as "1" due to its status as a riparian species according to A Utah Flora. Riparian habitat modification and disturbance from the grazing-related impacts of cattle are a threat to this species. Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys.

Scored By/Date: J. Alexander/2014

Revisions: Moved from Medium Priority to Watch List

*Rorippa sphaerocarpa*

Family: Brassicaceae or Cruciferae

Comments: Peripheral. Only 8 specimens at BRY have been collected. It has been found in Duchesne, Garfield, Piute, and Utah Counties. This taxon's primary range is in the Southwestern U.S. and Mexico. Number of individuals scored as "1" since Welsh states that this species has been found in "moist sites at 1370 to 3050 m in Duchesne, Garfield, Piute, and Utah cos. where evidently rare..." in A Utah Flora. Habitat Specificity scored as "1" due to its status as a riparian species according to A Utah Flora and FNA. Riparian habitat modification and disturbance from the grazing-related impacts of cattle and residential development (Utah County) are a threat to this species. Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys.

Scored By/Date: UNPS Rare Plant Comm./2008

Revisions: Moved from Medium Priority to Watch List

*Subularia aquatica* ssp. *americana*

Family: Brassicaceae or Cruciferae

Comments: Peripheral. Only 1 specimen at BRY has been collected. It has been found in Duchesne County (Uinta Mts., ca 1 mi e. of Mirror Lake, *B. Maguire et al.* 4340, 16 Aug 1933, UTC). This taxon's primary range is in the Northeastern U.S. and Canada. Habitat Specificity scored as "1" due to its status as a riparian species according to FNA ("muddy pool margins, rocky gravelly bottoms, shallow stream pools, wet sedge meadows, shallow sandy water flats, muddy tidal flats, salt

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marshes, gravelly lake beaches...") and A Utah Flora ("margins of ponds and lakes at high elevations. This plant should be sought in habitats similar to those of *Isoetes*"). Threats to this taxon include riparian habitat modification and disturbance. These are the primary reasons for the upgrade of the threats to this species to a "1". Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys. However, since it was last collected in 1933, this population may have been extirpated. Further investigation may result in evidence that trends should be rescored 1.  
Scored By/Date: J. Alexander/2014  
Revisions: Moved from Medium Priority to Watch List

*Thelypodium flexuosum*

Family: Brassicaceae or Cruciferae  
Comments: Peripheral. Restricted to saline greasewood communities. Known from 3 collections in Utah. Threats and trends poorly understood.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Thelypodopsis sagittatum* ssp. *ovalifolium*

Family: Brassicaceae or Cruciferae  
Comments: Regional Endemic. Restricted to saline meadows in the Great Basin and southern Wasatch Plateaus. Infrequently collected. Threats and trends not well understood.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Buddleja utahensis*

Family: Buddlejaceae or Scrophulariaceae  
Comments: Regional Endemic. Relatively common on limestone outcrops and cliffs in the Beaver Dam Mountains; trends may become downward from urban growth and recreation impacts  
Scored By/Date: J.Alexander/2009

*Cylindropuntia echinocarpa*

Synonym: *Opuntia echinocarpa*  
Family: Cactaceae  
Comments: Peripheral. Uncommon on limestone outcrops in the Beaver Dam Mountains. Trend may be downward due to impacts from wildfire, recreation, grazing, and urban expansion.  
Scored By/Date: J.Alexander/2009

*Echinomastus johnsonii*

Synonym: *Neolloydia johnsonii*  
Family: Cactaceae  
Comments: Regional Endemic. Uncommon on limestone outcrops in the Beaver Dam Mountains. Trend is considered down due to the impact of current and future construction, recreational, grazing disturbance, and horticultural collector disturbance in this area. Welsh et al 2008 indicates that this taxon's low population numbers in Utah and its accessibility to collectors makes it highly vulnerable to extirpation.  
Scored By/Date: J. Alexander/2009

*Grusonia pulchella*

Synonym: *Opuntia pulchella*  
Family: Cactaceae  
Comments: Regional Endemic. Infrequently collected (like many cacti), restricted to Great Basin, may be threatened by over-collection by cactus gardeners, trends not known.  
Scored By/Date: UNPS Rare Plant Comm./2008  
Revisions: Scientific name changed

*Mammillaria tetrancistra*

Family: Cactaceae  
Comments: Peripheral. Uncommon on limestone outcrops in the Beaver Dam Mtns. Trend is probably downward due to the impact of current and future construction, recreational, grazing disturbance, and horticultural collector disturbance in this area. Its accessibility to collectors makes it highly vulnerable to extirpation.  
Scored By/Date: J. Alexander/2009

*Callitriche hermaphroditica*

Family: Callitrichaceae or Plantaginaceae  
Comments: Sparse. Only 12 specimen at BRY has been collected. This taxon's primary range is in the North-eastern U.S. and Canada. Habitat Specificity scored as "1" due to its status as a riparian species according to A Utah Flora ("Reservoirs, stock ponds, lakes, and sluggish streams"). riparian habitat modification and disturbance from the grazing-related impacts of cattle are a threat to this species. This is the primary reason for the score of the threats to this species to a "1". Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys  
Scored By/Date: J. Alexander/2014  
Revisions: Moved from Medium Priority to Watch List

*Callitriche heterophylla*

Family: Callitrichaceae or Plantaginaceae  
Comments: Sparse. Only 12 specimen at BRY has been collected. This taxon's primary range is in the north-eastern U.S. and Canada. Habitat Specificity scored as "1" due to its status as a riparian species according to A Utah Flora ("Beaver ponds, marshes, lakes, and reservoirs"). riparian habitat modification and disturbance from residential development and the grazing-related impacts of cattle, and potentially naturalized goats, are a threat to this species. This is the primary reason for the score of the threats to this species to a "1". Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys  
Scored By/Date: J. Alexander/2014  
Revisions: Moved from Medium Priority to Watch List

UNPS Watch List: Ranking Comments

*Downingia laeta*

Family: Campanulaceae

Comments: Sparse. Only 11 specimens at BRY have been collected. Habitat Specificity scored as "1" due to its status as a riparian species according to A Utah Flora ("Drying mud on reservoir, pond margins, and seasonally wet playas, with *Marsilea*, *Boisduvalia*, *Plagiobothrys*, and *Alisma*, typically in heavy clay substrates"). Riparian habitat modification and disturbance from residential development and the grazing-related impacts of cattle are a threat to this species. Number of Individuals is scored as "1", some of these mud flat or vernal pool annuals may have locally high populations. This taxon has never been intensively surveyed. Trend scored as "unknown" since the impacts of these modifications on this species have not been investigated.

Scored By/Date: J. Alexander/2014

Revisions: Moved from Medium Priority to Watch List

*Porterella carnosula*

Family: Campanulaceae

Comments: Sparse. Only 7 specimen at BRY have been collected in Utah. It is known from Rich, Sevier and Summit Counties. This taxon's primary range is in the Pacific Northwest, Rocky Mountains, and the Southwestern U.S. Habitat Specificity rescored a "1" due to its status as a riparian species according to A Utah Flora (Pond and pool margins and streamsides, often in mud). Riparian habitat modification and disturbance related to development and grazing activities are a threat to this species. Number of Individuals is re-scored as "1", some of these mud flat or vernal pool annuals may have locally high populations. Climate change is also a threat. Droughts and rapid snowmelt due to wind-blown sediments are melting snowpack earlier than normal in our region. These are the primary reasons for the upgrade of the threats to this species to a "1". It has never been intensively surveyed. Trends are scored as "unknown". These changes re-rank this taxon to the "Watch" list.

Scored By/Date: J. Alexander/2014

*Cleomella plocasperma*

Family: Capparaceae or Cleomaceae

Comments: Peripheral. Only 11 specimens at BRY have been collected all of which were collected in the Great Basin of western Utah in Beaver, Iron and Millard Counties. This taxon's primary range is in California, Idaho and Nevada. Habitat Specificity scored as "1" due to its status as an alkaline spring mound riparian species according to A Utah Flora ("Saline soils with salt grass, greasewood and other halophytes. At Thermo Hot Springs in Beaver County this plant grows both on the elevated spring mounds and in the clay pans adjacent"). Threats scored as a "1" due to continuing threats of riparian habitat modification and disturbance from the grazing-related impacts of cattle and due to increasing threats from hay farming-related and municipal (i.e. Las Vegas Valley Water District) water pumping and pipeline activities in the Great Basin. Trends are scored as

"unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys.

Scored By/Date: J. Alexander/2014

Revisions: Moved from Medium Priority to Watch List

*Loeflingia squarrosa*

Family: Caryophyllaceae

Comments: Peripheral. Only 5 specimens at BRY have been collected. In Kane County, this taxon has been three times (*Fertig 20415*, 22 May 2003, ca 0.6 mi E of Johnson Wash, ca 13.5 mi due NE of Kanab, BRY; *Fertig 20859*, 5 Oct 2003, 1.5 mi s of Red Knoll and 7 miles due NW of Kanab, BRY; *Fertig 21065*, 2 Jun 2004, 6 mi due NW of Kanab and 6 miles due NE of Coral Pink Sand Dunes State Park, BRY; *Fertig 21904*, Sand Hills, ca 9 mi due NNW of Kanab, 5 Jun 2005, BRY) and in Washington County, 2 times. Habitat Specificity scored as "1" since it is restricted to sand dune habitats. Due to grazing-related impacts, the subsequent invasion of exotic weeds, and the increased ATV disturbance in Quaternary dune fields and sandy areas across the Colorado Plateau, threats are scored as a "1" Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys.

Scored By/Date: J. Alexander/2014

Revisions: Moved from Medium Priority to Watch List

*Minuartia macrantha*

Synonym: *Arenaria macrantha*

Family: Caryophyllaceae

Comments: Regional Endemic. 2 specimens at BRY have been collected in Utah, all of which were collected in the Uinta Mountains Daggett and Uintah County. Habitat Specificity rescored a "1" due to its status as an alpine talus species according to A Utah Flora ("Talus slopes and ridges"). In Wyoming it is reported to be restricted to limestone substrates, but in Utah, the substrate type is not known. Threats to this taxon include grazing-related impacts from naturalized mountain goats. Climate change is also a threat. Droughts and rapid snowmelt due to wind-blown sediments are melting snowpack earlier than normal in our region. These are the primary reasons for the upgrade of the threats to this species to a "1". Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of surveys.

Scored By/Date: J. Alexander/2015

*Silene nachlingerae*

Family: Caryophyllaceae

Comments: Regional Endemic. Calceophile. The single voucher of this taxon for Utah is from Beaver County ("ca 31 mi S of Garrison, Mt. Home Range, 9050 ft. elev., *S. Goodrich*, 19803, 2 Aug 1983, BRY"). It is possible that this taxon may be found in similar habitat in neighboring Millard County also.

Scored By/Date: J. Alexander/2014

## UNPS Watch List: Ranking Comments

*Stellaria crassifolia*

Family: Caryophyllaceae

Comments: Peripheral. Only 5 specimens at BRY have been collected. It has been found in Daggett and Summit Counties in Utah (S. Goodrich 22381, 3 Sep 1987 BRY; C. H. Refsdal & S. Goodrich 7500, 21 Aug 1995 BRY; S. Goodrich 16271, 16303, 1 Sep 1981, 16303, BRY). It should be looked for in Duchesne and Uintah Counties. This taxon's primary range is in the Rocky Mountains and Canada. Habitat Specificity scored as "1" due to its status as a subalpine riparian species according to A Utah Flora ("wet, boggy meadow with *Carex aquatilis* and along streamlets and around springs with grasses and sedges"). Threats to this taxon include riparian habitat modification and disturbance from the grazing-related impacts of cattle and naturalized mountain goats. Climate change is also a threat. These are the primary reasons for the upgrade of the threats to this species to a "1". Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of surveys.

Scored By/Date: J. Alexander/2014

Revisions: Moved from Medium Priority to Watch List

*Stellaria longifolia*

Family: Caryophyllaceae

Comments: Sparse. Only 7 specimens at BRY have been collected. It is known from a single collection in Utah across multiple counties (although the number of counties reported by Welsh is 9, more than the number of specimens). This taxon's primary range is in the Rocky Mountains, Eastern U.S. and Canada. Utah materials may be misidentified specimens of a form of *Stellaria longipes*. FNA does not include Utah or New Mexico in its distribution, while A Utah Flora does. Sensus FNA, "*Stellaria longifolia* often is confused with forms of *S. longipes* but differs in having leaves that are widest at or above the middle and in having the angles of the stem and/or the leaf margins minutely papillate-scabrid. The capsules can be either straw colored or black." Habitat Specificity scored as "1" due to its status as a subalpine riparian and meadow species according to A Utah Flora ("Subalpine and montane meadows and riparian sites in the sagebrush, cottonwood, and lodgepole communities"). Threats may be primarily from riparian habitat modification and disturbance from the grazing-related impacts of cattle, but it scored as unknown due to uncertainty. Threats in the Uinta Mountains and Las Sal Mountains are high due to grazing-related impacts of cattle and naturalized mountain goats. It is not known if these threats are consistent in the remainder of its range in Utah. Trends are "unknown" due to the lack of population-level surveys.

Scored By/Date: J. Alexander/2014

Revisions: Moved from Medium Priority to Watch List

*Atriplex x bonnevillensis*

Synonym: *Atriplex gardneri* var. *bonnevillensis*

Family: Chenopodiaceae or Amaranthaceae

Comments: Regional Endemic. Sensus FNA, "the Bonneville saltbush is apparently a partially stabilized introgressant involving *Atriplex gardneri* var. *falcata* and *A. canescens*." Welsh continues to recognize hybrid taxa a varieties of one of the parents despite chromosomal and genetic research to the contrary. The modern trend, as in *Boechera*, is to recognize these hybrids as genetic species, when an appropriate Nothospecies name can be applied, otherwise they are recognized by their hybrid formula only. This trend is followed in this list.

Scored By/Date: J. Alexander/2014

Revisions: Scientific name changed.

*Atriplex hymenelytra*

Family: Chenopodiaceae or Amaranthaceae

Comments: Regional Endemic. Only 15 specimens at BRY have been collected, all of which were collected in Washington County. This taxon's primary range is in the Mojave Desert in Arizona, California, and Nevada. The populations in Washington County are restricted to gypsum soils of the Muddy Creek Formation on the southern and western slope of the Beaver Dam Mountains. These habitat are becoming significantly degraded by recreational ATV use and grazing. If it occurs at all on the eastern foothills of the Beaver Dam Mountains within the area threatened by development from St. George and Bloomington, it is rare. The trend is likely downward but relocation of populations has not been attempted recently to determine how many are threatened by these disturbances.

Scored By/Date: J. Alexander/2014

Revisions: Moved from Medium Priority to Watch List

*Atriplex obovata*

Family: Chenopodiaceae or Amaranthaceae

Comments: Peripheral. Mainly on Mancos Shale, less than 10 occurrences, all in San Juan County, threats high from herbivory and habitat disturbance, trends not known.

Scored By/Date: UNPS Rare Plant Comm./2008

*Atriplex pleiantha*

Synonym: *Proatriplex pleiantha*

Family: Chenopodiaceae or Amaranthaceae

Comments: Regional Endemic. May be a local endemic in the Four Corners region, where mostly on Morrison Formation. Few populations in Utah, threats and trends unknown.

Scored By/Date: UNPS Rare Plant Comm./2008

*Atriplex polycarpa*

Family: Chenopodiaceae or Amaranthaceae

Comments: Peripheral. Only 8 specimens at BRY have been collected, all of which were collected in Washington County. This taxon's primary range is in the Mojave Desert and Mexico. The populations in Washington



UNPS Watch List: Ranking Comments

County are restricted to saline soils in washes the vicinity St. George and washes draining into the Virgin River. This is the rarest of the 3 saline valley desert Atriplex taxa in this region. The other two are more common and have larger populations, *A. lentiformis* and *A. torreyi*. Threats scored a "1" since these habitat are becoming significantly degraded by recreational ATV use, target shooting, grazing, and development. The trend is likely downward but relocation of populations has not been attempted recently to determine how many are threatened by these disturbances.

Scored By/Date: J. Alexander/2014

Revisions: Moved from Medium Priority to Watch List

*Atriplex wolfii* var. *tenuissima*

Family: Chenopodiaceae or Amaranthaceae

Comments: Regional Endemic. Also very rare in Wyoming, status not known in Colorado. Restricted to greasewood and saltbush communities and perhaps under-collected. Little known about threats and trends.

Scored By/Date: UNPS Rare Plant Comm./2008

*Corispermum welshii*

Family: Chenopodiaceae or Amaranthaceae

Comments: Regional Endemic. Described in 1995, type from Coral Pink Sand Dunes, psammophile (sand dune lover). May be impacted by ATV recreation. Few known populations, but easy to confuse with other *Corispermum* taxa and probably under-collected. Abundance not well known.

Scored By/Date: Fertig/2010

*Nitrophila occidentalis*

Family: Chenopodiaceae or Amaranthaceae

Comments: Peripheral. Only 10 specimens at BRY have been collected, all of which were collected in the Great Basin of western Utah, Juab and Millard Counties. It may be present in Tooele and Box Elder Counties. This taxon's primary range is in the Great Basin, Mojave Desert, and Mexico. Habitat Specificity scored as "1" due to its status as a alkaline spring mound riparian species according to A Utah Flora. Threats scored as a "1" due to continuing threats of riparian habitat modification and disturbance from the grazing-related impacts of cattle and due to increasing threats from hay farming-related and municipal (i.e. Las Vegas Valley Water District) water pumping and pipeline activities in the Great Basin. Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys.

Scored By/Date: J. Alexander/2014

Revisions: Moved from Medium Priority to Watch List

*Crassula aquatica*

Synonym: *Tillaea aquatica*

Family: Crassulaceae

Comments: Peripheral. Only 1 specimen at BRY has been collected. It has been found in Daggett County (n. side of Diamond Mt. Plateau above Little Davenport Cr.,

*Neese 13963*, 28 Jun 1983, BRY). It is also reported for Uintah County in A Utah Flora without a voucher citation. This taxon's primary range is in the Western and Eastern U.S. and Canada. Habitat Specificity scored as "1" due to its status as a riparian species according to A Utah Flora ("Shallow water in a wet meadow"). riparian habitat modification and disturbance from the grazing-related impacts of cattle are a threat to this species. Trend is scored as "unknown" since the impacts of these modifications on the populations of this species have not been investigated.

Probably under-collected, easily overlooked [Fertig 2016].

Scored By/Date: J. Alexander/2015

Revisions: Moved from Medium Priority to Watch List

*Rhodiola integrifolia* ssp. *integrifolia*

Synonym: *Sedum rosea* var. *integrifolium*

Family: Crassulaceae

Comments: Peripheral. Only 8 specimens at BRY have been collected of this taxon. It has been found in Box Elder and Juab Counties. It is restricted to the Raft River and Deep Creek Mountains in Utah. This taxon's primary range is in the Rocky Mountains and Pacific Northwest. Habitat Specificity scored as "1" due to its status as a alpine rock cliff and crevice species according to A Utah Flora ("Rock outcrops and talus slopes, often in quartzitic rubble, in alpine tundra"). and FNA ("Cliffs and rocky slopes, alpine meadows, tundra"). Threats to this taxon may be primarily from grazing-related impacts, but it scored as "unknown" due to uncertainty. At least in the Deep Creek Range, this is one of several taxa that will be threatened by the proposed introduction of naturalized mountain goats by the State of Utah. Climate change is also a threat. Although the climate threats alone do not warrant changes, threats will be upgraded to "1" if the introductions proceed. Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys.

Scored By/Date: J. Alexander/2015

Revisions: Moved from Medium Priority to Watch List

*Cuscuta applanata*

Family: Cuscutaceae or Convolvulaceae

Comments: Peripheral. Single record in Utah, host plants variable, intrinsic rarity high due to parasitic relationship with host plants. Threats and trends not known.

Scored By/Date: UNPS Rare Plant Comm./2008

*Cuscuta cuspidata*

Family: Cuscutaceae or Convolvulaceae

Comments: Peripheral. Known from 3 collections in Utah. Intrinsic rarity high due to parasitic relationship to hosts. Threats and trends poorly known.

Scored By/Date: UNPS Rare Plant Comm./2008

## UNPS Watch List: Ranking Comments

*Carex alma*

Family: Cyperaceae

Comments: Peripheral. *Carex alma* was not reported for Utah in FNA. There are two vouchers from Washington County, (*Baird 2617*, 29 April 1987, Beaver Dam Wash at Bentley Spring, BRY; *Tuhy 3865*, 08 January 1999, east fork of Beaver Dam Wash, ca 0.5 mi N of boundary of Desert Inn Ranch, BRY). The determination of the BYU vouchers need to be confirmed. However, this taxon has been found across the border in Nevada, most notably in Lincoln County within the upper Beaver Dam Wash drainage in the Clover Mountains (*Tiehm 16314*, 7 June 2011, RENO UTC). The vouchers are mostly likely correctly determined and FNA missed this record for Utah. Habitat Specificity rescored a "1" due to its status as a riparian species according to FNA ("Stream banks, springs, seeps in desert regions"). It was not documented by the original list why this species scored as "0" when all other riparian Carices were scored as "1". Riparian habitat modification and disturbance from the grazing-related impacts of cattle may be a threat, however it is scored as "unknown" due to uncertainty.

Scored By/Date: J. Alexander/2014

Revisions: Moved from Medium Priority to Watch List

*Carex atherodes*

Family: Cyperaceae

Comments: Sparse. Only 2 specimens at BRY have been collected. It has been found in Sevier and Utah Counties in Utah. Primary range is in the Western U.S. and Canada. Habitat Specificity scored as "1" due to its status as a riparian species according to A Utah Flora ("Margins of ponds and lakes, and along streams"). Riparian habitat modification and disturbance related to residential development, farming, and grazing-related impacts of cattle are a threat to this species. Climate change is also a threat. Droughts and rapid snowmelt due to wind-blown sediments are melting snowpack earlier than normal in our region. Trend is scored as "unknown" since the impacts of these modifications on the populations of this species have not been investigated.

Scored By/Date: J. Alexander/2014

Revisions: Moved from Medium Priority to Watch List

*Carex bebbii*

Family: Cyperaceae

Comments: Peripheral. Only 2 specimens at BRY have been collected. It has been found in the Uinta Mountains in Uintah County. This taxon's primary range is in the Northern U.S. and Canada. Habitat Specificity scored as "1" due to its status as a riparian species according to A Utah Flora ("Riparian communities, margins of beaver ponds, and along ditches"). Threats to this taxon include riparian habitat modification and disturbance from the grazing-related impacts of cattle and naturalized mountain goats. Climate change is also a threat. Droughts and rapid snowmelt due to wind-blown sediments are melting snowpack earlier than normal in our region. These are the primary reasons for the upgrade of the threats to

this species to a "1". Trends scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys.

Scored By/Date: J. Alexander/2014

Revisions: Moved from Medium Priority to Watch List

*Carex crawei*

Family: Cyperaceae

Comments: Disjunct. Known from one collection in Utah at a marl bog in Kane County (Welsh et al. (2008). Threats and trends not known.

Scored By/Date: UNPS Rare Plant Comm./2008

*Carex curatorum*

Synonym: *Carex scirpoidea* var. *curatorum*

Family: Cyperaceae

Comments: Regional Endemic. Found in hanging gardens and shady canyon wetlands in Colorado River drainage. Recently documented in Dinosaur NM. Threat scored as unknown but may need to be upgraded to 1 based on threats to desert riparian systems.

Scored By/Date: Fertig/2010

*Carex diandra*

Family: Cyperaceae

Comments: Sparse. Known from two reports in Utah (Duchesne and Garfield counties). Usually found in calcareous wetlands.

Scored By/Date: UNPS Rare Plant Comm./2008

*Carex idaho*

Family: Cyperaceae

Comments: Disjunct. Understandable the plant hasn't been recognized in the past. One of the pieces of evidence Cronquist used for combining *Carex idaho* and *C. parryana* is that some sites seem to have both forms. Turns out he's right that there are half a dozen sites where they co-occur BUT the plants remain morphologically distinct there, without intermediates, and they occupy different microhabitats. You know *Carex* are all about microhabitat specialization.) Additional Source: Reznicek, A. A., and D. F. Murray. 2013. A re-evaluation of *Carex specuicola* and the *Carex parryana* complex (Cyperaceae). J. Bot. Res. Inst. Texas 7:37-51.

Scored By/Date: Barbara Wilson (Carex Working Group)/2014

Revisions: New to Watch List

*Carex jonesii*

Family: Cyperaceae

Comments: Peripheral. Only 11 specimens at BRY have been collected. It has been found in the Tushar Mountains (Beaver County), Deep Creek Range (Jubb County), and Wasatch Range (Salt Lake County). The record for the Deep Creek Range in Jubb County was collected by Ben Franklin (6741, BRY). This taxon's primary range is in the Pacific Northwest. *Carex jonesii* was not reported for Utah in FNA. Sensus FNA, "*Carex*

UNPS Watch List: Ranking Comments

*jonesii* is frequently confused with other western montane sedges that have capitate inflorescences. It is most often confused with *C. illota* due to the strong similarity of the perigynia (somewhat shorter and more rounded apically in *C. illota*)." The determination of vouchers at BRY needs to be confirmed. Habitat Specificity scored as "1" due to its status as a riparian species according to A Utah Flora ("Meadows and along streams") and FNA ("Wet subalpine meadows, stream banks"). Number of individuals scored as "unknown" due to this taxon's uncertain status in Utah. In the Tushar Mountains, threats to this taxon include riparian habitat modification and disturbance from the grazing-related impacts of cattle and naturalized mountain goats. At least in the Deep Creek Range, this is one of several taxa that may be threatened by the proposed introduction of mountain goats by the State of Utah. Climate change is also a threat. These are the primary reasons for the upgrade of threats to a "1". Trends are "unknown"  
Scored By/Date: J. Alexander/2014  
Revisions: Moved from Medium Priority to Watch List

*Carex lachenalii*

Synonym: *Carex bipartita*  
Family: Cyperaceae  
Comments: Peripheral. Only 2 specimens at BRY have been collected. It has been found in Uinta Mountains in Duchesne and Summit Counties. Its primary range is in the Rocky Mountains and Canada. Habitat Specificity scored as "1" due to its status as a riparian species according to A Utah Flora ("Wet alpine meadows") and FNA ("Arctic and alpine meadows, peatlands, mossy banks of brooks"). Threats to this taxon include riparian habitat modification and disturbance from the grazing-related impacts of cattle and naturalized mountain goats. Climate change is also a threat. Droughts and rapid snowmelt due to wind-blown sediments are melting snowpack earlier than normal in our region. These are the primary reasons for the upgrade of threats to a "1". Trends are "unknown"  
Scored By/Date: J. Alexander/2014  
Revisions: Moved from Medium Priority to Watch List

*Carex lasiocarpa*

Family: Cyperaceae  
Comments: Peripheral. Only 7 specimen at BRY have been collected in Utah. It is known from Daggett, Sevier and Uintah Counties. This taxon's primary range is in the Pacific Northwest, Rocky Mountains, eastern U.S. and Canada. Habitat Specificity scored a "1" due to its status as a riparian species according to A Utah Flora ("Swampy meadows and ponds (in water to ca 30 cm deep) on subalpine moraines"). Threats to this taxon include grazing-related impacts from cattle. Climate change is also a threat. Droughts and rapid snowmelt due to wind-blown sediments are melting snowpack earlier than normal in our region. These are the primary reasons for the upgrade of threats to "1". Trends scored as "unknown".  
Scored By/Date: J. Alexander/2015

*Carex leporinella*

Family: Cyperaceae  
Comments: Peripheral. Only 12 specimens at BRY have been collected. It has been found in the Uinta Mountains in Duchesne, Summit, and Wasatch Counties. This taxon's primary range is in the Rocky Mountains and Pacific Northwest. Habitat Specificity scored as "1" due to its status as a riparian species according to A Utah Flora ("Wet and drying meadows, often in drying mud of ephemeral pools or around ponds and lakes"). Threats include riparian habitat modification and disturbance from the grazing-related impacts of cattle and naturalized mountain goats. Climate change is also a threat. Droughts and rapid snowmelt due to wind-blown sediments are melting snowpack earlier than normal in our region. These are the primary reasons for the upgrade of the threats to this species to a "1". Trends scored as "unknown".  
Scored By/Date: UNPS Rare Plant Comm./2008  
Revisions: Moved from Medium Priority to Watch List

*Carex leptalea*

Family: Cyperaceae  
Comments: Peripheral. Only 7 specimen at BRY have been collected in Utah. It is known from Daggett, Duchesne, and Uintah counties. Its primary range is in the northern U.S. and Canada. Habitat Specificity scored a "1" due to its status as a riparian species according to A Utah Flora ("Shady seepy bogs"). Threats to this taxon include grazing-related impacts from cattle. Climate change is also a threat. Droughts and rapid snowmelt due to wind-blown sediments are melting snowpack earlier than normal in our region. These are the primary reasons for the upgrade of the threats to this species to a "1". Trends are scored as "unknown".  
Scored By/Date: J. Alexander/2015

*Carex livida*

Family: Cyperaceae  
Comments: Disjunct. Only 7 specimen at BRY have been collected in Utah. It is known from Duchesne and Uintah Counties. This taxon's primary range is in the northern U.S. and Canada. Habitat Specificity scored a "1" due to its status as a riparian species according to A Utah Flora ("Subalpine, boggy meadows"). Threats to this taxon include grazing-related impacts from cattle. Climate change is also a threat. These are the primary reasons for the upgrade of the threats to this species to a "1". Trends are "unknown"  
Scored By/Date: J. Alexander/2015

*Carex luzulina* var. *ablata*

Family: Cyperaceae  
Comments: Peripheral. Only 6 specimens at BRY have been collected. This taxon's primary range is in Colorado and New Mexico. It has been found in the Tushar Mountains in Piute and Beaver Counties with an outlier in Salt Lake County. Habitat Specificity scored as "1" due to its status as an alpine riparian species according to FNA

## UNPS Watch List: Ranking Comments

("Wet meadows, bogs") and A Utah Flora ("Engelmann spruce and meadow communities, often along streams"). Riparian habitat modification and disturbance from the grazing-related impacts of cattle. Climate change is also a threat. This is the primary reason for the upgrade of the threats to this species to a "1". Trends scored as "unknown"

Scored By/Date: J. Alexander/2014

Revisions: Moved from Medium Priority to Watch List

*Carex microglochis*

Family: Cyperaceae

Comments: Disjunct. Only 7 specimen at BRY have been collected in Utah. It is known from Daggett, Duchesne and Emery Counties. Its primary range is in the Rocky Mountains and western Canada. Habitat Specificity scored a "1" due to its status as a riparian species according to A Utah Flora ("Calcareous boggy meadows"). Threats to this taxon include grazing-related impacts from cattle and climate change is also a threat. These are the primary reasons for the upgrade of the threats to this species to a "1". Trends scored as "unknown" Scored By/Date: J. Alexander/2015

*Carex multicosata*

Family: Cyperaceae

Comments: Peripheral. Only 7 specimens at BRY have been collected. It has been found in Cache, Daggett, Summit, and Uintah Counties. Its primary range is in Pacific Northwest. Habitat Specificity scored as "1" due to its status as a riparian species according to A Utah Flora ("Moist and wet meadows and along streams"), but it does not seem to be a riparian species sensu FNA since it is only reported for "dry soils". Threats to this taxon include grazing-related impacts from cattle and naturalized mountain goats. Climate change is also a threat. These are the primary reasons for the upgrade of the threats to this species to a "1". Trends scored as "unknown"

Scored By/Date: J. Alexander/2014

Revisions: Moved from Medium Priority to Watch List

*Carex neurophora*

Family: Cyperaceae

Comments: Peripheral. Only 3 specimens at BRY have been collected (although 5 counties have been listed in the distribution in A Utah Flora: Beaver, Cache, Emery, Salt Lake and Wasatch). The voucher for the Tushar Mountains was collected near Puffer Lake (*Lewis 495*, 3 August 1955, BRY) and near Big Flat Ranger Station (*Lewis 483*, 2 August 1955, UTC). The Cache County record was collected in the Bear River Range (Maguire et al 15263, 24 July 1936, UTC). The Emery County record was collected along Sawmill Creek (*Lewis 4192*, 19 July 1976, BRY). This taxon was most recently collected multiple times in the Uinta Mountains in Wasatch County. Its primary range is in the Pacific Northwest. FNA does not list this taxon for Utah. It, like *C. jonesii* and *C. vernacula*, appears to be from a group of easily misident-

ified species within *Carex*. The determination of the vouchers above need confirmation. Habitat Specificity scored as "1" due to its status as a riparian species according to A Utah Flora ("Wet meadows and along streams"). Number of individuals was scored a "1" in the original list. Most of the specimens cited as vouchers for this species are historical. Only one population in the Uinta Mountains has been collected in the past 20 years. These data suggest that the size of populations are unknown through most of its range in Utah. Number of Individuals has been rescored to "unknown". At least in the Tushar and Uinta Mountains, threats to this taxon include grazing-related impacts from cattle and naturalized mountain goats. At least one site above is along a lake near a Ski Resort in the Tushars. This proximity may also have had impacts on this population. Climate change is also a threat. This is the primary reason for **the upgrade of threats to a "1". Trends "unknown"**.

Scored By/Date: J. Alexander/2014

Revisions: Moved from Medium Priority to Watch List

*Carex perglobosa*

Family: Cyperaceae

Comments: Regional Endemic. Only 3 specimens at BRY have been collected in Utah. It has been found in the La Sal Mountains in Utah. It has been found in Colorado. Habitat Specificity re-scored a "1" due to its status as an alpine rock talus species according to FNA ("Dry alpine tundra, especially scree slopes"). Habitat was scored a "0" in the original list, probably due to the vague habitat description in A Utah Flora. Threats to this taxon include grazing-related impacts from cattle and naturalized mountain goats. Climate change is also a threat. These are the primary reasons for the upgrade of the threats to this species to a "1". Trends are scored as "unknown"

Scored By/Date: J. Alexander/2015

Revisions: Moved from Medium Priority to Watch List

*Carex retrorsa*

Family: Cyperaceae

Comments: Peripheral. Only 4 specimens at BRY have been collected. It has been found in Utah, Wasatch, and Weber Counties. Its primary range is in Rocky Mountains and the Eastern U.S. Habitat Specificity scored as "1" due to its status as a riparian species according to A Utah Flora ("Along rivers and margins of ponds and reservoirs") and FNA ("Swamps, wet thickets, often along streams, marshes, sedge meadows, shores of streams, ponds, and lakes"). Threats scored as "1" since riparian habitat modification and disturbance related to residential-highway development, farming, and grazing-related impacts are degrading wetlands in these counties. Trends are scored as "unknown"

Scored By/Date: J. Alexander/2014

Revisions: Moved from Medium Priority to Watch List

UNPS Watch List: Ranking Comments

*Carex scirpoidea* ssp. *scirpoidea*

Family: Cyperaceae

Comments: Peripheral. Only 7 specimens at BRY have been collected. It has been found in Emery, Garfield, and Iron Counties. This is a circumboreal species with a primary range in North America in the Rocky Mountains, Eastern U.S. and Canada. Habitat Specificity scored as "1" due to its status as a riparian species and edaphic endemic according to A Utah Flora ("Riparian and wet meadow communities on calcareous substrates") and FNA. Riparian habitat modification and disturbance from the grazing-related impacts of cattle are a threat to this species. Trend scored as "unknown".

Scored By/Date: J. Alexander/2014

Revisions: Moved from Medium Priority to Watch List

*Carex scopulorum* var. *bracteosa*

Family: Cyperaceae

Comments: Peripheral. Only 10 specimens at BRY have been collected. It has been found in the Deep Creek Range, Raft River Mountains, and in Uinta Mountains in Box Elder, Daggett, and Juab Counties. This taxon's primary range is in the Rocky Mountains and Canada. Habitat Specificity scored as "1" due to its status as a subalpine riparian species according to A Utah Flora ("Wet meadows and along streams") and FNA ("Wet subalpine and alpine meadows"). At least in the Deep Creek Range, this is one of several taxa that will be threatened by the proposed introduction of naturalized mountain goats by the State of Utah. Threats are high in at least the Uinta Mountains, but it is not known if that holds true throughout this species' range in Utah. Threats to this taxon include riparian habitat modification and disturbance from the grazing-related impacts of cattle and naturalized mountain goats. Climate change is also a threat. These are the primary reasons for the upgrade of the threats to this species to a "1". Trends are scored as "unknown".

Scored By/Date: J. Alexander/2014

Revisions: Moved from Medium Priority to Watch List

*Carex sheldonii*

Family: Cyperaceae

Comments: Peripheral. There is one voucher from Summit County in A Utah Flora, (along margin of Weber River just south of Coalville, *Nelson & Nelson 8420*, 08 July 1986, BRY). The determination of this voucher at BRY needs to be confirmed. Habitat Specificity rescored a "1" due to its status as a riparian species according to FNA ("Wet meadows, lakeshores, open, moist forests along streams"). Riparian habitat modification and disturbance from the grazing-related impacts of cattle may be a threat to this species, however it is scored as "unknown" due to uncertainty. These changes re-rank this taxon to the "Watch" list, but it may be placed on the "Status Uncertain" or "Excluded" list if this specimen can be confirmed as being determined incorrectly based on the FNA treatment.

Scored By/Date: J. Alexander/2014

*Carex stipata* var. *stipata*

Family: Cyperaceae

Comments: Sparse. Only 3 specimens at BRY have been collected. It has been found in Davis, Salt Lake, and Weber Counties. Its primary range is in the northern U.S., Canada, and eastern Asia. Habitat Specificity scored as "1" due to its status as a riparian species according to A Utah Flora ("Wet places at 1525 to 1830 m.") and FNA ("Seasonally saturated or inundated soils in wet meadows, marshes, edges of tidal marshes, swamps, alluvial bottomlands"). Threats scored as "1" since riparian habitat modification and disturbance related to residential-highway development, farming, and grazing-related impacts are degrading wetlands in these counties. Trends are scored as "unknown".

Scored By/Date: J. Alexander/2014

Revisions: Moved from Medium Priority to Watch List

*Cladium californicum*

Family: Cyperaceae

Comments: Peripheral. Several populations were flooded by construction of Lake Powell. Current population size not known, but trends assumed to be downward from loss of Glen Canyon habitat.

Scored By/Date: UNPS Rare Plant Comm./2008

*Cyperus acuminatus*

Family: Cyperaceae

Comments: Peripheral. Only 4 specimens at BRY have been collected. It has been found in Millard County in Utah. Its primary range is in the Midwestern U.S. and the Pacific Northwest. Habitat Specificity scored as "1" due to its status as a riparian species according to A Utah Flora ("Mud flats and drying shores") and FNA ("Wet, often sandy shores and damp, disturbed soils"). Riparian habitat modification and disturbance from farming and the grazing-related impacts of cattle are a threat to this species. Trend is scored as "unknown".

Scored By/Date: J. Alexander/2014

Revisions: Moved from Medium Priority to Watch List

*Cyperus bipartitus*

Family: Cyperaceae

Comments: Peripheral. Only 1 specimen at BRY has been collected. It has been found in Utah County along the shore of Utah Lake (*Thorne & Johnson 9607* American Fork, above Utah Lake, near railroad tracks, BRY). Another specimen at UTC from Weber County (*Draper 412*, 05 September 2007, West Haven, near tower 64 of Rocky Mtn. Power 230 & 345 KV transmission line right-of-way; near the south branch of the Wilson Canal and west of West Haven Country Park) need confirmation. This taxon's primary range is in the Southern and Eastern U.S. Habitat Specificity scored as "1" due to its status as a riparian species according to A Utah Flora ("wet meadow") and FNA ("Emergent shorelines, ditches, puddles, often in disturbed places"). Riparian habitat modification and disturbance related to development, farming, and grazing-related impacts are a threat

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to this species. It is possible that the riparian disturbance along the shores of Utah Lake have already extirpated this species, which was last seen in 1991. Trend is scored as "unknown"

Scored By/Date: J. Alexander/2014

Revisions: Moved from Medium Priority to Watch List

*Eleocharis bella*

Family: Cyperaceae

Comments: Peripheral. *Eleocharis bella* was not reported for Utah in FNA. The single record cited for Washington County by A Utah Flora (*Atwood & Higgins 5901*, 18 August 1973, Ox Valley, 6 mi south of Enterprise) may be misidentified. The determination of this voucher at BRY needs to be confirmed. Habitat Specificity rescored a "1" due to its status as a riparian species according to FNA ("Bare, often drying soil of stream alluvium, lake margins, wet meadows"). Riparian habitat modification and disturbance from the grazing-related impacts of cattle may be a threat to this species, however it is scored as "unknown" due to uncertainty. These changes re-rank this taxon to the "Watch" list, but it may be placed on the "Status Uncertain" or "Excluded" list if this specimen can be confirmed as being determined incorrectly based on the FNA treatment.

Scored By/Date: J. Alexander/2014

*Eleocharis flavescens* var. *flavescens*

Family: Cyperaceae

Comments: Peripheral. Habitat Specificity rescored a "1" due to its status as a riparian species according to FNA ("Brackish creeks, canal banks, dune depressions, hammocks, hot springs, irrigation ditches, maritime mud flats, salt marshes"). Riparian habitat modification and disturbance from farming and the grazing-related impacts of cattle may be a threat to this species, however it is scored as "unknown" due to uncertainty. These changes re-rank this taxon to the "Watch" list.

Scored By/Date: J. Alexander/2014

*Lipocarpa aristulata*

Family: Cyperaceae

Comments: Peripheral. *Lipocarpa aristulata* was not reported for Utah in FNA. The two records cited for Kane County by A Utah Flora are likely identified correctly, however. The distribution of this species includes the Four-Corners region in FNA. It is likely that FNA missed the voucher for this taxon for Utah.

Scored By/Date: J. Alexander/2014

*Scirpus nevadensis*

Synonym: *Amphiscirpus nevadensis*

Family: Cyperaceae

Comments: Peripheral. Known from two records in Utah. Typically found in alkaline wet meadows. Threats and trends not known.

Scored By/Date: UNPS Rare Plant Comm./2008

*Chamaesyce ocellata* var. *arenicola*

Family: Euphorbiaceae

Comments: Peripheral. Only 11 specimens at BRY have been collected. It has been found in Millard, Tooele, and Utah Counties. Its primary range is in the Great Basin and the Mojave Desert. Habitat Specificity scored as "1" since it is restricted to sand dune habitats according to A Utah Flora ("Sand dunes and other sandy sites in salt and sand desert shrub communities"). Due to the increased ATV disturbance and the subsequent invasion of exotic weeds in quaternary dune fields across the Great Basin, threats are scored as a "1". Disturbance due to grazing activities may also be a threat. The populations in Utah county may have been extirpated due to residential development. Trends are scored as "unknown"

Scored By/Date: J. Alexander/2014

Revisions: Moved from Medium Priority to Watch List

*Euphorbia nephradenia*

Family: Euphorbiaceae

Comments: Regional Endemic. Found on gumbo-clay soils of the Tropic and Entrada formations in central and south-central Utah. Known from 12-15 populations. Population size usually low. May be threatened by competition from weeds and off road recreation. Trends not known.

Scored By/Date: Fertig/2010

*Astragalus argophyllus* var. *stocksii*

Synonym: *Astragalus henrimontanensis*

Family: Fabaceae or Leguminosae

Comments: Local Endemic. Restricted to Henry Mountains and Aquarius Plateau. Habitat relatively unspecialized (sagebrush, conifer, aspen) but few occurrences and populations small. Threats and trends not known.

Scored By/Date: UNPS Rare Plant Comm./2008

Revisions: Scientific name changed.

*Astragalus calycosus* var. *monophyllidus*

Family: Fabaceae or Leguminosae

Comments: Regional Endemic. One population in Utah (mostly in Nevada), on clay barrens. Threats and trends not well known. This is the form that typically has a single terminal leaflet. Welsh (2008 Utah Flora) questions if this is just a recurrent genetic variant.

Scored By/Date: UNPS Rare Plant Comm./2008

*Astragalus chloodes*

Family: Fabaceae or Leguminosae

Comments: Local Endemic. Uintah Basin endemic on Frontier, Dakota, Entrada, and Navajo formations. Locally abundant, trends not known, Potential threats from mineral development and other activities in the Basin not well documented.

Scored By/Date: UNPS Rare Plant Comm./2008

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*Astragalus concordius*

Family: Fabaceae or Leguminosae  
Comments: Local Endemic. Formerly included in *A. pitensis*, described as a new species in 1998 from Pine Valley Mountains/Kolob area in SW Utah. May be threatened by wildfire. Total population size poorly known, many occurrences seem to be small.  
Scored By/Date: Fertig/2010

*Astragalus detritalis*

Family: Fabaceae or Leguminosae  
Comments: Regional Endemic. Restricted to the Uinta Basin in NE Utah and Colorado. Found in various vegetation types on Duchesne River and Uinta formations. Threatened by mineral exploration and development, but trends not well known. Number of populations is relatively high.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Astragalus jejunos*

Synonym: *Astragalus jejunos* var. *jejunus*  
Family: Fabaceae or Leguminosae  
Comments: Regional Endemic. More widespread in southern Wyoming. Known from 8 main populations in NE Utah. Usually on barren mesa rims in sagebrush or juniper communities, often on calcareous soils. Threats and trends not determined.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Astragalus limnocharis* var. *limnocharis*

Family: Fabaceae or Leguminosae  
Comments: Local Endemic. More abundant in Cedar Breaks than previously known, though populations small, restricted to Claron Formation, threats minimal **in most sites. Not a "lakeshore" species as suggested in** Welsh et al. (2008), though one occurrence is found on Claron beds near the high water level of Navajo Lake.  
Scored By/Date: Fertig/2010

*Astragalus limnocharis* var. *tabulaeus*

Synonym: Included in *Astragalus limnocharis* var. *montii* by some authors  
Family: Fabaceae or Leguminosae  
Comments: Local Endemic. Populations small, Claron endemic, restricted to Table Cliff area in Garfield County. Threats probably low given terrain (maybe from impacts of logging access?). No trend data.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Astragalus lutosus*

Family: Fabaceae or Leguminosae  
Comments: Regional Endemic. Restricted to the Uinta Basin of Utah and Colorado on Green River Shale. Habitat being impacted by mineral exploration and development. Trends not well known. Would rank higher if considered a local endemic.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Astragalus malacoides*

Family: Fabaceae or Leguminosae  
Comments: Local Endemic. Populations moderate to small sized,, limited to Kaiparowits Plateau, Circle Cliffs, and Henry Mountains area. Edaphic endemic of clay soils in the Kaiparowits, Straight Cliffs, Wahweap, Ferron, Chinle, and Moenkopi formations. Threats mostly low, plants seem to be tolerant of some disturbance. Trends not known.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Astragalus montii*

Synonym: *Astragalus limnocharis* var. *montii*  
Family: Fabaceae or Leguminosae  
Comments: Local Endemic. Listed as Threatened under ESA. Restricted to the southern Wasatch Plateau on Flagstaff limestone openings in the mountains. Population size found to be relatively high based on Joel Tuhy survey. Threats and trends poorly known.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Astragalus monumentalis*

Synonym: *Astragalus monumentalis* var. *monumentalis*  
Family: Fabaceae or Leguminosae  
Comments: Local Endemic. Thought to be locally common with small global range in canyon country of Garfield and San Juan counties. Limited to Cutler, White Rim, and Cedar Mesa formations. Threats and trends not known.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Astragalus naturitensis*

Family: Fabaceae or Leguminosae  
Comments: Regional Endemic. Restricted to the Colorado Plateau, mostly in Colorado and New Mexico (6 collections in Utah according to Welsh et al. 2008). Found on sandstone outcrops in sagebrush and juniper. Threats and trends poorly known.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Astragalus perianus*

Family: Fabaceae or Leguminosae  
Comments: Local Endemic. 16 specimens at BRY have been collected. It has been found in Beaver, Garfield, Iron, Kane, Piute, and Sevier Counties. At least in the Tushar Mountains, threats to this taxon include grazing-related impacts from naturalized mountain goats. Climate change is also a threat. These are the primary reasons for the upgrade of the threats to this species to a "1". It is not known if these threats are consistent in the remainder of its range in Utah. Trends are re-scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys. Threats and Trends were scored as "0" in the original list, however, the recent introductions of mountains goats to alpine sites in Utah have brought more scrutiny to past scorings.  
Scored By/Date: J. Alexander/2014  
Revisions: Moved from Medium Priority to Watch List

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*Astragalus piscator*

Family: Fabaceae or Leguminosae  
Comments: Local Endemic. Restricted to sandy soils and badlands of the Mancos Shale, Moenkopi, Cutler, and White Rim formations in the Grand River Valley of E Utah. Threats probably low, trends not known.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Astragalus platytropis*

Family: Fabaceae or Leguminosae  
Comments: Peripheral. The single record for the Deep Creek Range, Juab County, was collected in 1977 (*Shultz et al.* 2233, 29 June 1977, open meadow between Red Mountain and Ibapah Peak, UTC). In A Utah Flora, this taxon is known only from Beaver, Kane, Millard, and Tooele Counties. In the Deep Creek Range (if there are still extant populations!), this is one of several taxa that may be threatened by the proposed introduction of naturalized mountain goats by the State of Utah. Climate change is also a threat. Although the climate threats alone do not warrant changes, threats will be upgraded to "1" if the introductions proceed. Trends are scored as "unknown".  
Scored By/Date: J. Alexander/2014  
Revisions: Moved from Medium Priority to Watch List.

*Astragalus saurinus*

Family: Fabaceae or Leguminosae  
Comments: Local Endemic. Uinta Basin endemic (*saurinus* comes from type locality at Dinosaur NM), found in various shale, siltstone, and badland geologic formations. Individual population may be large, but threats and trends not well known.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Astragalus uncialis*

Family: Fabaceae or Leguminosae  
Comments: Local Endemic. Populations moderately to sometimes large, a few threatened by ATV recreation, mining (perhaps should be scored low). Found in shade-scale and desert shrub communities (habitat specificity scored as low).  
Scored By/Date: UNPS Rare Plant Comm./2008

*Astragalus wetherillii*

Family: Fabaceae or Leguminosae  
Comments: Regional Endemic. Reported by Alice Eastwood, historical (not documented since 1920s), trends assumed to be low, intrinsic rarity (pollinator or fecundity issues?) and threats unknown. Habitat may be shaded sandstone cliffs—perhaps worth ranking as 1 (currently scored 0).  
Scored By/Date: UNPS Rare Plant Comm./2008

*Astragalus zionis* var. *vigulus*

Family: Fabaceae or Leguminosae  
Comments: Local Endemic. Restricted to the E side of the Pine Valley Mountains, populations small, description from UT Flora suggests it is not a habitat specialist?

More information needed on threats - may be impacted by fire?  
Scored By/Date: UNPS Rare Plant Comm./2008

*Hedysarum boreale* var. *gremiale*

Family: Fabaceae or Leguminosae  
Comments: Local Endemic. Five collections noted in Welsh et al. (2008). Not a habitat specialist based on description in Utah Flora (pinyon-juniper and montane brush). Spiny-loment phase. Information needed on threats and trends.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Hedysarum occidentale* var. *canone*

Family: Fabaceae or Leguminosae  
Comments: Local Endemic. Often associated with coal cliffs in north-central Utah. May be impacted by mining activities, but otherwise threats poorly known and scored unknown, along with trend.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Lupinus sericeus* var. *marianus*

Family: Fabaceae or Leguminosae  
Comments: Local Endemic. 16 specimens at BRY have been collected. It has been found in Beaver, Garfield, Piute, and Sevier Counties. At least in the Tushar Mountains, threats to this taxon include grazing-related impacts from cattle and naturalized mountain goats. Climate change is also a threat. These are the primary reasons for the upgrade of the threats to this species to a "1". It is not known if these threats are consistent in the remainder of its range in Utah. Trends are scored as "unknown".  
Scored By/Date: J. Alexander/2014

*Oxytropis besseyi* var. *obnapiformis*

Synonym: *Oxytropis obnapiformis*, *O. nana* var. *obnapiformis*  
Family: Fabaceae or Leguminosae  
Comments: Regional Endemic. Often on badlands sites on fine-textured soils. Uncommon in Wyoming also. Only 11 collections noted in Utah Flora (2008). Abundance and trends not known.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Oxytropis deflexa* var. *pulcherrima*

Synonym: Included in *Oxytropis deflexa* var. *deflexa* by some authors  
Family: Fabaceae or Leguminosae  
Comments: Regional Endemic. 18 specimens at BRY have been collected. It has been found mostly in the Uinta Mountains in Daggett, Duchesne, and Summit Counties. Its primary range is in the Rocky Mountains and Canada. Habitat Specificity originally scored "1" presumably due to its status as a potential edaphic endemic according to A Utah Flora ("Alpine meadows and Engelmann spruce krummholz, on Paleozoic limestone, and at the contact with Precambrian quartzite"). Threats include disturbance from the grazing-related impacts of cattle and naturalized mountain goats. Climate change



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is also a threat. These are the primary reasons for the upgrade of the threats to this species to a "1". Trends are scored as "unknown".

Scored By/Date: J. Alexander/2014

Revisions: Moved from Medium Priority to Watch List

*Oxytropis oreophila* var. *jonesii*

Family: Fabaceae or Leguminosae

Comments: Local Endemic. Restricted to central Utah (although range may be large enough to rescore as regional endemic). Restricted to Flagstaff, Claron, and Green River formations on limestone and shale barrens. Often found in Bristlecone pine communities. Abundance and trends not well known.

Scored By/Date: UNPS Rare Plant Comm./2008

*Pediomelum aromaticum* var. *aromaticum*

Synonym: *Psoralea aromatica*

Family: Fabaceae or Leguminosae

Comments: Regional Endemic. Found mostly on Cutler and Moenkopi formations. Occurrence in San Rafael Swell is historical and has not been relocated (current range in Grand County and adjacent Colorado could make this variety a local endemic). Abundance not known, trends considered downward.

Scored By/Date: UNPS Rare Plant Comm./2008

*Pediomelum aromaticum* var. *barnebyi*

Family: Fabaceae or Leguminosae

Comments: Regional Endemic. Taxonomic questions- new populations discovered near Kanab fit var. *aromaticum* better. May be a narrow endemic of Short Creek area along UT-AZ border east to Kanab. Mostly on Chinle soils. May be tolerant of disturbance. Populations vary from small to locally common. Known from 6-10 collections.

Scored By/Date: Fertig/2010

*Pediomelum aromaticum* var. *tuhyi*

Family: Fabaceae or Leguminosae

Comments: Local Endemic. Found in Canyonlands area of eastern Utah, mostly on Entrada, Morrison, and Kayenta formations. May be locally common. Threats and trends poorly known. Not recognized in Intermountain Flora.

Scored By/Date: UNPS Rare Plant Comm./2008

*Pediomelum castoreum*

Synonym: *Psoralea castorea*

Family: Fabaceae or Leguminosae

Comments: Regional Endemic. This species is reported for UT based on the type collection of Palmer (#97) in 1877, which probably came from the vicinity of Littlefield, AZ, and not in the Beaver Dam Mountains. However, one cannot rule out entirely the Beaver Dam Mountains in Arizona or Utah due to the ambiguity of the collection locality and the history of extirpation due to disturbance in this region. This taxon has yet to be adequately documented from Utah to be considered for

the Medium or Watch list. The categories herein are based on the assumption that populations, once discovered will be restricted to the Beaver Dam Mountains. [Alexander & Fertig 2009] .

In 2013, the committee revised the rank to Watch on the assumption the taxon is present and occurs at low numbers in few sites.

Scored By/Date: J. Alexander/2013

Revisions: Moved from Need Data to Watch List

*Pediomelum epipsilum*

Synonym: *Psoralea epipsila*, *Pediomelum megalanthum* var. *epipsilum*

Family: Fabaceae or Leguminosae

Comments: Local Endemic. Populations small to medium, Chinle and Moenkopi endemic, responds positively to some disturbance, but absent in large chained area on Grand Staircase– Escalante NM.

Scored By/Date: Fertig/2009

*Pediomelum mephiticum*

Synonym: *Psoralea mephitica* var. *mephitica*

Family: Fabaceae or Leguminosae

Comments: Regional Endemic. Uncommon on sandy clay alluvium derived from gypsum, limestone, and sandstone layers of the Moenkopi and Chinle formations. Uncommon in the Beaver Dam Mtns and in Zion NP. Trend is probably downward due to the impact of current and future construction, recreational, and grazing disturbance in this area.

Scored By/Date: J. Alexander/2009

*Pediomelum pariense*

Synonym: *Psoralea pariensis*

Family: Fabaceae or Leguminosae

Comments: Local Endemic. Restricted to Carmel Formation, populations usually small, threats mostly low. Apparently not in Zion NP as often reported (despite occupied similar habitat just east of the park). Trends not known.

Scored By/Date: UNPS Rare Plant Comm./2008

*Pediomelum retrorsum*

Synonym: *Psoralea mephitica* var. *retrorsa*

Family: Fabaceae or Leguminosae

Comments: Regional Endemic. Occurs on Moenkopi and Claron soils. Known from 6 collections (Welsh et al. 2008). Abundance and trends not known.

Scored By/Date: UNPS Rare Plant Comm./2008

*Psoralidium lanceolatum* var. *stenostachys*

Family: Fabaceae or Leguminosae

Comments: Local Endemic. Taxonomic questions, perhaps a Regional Endemic instead of Local endemic (1 pt instead of 2). Found primarily on sandy sites in northern Utah. Abundance and trends not known.

Scored By/Date: UNPS Rare Plant Comm./2008

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*Psorothamnus arborescens* var. *pubescens*

Family: Fabaceae or Leguminosae

Comments: Regional Endemic. Known from 2 collections in Utah, most recently collected in 1972. Also uncommon in northern AZ (type from House Rock Valley) where found on Moenkopi clay badlands. Threats and trends not known in Utah (but trend may be downward).

Scored By/Date: UNPS Rare Plant Comm./2008

*Psorothamnus nummularius*

Synonym: *Psorothamnus polydenius* var. *jonesii*

Family: Fabaceae or Leguminosae

Comments: Local Endemic. Limited to Mancos Shale, but often locally common (abundance scored 0). Just 13 collections noted in 2008 Utah Flora. Threats and trends not known.

Scored By/Date: UNPS Rare Plant Comm./2008

*Psorothamnus polydenius* var. *polydenius*

Family: Fabaceae or Leguminosae

Comments: Regional Endemic. Found on calcareous siltstone and rubble in Beaver Dam Mountains in Utah. Known from about 10 collections. Abundance and trends not known.

Scored By/Date: Fertig/2011

*Trifolium beckwithii*

Family: Fabaceae or Leguminosae

Comments: Disjunct. Known from 2 collections from wet meadows in central Utah. Threats may be high from wetland development or modification. Utah populations tend to be more robust than those from west coast. Also disjunct in South Dakota.

Scored By/Date: UNPS Rare Plant Comm./2008

*Lomatogonium rotatum*

Family: Gentianaceae

Comments: Disjunct. 5 records are cited for Daggett County by A Utah Flora but only two are listed (*Goodrich 22365, 23591* BRY). It was not documented why number of individuals for this taxon was scored as a "unknown" while other taxa that have only been known from a single specimen in Utah were scored as a "1". Further population-level research may show that this taxon is more locally common and should be scored a "0". However since it has only been collected 5 times in the same relative vicinity, it is reasonable to assume this plant is not common in Daggett County and rescored this taxon as a "1" is warranted. Habitat Specificity rescored a "1" due to its status as a riparian species according to A Utah Flora ("Wet sedge meadow"). Threats to this taxon include disturbance from the grazing-related impacts of cattle. Climate change is also a threat. These are the primary reasons for the upgrade of the threats to this species to a "1". Trends are scored as "unknown".

Scored By/Date: J. Alexander/2014

Revisions: Moved from Medium Priority to Watch List

*Jamesia americana* var. *zionis*

Family: Hydrangeaceae or Saxifragaceae

Comments: Local Endemic. Populations in Zion NP are small and mostly inaccessible, limiting threats. Trends stable. Reports from Cedar Breaks area are based on var. *rosea* and differ in flower color and size. Taxonomic study may show these varieties should be combined.

Scored By/Date: Alexander & Fertig/2009

*Jamesia tetrapetala*

Family: Hydrangeaceae or Saxifragaceae

Comments: Regional Endemic. Only known from **mountain ranges in the Great Basin (including Utah's House Range)**, where it occurs mostly on limestone outcrops in montane shrublands. Just 3 collections from Utah. Threats and trends unknown.

Scored By/Date: UNPS Rare Plant Comm./2008

*Nama hispida*

Family: Hydrophyllaceae or Boraginaceae

Comments: Peripheral. Only 11 specimens at BRY have been collected. This taxon's primary range is in Southwestern U.S. It has been found along canyons and washes along the Colorado River Basin in the vicinity of Lake Powell in San Juan and Kane Counties. Habitat Specificity scored as "1" since it is restricted to sandy habitats sensu A Utah Flora ("sandy shores and drainage bottoms"). Due to grazing-related impacts, the subsequent invasion of exotic weeds, and the increased ATV disturbance in quaternary dune fields and sandy areas across the Colorado Plateau, threats are scored as a "1". Most populations may be protected within Glen Canyon National Recreation Area, but habitat along Lake Powell may be heavily impacted by changes in lake levels and disturbance from recreational boaters. Trends unknown.

Scored By/Date: J. Alexander/2014

Revisions: Moved from Medium Priority to Watch List

*Nama retrorsa*

Family: Hydrophyllaceae or Boraginaceae

Comments: Regional Endemic. This taxon has been found in sandy areas in Garfield, Grand, Kane, and San Juan Counties. Habitat Specificity scored as "1" since it is restricted to sandy habitats sensu A Utah Flora. Due to grazing-related impacts, the subsequent invasion of exotic weeds, and the increased ATV disturbance in quaternary dune fields and sandy areas across the Colorado Plateau, threats are scored as a "1". Trends are scored as "unknown".

Scored By/Date: J. Alexander/2014

Revisions: Moved from Medium Priority to Watch List.

*Phacelia austromontana*

Family: Hydrophyllaceae or Boraginaceae

Comments: Disjunct. Known from a single historical collection, taken by Walter Cottam in the Pine Valley Mountains (disjunct from California and W Nevada). Habitat generalist (Ponderosa pine and mountain brush). Trends apparently downward.

Scored By/Date: UNPS Rare Plant Comm./2008

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*Phacelia cottamii*

Family: Hydrophyllaceae or Boraginaceae  
Comments: Local Endemic. New species described in 2003, (previously included in *P. utahensis*). Mancos Shale endemic. Much habitat on unprotected private land. Thought to be locally common, but trends not known.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Phacelia glandulosa*

Family: Hydrophyllaceae or Boraginaceae  
Comments: Regional Endemic. Found on Green River shale in eastern Utah, where known from 7 collections (Utah Flora 2008). More widespread in SW Wyoming, where also found on clayey badlands in desert scrub and cushion plant communities. Abundance and trends not known in Utah.  
Scored By/Date: Fertig/2009.

*Phacelia mamillarensis*

Family: Hydrophyllaceae or Boraginaceae  
Comments: Local Endemic. Kaiparowits endemic, populations often large in wet years, threats mostly low, some impact from ATV recreation, mining. Trends not known.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Phacelia palmeri*

Family: Hydrophyllaceae or Boraginaceae  
Comments: Regional Endemic. Uncommon in gypsum outcrops in the vicinity of St. George, the Beaver Dam Mountains and SW Zion NP. While found on almost every large gypsum outcrop, local populations are low. Trends rescored as "unknown" from "0" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys, but it is likely downward. Relocation of populations have not been attempted recently to determine how many are threatened by development and gypsum mining.  
Scored By/Date: J. Alexander/2014

*Phacelia perityloides* var. *laxiflora*

Synonym: *Phacelia laxiflora*  
Family: Hydrophyllaceae or Boraginaceae  
Comments: Regional Endemic. Uncommon in limestone crevices in the Beaver Dam Mountains. It may be more common due to the inaccessibility of most potential habitat.  
Scored By/Date: J. Alexander/2009

*Phacelia salina*

Family: Hydrophyllaceae or Boraginaceae  
Comments: Regional Endemic. Known from 2 collections in Utah (Welsh et al. 2008). Usually found on saline soils. Threats and trends not known.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Phacelia splendens*

Family: Hydrophyllaceae or Boraginaceae  
Comments: Regional Endemic. In Utah, found only on Mancos Shale. Known from 3 collections. Abundance and trends not known.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Phacelia tetramera*

Family: Hydrophyllaceae or Boraginaceae  
Comments: Peripheral. Known from a single collection in Utah from saline Salicornia-Suaeda community. Small plant that is easily overlooked—may be undercollected. Threats and trends unknown.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Tricardia watsonii*

Family: Hydrophyllaceae or Boraginaceae  
Comments: Peripheral. Found in rocky areas in limestone and sandstone in variety of desert shrub vegetation types (habitat scored 0). Populations small, but easily overlooked when not in flower. Considered rare in Arizona too. Trends appear downward, as several older populations have not been relocated.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Olsynium douglasii* var. *inflatum*

Synonym: *Sisyrinchium douglasii*  
Family: Iridaceae  
Comments: Peripheral. The continued mining in the vicinity of the only Utah population of this species indicates the trend is down. Habitat Specificity scored as "0" since the habitat does not seem unusual according to A Utah Flora ("Open, often rocky areas moist in spring, coniferous forest, sagebrush, margins of lakes"). higher.  
Scored By/Date: J. Alexander/2014  
Revisions: Scientific name changed.

*Isoetes echinospora*

Synonym: *Isoetes tenella*  
Family: Isoetaceae  
Comments: Peripheral. Only 3 specimen at BRY have been collected in Utah. It is known from Daggett, Duchesne and Emery Counties. Habitat Specificity rescored a "1" due to its status as a riparian species according to A Utah Flora ("Ponds, lake margins, and in mud"). Threats to this taxon include grazing-related impacts from cattle. Climate change is also a threat. Droughts and rapid snowmelt due to wind-blown sediments are melting snowpack earlier than normal in our region. These are the primary reasons for the upgrade of the threats to a "1". Trends scored as "unknown".  
Scored By/Date: J. Alexander/2015  
Revisions: Moved from Medium Priority to Watch List

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*Isoetes howellii*

Synonym: *Isoetes tenella*

Family: Isoetaceae

Comments: Disjunct. Only 5 specimen at BRY have been collected in Utah. It is known from Cache and Washington Counties. Habitat Specificity rescored a "1" due to its status as a riparian species according to A Utah Flora ("Ponds margin" and "ephemeral pool"). It is not known why the species of *Isoetes* were scored "0" for habitat specificity when most are riparian or ephemeral pools species.

Scored By/Date: J. Alexander/2015

Revisions: Moved from Medium Priority to Watch List.

*Juncus brevicaudatus*

Synonym: *Juncus tweedyi*

Family: Juncaceae

Comments: Disjunct. Sensus FNA, "Populations from about around hot springs in the west have been separated as *Juncus tweedyi* Rydberg, but no morphologic distinction appears to exist between *J. tweedyi* and *J. brevicaudatus*." This plant has a similar distribution to *J. articulatus*, and is mostly in the northeastern U.S. with scattered populations across the Midwest and Western U.S. The only specimen from Utah was collected in Box Elder County in 1874 (*Kuntze 3133*, "near Corrinne", NY) and is the holotype of *J. canadensis* var. *kuntzei*. This taxon is a historical collection and the population has likely been extirpated. It is another candidate for a list of potentially extinct species that have not been relocated in the past 50 years. Habitat Specificity rescored as a "1" due to its status as a acidic riparian or hot spring species according to A Utah Flora ("wet places about hot springs") and FNA ("Generally in acidic or peaty moist sites, including emergent shorelines and around hot springs").

Scored By/Date: J. Alexander/2014

Revisions: Scientific name changed

*Juncus castaneus*

Family: Juncaceae

Comments: Disjunct. Only 4 specimens at BRY have been reported for A Utah Flora. It has been found on the Wasatch Plateau (Sanpete County) and in the Uinta Mountains (Duchesne and Summit Counties). A recent record for Uintah County has been collected (*Goodrich 28324*, 22 August 2011, Uinta Mountains., Lake Shore Basin, Ashley Creek drainage, BRY, USUUB). It is found mostly in Alaska and the Canadian Arctic with scattered disjunct populations across the Rocky Mountains. Number of Individuals is unknown. Habitat Specificity scored as "1" due to its status as a alpine riparian species according to A Utah Flora ("wet alpine communities") and FNA ("Tundra, subalpine and alpine bogs and meadows, and along streams in gravelly or clayey soils"). Threats include riparian habitat modification and disturbance from the grazing-related impacts of cattle and naturalized mountain goats. Climate change is also a threat. These are the primary reasons for upgrading threats to a

"1". Trends are scored as "unknown" .

Scored By/Date: J. Alexander/2014

Revisions: Moved from Medium Priority to Watch List

*Juncus ensifolius* var. *ensifolius*

Family: Juncaceae

Comments: Sparse. Only 4 specimens at BRY have been reported for A Utah Flora. It has been found in the Uinta Mountains (Daggett and Uintah Counties) with disjunct populations in the mountains in Rich, Salt Lake, and Tooele Counties. This is a variety with scattered populations across the Rocky Mountains, Pacific Northwest, and Canada. Number of Individuals are unknown. Habitat Specificity scored as "1" due to its status as a montane riparian species according to FNA ("Wet meadows, marshy areas, wet granite areas, shores, banks and ditches, often montane"). Threats to this taxon include riparian habitat modification and disturbance from the grazing-related impacts of cattle and naturalized mountain goats. Riparian habitat modification and disturbance from farming and residential development may be the primary impacts in the rest of the counties. Climate change is also a threat. These are the primary reasons for the upgrade of the threats to a "1". Trends are scored as "unknown".

Scored By/Date: J. Alexander/2014

Revisions: Moved from Medium Priority to Watch List

*Juncus macrophyllus*

Family: Juncaceae

Comments: Peripheral. This species is not reported for Utah in FNA. It is likely that the FNA authors missed the Utah Specimens. Habitat Specificity rescored as a "1" due to its status as a low-elevation riparian species according to FNA ("Wet banks and meadows in chaparral and low mountains"). Threats scored as "1" since riparian habitat modification and disturbance from the grazing-related impacts of cattle are a threat to this species. Trends kept scored as "unknown" .

Scored By/Date: J. Alexander/2014

Revisions: Moved from Medium Priority to Watch List

*Stachys rothrockii*

Family: Lamiaceae or Labiatae

Comments: Regional Endemic. Found on Tropic Shale in desert shrub and juniper communities. Known from 5 collections, all in western Kane County near Orderville.

Scored By/Date: UNPS Rare Plant Comm./2008

*Lemna gibba*

Family: Lemnaceae or Araceae

Comments: Disjunct. Although 3 specimens at BRY have been determined as this species, this species was not reported for Utah in FNA. Its primary range is in the extreme southwestern U.S. and Mexico. The closest populations of this taxon to Utah are in Clark County, Nevada. The report from Iron County, Utah may be correctly identified, but the Utah County report is much farther disjunct from the range of the species and should

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be re-examined. This taxon may also be present in Washington County. Habitat Specificity rescored a "1" due to its status as a riparian species according to FNA ("Eutrophic, quiet waters in temperate regions with mild winters"). Number of Individuals scored as "unknown". This plant has been found in still, eutrophic outflows of springs in the Mojave Desert region, habitats that are becoming significantly degraded by development, ATV-recreational disturbance, and grazing impacts. Species of small, water-dependent herbs are generally overlooked by botanists. Despite this, the habitat for this species is very limited. The situation is complicated by man-made water features. Many of the eutrophic water bodies in the range of this species are not natural, mostly stock ponds and residential reservoirs. It is possible that the populations of this taxon in Utah are not native. It is a high priority to check to see if these populations still exist. Until this has been attempted, it is just an educated guess to say that the trend of this species is downward.

Scored By/Date: J. Alexander/2014

Revisions: Moved from Medium Priority to Watch List

*Lemna valdiviana*

Family: Lemnaceae or Araceae

Comments: Sparse. Only 5 specimens at BRY have been collected. It has been found in Cache, Utah, Washington, and Weber Counties. This taxon's primary range is in the southeastern U.S. with many disjunct populations in the western U.S. Although not reported for Utah in FNA, it is likely that the authors missed the record for Utah in their treatment. This taxon is also on the "Watch" list for Wyoming. Habitat Specificity rescored a "1" due to its status as a riparian species according to FNA ("Mesotrophic, quiet waters"). This plant has been found in still outflows of springs, oxbows of streams, in the Great Salt Lake, and in Utah Lake. The typical habitat for this species is becoming significantly degraded by development, recreational disturbance, and grazing impacts. Species of small, water-dependent herbs are generally overlooked by botanists. Despite this, the habitat for this species is very limited. The situation is complicated by man-made water features. Many of the water bodies in the range of this species are not natural, mostly stock ponds and residential reservoirs. Number of Individuals scored as "unknown". It is possible that some of the populations of this taxon in Utah are not technically native. It is a high priority to check to see if these populations still exist. Until this has been attempted, it is just an educated guess to say that the trend of this species is downward.

Scored By/Date: J. Alexander/2014

Revisions: Moved from Medium Priority to Watch List

*Spirodela polyrhiza*

Family: Lemnaceae or Araceae

Comments: Sparse. Only 7 specimens at BRY have been collected. It has been found in Cache, Davis, Salt Lake and Utah Counties. It is widespread across the U.S. and southern Canada. This taxon is also on the "Watch" list for Wyoming. Habitat Specificity rescored a "1" due to

its status as a riparian species according to FNA ("Eutrophic, quiet waters"). This plant has been found mostly in wetlands around the Great Salt Lake and Utah Lake. The typical habitat for this species is becoming significantly degraded by development and recreational disturbance. Species of small, water-dependent herbs are generally overlooked by botanists. Despite this, the habitat for this species is very limited. Number of Individuals scored as "1" since population sizes are relatively unknown for this small plant in Utah. It is a high priority to check to see if these populations still exist. Until this has been attempted, it is just an educated guess to say that the trend of this species is downward.

Scored By/Date: J. Alexander/2014

Revisions: Moved from Medium Priority to Watch List

*Wolffia borealis*

Family: Lemnaceae or Araceae

Comments: Sparse. Only 3 specimens at BRY have been collected. It has been found in Cache, Morgan, and Weber Counties. It is widespread across the U.S. and southern Canada. This taxon is also on the "Watch" list for Wyoming. Habitat Specificity rescored a "1" due to its status as a riparian species according to FNA ("Eutrophic, quiet waters"). This plant has been found mostly in wetlands around the Great Salt Lake. The situation is complicated by man-made water features. Many of the water bodies in the range of this species are not natural, mostly stock ponds and residential reservoirs. It is possible that some of the populations of this taxon in Utah are not technically native. Much of the habitat for this species is becoming significantly degraded by development, recreational disturbance, and grazing impacts. Species of small, water-dependent herbs are generally overlooked by botanists. Despite this, the habitat for this species is very limited. Number of Individuals scored as "unknown". **It is a high priority to check to see if these populations still exist.** Until this has been attempted, it is just an educated guess to say that the trend of this species is downward.

Scored By/Date: J. Alexander/2014

Revisions: Moved from Medium Priority to Watch List

*Utricularia intermedia*

Family: Lentibulariaceae

Comments: Peripheral. Only 6 specimens at BRY have been collected. It has been found in Cache, Rich, and Wayne Counties. It is a circumboreal species that is widespread across the U.S. and Canada. Habitat Specificity rescored a "1" due to its status as a riparian species according to A Utah Flora ("pods and lakes"). Many of the water bodies in the range of this species are not natural, mostly stock ponds and residential reservoirs. It is possible that some of the populations of this taxon in Utah are not technically native. Much of the habitat for this species is becoming significantly degraded by development, recreational disturbance, and grazing impacts, which is the primary reason for re-scoring Threats from "0" to a "1". Species of small, water-dependent herbs are

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generally overlooked by botanists. Despite this, the habitat for this species is very limited. Number of Individuals re-scored as "unknown" from "1". It is a high priority to check to see if these populations still exist. Until this has been attempted, it is just an educated guess to say that the trend of this species is downward.

Scored By/Date: J. Alexander/2015

Revisions: Moved from Medium Priority to Watch List

*Utricularia minor*

Family: Lentibulariaceae

Comments: Sparse. Only 6 specimens at BRY have been collected. It has been found in Cache, Rich, Summit, Uintah, and Utah counties. It is a circumboreal species that is widespread across the U.S. and Canada. Habitat Specificity rescored a "1" due to its status as a riparian species according to A Utah Flora ("pods and lakes"). This plant has been found mostly in shallow water along lakes and ponds at lower elevations in Utah. The situation is complicated by man-made water features. Many of the water bodies in the range of this species are not natural, mostly stock ponds and residential reservoirs. It is possible that some of the populations of this taxon in Utah are not technically native. Much of the habitat for this species is becoming significantly degraded by development, recreational disturbance, and grazing impacts, which is the primary reason for scoring Threats as a "1". Species of small, water-dependent herbs are generally overlooked by botanists. Despite this, the habitat for this species is very limited. Number of Individuals scored as "unknown". It is a high priority to check to see if these populations still exist. Until this has been attempted, it is just an educated guess to say that the trend of this species is downward.

Scored By/Date: J. Alexander/2015

Revisions: Moved from Medium Priority to Watch List

*Allium geyeri* var. *chatterleyi*

Family: Liliaceae or Amaryllidaceae

Comments: Local Endemic. Known only from the Abajo Mountains. Habitat not unusual (pinyon-juniper, Ponderosa pine-mountain brush communities). This taxon is skipped entirely in the treatment for FNA. It is not listed in the synonymy of any *Allium* species. Threats and trends not known.

Scored By/Date: Fertig/2009; J. Alexander/2014

*Allium passeyi*

Family: Liliaceae or Amaryllidaceae

Comments: Local Endemic. Few populations, but these quite abundant (>100,000), threats poorly known, habitat protected in Golden Spike NHS. Only 7 collections at BYU. Found in sagebrush communities on thin soils over dolomitic limestone (habitat scored 1 based on unusual rock type). Threats and trends poorly known.

Scored By/Date: UNPS Rare Plant Comm./2008

*Calochortus ciscoensis*

Family: Liliaceae

Comments: Local Endemic. Newly described in 2008 from Cisco area, Uinta Basin, and Arches NP, edaphic endemic on Mancos shale & Duchesne River F, more info needed on abundance, threats.

Local populations of this taxon have been reported to be large and widespread across its native range in Utah. Number of individuals re-scored to "O". Threats species may include grazing-related impacts and ATV-recreational disturbances, however, it is scored as "unknown" due to uncertainty. The plants in the Uinta Basin are likely threatened by energy development. Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys.

Scored By/Date: J. Alexander/2014

Revisions: Moved from Need Data to Watch List.

*Eucnide urens*

Family: Loasaceae

Comments: Peripheral. Range is so restricted in Utah that total population numbers are low; threats may be low [limestone cliff face habitat and its irritating hairs makes this plant resistant to anthropomorphic disturbance]

Scored By/Date: J. Alexander/2009

*Mentzelia goodrichii*

Family: Loasaceae

Comments: Local Endemic. Green River shale endemic of Argyle Canyon area. Known from 6 collections according to Utah Flora (2008). Population size is low, but trends not known. Threats scored as low.

Scored By/Date: UNPS Rare Plant Comm./2008

*Mentzelia multicaulis* var. *flumensevera*

Family: Loasaceae

Comments: Local Endemic. Described in 2002, endemic to Sevier River Canyon on volcanic talus, information needed on population size, threats would seem low based on rugged and unstable habitat.

Scored By/Date: UNPS Rare Plant Comm./2008

*Mentzelia multicaulis* var. *uintahensis*

Synonym: *Mentzelia uintahensis*

Family: Loasaceae

Comments: Regional Endemic. Found on Duchesne River, Green River, and Moenkopi formations. Known only from the Uinta Basin in Utah and Colorado, where threats from mineral exploration and development are high. Abundance and trends not known.

Scored By/Date: UNPS Rare Plant Comm./2008

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*Sphaeralcea caespitosa* var. *caespitosa*

Family: Malvaceae

Comments: Local Endemic. Found on calcareous soils, especially the Sevy Dolomite. Dwarf growth habit with unusually large flowers makes this species a strong candidate for cultivation as an ornamental, and populations could be threatened by over-collection of live plants and seed. Locally common at present.

Scored By/Date: UNPS Rare Plant Comm./2008

*Menyanthes trifoliata*

Family: Menyanthaceae

Comments: Sparse. Only 13 specimens at BRY have been collected. It has been found in Duchesne, Kane, Summit, Uintah, and Wasatch Counties. It is a circumboreal species that is widespread across the U.S. and Canada. Habitat Specificity rescored a "1" due to its status as a riparian species according to A Utah Flora ("lake margins and bogs"). This plant has been found mostly in shallow water along lakes, ponds, and bogs in alpine and subalpine habitats in Utah. The habitat for this species is becoming degraded by development, recreational disturbance, and grazing impacts, which is the primary reason for scoring Threats as a "1". Number of Individuals scored as "unknown".

Scored By/Date: J. Alexander/2015

Revisions: Moved from Medium Priority to Watch List

*Najas flexilis*

Synonym: *Najas caespitosa*

Family: Najadaceae

Comments: Peripheral. The populations in Fish Lake **form the basis of "Najas caespitosa" (which is a narrow endemic if recognized)** and may be threatened by yet unknown source, possibly recreation-development disturbances and riparian modifications along the lake shores. Numerous riparian species have not been relocated in this area for over 40 years. These are the primary reasons for the upgrade of the threats to this species to a "1". Trends are scored as "1". It is downward.

Scored By/Date: J. Alexander/2014

Revisions: Scientific name changed

*Najas guadalupensis* ssp. *guadalupensis*

Family: Najadaceae

Comments: Disjunct. Only 2 specimens at BRY have been collected. It has been found in Cache, Duchesne, and Salt Lake Counties. This taxon's primary range is in the Eastern U.S. and California. Habitat Specificity scored as "1" due to its status as a riparian species according to FNA ("Lakes, rivers, and canals"). Riparian habitat modification and disturbance from farming, residential-highway development and the grazing-related impacts of cattle are a threat to this species. Trends are scored as "unknown".

Scored By/Date: J. Alexander/2014

Revisions: Moved from Medium Priority to Watch List

*Najas marina*

Family: Najadaceae

Comments: Peripheral. Only 4 specimens at BRY have been collected. It has been found in Cache, Juab, and Tooele Counties. Its primary range is in California, Arizona, and Nevada with disjunct populations in the eastern U.S. Habitat Specificity scored as "1" due to its status as a riparian species according to FNA ("Brackish or highly alkaline waters of ponds and lakes"). Riparian habitat modification and disturbance from farming, residential-highway development and the grazing-related impacts of cattle are a threat to this species. Trends are scored as "unknown".

Scored By/Date: J. Alexander/2014

Revisions: Moved from Medium Priority to Watch List

*Abronia villosa*

Family: Nyctaginaceae

Comments: Regional Endemic. Only 10 specimens at BRY have been collected of this taxon. Restricted in Utah to sandy pockets in the Beaver Dam Wash of Washington County. Habitat Specificity scored as "1" since it is restricted to sand dune habitats. Due to grazing-related impacts, the subsequent invasion of exotic weeds, and the increased ATV disturbance in sandy areas in southern Utah, threats are scored as a "1". Trends are scored as "unknown".

Scored By/Date: J. Alexander/2015

Revisions: Moved from Medium Priority to Watch List

*Menodora spinescens*

Family: Oleaceae

Comments: Regional Endemic. Uncommon on alluvium in wash banks in the Beaver Dam Wash vicinity. It may also be found in washes alluvial fans the Beaver Dam Mountains in the *Coleogyne* zone, similar to the habitat found in southern Nevada & California. Impacted by ongoing development, grazing, and recreational impacts in SW UT.

Scored By/Date: J. Alexander/2015

*Boisduvalia densiflora*

Synonym: *Epilobium densiflorum*

Family: Onagraceae

Comments: Sparse. Only 2 specimens at BRY have been collected. It has been found in Cache and Weber Counties in Utah. This taxon's primary range is in the northern U.S. and Canada. Habitat Specificity scored as "1" due to its status as a riparian species according to A Utah Flora ("Marsh and mud-flat areas"). Riparian habitat modification and disturbance from farming, residential-highway development and the grazing-related impacts of cattle are a threat to this species. Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys.

Scored By/Date: J. Alexander/2014

Revisions: Moved from Medium priority to Watch list

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*Boisduvalia glabella*

Synonym: *Epilobium pygmaeum*

Family: Onagraceae

Comments: Sparse. Only 5 specimens at BRY have been collected. It has been found in Cache, Salt Lake, Uintah, and Utah Counties in Utah. This taxon's primary range is in the eastern U.S. and California. Habitat Specificity scored as "1" due to its status as a riparian species according to FNA ("Shores of lakes and ponds"). Riparian habitat modification and disturbance from farming, residential-highway development and the grazing-related impacts of cattle are a threat to this species. Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys.

Scored By/Date: J. Alexander/2014

Revisions: Moved from Medium priority to Watch list

*Camissonia atwoodii*

Synonym: *Chylismia atwoodii*

Family: Onagraceae

Comments: Local endemic. Edaphic endemic of Straight Cliffs clinker, can be very abundant in some years, threats in past from coal mining, roads, current trend not known

Scored By/Date: UNPS Rare Plant Comm./2008

*Camissonia bairdii*

Family: Onagraceae

Comments: Regional Endemic. Chinle endemic in SW Utah. Population trends poorly known - plants small stature makes it easy to overlook. Chinle habitat is being invaded by *Bromus rubens* and *Molucella laevis*. More surveys needed.

Scored By/Date: J. Alexander/2009

*Camissonia claviformis* var. *aurantiaca*

Synonym: *Chylismia claviformis* ssp. *aurantiaca*

Family: Onagraceae

Comments: Regional Endemic. Uncommon on alluvial wash banks and fans in the Beaver Dam Wash area. Trend considered downward due to the impact of current and future construction, recreational, and grazing disturbance in the area.

Scored By/Date: J. Alexander/2009

*Camissonia claviformis* var. *claviformis*

Synonym: *Chylismia claviformis* ssp. *claviformis*

Family: Onagraceae

Comments: Regional Endemic. Uncommon on alluvium in wash banks and fans in the Beaver Dam Wash area. It may also be found in washes alluvial fans the Beaver Dam Mountains in below *Coleogyne* zone, similar to the habitat found in southern Nevada & California. Trend considered downward due to the impact of current and future construction, recreational, and grazing disturbance in this area.

Scored By/Date: J. Alexander/2009

*Camissonia claviformis* var. *cruciformis*

Synonym: *Chylismia claviformis* ssp. *cruciformis*

Family: Onagraceae

Comments: Peripheral. Rare on alluvial wash banks and fans in the Beaver Dam Wash area. Trend considered downward due to the impact of current and future construction, recreational, and grazing disturbance in this area and that it has only been seen once.

Reported for Utah based on a single specimen from Washington County, Utah (*Baird 1964b* BRY). It is not included in the key to varieties in the 5th Ed. of A Utah Flora, which suggests the determination is uncertain according to Welsh.

Scored By/Date: J. Alexander/2015

*Camissonia gouldii*

Family: Onagraceae

Comments: Regional Endemic. Very similar to *Camissonia pygmaea*, perhaps not distinct; threats may be high? Found on volcanic ash soils. Only 6 collections noted in Welsh et al. (2008).

Scored By/Date: UNPS Rare Plant Comm./2008

*Epilobium glaberrimum* var. *fastigiatum*

Family: Onagraceae

Comments: Peripheral. Only 9 specimens at BRY have been collected. It has been found in only in Washington County in Utah. Its primary range is in California, the Pacific Northwest, the northern Rocky Mountains, and Canada. Habitat Specificity rescored a "1" due to its status as a riparian species according to A Utah Flora ("Riparian habitats in oak, birch, dogwood, rose, and mixed mountain brush communities"). The habitat for this species is becoming degraded by development, recreational disturbance, and grazing impacts, which is the primary reason for scoring Threats as a "1". Trends are scored as "unknown".

Scored By/Date: J. Alexander/2015

Revisions: Moved from Medium Priority to Watch List

*Epilobium leptophyllum*

Family: Onagraceae

Comments: Sparse. Only 8 specimens at BRY have been collected. It has been found in Cache, Daggett, Duchesne, Kane, Uintah, and Utah Counties in Utah. This taxon is widespread throughout the United States and Canada. Habitat Specificity rescored a "1" due to its status as a montane, stream-side riparian species according to A Utah Flora ("Lodgepole pine, aspen, and spruce-fir communities, and alpine tundra (talus), and downward into cottonwood-alder streamside communities, usually on gravel bars along streams, or in alpine tundra and on talus"). The habitat for this species is becoming degraded by development, recreational disturbance, and grazing impacts, which is the primary reason for scoring Threats as a "1". Trends scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of surveys.

Scored By/Date: J. Alexander/2015

Revisions: Moved from Medium Priority to Watch List



UNPS Watch List: Ranking Comments

*Epilobium nevadense*

Family: Onagraceae

Comments: Regional endemic. Only 6 specimens in Utah have been collected. It has been found in Millard County in the Canyon Mountains (*Goodrich 14918, 15144*, BRY, NY; *Franklin 7308, 7310* SJNM); in Washington County in the Bull Valley Mountains-upper Beaver Dam Wash drainage (*Higgins 20843* BRY; *Atwood 20132* BRY, NY) and in the Beaver Dam Mountains (*Higgins 778* BRY); and in Iron County at the mouth of Camp Creek S of Kanarraville (*Thorne 5689* BRY, NY, ZION herbarium). It has an equally sparse N to S range in Nevada with montane sites in Eureka, White Pine, Lincoln and Clark Counties. There is a new report of a population in the Grand Canyon in Mohave County, Arizona. Although the habitat does not seem unusual according to A Utah Flora ("Pinyon-juniper and oak-mountain mahogany communities, on limestone or quartzite"), the Intermountain Flora ("talus and cliffs") and herbarium specimen label data suggest that this is a rock crevice species, inhabiting both limestone and igneous substrates. In Utah, naturalized mountain goats do not appear to be threatening this species since it occurs at lower elevation sites (3100 ft to 8700 ft in Utah) and is only known from ranges where goats have not been transplanted by the State of Utah. The cliff and talus habitat preferred by the species likely also reduces the impact by livestock grazing. Climate change may be a threat. Droughts and rapid snowmelt due to wind-blown sediments are melting snowpack earlier than normal in our region. Threats and Trends scored as "unknown".  
Scored By/Date: J. Alexander/2016

*Epilobium palustre*

Synonym: *Epilobium palustre* var. *palustre*

Family: Onagraceae

Comments: Peripheral. Vouchers for this taxon are not reported in A Utah Flora. It is reported for Duchesne and Uintah Counties in Utah in IMF. A single specimen from NW of Duchesne along the Duchesne River near Rock Creek Road Junction in Duchesne County documents this taxon for Utah (*Neese 14889* 15 August 1983 UTC; specimen from SEINet). It is a circumboreal species that is widespread across the U.S. and Canada. Habitat Specificity scored a "1" due to its status as a riparian species according to IMF ("wet low ground"). Much of the habitat for this species is becoming significantly degraded by development, recreational disturbance, and grazing impacts, which is the primary reason for re-scoring Threats from "unknown" to a "1". Trends are scored as "unknown".  
Scored By/Date: J. Alexander/2014  
Revisions: Moved from Medium Priority to Watch List.

*Oenothera deltooides* var. *decumbens*

Synonym: *Oenothera deltooides* ssp. *ambigua*

Family: Onagraceae

Comments: Regional Endemic. Found in sandy creosote bush and blackbrush communities. Only found in limited area of Washington County in Utah. Abundance and trends poorly known.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Botrychium multifidum*

Family: Ophioglossaceae

Comments: Peripheral. Only 2 specimen at BRY have been collected in Utah. Threats to this taxon include disturbance from the grazing-related impacts of cattle and naturalized mountain goats. Climate change is also a threat. These are the primary reasons for the upgrade of the threats to this species to a "1". Trends are scored as "unknown".  
Scored By/Date: J. Alexander/2014

*Cypripedium fasciculatum*

Family: Orchidaceae

Comments: Disjunct. Threats from over-harvest for roots (medicinal use), collection of orchids by gardeners [*Fertig 2009*].

The Summit County record is at UVSC (*Harper 2001 -97, 23 June 2001, Highway 150, Lodge-pole campground [Yellowpine Campground]*). Intrinsic rarity changed to 1 due to potential pollinator specificity or impacts. Threats include disturbance from the grazing-related impacts of cattle. Climate change is also a threat. Droughts and rapid snowmelt due to wind-blown sediments are melting snowpack earlier than normal in our region. These are the primary reasons for the upgrade of the threats to this species to a "1". Trends are scored as "unknown". It is alarming that across its range in Utah, the last specimen was collected over 30 years ago.  
Scored By/Date: J. Alexander/2014  
Revisions: Moved from Medium Priority to Watch List

*Platanthera zothecina*

Family: Orchidaceae

Comments: Regional Endemic. Also rare in NW Colorado. Found mostly in hanging gardens and seeps in the Colorado River watershed. Trends not known.  
Scored By/Date: UNPS Rare Plant Comm./2008  
Revisions: Scientific name changed

*Eschscholzia mexicana*

Synonym: *Eschscholzia californica* ssp. *mexicana*

Family: Papaveraceae

Comments: Peripheral. Uncommon in the Beaver Dam Mountains. Better info needed on the number and size of populations (numbers may be high in favorable years). Trend probably downward due to the impact of current and future construction, recreation, and grazing disturbance in the area and is also highly threatened by invasive annual exotics.  
Scored By/Date: J. Alexander/2009

## UNPS Watch List: Ranking Comments

*Papaver uintaense*

Synonym: *Papaver lapponicum* var. *occidentale*, *P. radicum* ssp. *kluanense*, *P. radicum* var. *pygmaeum*, *P. kluanense*

Family: Papaveraceae

Comments: Disjunct. Could be considered a local endemic of the Uintas (and score higher) - there are taxonomic issues to resolve. Threats perhaps higher?

22 specimen at BRY have been collected in Utah. Threats include disturbance from the grazing-related impacts of cattle and naturalized mountain goats. Climate change is also a threat. These are the primary reasons for the upgrade of the threats to this species to a "1". Trends are scored as "unknown".

Scored By/Date: J. Alexander/2015

*Platystemon californicus*

Family: Papaveraceae

Comments: Peripheral. Rare on alluvial fans and in mixed shrub communities up to the pinyon juniper zone between the Beaver Dam and Pine Valley Mountains. Trend probably downward.

Scored By/Date: J. Alexander/2009

*Achnatherum arnowiae*

Synonym: *Stipa arnowiae*

Family: Poaceae or Gramineae

Comments: Regional Endemic?. Recently described, hybrid between *Stipa hymenoides* x *S. comata* from S Utah, many plants may be sterile - perhaps not a real taxon, threats may be moderate [UNPS 2008].

Sensu FNA, this taxon is not a hybrid. Barkworth suggests that all records of this taxon determined by Welsh from outside the type locality vicinity in Kane County are the hybrid, *A. x bloomeri*. The Kane County plants being a local endemic that evolved from a specialized population of *A. hymenoides*. This treatment is followed herein. All other county reports of this taxon are treated under *A. x bloomeri*. Within Kane County, it is still not clear how large the population of this taxon is.

A duplicate specimen from Coconino County, AZ at ASU has been confirmed by W. Fertig, supporting the idea that this taxon may be a Regional Endemic.

Scored By/Date: J. Alexander/2014; W. Fertig/2016

Revisions: Scientific name changed.

*Andropogon glomeratus*

Family: Poaceae or Gramineae

Comments: Peripheral. In Utah, found mostly in hanging gardens and cottonwood riparian areas, only along Lake Powell. Only 6 collections cited in Welsh et al. (2008). Threats and trends scored as unknown.

Scored By/Date: UNPS Rare Plant Comm./2008

*Deschampsia danthonioides*

Family: Poaceae or Gramineae

Comments: Peripheral. Only 5 specimens at BRY have been collected. It has been found in Cache, Davis, Salt Lake and Weber Counties. Its primary range is in the Pacific Northwest and Canada. Habitat Specificity scored as "1" due to its status as a saline meadow riparian species according to A Utah Flora ("Salt desert shrub and saline meadows communities, pastures and marshes"). Threats should be considered a "1" due to the impacts to the integrity of wetland habitats from residential-highway development in the Salt Lake Valley region. Trend is scored as "unknown" since populations of this taxon have not been recently relocated in Utah. It is unknown how development has impacted this taxon. It could be assumed that the trend is downward.

Scored By/Date: J. Alexander/2014

Revisions: Moved from Medium Priority to Watch List

*Eragrostis hypnoides*

Family: Poaceae or Gramineae

Comments: Peripheral. Only 13 specimens at BRY have been collected. It has been found in Box Elder, Cache, Utah, Wasatch, and Uintah Counties. It has recently been collected along Utah Lake in Utah County (*Johnson 2633*, 15 August 2013, Lower Hobbie Creek Wildlife Management Area, Provo Bay, BRY, UTC) and along the Green River in Uintah County (*Goodrich 27327*, 14 September 2007, floodplain of the Green River at Jensen Bridge, USUUB). A Utah Flora is incorrect, stating that this is native to Africa. This is native to the New World and ranges from Argentina to Canada. Habitat Specificity scored as "1" due to its status as a riparian species according to A Utah Flora ("Along waterways, in marshes and beds of drying ponds") and FNA ("along muddy or sandy shores of lakes and rivers"). Threats should be considered a "1" due to the impacts to the integrity of wetland habitats from residential-highway development in the Salt Lake Valley and Utah Lake regions. Trend is scored as "unknown" since populations of this taxon have not been recently relocated in Utah.

Scored By/Date: J. Alexander/2014

Revisions: Moved from Medium Priority to Watch List

*Festuca dasyclada*

Family: Poaceae or Gramineae

Comments: Regional Endemic. Mostly found on Green River shale and Claron and Flagstaff limestones in montane forest and sagebrush communities. Populations small, trends poorly known.

Scored By/Date: UNPS Rare Plant Comm./2008

*Imperata brevifolia*

Family: Poaceae or Gramineae

Comments: Peripheral. Found in riparian areas in sandstone slickrock canyons in the Lake Powell area. Known from only about 5 collections. Threats & trends unknown.

Scored By/Date: UNPS Rare Plant Comm./2008

UNPS Watch List: Ranking Comments

*Muhlenbergia mexicana*

Family: Poaceae or Gramineae

Comments: Disjunct. Only 3 specimens at BRY have been collected. It has been found in Grand and Utah Counties. Habitat Specificity scored as "1" due to its status as a riparian species according to A Utah Flora ("Along waterways and in other moist, often disturbed sites") and FNA ("along muddy or sandy shores of lakes and rivers"). Threats should be scored as "1" due to the impacts to the integrity of wetland habitats from grazing and residential-highway development in Utah County. In Grand County, residential-highway development threats are less (but not absent) but threats from riparian habitat modification and disturbance from ATV & Boating recreation and the grazing-related impacts of cattle may be significant. Trend is scored as "unknown" since populations of this taxon have not been recently relocated in Utah. It is unknown how development has impacted this taxon. It could be assumed that the trend is downward.

Scored By/Date: J. Alexander/2014

Revisions: Moved from Medium Priority to Watch List

*Panicum hallii*

Family: Poaceae or Gramineae

Comments: Peripheral. May be extirpated in Utah—known from a single collection made in 1934 in Pine Valley (Beaver County). Trends downward. Threats not known.

Scored By/Date: UNPS Rare Plant Comm./2008

*Spartina pectinata*

Family: Poaceae or Gramineae

Comments: Peripheral. Only 3 specimens at BRY have been collected. It has been found in Box Elder, Cache, Grand and Uintah Counties. Its primary range is in the Rocky Mountains, Great Plains, Eastern U.S. and Canada. Habitat Specificity scored as "1" due to its status as a low-elevation riparian species according to A Utah Flora ("Wet, often saline sites along waterways and in meadows below 1520 m"). Threats scored a "1" due to riparian habitat modification and disturbance from the grazing-related impacts of cattle. Along the Green River in Uintah County and the Colorado River in Grand County, recreational use along the river may be a threat to this species. Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population surveys.

Scored By/Date: J. Alexander/2014

Revisions: Moved from Medium Priority to Watch List

*Ipomopsis spicata* ssp. *spicata*

Synonym: *Gilia spicata* var. *spicata*

Family: Polemoniaceae

Comments: Peripheral. Found in barren habitats, threats and trends poorly known, known from 4 main sites in Utah, all in the Uinta Range; more widespread in WY

Scored By/Date: UNPS Rare Plant Comm./2008

*Navarretia saximontana*

Family: Polemoniaceae

Comments: Disjunct. The type was collected in Dog Valley, Garfield County. *N. saximontana* is presently known from a single location in Utah. It could be in nearby springs and the general region where it occurs; it is abundant in the Flagstaff area and in Colorado [Johnson Jan 2014]; this taxon was scored a 1 for all categories except intrinsic rarity, threats and trends. It is currently unknown whether the populations at this one locality in Utah is impacted by any threats or what the long term trend in the populations are.

Scored By/Date: J. Alexander/2015

Revisions: New to Watch List

*Phlox lutescens*

Synonym: *Phlox austromontana* var. *lutescens*

Family: Polemoniaceae

Comments: Local Endemic. Found in variety of pinyon-juniper and desert shrub communities on sandstone in SE Utah (habitat specificity low), populations small, known from 10 collections, threats and trends unknown.

Scored By/Date: UNPS Rare Plant Comm./2008

*Phlox opalensis*

Family: Polemoniaceae

Comments: Regional Endemic. UT populations seem small (can be very large in WY), restricted to clay barren habitats, threats from ATV recreation, and oil and gas development. Just 3 collections in Utah, last noted in 1995.

Scored By/Date: Fertig/2008

*Eriogonum acaule*

Family: Polygonaceae

Comments: Regional Endemic. Newly discovered in UT in 2006 in Rich County, edaphic endemic of calcareous sandstone, restricted to wind-blasted cushion plant communities in Wyoming, threats probably low but need to be determined. Trends not known.

Scored By/Date: UNPS Rare Plant Comm./2008

*Eriogonum aretioides*

Family: Polygonaceae

Comments: Local Endemic. Restricted to Claron limestone outcrops in south-central Utah, often associated with Bristlecone pine. Populations small, trends poorly known.

Scored By/Date: UNPS Rare Plant Comm./2008

*Eriogonum cernuum* var. *psammophilum*

Synonym: Included in var. *cernuum* in FNA and Intermountain Flora.

Family: Polygonaceae

Comments: Local Endemic. Newly described in 2003, may be a large ecotype of sand dunes - not recognized in other recent regional floras. Abundance and trends poorly known. Better treated as Status Uncertain?

Scored By/Date: UNPS Rare Plant Comm./2008

## UNPS Watch List: Ranking Comments

*Eriogonum ephedroides*

Synonym: *Eriogonum brevicaulle* var. *ephedroides*

Family: Polygonaceae

Comments: Local Endemic. Uinta Basin endemic found on Green River Formation in desert shrub communities; may be threatened by oil and gas development; populations often locally common, but trends not known.

Scored By/Date: UNPS Rare Plant Comm./2008

Revisions: Scientific name changed.

*Eriogonum eremicum*

Synonym: *Eriogonum batemanii* var. *eremicum*

Family: Polygonaceae

Comments: Local Endemic. Found on limestone and dolomite in desert shrub communities in narrow area of Beaver and Millard counties; populations may intergrade with *E. spathulatum*; threats and trends unknown.

Scored By/Date: UNPS Rare Plant Comm./2008

Revisions: Scientific name changed

*Eriogonum exaltatum*

Synonym: *Eriogonum insigne*, misapplied

Family: Polygonaceae

Comments: Regional Endemic. Locally common on gypsum outcrops throughout Washington Co. and extending into Kane Co. The Iron County record is presumed extinct. Due to development and ATV disturbance, it's range is shrinking. It may higher local population sizes than recorded, as it is a late summer flowering species. It is however, rarely collected. Trend may be downward.

The Iron County type of *Eriogonum insigne* was recently, with great difficulty, determined by Reveal to be a form of *E. deflexum*. Ecologically this determination is most likely correct. The type was collected in July at an much earlier date than any population that has been previously considered this taxon. Only *Eriogonum deflexum* is blooming at the time this type was collected (04 Jul 1877), both in southern Utah and southern Nevada. In Washington County, both *E. deflexum* and populations now considered to be *E. exaltatum* (and formerly known as "*E. insigne*") grow in profusion of gypsum outcrops. In many places, *E. deflexum* blooms earlier and far outnumbers *E. exaltatum*. As such, many specimens determined previously as "*E. insigne*" are *E. deflexum*. The populations in Utah, however, are unusual. *E. exaltatum* is a Mojave Desert endemic, as such, specimens determined as *E. exaltatum* or "*E. insigne*" from outside that ecoregion in Utah (Kane and San Juan Counties) should be re-examined. They, too, may be *E. deflexum*. West of the Virgin River Gorge in Arizona and south to Las Vegas and California, gypsum outcrops are dominated by *E. exaltatum* in flower from late August through October, with *E. deflexum* found mostly in washes, disturbed areas, and roadsides. Washes and disturbed areas over gypsum bedrock are typically the only areas where these two taxa can be found sympatric. Residential development and ATV disturbance are threatening populations of this taxon in Washington

County. A score of "0" can no longer be justified for Trends. It has been rescored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of surveys.

Scored By/Date: J. Alexander/2015

*Eriogonum heermannii* var. *subspinosum*

Family: Polygonaceae

Comments: Regional Endemic. Uncommon in limestone outcrops in Beaver Dam Mountains. Trend probably downward due to the impact of current and future construction, recreation, and grazing disturbance in this area.

Scored By/Date: J. Alexander/2009

*Eriogonum loganum*

Synonym: *Eriogonum brevicaulle* var. *loganum*

Family: Polygonaceae

Comments: Local Endemic. Found in sagebrush grasslands on valley benches in the vicinity of Logan and the mountains of northernmost Utah. Populations small, but threats and trends poorly known.

Scored By/Date: UNPS Rare Plant Comm./2008

Revisions: Scientific name changed

*Eriogonum panguicense* var. *alpestre*

Family: Polygonaceae

Comments: Local Endemic. Sensus Reveal on his *Eriogonum* Monograph Website (plantsystematics.org):

"*Eriogonum panguicense* var. *alpestre* is the high-elevation expression of the species, and is only marginally distinct. The plant is restricted essentially to the Cedar Breaks National Monument area of Iron Co., Utah, where it is scattered but fairly common along the rim of the breaks." Fertig and Doug Reynolds surveyed populations in Cedar Breaks NM in 2007-2008 and estimated the population at 50,000-100,000.

Scored By/Date: J. Alexander/2014

Revisions: Moved from Need Data to Watch List

*Eriogonum saurinum*

Synonym: *Eriogonum lonchophyllum* var. *saurinum*

Family: Polygonaceae

Comments: Local Endemic. Restricted to the Uinta Basin of NE Utah and adjacent Colorado in the vicinity of Dinosaur NM. Found on Wasatch, Entrada, Carmel, and other sandstone and shale formations with sparse desert shrub communities. Populations locally common, but trends not known. May be threatened by mineral exploration and development.

Scored By/Date: UNPS Rare Plant Comm./2009

Revisions: Scientific name changed. Moved from Medium Priority to Watch List.

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*Eriogonum scabrellum*

Family: Polygonaceae

Comments: Regional Endemic. Found in sparsely vegetated clay and shale slopes and badlands in SE Utah associated with Mancos, Tropic, and Morrison formations. Populations vary from small to locally common (scored 1). Threats and trends poorly known. May colonize disturbed roadcuts on the Kelly Grade in the southern Kaiparowits Plateau.

Scored By/Date: UNPS Rare Plant Comm./2008

*Eriogonum thompsonii* var. *albiflorum*

Synonym: *Eriogonum corymbosum* var. *albiflorum*

Family: Polygonaceae

Comments: Regional Endemic. Usually found on Chinle and Moenkopi beds on silty to clay-rich soils with sparse vegetative cover. Abundance and trends poorly known, but numbers may be high if the closely related var. *matthewsiae* is included.

Scored By/Date: UNPS Rare Plant Comm./2008

Revisions: Scientific name changed

*Eriogonum wrightii* var. *wrightii*

Synonym: *Eriogonum brevicaulum* var. *ephedroides*

Family: Polygonaceae

Comments: Peripheral. Found in volcanic ash and limestone bedrock in Beaver Dam Mountains in Utah, but abundant farther south in Arizona. Abundance and trends unknown.

Scored By/Date: UNPS Rare Plant Comm./2008

*Koenigia islandica*

Family: Polygonaceae

Comments: Disjunct. Only 1 specimen at BRY have been collected in Utah. It is known only from Duchesne County on Gilbert Peak (*Goodrich et al. 26308*, 9 Aug. 2000, BRY). This taxon's primary distribution is in the Rocky Mountains and western Canada. Habitat Specificity scored a "1" due to its status as an alpine seep species according to A Utah Flora ("mossy margins of seeps and on stream banks and on frost hummocks"). Threats to this taxon include grazing-related impacts from cattle, sheep, and naturalized mountain goats. Climate change is also a threat. These are the primary reasons for the upgrade of threats to a "1". Trends are "unknown".

Scored By/Date: J. Alexander/2015

*Polygonum minimum*

Family: Polygonaceae

Comments: Peripheral. Only 5 specimens at BRY have been collected. It has been found in the Uinta Mountains and Wasatch Range in Duchesne, Salt Lake, Summit, and Utah Counties in Utah. Its primary range is in Alaska, California, the Pacific Northwest and Canada. Habitat Specificity scored as "1" due to its status as an alpine rock crevice and talus species according to A Utah Flora ("Spruce-fir and alpine communities, often in rock stripes or talus"). Threats include grazing-related impacts from sheep and naturalized mountain goats.

Climate change is also a threat. These are the main reasons for threats being upgrade to 1. Trends unknown.

Scored By/Date: J. Alexander/2015

Revisions: Moved from Medium Priority to Watch List

*Pterostegia drymarioides*

Family: Polygonaceae

Comments: Peripheral. Known from 10 collections (Welsh et al. 2008) in limestone or basalt rock crevices in Washington County. Abundance and trends not known. May be threatened by wildfire.

Scored By/Date: UNPS Rare Plant Comm./2008

*Claytonia megarhiza*

Family: Portulacaceae or Montiaceae

Comments: Peripheral. 29 specimens at BRY have been collected. It has been found in the Uinta and La Sal Mountains in Duchesne, Grand, San Juan, Summit, and Uintah Counties. Its primary range is in the Rocky Mountains and the Pacific Northwest. Habitat Specificity scored as "1" due to its status as an alpine talus and tundra species according to A Utah Flora ("Rocky slopes, talus, alpine and subalpine meadows, subalpine spruce-fir"). Threats include grazing-related impacts from naturalized mountain goats. Climate change is also a threat. These are the primary reasons for the upgrade of threats to a "1". Trends are scored as "unknown".

Scored By/Date: J. Alexander/2015

Revisions: Moved from Medium Priority to Watch List

*Lewisia triphylla*

Family: Portulacaceae or Montiaceae

Comments: Peripheral. Only 8 specimens at BRY have been collected. It has been found in Cache, Davis, Duchesne, Morgan, Rich, Salt Lake and Summit Counties in Utah. Its primary range is in the Pacific Northwest. Habitat Specificity scored as "1" due to its status as an alpine or subalpine meadow species according to A Utah Flora ("Meadows in sedge-forb and spruce-fir communities") and FNA ("Open places, sandy to gravelly soils, sometimes alpine meadows, usually near melting snow"). Threats include grazing-related impacts from cattle, sheep, and naturalized mountain goats (at least in the Uinta Mountains). Climate change is also a threat. These are the primary reasons for threats being upgraded to 1. Trends are unknown.

Scored By/Date: J. Alexander/2015

Revisions: Moved from Medium Priority to Watch List

*Portulaca halimoides*

Family: Portulacaceae or Montiaceae

Comments: Peripheral. Only 6 specimens at BRY have been collected. It has been found in Kane and San Juan Counties in Utah. Its primary range is in the Midwestern U.S. and Mexico. Habitat Specificity scored as "1" since it is restricted to sandy habitats according to A Utah Flora ("sandy sites in fourwing saltbush, ephedra, cliffrose, and pinyon-juniper communities") and FNA ("Dry soil, sand dunes, arroyos"). Due to grazing-related

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impacts, the subsequent invasion of exotic weeds, and the increased ATV disturbance in quaternary dune fields and sandy areas across the Colorado Plateau, threats are scored as a "1". Trends are scored as "unknown".

Scored By/Date: J. Alexander/2015

Revisions: Moved from Medium Priority to Watch List

*Potamogeton epihydrus*

Family: Potamogetonaceae

Comments: Disjunct. Only 1 specimen at BRY has been collected. It has been found in Utah in Salt Lake County. The specimen data is not listed in A Utah Flora. This taxon is not reported for Utah in FNA. Number of populations scored as "unknown" since the specimen was not cited in detail in A Utah Flora and it is not reported for Utah in FNA. The record at BRY should be confirmed to determine the status of the determination. Its primary range is in the Pacific Northwest, Eastern U.S. and Canada with disjunct populations in Wyoming, South Dakota and Montana. Habitat Specificity scored as "1" due to its status as a riparian species according to FNA ("Still or flowing waters of lakes, ponds, streams, and rivers").

Threats to this taxon include riparian habitat modification and disturbance from residential-highway development and the grazing-related impacts of cattle. These are the primary reasons for the upgrade of the threats to a "1". Trends are scored as "unknown".

Scored By/Date: J. Alexander/2014

Revisions: New to Watch List

*Potamogeton foliosus* ssp. *fibrillosus*

Family: Potamogetonaceae

Comments: Disjunct. Only 3 specimens at BRY have been collected. It has been found in Utah in Grand (Holmgren 2358, 03 August 1965, Uintah and Ouray Indian Reservation (Hill Creek extension) Hill Creek, vicinity of Weaver Reservoir, BRY) and Summit County. The Summit County specimen data has not been relocated yet. This taxon is reported only for Cache County in FNA. It is likely based on a specimen collected by Thorne (Thorne 4778, 04 July 1986, Wellsville Mountains, Dry Lake South shore, BRY). It is not known why Welsh did not include this specimen in A Utah Flora. He may have considered it a different species. The records at BRY should be verified. This taxon has a narrow distribution in Oregon and Idaho with disjunct populations in California, Washington and Wyoming. Habitat Specificity scored as "1" due to its status as a riparian species according to FNA ("Warm waters of shallow lakes, springs, streams, and rivers"). Threats include riparian habitat modification and disturbance from residential-highway development and the grazing-related impacts of cattle. These are the primary reasons for the upgrade of threats to a "1". Trends are scored as "unknown".

Scored By/Date: J. Alexander/2014

Revisions: Moved from Medium Priority to Watch List

*Potamogeton friesii*

Family: Potamogetonaceae

Comments: Disjunct. Only 3 specimens at BRY have been collected. It has been found in Utah in Sevier (Thorne 4078, 17 August 1985, Fish Lake, Pelican Point, BRY; Atwood 10587, 15 August 1984, Pelican Point, Fishlake, BRY) and Summit County (Hobson 52, 27 July 1939, Lyman Lake Blackfork Creek, UTC). Its primary range is in the northeastern U.S. and Canada with disjunct populations in Nebraska, the Dakotas, and Idaho. Habitat Specificity scored as "1" due to its status as a riparian species according to FNA ("Calcareous to brackish waters of lakes and slow-flowing streams"). Threats to this taxon include riparian habitat modification and disturbance from grazing-related impacts of cattle. However, the populations in Fish Lake may be threatened by yet unknown source, possibly recreation and development disturbances and riparian modifications along the lake shores. Several riparian species have not been relocated in this area for over 40 years. These are the primary reasons for the upgrade of threats to a "1". Trends are scored as "unknown" due to uncertainty of the magnitude of impacts on extant populations and the lack of surveys, but it is likely downward.

Scored By/Date: J. Alexander/2014

Revisions: Moved from Medium Priority to Watch List

*Potamogeton illinoensis*

Family: Potamogetonaceae

Comments: Disjunct. Only 1 specimen at BRY has been collected. It was found in Cache County. FNA reports this taxon from Sevier County only (Maguire 16220, 25 August 1938, vicinity Twin Creeks, Fish Lake, UTC) The data for the BRY record is not known. It is also not known if Welsh has seen the UTC specimen. The records at BRY and UTC should be verified. Primary range is in the northeastern U.S. and Pacific Northwest with disjunct populations in the southern U.S. and Rocky Mountains. Habitat Specificity scored as "1" due to its status as a riparian species according to FNA ("Alkaline waters of streams, rivers, lakes, ponds, and sloughs"). Threats include riparian habitat modification and disturbance from grazing-related impacts of cattle. However, the populations in Fish Lake may be threatened by yet unknown source, possibly recreation and development disturbances and riparian modifications along the lake shores. Several riparian species have not been relocated in this area for over 40 years. These are the primary reasons for upgrading threats to "1". Trends are scored as "unknown", but it is likely downward.

Scored By/Date: J. Alexander/2014

Revisions: Moved from Medium Priority to Watch List

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*Potamogeton natans*

Family: Potamogetonaceae

Comments: Disjunct. Only 7 specimens at BRY have been collected. It has been found in Duchesne, Rich, Uintah, and Utah Counties. A specimen from Kane County is likely misidentified (*Hill 329*, 01 August 2003, Lake Powell, Escalante Arm, Explorer Canyon, Alcove and hanging garden at the end of canyon, ASC). This taxon's primary range is in the Eastern U.S., California, Pacific Northwest and Canada with disjunct populations in the Nevada, Kansas, Arizona, and the Rocky Mountains. Habitat Specificity scored as "1" due to its status as a riparian species according to FNA ("Quiet or slow-flowing waters of ponds, lakes, and streams"). Threats are high in at least the Uinta Mountains, but it is not known if that holds true throughout this species' range in Utah. Threats also include grazing-related impacts from cattle and climate change. These are the primary reasons for the upgrade of threats to a "1". Trends are scored as "unknown".

Scored By/Date: J. Alexander/2014

Revisions: Moved from Medium Priority to Watch List

*Potamogeton robbinsii*

Family: Potamogetonaceae

Comments: Disjunct. Only 3 specimens at BRY have been collected. It has been found in Utah in Sevier County (*Piranian s.n.*, 04 September 1936, vicinity of Twin Creeks, Fish Lake, UTC; *Higgins 16070*, 17 August 1985, Fish Lake at Pelican Point, BRY DES UTC; *Thorne 4077*, 17 August 1985, Fish Lake, Pelican Point, BRY). It was reported from Rich and Daggett Counties in A Utah Flora without citation of the source. Its primary range is in the Northeastern U.S., Pacific Northwest, and Canada with disjunct populations in the Rocky Mountains. Habitat Specificity scored as "1" due to its status as a riparian species according to FNA ("Shallow to deep water of ponds, lakes, and slow-flowing rivers"). The populations in Fish Lake may be threatened by yet unknown source, possibly recreation and development disturbances and riparian modifications along the lake shores. Several riparian species have not been relocated in this area for over 40 years. These are the primary reasons for the upgrade of the threats to a "1". Trends are scored as "unknown", but are likely downward.

Scored By/Date: J. Alexander/2014

Revisions: Moved from Medium Priority to Watch List

*Potamogeton zosteriiformis*

Family: Potamogetonaceae

Comments: Disjunct. Only 3 specimens at BRY have been collected. It has been found in Utah in Sevier County (*Maguire 16207*, 24 August 1938, East side of North bay, Fish lake, BRY UTC; *Maguire 16226*, 25 August 1938, North Bay Fish Lake, UTC). It is not known if any of the 3 vouchers cited by Welsh are more modern collections. Its primary range is in the Northern U.S. and Canada with disjunct populations in Kansas and the Rocky Mountains. Habitat Specificity scored as "1" due

to its status as a riparian species according to FNA ("Lakes, ponds, and slow streams"). The populations in Fish Lake may be threatened by yet unknown source, possibly recreation and development disturbances and riparian modifications along the lake shores. Several riparian species have not been relocated in this area for over 40 years. These are the primary reasons for the upgrade of threats to a "1". Trends are scored as unknown due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys, but it is likely downward.

Scored By/Date: J. Alexander/2014

Revisions: Moved from Medium Priority to Watch List

*Stuckenia filiformis* ssp. *alpina*

Synonym: *Potamogeton filiformis* var. *alpinus*

Family: Potamogetonaceae

Comments: Peripheral. A taxon not included in previous versions of the UNPS Rare Plant list, but its apparent rarity in Utah warrants further research. Only 2 specimens at BRY have been collected (but it is reported for 3 counties in A Utah Flora). It has been found in Salt Lake, Summit, and Washington Counties. Number of populations scored as "unknown" since the distribution map in FNA shows a wider range than specimen collections in A Utah Flora indicate. This taxon's primary range is in the Rocky Mountains, Pacific Northwest, and Canada. Habitat Specificity scored as "1" due to its status as a riparian species according to FNA ("Calcareous, saline, or brackish shallow to deep waters of ponds, lakes, streams, ditches, and coastal inshore waters"). Threats include riparian habitat modification and disturbance from the grazing-related impacts of cattle (and sheep in the Uinta Mountains). Climate change is also a threat. Droughts and rapid snowmelt due to wind-blown sediments are melting snowpack earlier than normal in our region. These are the primary reasons for the upgrade of threats to a "1". Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys.

Scored By/Date: J. Alexander/2014

Revisions: Moved from Medium Priority to Watch List

*Stuckenia striata*

Synonym: *Potamogeton filiformis* var. *latifolius*, *P. latifolius*

Family: Potamogetonaceae

Comments: Peripheral. Only 6 specimens at BRY have been collected. It has only been found in Utah in Box Elder County. This taxon's primary range is in Nevada and California with disjunct populations in Arizona, Colorado and Texas. Habitat Specificity scored as "1" due to its status as a alkaline riparian species according to FNA ("Waters of alkaline rivers, canals, and ponds"). Threats scored as a "1" due to continuing threats from riparian habitat modification and disturbance from the grazing-related impacts of cattle and due to increasing threats from hay farming-related and municipal water pumping

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(i.e. Las Vegas Valley Water District) and pipeline activities in the Great Basin. Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys.

Scored By/Date: J. Alexander/2014

Revisions: Moved from Medium Priority to Watch List

*Stuckenia vaginata*

Synonym: *Potamogeton vaginatus*

Family: Potamogetonaceae

Comments: Peripheral. Only 3 specimens at BRY have been collected. It has been found in Garfield, Utah, and Washington Counties. In SEINet, additional records are present from Box Elder County (*Maguire 3183*, 12 September 1932, Bear River Migratory Bird Refuge Unit 2, UTC; *Jensen & Dargan 135*, 27 July 1938, Locomotive Springs, UTC), Summit County (*Hobson 31*, 10 July 1939, Side stream, Smith Fork, Hewinta Road, UTC), and Sanpete County (*Maguire 18651*, 13 June 1940, 1 mile W of Moroni, shallow stream saline meadow, UTC). Number of populations scored as "unknown" since the specimens on SEINet suggests a wider range than specimens cited in A Utah Flora indicate. The records at UTC should be confirmed to determine the status of these county records. Its primary range is in the Rocky Mountains and Canada with disjunct populations in California, Wisconsin and Minnesota. Habitat Specificity scored as "1" due to its status as a riparian species according to FNA ("Deep lakes and ponds"). Threats to this taxon include riparian habitat modification and disturbance from residential-highway development and the grazing-related impacts of cattle. These are the primary reasons for the upgrade of the threats to this species to a "1". Trends are scored as "unknown".

Scored By/Date: J. Alexander/2014

Revisions: Moved from Medium Priority to Watch List

*Androsace chamaejasme* ssp. *lehmanniana*

Synonym: *Androsace chamaejasme* var. *carinata*

Family: Primulaceae

Comments: Peripheral. Only 5 specimens at BRY have been collected. It has been found in San Juan County in Utah. It is reported for Grand county in A Utah Flora. This is a circumboreal species with a primary range in North America in the Rocky Mountains and Canada. Habitat Specificity scored as "1" since this taxon appears to be an rock crevice and alpine tundra species according to A Utah Flora ("Alpine tundra") and FNA ("Rocky, open habitats on tundra"). Threats include grazing-related impacts from naturalized mountain goats. Climate change is also a threat. These are the primary reasons for the upgrade of threats to a "1". Trends are scored as "unknown".

Scored By/Date: J. Alexander/2015

Revisions: Moved from Medium Priority to Watch List

*Androsace filliformis*

Family: Primulaceae

Comments: Peripheral. Only 7 specimens at BRY have been collected. It has been found in Cache, Duchesne, Emery, Rich, Salt Lake, and Wasatch counties in Utah. Its primary range is in California, the Pacific Northwest, and the Rocky Mountains. Habitat Specificity scored as "1" since it is montane meadow and riparian species according to A Utah Flora ("Meadows and streambanks") and FNA ("Wet meadows"). Threats include grazing-related impacts from cattle. Climate change is also a threat. Droughts and rapid snowmelt due to wind-blown sediments are melting snowpack earlier than normal in our region. These are the primary reasons for the upgrade of threats to a "1". Trends are scored as unknown.

Scored By/Date: J. Alexander/2015

Revisions: Moved from Medium Priority to Watch List

*Dodecatheon pulchellum* var. *zionense*

Synonym: Includes subvar. *huberi*

Family: Primulaceae

Comments: Regional Endemic. Large-leaved form, more widely distributed than initially suspected, hanging garden species, populations localized, threats probably low overall, though apparently in decline in some of the larger hanging garden areas in Zion NP.

Scored By/Date: J. Alexander/2009

*Dodecatheon redolens*

Synonym: *Dodecatheon jeffreyi* var. *redolens*

Family: Primulaceae

Comments: Peripheral. Only 3 specimens at BRY have been collected. It is known only from the Deep Creek Range in Juab County in Utah. It has been found in similar habitat in Nevada and California. Habitat Specificity scored as "1" since it is montane riparian species according to A Utah Flora ("Streamsides in douglas fir, white fir, spruce, and aspen woodlands") and FNA ("Moist meadows, stream banks, mainly in montane conifer woodlands"). This is one of several taxa that may be threatened in the Deep Creek Range by the proposed introduction of naturalized mountain goats by the State of Utah. Climate change is also a threat. Droughts and rapid snowmelt due to wind-blown sediments are melting snowpack earlier than normal in our region. Although the climate threats alone do not warrant changes, threats will be upgraded to "1" if the introductions proceed. Trends are scored as "unknown".

Scored By/Date: J. Alexander/2015

Revisions: Moved from Medium Priority to Watch List

*Primula incana*

Family: Primulaceae

Comments: Peripheral. Only 14 specimens at BRY have been collected. It has been found only in Daggett and Garfield Counties in Utah. Its primary range is in Alaska, the Rocky Mountains, and Canada. Habitat Specificity scored as "1" since it is montane meadow or riparian species according to A Utah Flora ("Wet meadows



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and calcareous, often in cold quaking, bogs with sedges, arrow-grass, and *Calamagrostis*, or in river birch and Booth's willow riparian community") and FNA ("Alkaline clay soil in floodplains and moist open meadows"). Threats include grazing-related impacts from cattle and sheep. Climate change is also a threat. Droughts and rapid snowmelt due to wind-blown sediments are melting snowpack earlier than normal in our region. These are the primary reasons for the upgrade of threats to a "1". Trends are scored as "unknown".

Scored By/Date: J. Alexander/2015

Revisions: Moved from Medium Priority to Watch List

*Primula specuicola*

Family: Primulaceae

Comments: Regional Endemic. Limited to hanging gardens in Navajo and Entrada Sandstone. Hanging garden populations are vulnerable to dewatering from water developments and climate change/long-term regional drought. Might be vulnerable to over-harvest by collectors or wildflower enthusiasts.

Scored By/Date: UNPS Rare Plant Comm./2008

*Samolus parviflorus*

Synonym: *Samolus valerandi*, *S. valerandi* ssp. *parviflorus*

Family: Primulaceae

Comments: Peripheral. Only 8 specimens at BRY have been collected. It has been found only in Salt Lake and Washington County in Utah. The recent widespread development in Washington County, the development of wetlands in the Salt Lake Valley, and the disturbance, re-channeling and potential loss of spring-fed streams, justifies including this taxon in the rare plant list. This plant has been found in clear-running shallow streams and spring outflows in the Mojave Desert region, habitats that are becoming significantly degraded by development, ATV-recreational disturbance, and grazing impacts. Species of water-dependent herbs are generally overlooked by botanists. Despite this, the habitat for this species is very limited and population sizes are characteristically small for this taxon in the Mojave Desert, which is the reason for the scores of "1" instead of "unknown". It is a high priority to check to see if these populations still exist. Until this has been attempted, it is just an educated guess to say that the trend of this species is downward.

Scored By/Date: J. Alexander/2015

Revisions: Moved from Medium Priority to Watch List

*Adiantum pedatum* var. *aleuticum*

Synonym: *Adiantum pedatum*

Family: Pteridaceae or Polypodiaceae

Comments: Sparse. Populations small, habitat specialized but largely unthreatened or protected.

Scored By/Date: UNPS Rare Plant Comm./2008

*Cryptogramma stelleri*

Family: Pteridaceae or Polypodiaceae

Comments: Disjunct. Only 8 specimens at BRY have been collected. It has been found only in Utah County. The map in FNA suggests that the records for Utah are in Summit County but this may just be an error. [Early range maps in FNA were notoriously inaccurate when showing within-distribution of species and were later replaced by a dot for each state—WFertg.] This taxon's primary range is in Rocky Mountains and Canada. Habitat Specificity scored as a "1" since this taxon appears to be an edaphic, montane rock crevice endemic sensu FNA: "sheltered calcareous cliff crevices and rock ledges, typically in coniferous forest or other boreal habitats". Threats include grazing-related impacts from naturalized mountain goats. Climate change is also a threat. Droughts and rapid snowmelt due to wind-blown sediments are melting snowpack earlier than normal in our region. These are the primary reasons for the upgrade of threats to a "1". Trends are scored as unknown.

Scored By/Date: J. Alexander/2015

Revisions: Moved from Medium Priority to Watch List

*Myriopteris wootonii*

Synonym: *Cheilanthes wootonii*

Family: Pteridaceae or Polypodiaceae

Comments: Peripheral. Uncommon in limestone crevices in Beaver Dam Mountains. Threatened by exotic plants and increased recreation use of habitat. Difficult to census due to rugged habitat. Trends may be downward [Alexander 2009]. The previous ranking is incorrect. It was collected in sandstone crevices in Zion N.P. The one voucher for Utah was collected along Pine Creek in Zion N.P. in Washington County (*Thorne & Franklin 5766*, 17 October 1987, BRY).

Scored By/Date: J. Alexander/2015

Revisions: Scientific name changed

*Anemone parviflora*

Family: Ranunculaceae

Comments: Disjunct. Only 13 specimens at BRY have been collected. It has been found in the Uinta and Wasatch Mountains in Duchesne, Salt Lake, and Summit Counties in Utah. Its primary range in North America is Alaska, the northern Rocky Mountains and Canada. Habitat Specificity scored as "1" since this taxon appears to be an meadow and subalpine rock crevice species (mostly restricted to limestone in Utah) according to A Utah Flora ("Spruce-fir and meadow communities, often in limestone talus") and FNA ("Streamsides, meadows, rocky slopes"). Threats include grazing-related impacts from naturalized mountain goats (in addition to sheep grazing in the Uinta Mountains). Climate change is also a threat. These are the primary reasons for the upgrade of threats to a "1". Trends are scored as "unknown"

Scored By/Date: J. Alexander/2015

Revisions: Moved from Medium Priority to Watch List

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*Aquilegia atwoodii*

Family: Ranunculaceae

Comments: Local Endemic. Known only from Desolation Canyon. Included in *Aquilegia fosteri* by Holmgren et. al. (2012). Populations assumed to be few and small, with low threats. Trends not known.

Scored By/Date: UNPS Rare Plant Comm./2008

*Aquilegia barnebyi*

Family: Ranunculaceae

Comments: Regional Endemic. Perhaps a local endemic (Uintah Basin into CO), populations moderate sized, Green River shale endemic, threatened by mineral development, roads. Trends not known.

Scored By/Date: UNPS Rare Plant Comm./2008

*Aquilegia chrysantha*

Family: Ranunculaceae

Comments: Peripheral. Only 13 specimens at BRY have been collected. It has been found only within canyons in Zion National Park in Washington County in Utah. This taxon's primary range is in Arizona, New Mexico and northern Mexico. Habitat Specificity scored as "1" due to its status as an riparian spring, seep and hanging garden species according to A Utah Flora ("Hanging gardens, stream and seep margins, and other moist sites in cottonwood, Arizona ash, and bigtooth maple communities"), and FNA ("Damp places in canyons"). The loss of species due to drying of hanging gardens and the development of springs is a concern in Utah, which raises the concern for species such as this one. Threats may be primarily from the drying of hanging gardens and springs, but it scored as "0" since all the known populations are protected within a Zion National Park in Utah. Trends are scored as "unknown".

Scored By/Date: J. Alexander/2015

Revisions: Moved from Medium Priority to Watch List

*Aquilegia desolaticola*

Family: Ranunculaceae

Comments: Local Endemic. Desolation Canyon endemic known only from the type collection in 1999: restricted to seeps in sandy soils of the Price River Formation. Population small, trends not known, threats probably low.

Scored By/Date: UNPS Rare Plant Comm./2008

*Aquilegia fosteri*

Synonym: *Aquilegia formosa* var. *fosteri*, *A. desertorum*

Family: Ranunculaceae

Comments: Local Endemic. Trend is stable, a few populations in the main canyon such as the one along the Narrows Trail are in decline due to tourists picking flowers. Overall the populations in Zion are spread throughout the park. Some taxonomists view this species more broadly (including *A. atwoodii*) which would expand its **range and change its distribution to "regional endemic"**.

Scored By/Date: J. Alexander/2009

*Aquilegia grahamii*

Synonym: *Aquilegia micrantha* var. *grahamii*

Family: Ranunculaceae

Comments: Local Endemic. Populations all small, habitat specialized (hanging gardens in Weber Sandstone), threats probably low, new population recently discovered in Dinosaur NM. Trends not known.

Scored By/Date: UNPS Rare Plant Comm./2008

*Aquilegia loriae*

Synonym: *Aquilegia micrantha* var. *loriae*

Family: Ranunculaceae

Comments: Local Endemic. Populations few, small, seem stable, mostly in shady steep canyons with low threats.

Scored By/Date: UNPS Rare Plant Comm./2008

*Aquilegia scopulorum* var. *scopulorum*

Family: Ranunculaceae

Comments: Regional Endemic. 44 specimens at BRY have been collected. It is known from Garfield, Juab, Kane, Piute, Sanpete, and Sevier Counties. This taxon has been found in similar habitats in Nevada. The voucher for the Deep Creek Range was collected by Jim Harris on the summit of Red Mountain (3024, UVSC). At least in the Deep Creek Range, this is one of several taxa that may be threatened by the proposed introduction of naturalized mountain goats by the State of Utah. Climate change is also a threat. Although the climate threats alone do not warrant changes, threats will be upgraded to "1" if the introductions proceed. Trends are scored as "unknown".

Scored By/Date: J. Alexander/2015

Revisions: Moved from Medium Priority to Watch List.

*Ranunculus flabellaris*

Family: Ranunculaceae

Comments: Disjunct. Only 3 specimens at BRY have been collected. It has been found only in Cache, Duchesne, Salt Lake, and Summit Counties in Utah (only 3 specimens are cited but there are 4 counties listed). Its primary range is in the Pacific Northwest and the eastern U.S. Habitat Specificity scored as "1" since it is montane riparian species according to A Utah Flora ("Ponds, marshes, and other wet sites") and FNA ("Shallow water or drying mud"). Threats scored as "1" since riparian habitat modification and disturbance related to residential-highway development, farming, and grazing-related impacts are degrading wetlands in northern Utah. Trends are scored as "unknown"

Scored By/Date: J. Alexander/2015

Revisions: Moved from Medium Priority to Watch List

*Ranunculus gelidus*

Synonym: Included in *R. grayi* by some authors

Family: Ranunculaceae

Comments: Disjunct. Only 5 specimens at BRY have been collected. It has been found in the Uinta and Wasatch Mountains in Duchesne, Salt Lake, and Summit

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counties in Utah. Its primary range in North America in Alaska, the northern Rocky Mountains and Canada. Habitat Specificity scored as "1" since this taxon appears to be an alpine rock crevice species according to A Utah Flora ("Smelowskia-sedge community in alpine tundra") and FNA ("Open arctic and alpine slopes"). Threats include grazing-related impacts from naturalized mountain goats. Climate change is also a threat. These are the primary reasons for the upgrade of the threats to this species to a "1". Trends are scored as "unknown".

Scored By/Date: J. Alexander/2015

Revisions: Moved from Medium Priority to Watch List

*Ranunculus gmelinii*

Family: Ranunculaceae

Comments: Disjunct. Only 6 specimens at BRY have been collected. It has been found in Daggett, Duchesne, Morgan, Piute, Rich, Sanpete, Sevier, Summit, and Weber Counties in Utah. Its primary range is in Alaska, the Rocky Mountains, the Pacific Northwest, and Canada. Habitat Specificity scored as "1" since it is montane riparian species according to A Utah Flora ("Pond margins and wet places often exposed as water dries") and FNA ("Shallow water or drying mud, wet meadows, swamps, marshes, ponds, shores of rivers"). Threats scored as "1" since riparian habitat modification and disturbance related to residential-highway development, farming, and grazing-related impacts are degrading wetlands in northern Utah. Trends are scored as "unknown".

Scored By/Date: J. Alexander/2015

Revisions: Moved from Medium Priority to Watch List

*Ranunculus hyperboreus*

Family: Ranunculaceae

Comments: Peripheral. 16 specimens at BRY have been collected. It has been found in Daggett, Rich, Summit, and Uintah Counties in Utah. This is a circumboreal species with a primary range in North America in Alaska, the Rocky Mountains, and Canada. Habitat Specificity scored as "1" since it is montane riparian species according to A Utah Flora ("Ponds, bogs, and wet meadows") and FNA ("Floating in shallow water or stranded on exposed mud at margins of streams and ponds and open wet soil and marshes, in tundra or boreal or subalpine forest"). Threats scored as "1" since riparian habitat modification and disturbance related to residential-highway development, farming, and grazing-related impacts are degrading wetlands in northern Utah. Trends are scored as "unknown".

Scored By/Date: J. Alexander/2015

Revisions: Moved from Medium Priority to Watch List

*Ranunculus pygmaeus*

Family: Ranunculaceae

Comments: Peripheral. Only 4 specimens at BRY have been collected. It has been found in the Uinta Mountains in Duchesne (*Huber 3498*, 20 Aug 1996, BRY) and Summit (*Franklin 6286*, 22 Jul 1988 BRY) counties. Primary range is in the Rocky Mountains and Canada. Habitat

Specificity rescored a "1" due to its status as an alpine meadow species according to FNA ("Arctic and alpine meadows and slopes, usually around persistent snow patches") and A Utah Flora ("Alpine snowbank community"). Threats include disturbance from the grazing-related impacts of cattle, sheep, and naturalized mountain goats. Climate change is also a threat. These are the primary reasons for the upgrade of threats to a "1". Trends are scored as "unknown".

Scored By/Date: J. Alexander/2015

Revisions: Moved from Medium Priority to Watch List

*Trautvetteria carolinensis*

Synonym: *T. carolinensis* var. *occidentalis*

Family: Ranunculaceae

Comments: Peripheral. Found in boggy wetlands in the Abajo Mountains, where known from 4 collections (Utah Flora 2008). Abundance low, but threats and trends poorly known.

Scored By/Date: UNPS Rare Plant Comm./2008

*Ceanothus vestitus* var. *franklinii*

Synonym: *Ceanothus franklinii*

Family: Rhamnaceae

Comments: Local Endemic. Known from less than 10 collections in SW Utah, with one disjunct occurrence NW of Escalante (Garfield Co.) which warrants revisiting. Abundance low, threats and trends unknown.

Scored By/Date: UNPS Rare Plant Comm./2008

Revisions: Scientific name changed

*Crataegus saligna*

Synonym: *Crataegus douglasii* var. *duchesnensis*

Family: Rosaceae

Comments: Regional Endemic. In FNA, this variety is delimited as *C. saligna*. Since *C. douglasii* is no longer considered present in Utah and all former populations are delimited as *C. rivularis*, Welsh's variant was split with similar Colorado populations as *C. saligna*. It is no longer considered a Utah endemic in FNA. Range is changed to "Regional Endemic". Habitat Specificity rescored as a "1" due to its status as a riparian species according to FNA ("Along streams, flood plains"). Threats scored as "1" since riparian habitat modification and disturbance related to residential-highway development, farming, and grazing-related impacts are degrading wetlands in northern Utah. Trends are scored as "unknown". These changes do not change the priority rank of this taxon.

Scored By/Date: J. Alexander/2015

Revisions: Scientific name changed

*Geum aleppicum*

Family: Rosaceae

Comments: Peripheral. Only 7 specimens at BRY have been collected. It has been found in Carbon, Garfield, Grand, Salt Lake, San Juan, Summit, Utah and Wasatch Counties in Utah. Its primary range is in Alaska, the Rocky Mountains, the Pacific Northwest, eastern U.S.,

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and Canada. Habitat Specificity scored as "1" since it is montane riparian species according to A Utah Flora ("Wet to dryish meadows") and FNA ("Moist habitats, meadows, stream banks, alluvial thickets, swamps, forests, clearings, ditches, roadsides"). Threats scored as "1" since riparian habitat modification and disturbance related to residential-highway development, farming, and grazing-related impacts are degrading wetlands in northern Utah. Trends are scored as "unknown".

Scored By/Date: J. Alexander/2015

Revisions: Moved from Medium Priority to Watch List

*Ivesia utahensis*

Family: Rosaceae

Comments: Local Endemic. Threats to this taxon include disturbance from the grazing-related impacts of cattle and naturalized mountain goats. Climate change is also a threat. Droughts and rapid snowmelt due to wind-blown sediments are melting snowpack earlier than normal in our region. These are the primary reasons for upgrading threats to a "1". Trends are scored as "unknown"

Scored By/Date: J. Alexander/2015

*Potentilla angelliae*

Family: Rosaceae

Comments: Local endemic. Found in rocky subalpine meadows in Boulder Mountain (habitat specificity low), abundance low, threatened by sheep grazing and recreation, trends now known.

Scored By/Date: UNPS Rare Plant Comm./2008

*Potentilla glandulosa* var. *pusilla*

Synonym: *Drymocallis glandulosa* [variety not recognized in FNA]

Family: Rosaceae

Comments: Local Endemic. 19 specimens at BRY have been collected. It has been found in Beaver, Piute, and Sevier Counties. This taxon was not treated as a variety or a synonym in FNA and its status remains uncertain. At least in the Tushar Mountains, threats to this taxon include grazing-related impacts from cattle and naturalized mountain goats. Climate change is also a threat. These are the primary reasons for the upgrade of threats to a "1". It is not known if these threats are consistent in the remainder of its range in Utah. Trends are scored as "unknown".

Scored By/Date: J. Alexander/2015

Revisions: Moved from Medium Priority to Watch List

*Potentilla holmgrenii*

Family: Rosaceae

Comments: Regional Endemic. Since A Utah Flora does not recognize this taxon, it is difficult to determine how many specimens at BRY have been collected. Only one specimen from Utah has been determined in the type publication (13 Jul 1983, *Goodrich 19024* BRY, NY) It has been found only in the Deep Creek Range in Juab County in Utah. This taxon's primary range is in Nevada. Habitat Specificity scored as "1" since it is alpine

rock crevice and talus species according to FNA ("Wind-swept ridges, fellfields, rocky slopes"). At least in the Deep Creek Range, this is one of several taxa that may be threatened by the proposed introduction of naturalized mountain goats by the State of Utah. Climate change is also a threat. Although the climate threats alone do not warrant changes, threats will be upgraded to "1" if the introductions proceed. Trends are scored as "unknown".

Scored By/Date: J. Alexander/2015

Revisions: New to Watch List

*Potentilla nivea*

Family: Rosaceae

Comments: Regional Endemic. Only 6 specimens at BRY have been collected. It has been found in the Abajo, Deep Creek, La Sal and Uinta Mountains in Grand, Juab, San Juan, and Summit Counties in Utah. Its primary range is in Alaska, the Rocky Mountains and Canada. Habitat Specificity scored as "1" since it is alpine rock crevice and talus species according to FNA ("Well-drained, exposed sites, ridge crests, coarse mineral soil, scree, usually on calcareous substrates"). It may be an edaphic endemic restricted to calcareous substrates. Threats include grazing-related impacts from naturalized mountain goats. Climate change is also a threat. These are the primary reasons for the upgrade of threats to a "1". Trends are scored as "unknown".

Scored By/Date: J. Alexander/2015

Revisions: Moved from Medium Priority to Watch List

*Potentilla palustris*

Synonym: *Comarum palustre*

Family: Rosaceae

Comments: Peripheral. Threats to this taxon include disturbance from the grazing-related impacts of cattle. Climate change is also a threat. These are the primary reasons for the upgrade of the threats to this species to a "1". Trends are scored as "unknown".

Scored By/Date: J. Alexander/2015

Revisions: Moved from Medium Priority to Watch List

*Rubus neomexicanus*

Family: Rosaceae

Comments: Peripheral (perhaps should be considered disjunct). Found in hanging gardens in side drainages of the Colorado River in Utah. Abundance low, but threats and trends poorly known. Has potential as a cultivated garden species, which could increase pressure for seed harvest.

Scored By/Date: UNPS Rare Plant Comm./2008

*Salix arizonica*

Family: Salicaceae

Comments: Regional Endemic. Many more populations are known today compared to the mid 1990s when it was nearly listed under the Endangered Species Act. Some new population reports should be confirmed, however. Found mostly in riparian areas on volcanic

UNPS Watch List: Ranking Comments

soils, where threatened by livestock grazing. At least two small populations protected in Cedar Breaks NM. Can hybridize with *Salix brachycarpa* and not all populations may be genetically pure. Tends to form thickets which may represent few distinct genets (intrinsic rarity perhaps should be a 1).

Scored By/Date: Fertig/2009

*Anemopsis californica*

Family: Saururaceae

Comments: Peripheral. Mostly saline wetlands, populations in St. George area may be threatened by urban sprawl and from over-harvest as a medicinal plant.

Scored By/Date: UNPS Rare Plant Comm./2008

*Boykinia jamesii* var. *heucheriformis*

Synonym: *Telesonix jamesii*

Family: Saxifragaceae

Comments: Peripheral. Only 6 specimens at BRY have been collected. It has been found only in the Bear River Range in Cache County in Utah. Its primary range is in the Rocky Mountains. Habitat Specificity scored as "1" since it appears to be a calcareous rock crevice species according to A Utah Flora ("Crevices, often in limestone or dolomite in the spruce-fir community"). Threats and Trends are scored as "unknown"

Scored By/Date: J. Alexander/2015

Revisions: Moved from Medium Priority to Watch List

*Saxifraga bronchialis* var. *austromontana*

Family: Saxifragaceae

Comments: Peripheral. Only 10 specimens at BRY have been collected. It has been found only in the La Sal Mountains in Grand and San Juan Counties in Utah. Its primary range is in the Rocky Mountains and Pacific Northwest. Habitat Specificity scored as "1" since it is subalpine meadow and rock crevice species according to A Utah Flora ("Open rocky slopes and meadows with *Polemonium*, bluebell, catchfly, *Stellaria*, *Androsace*, *Smelowskia*, wallflower, and clover"). Threats include grazing-related impacts from naturalized mountain goats. Climate change is also a threat. These are the primary reasons for upgrading threats to "1". Trends are "unknown".

Scored By/Date: J. Alexander/2015

Revisions: Moved from Medium Priority to Watch List

*Saxifraga cernua*

Family: Saxifragaceae

Comments: Peripheral. Only 13 specimens at BRY have been collected. It has been found only in the Uinta and La Sal Mountains in Grand, San Juan, and Summit Counties in Utah. Its primary range is in the Rocky Mountains and Canada. Habitat Specificity scored as "1" since it is alpine tundra and rock crevice species according to A Utah Flora ("Rocky places with sedges, grass, *Polemonium*, and *Erigeron*"). Threats to this taxon include grazing-related impacts from naturalized mountain goats. Climate change is also a threat. These are the

primary reasons for the upgrade of threats to a "1". Trends are scored as "unknown".

Scored By/Date: J. Alexander/2015

Revisions: Moved from Medium Priority to Watch List

*Saxifraga flagellaris* ssp. *crandallii*

Family: Saxifragaceae

Comments: Peripheral. Only 14 specimens at BRY have been collected. It has been found only in the Uinta and La Sal Mountains in Duchesne, Grand, San Juan, and Summit Counties in Utah. This taxon's primary range is in the Rocky Mountains. Habitat Specificity scored as "1" since it is alpine tundra species according to A Utah Flora ("Alpine tundra with *Erigeron*, *Polemonium*, sedges, and grass"). Threats include grazing-related impacts from naturalized mountain goats. Climate change is also a threat. These are the primary reasons for upgrading threats to a "1". Trends are scored as unknown.

Scored By/Date: J. Alexander/2015

Revisions: Moved from Medium Priority to Watch List

*Saxifraga hirculus* ssp. *hirculus*

Family: Saxifragaceae

Comments: Disjunct. Only 5 specimens at BRY have been collected. It has been found only in the Uinta Mountains in Daggett County in Utah. Its primary range is in the northern Rocky Mountains and Canada. Habitat Specificity scored as "1" since it is subalpine meadow and bog species according to A Utah Flora ("Wet meadows with sedges, *Calamagrostis*, and *Sphagnum*"). Threats to this taxon include grazing-related impacts from cattle, sheep, and naturalized mountain goats. Climate change is also a threat. These are the primary reasons for the upgrade of threats to a "1". Trends are scored as "unknown".

Scored By/Date: J. Alexander/2015

Revisions: Moved from Medium Priority to Watch List

*Saxifraga nidifica* var. *nidifica*

Family: Saxifragaceae

Comments: Peripheral. Only 1 specimen at BRY and 3 specimens at NY have been collected. It has been found only in Cache and Summit County in Utah. This taxon's primary range is in the Pacific Northwest and the northern Rocky Mountains. Habitat Specificity scored as "1" since it is riparian species according to A Utah Flora ("Meadows and seeps, or along stream banks"). Threats to this taxon may include riparian habitat modification and disturbance related to residential-highway development, farming, and grazing-related impacts, but it is scored as "unknown" due to uncertainty. Trends are scored as "unknown".

Scored By/Date: J. Alexander/2015

Revisions: Moved from Medium Priority to Watch List

## UNPS Watch List: Ranking Comments

*Saxifraga serpyllifolia* var. *chrysantha*

Synonym: *Saxifraga chrysantha*

Family: Saxifragaceae

Comments: Peripheral. Only 14 specimens at BRY have been collected. It has been found only in the Uinta Mountains in Duchesne and Summit Counties in Utah. This taxon's primary range is in the Rocky Mountains. Habitat Specificity scored as "1" since it is alpine tundra species according to A Utah Flora ("Alpine tundra, fell fields, and rock stripes with *Smelowskia*, *Parrya*, *Primula*, and sedges"). Threats include grazing-related impacts from naturalized mountain goats. Climate change is also a threat. These are the primary reasons for the upgrade of threats to a "1". Trends are "unknown".  
Scored By/Date: UNPS Rare Plant Comm./2008  
Revisions: Moved from Medium Priority to Watch List

*Castilleja nana*

Family: Scrophulariaceae or Orobanchaceae

Comments: Regional Endemic. Only 14 specimens at BRY have been collected. It has been found only in the Deep Creek Range in Juab County in Utah. Its primary range is in California and Nevada. Habitat Specificity scored as "1" since it is alpine tundra and meadow species according to A Utah Flora ("Alpine meadows, talus, and windswept ridges in granitic or quartzitic gravelly sand with *Geum* and *Phlox*"). At least in the Deep Creek Range, this is one of several taxa that may be threatened by the proposed introduction of naturalized mountain goats by the State of Utah. Climate change is also a threat. Although the climate threats alone do not warrant changes, threats will be upgraded to "1" if the introductions proceed. Trends are scored as "unknown".  
Scored By/Date: J. Alexander/2015  
Revisions: Moved from Medium Priority to Watch List

*Lindernia dubia*

Family: Scrophulariaceae or Plantaginaceae

Comments: Peripheral. Only 1 specimen at BRY has been collected. It has been found only in the Utah County in Utah. This taxon's primary range is in California, the Pacific Northwest, and the eastern U.S. Habitat Specificity scored as "1" since it is riparian species according to A Utah Flora ("muddy creek bank"). Threats may include riparian habitat modification and disturbance related to residential-highway development, farming, and grazing-related impacts, but it is scored as "unknown". Trends are scored as "unknown".  
Scored By/Date: J. Alexander/2015  
Revisions: Moved from Medium Priority to Watch List

*Maurandya antirrhiniflora*

Synonym: *Maurandella antirrhiniflora*

Family: Scrophulariaceae or Plantaginaceae

Comments: Peripheral. Historical, populations in St. George area have probably been extirpated due to urban expansion, recreation, or grazing impacts. May also occur in E Utah (Arches NP, observation in summer 2009)  
Scored By/Date: Fertig & Alexander/2009

*Mimulus bigelovii* var. *cuspidatus*

Synonym: *Mimulus spissus*, *Diplacus bigelovii*

Family: Scrophulariaceae or Phrymaceae

Comments: Regional Endemic. Locally common (though less than 30,000 individuals), but range limited to alluvial wash banks and fans in the Beaver Dam Wash area, vulnerable to impacts of current and future construction, recreational, and grazing disturbance.  
Scored By/Date: J. Alexander/2009

*Mohavea breviflora*

Family: Scrophulariaceae or Plantaginaceae

Comments: Peripheral. Locally common on alluvial fans and banks in the Beaver Dam Wash vicinity. Like other rare Washington Co Mohave species, it is potentially impacted by construction, recreational, and grazing disturbance in this area.  
Scored By/Date: J. Alexander/2009

*Penstemon abietinus*

Family: Scrophulariaceae or Plantaginaceae

Comments: Local Endemic. Found primarily in the Fishlake Plateau and Salina Canyon in pinyon-juniper and sagebrush (habitat specificity low). Known from 16 collections (Welsh et al. 2008), populations small, but threats and trends poorly known.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Penstemon acaulis* var. *acaulis*

Family: Scrophulariaceae or Plantaginaceae

Comments: Local Endemic. Populations can be large, threats include potential impacts from oil and gas exploration/development. May be some threat from over-harvest for cultivation (this compact species with large flowers would make a good rock garden species). Trends not known. Also rare in Wyoming.  
Scored By/Date: Fertig/2009

*Penstemon ammophilus*

Family: Scrophulariaceae or Plantaginaceae

Comments: Local Endemic. Populations small, limited to shifting sand dunes over Navajo slickrock cliffs. Known from 3 main population centers near Canaan Mountain (Washington Co.), and Johnson Canyon and **No Man's Mesa/Deer Point in the White Cliffs west of Kanab** (Kane Co). Threats probably low, trends not known.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Penstemon angustifolius* var. *vernalensis*

Family: Scrophulariaceae or Plantaginaceae

Comments: Local Endemic. Known from 5 main locations in the Uinta Basin (an outlier population in Millard Co in SEINet is probably a misidentification). Populations small, habitat generic, threats may be high from over-collection or impacts from mineral development, trends not known.  
Scored By/Date: UNPS Rare Plant Comm./2008

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*Penstemon atwoodii*

Family: Scrophulariaceae or Plantaginaceae  
Comments: Local Endemic. Populations small (ca 18 occurrences, often with less than 500 plants), limited to Kaiparowits Formation, threats modest, trends unknown.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Penstemon barbatus* var. *trichander*

Family: Scrophulariaceae or Plantaginaceae  
Comments: Regional Endemic. Several historic records (Cottam, Rydberg) but only one recent collection (Atwood 13287) from Cliff Dwellers Pasture in 1987. In Utah, known only from the Abajo Mountains. Abundance low, threats and trends unknown.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Penstemon bracteatus*

Family: Scrophulariaceae or Plantaginaceae  
Comments: Local Endemic. Populations small to medium, Claron endemic over small area near Bryce Canyon, threats seem low, but this may be a potentially popular garden plant and could be impacted by over-collection of live plants or seed. Trends unknown.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Penstemon compactus*

Family: Scrophulariaceae or Plantaginaceae  
Comments: Local Endemic. Found on dolomite and limestone, only known from northern Wasatch Range. Threats scored as 0, but this low-growing, large-flowered species has strong horticultural potential and could be vulnerable to overharvest of live plants or seed. Trends not known.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Penstemon franklinii*

Family: Scrophulariaceae or Plantaginaceae  
Comments: Local Endemic. Found in black sagebrush grasslands on public lands NW of Enoch, habitat may be more unusual than presently scored. Threatened by livestock grazing, development, collection. Recent surveys by Terri Hildebrand found populations to be small. Trends not well known yet.  
Scored By/Date: Fertig/2011

*Penstemon idahoensis*

Family: Scrophulariaceae or Plantaginaceae  
Comments: Regional Endemic. Range restricted to the Idaho-Nevada-Utah border area, should be changed to Local Endemic. In Utah, restricted to Goose Creek drainage on white tuff-like outcrops of Salt Lake Formation. Threats and trends unknown.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Penstemon marcusii*

Family: Scrophulariaceae or Plantaginaceae  
Comments: Local Endemic. Limited to Mancos Shale in desert shrub vegetation. Twelve collections noted in 2008 Utah Flora, all in small area of central Utah on E side of Wasatch Plateau. Information needed on abundance and trends.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Penstemon navajoa*

Family: Scrophulariaceae or Plantaginaceae  
Comments: Local Endemic. Known only from high mountains of SE Utah. Found in Ponderosa pine and aspen-conifer woods (specificity low). Threats changed from 0 to 1 based on impacts from recent fire on Navajo Mountain, logging, and feral horses. Trends not known.  
Scored By/Date: Fertig/2009

*Penstemon petiolatus*

Family: Scrophulariaceae or Plantaginaceae  
Comments: Regional Endemic. A Beaver Dam Mountains limestone crevice endemic. Threats may be lower since the habitat is mostly out of reach from most anthropogenic disturbance. Global warming may be a future threat to this taxon. Rock wall climbing on limestones in this area is a currently limited but potentially larger impact in the future.  
Scored By/Date: J. Alexander/2009

*Penstemon scariosus* var. *cyanomontanus*

Family: Scrophulariaceae or Plantaginaceae  
Comments: Local Endemic. Known only from the Blue Mountain Plateau near Dinosaur NM along the UT-CO border in the Uinta Basin. Found on sandstone cracks and sandy soil in pinyon-juniper. Abundance low, but trends not known. Threats scored as low.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Penstemon sepalulus*

Family: Scrophulariaceae or Plantaginaceae  
Comments: Local Endemic. Restricted to Wasatch Range, mostly on Manning Canyon shale. Abundance and trends not well known. Threats considered low in rocky habitat. One historical collection from Zion NP is well out of range and has not been relocated, but label appears to be genuine.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Penstemon tusharensis*

Synonym: *Penstemon caespitosus* var. *suffruticosus*  
Family: Scrophulariaceae or Plantaginaceae  
Comments: Local Endemic. 31 specimens at BRY have been collected. It has been found in Beaver, Garfield, Iron, and Piute Counties. It has been reported for Kane County from an unspecified source in A Utah Flora. At least in the Tushar Mountains, threats to this taxon include grazing-related impacts from cattle and naturalized mountain goats. Climate change is also a threat. These are the primary reasons for upgrading threats to a

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"1". It is not known if these threats are consistent in the remainder of its range in Utah. Trends are scored as "unknown".

Scored By/Date: J. Alexander/2015

Revisions: Moved from Medium Priority to Watch List

*Synthyris alpina*

Synonym: *Besseyia alpina*

Family: Scrophulariaceae or Plantaginaceae

Comments: Regional Endemic. Only 4 specimens at BRY have been collected, all of which were collected in the Las Sal Mountains in Grand and San Juan Counties. This taxon's primary range is in the Rocky Mountains. Habitat Specificity scored as "1" due to its status as an alpine meadow species according to A Utah Flora ("Moist rocky alpine meadows"). Threats include grazing-related impacts from livestock and naturalized mountain goats. Climate change is also a threat. These are the primary reasons for the upgrade of threats to a "1". Trends are scored as "unknown".

Scored By/Date: J. Alexander/2015

Revisions: Scientific name changed. Moved from Medium Priority to Watch List

*Synthyris wyomingensis*

Synonym: *Besseyia wyomingensis*

Family: Scrophulariaceae or Plantaginaceae

Comments: Regional Endemic. Only 11 specimens at BRY have been collected, all of which were collected in the Raft River Mountains and the Uinta Mountains in Box Elder and Duchesne Counties. Its primary range is in the northern U.S. and Canada. Habitat Specificity scored as "1" due to its status as an alpine rock crevice and meadow species according to A Utah Flora ("Moist open areas on alpine high ridges and in meadow areas"). Threats to this taxon include grazing-related impacts from cattle, sheep, and naturalized mountain goats. Climate change is also a threat. These are the primary reasons for the upgrade of threats to a "1". Trends are scored as "unknown".

Scored By/Date: J. Alexander/2015

Revisions: Scientific name changed. Moved from Medium Priority to Watch List

*Selaginella utahensis*

Family: Selaginellaceae

Comments: Local Endemic. Populations appear unthreatened and stable in Zion NP, where it is found frequently in shaded Navajo sandstone slickrock along the east side of the park [Fertig 2010]. Nevada populations may be distinct from those in UT and may warrant taxonomic recognition. The NV sites have not been relocated in over 60 years.

Scored By/Date: W. Fertig/2010; J. Alexander/2014

*Sparganium natans*

Family: Sparganiaceae or Typhaceae

Comments: Peripheral. Only 4 specimens at BRY have been collected. It has been found in Duchesne, Summit, and Uintah Counties. This taxon's primary range is in the Rocky Mountains and Canada. Habitat Specificity scored as "1" due to its status as an alpine riparian species according to FNA ("Cool, quiet, slightly acid to somewhat basic waters of bays, pools, ditches, and peat bogs, usually in shallow water") and A Utah Flora ("Shallow ponds and lakes, often in muck"). Threats include riparian habitat modification and disturbance from the grazing-related impacts of cattle. Climate change is also a threat. These are the primary reasons for the upgrade of threats to a "1". Trends are scored as "unknown".

Scored By/Date: J. Alexander/2014

Revisions: Moved from Medium Priority to Watch List

*Viola frank-smithii*

Family: Violaceae

Comments: Local Endemic. Logan Canyon endemic, found in moist, shady limestone crevices and outcrops. Abundance low. Threats apparently low. Trends not known.

Scored By/Date: UNPS Rare Plant Comm./2008

*Viola purpurea* var. *charlestonensis*

Synonym: *Viola charlestonensis*

Family: Violaceae

Comments: Regional Endemic. Mostly on Carmel limestone. Populations in Zion NP are fairly large, some may be impacted by fire in Ponderosa pine communities. Trend probably stable in Zion, may be impacted outside the park by recreation and development.

Scored By/Date: J. Alexander/2009

*Fagonia laevis*

Family: Zygophyllaceae

Comments: Peripheral. Rare on limestone outcrops and cliffs in the Beaver Dam Mts. Threatened by habitat loss from urbanization and recreation. More info needed on trends

Scored By/Date: J.A. Alexander & W. Fertig/2009



## Appendix 4. UNPS Rare Plant List: Medium Priority List

The following table lists 433 species on the Medium Priority List for potential conservation attention in Utah based on the Wyoming protocol ranking system. Species are listed alphabetically by family and scientific name, with synonyms in parentheses. See text for an explanation of the seven ranking criteria and scoring methods used to derive the minimum and potential scores. County codes are explained in Table 3. Legal Status: Bureau of Land Management (BLM) and US Forest Service (USFS) Sensitive = S; US Fish and Wildlife Service (USFWS) Candidate = C, Endangered = E, Proposed = P; Threatened = T.

Family	Species	Common Name	Range	# Pops	# Indiv	Hab Spec	Intrin Rar	Threat	Trend	Min Score	Pot Score	County Dist. & Legal Status
Agavaceae (Asparagaceae)	<i>Yucca baileyi</i>	Bailey's yucca	1	1	1	0	U	0	U	3	5	Grf, Grn, Kan, Snj
Amaranthaceae	<i>Amaranthus acanthochiton</i>	Greenstripe	1	1	1	1	0	0	U	4	5	Kan
	<i>Tidestromia lanuginosa</i> ssp. <i>eliassoniana</i>	Woolly tidestromia	1	1	U	0	0	1	U	3	5	Wsh
Apiaceae (Umbelliferae)	<i>Bupleurum americanum</i>	American thorrowax	1	1	1	0	0	U	U	3	5	Slr
	<i>Cymopterus lapidosus</i>	Echo spring-parsley	1	1	1	0	0	U	U	3	5	Sum
	<i>Cymopterus macdougallii</i>	Canyonland spring-parsley	1	1	1	1	0	0	U	4	5	Grf, Kan, Snj
	<i>Cymopterus purpureus</i> var. <i>jonesii</i>	Jones' spring-parsley	1	1	1	0	0	U	U	3	5	Bvr, Irn, Wsh
	<i>Cymopterus purpureus</i> var. <i>rosei</i>	Rose's spring-parsley	2	0	U	1	0	0	U	3	5	Dch, Grf?, Jub, Mil, Piu, Snp, Sev, Was, Wsh
	<i>Ligusticum grayi</i>	Gray's lovage	1	1	U	0	0	1	U	3	5	Box
	<i>Lomatium cous</i>	Cous biscuitroot	1	1	1	0	0	1	U	4	5	Box
	<i>Lomatium minimum</i>	Least biscuitroot	2	1	0	1	0	0	0	4	4	Grf, Irn, Kan
	<i>Lomatium nudicaule</i>	Naked-stem biscuitroot	1	1	1	0	0	U	U	3	5	Box, Jub, Toe
	<i>Lomatium ravenii</i>	Raven's biscuitroot	1	1	1	0	0	U	U	3	5	Mil
	<i>Perideridia bolanderi</i>	Bolander's yampah	1	1	1	0	0	U	U	3	5	Box, Jub
	<i>Yabea microcarpa</i>	California hedge-parsley	1	1	U	0	0	1	U	3	5	Wsh
Araliaceae	<i>Aralia racemosa</i> ssp. <i>bicrenata</i>	Spikenard	1	1	1	1	0	0	0	4	4	Kan?, Wsh
Asclepiadaceae (Apocynaceae)	<i>Asclepias erosa</i>	Desert milkweed	1	0	U	1	0	1	U	3	5	Wsh
	<i>Asclepias hallii</i>	Hall's milkweed	1	1	1	0	0	U	U	3	5	Emr, Grf, Grn, Kan, Mor, Sev, Uin, Uta, Wsh

## Appendix 4. UNPS Rare Plant List: Medium Priority List, continued

Family	Species	Common Name	Range	# Pops	# Indiv	Hab Spec	Intrin Rar	Threat	Trend	Min Score	Pot Score	County Dist. & Legal Status
Asclepiadaceae (Apocynaceae)	<i>Asclepias involucrata</i>	Dwarf milkweed	1	1	1	0	0	U	U	3	5	Snj
	<i>Asclepias rusbyi</i>	Rusby's milkweed	1	1	1	0	0	1	U	4	5	Grn, Snj, Wsh
	<i>Sarcostemma cynanchoides</i> var. <i>hartwegii</i>	Climbing milkweed	1	1	1	0	0	U	U	3	5	Grf, Kan, Snj, Wsh
Aspleniaceae (Polypodiaceae)	<i>Asplenium adiantum-nigrum</i>	Black spleenwort	1	1	1	1	0	0	U	4	5	Wsh
	<i>Asplenium trichomanes</i> ssp. <i>trichomanes</i>	Maidenhair spleenwort	1	1	1	1	0	0	U	4	5	Slt, Uta
Asteraceae (Compositae)	<i>Adenophyllum cooperi</i>	Cooper's glandweed	1	1	1	0	0	1	U	4	5	Wsh
	<i>Ageratina occidentalis</i>	Western joe-pyeweed	1	1	1	1	0	0	U	4	5	Box, Cch, Toe
	<i>Agoseris grandiflora</i>	Bighead agoseris	1	1	1	0	0	U	U	3	5	Cch, Toe
	<i>Agoseris heterophylla</i>	Annual agoseris	1	1	1	0	0	U	U	3	5	Cch, Dav?, Slt, Snj
	<i>Agoseris retrorsa</i>	Retrorse agoseris	1	1	1	0	0	U	U	3	5	Irn, Jub, Mil, Toe, Wsh
	<i>Ambrosia eriocentra</i>	Woolly bursage	1	1	1	0	0	1	0	4	4	Wsh
	<i>Amphipappus fremontii</i> var. <i>spinosus</i>	Chaff-bush	1	1	1	0	0	1	U	4	5	Wsh
	<i>Arnica fulgens</i>	Orange arnica	1	1	1	0	0	1	U	4	5	Dag, Uin
	<i>Arnica sororia</i>	Meadow arnica	1	1	1	0	0	U	U	3	5	Cch, Rch
	<i>Baccharis wrightii</i>	Wright's seepweed	1	1	1	0	0	1	U	4	5	Snj
	<i>Bahia absinthifolia</i>	Hairyside bahia	1	1	1	0	0	U	U	3	5	Wsh
	<i>Bebbia juncea</i> var. <i>aspera</i>	Sweetbush	1	1	1	0	0	1	0	4	4	Wsh
	<i>Brickellia eupatorioides</i> var. <i>chlorolepis</i>	False boneset	1	1	1	0	0	1	U	4	5	Uin
	<i>Calycoseris parryi</i>	Purple tackplant	1	1	1	0	0	1	U	4	5	Wsh
	<i>Calycoseris wrightii</i>	Pale tackplant	1	1	U	0	0	1	U	3	5	Wsh
	<i>Chrysothamnus scopulorum</i> var. <i>scopulorum</i>	Spindly goldenbush	1	1	U	1	0	0	U	3	5	Grf, Irn, Kan, Snj, Wsh
<i>Cirsium arizonicum</i> var. <i>bipinnatum</i>	Wingless thistle	2	1	1	0	0	0	U	4	5	Crb, Emr, Snj, Sev, Way	
<i>Cirsium clavatum</i> var. <i>americanum</i>	Fringed thistle	1	1	1	0	0	U	U	3	5	Piu, Snj, Sev, Way	

## Appendix 4. UNPS Rare Plant List: Medium Priority List, continued

Family	Species	Common Name	Range	# Pops	# Indiv	Hab Spec	Intrin Rar	Threat	Trend	Min Score	Pot Score	County Dist. & Legal Status
Asteraceae (Compositae)	<i>Cirsium clavatum</i> var. <i>markaguntense</i>	Markagunt thistle	2	1	U	0	0	0	U	3	5	Irn
	<i>Cirsium eatonii</i> var. <i>murdockii</i>	Murdock's thistle	1	1	U	0	0	1	U	3	5	Dag, Dch, Uin
	<i>Cirsium pulcherrimum</i> var. <i>pulcherrimum</i>	Wyoming thistle	1	1	1	0	0	U	U	3	5	Cch, Dch, Piu, Sum, Uin
	<i>Cirsium rydbergii</i>	Rydberg's thistle	1	1	1	1	0	0	U	4	5	Grf, Grn, Kan, Snj, Way
	<i>Dieteria asteroides</i> var. <i>glandulosa</i>	Emory's aster	1	1	U	0	0	1	U	3	5	Wsh
	<i>Encelia farinosa</i>	White brittlebush	1	1	1	0	0	1	U	4	5	Wsh
	<i>Ericameria albida</i>	Alkali rabbitbrush	1	0	1	1	0	1	U	4	5	Bvr, Box, Jub, Mil, Toe
	<i>Ericameria nauseosa</i> var. <i>bigelovii</i>	Bigelow's rabbitbrush	1	1	1	0	0	U	U	3	5	Emr, Grf, Snj
	<i>Ericameria obovata</i>	Wasatch goldenbush	1	1	U	1	0	0	U	3	5	Box, Cch, Dav, Jub, Rch, Slt, Sum, Toe, Web
	<i>Ericameria watsonii</i>	Watson's goldenbush	1	1	U	1	0	0	U	3	5	Bvr, Jub, Mil
	<i>Erigeron abajoensis</i>	Abajo daisy	2	1	U	0	0	0	U	3	5	Grf, Piu, Snj, Way
	<i>Erigeron bloomeri</i> var. <i>bloomeri</i>	Bloomer's daisy	1	1	1	0	0	U	U	3	5	Box
	<i>Erigeron concinnus</i> var. <i>subglaber</i>	Alcove daisy	1	1	1	1	0	0	U	4	5	Grf, Grn, Kan, Snj
	<i>Erigeron corymbosus</i>	Mountain daisy	1	1	1	0	0	U	U	3	5	Rch
	<i>Erigeron coulteri</i>	Coulter's daisy	1	1	1	0	0	1	U	4	5	Rch, Sum, Uta
	<i>Erigeron filifolius</i>	Thread-leaf daisy	1	1	1	0	0	U	U	3	5	Cch, Dag
	<i>Erigeron humilis</i>	Low daisy	1	1	0	1	0	1	U	4	5	Bvr?, Grn, Piu?, Snj
	<i>Erigeron pumilus</i> var. <i>intermedius</i>	Slender daisy	1	1	1	0	0	U	U	3	5	Cch, Dav, Slt, Sum
	<i>Eriophyllum lanatum</i> var. <i>integrifolium</i>	Common woolly sunflower	1	1	1	0	0	U	U	3	5	Box
	<i>Eurybia integrifolia</i>	Thick-stem wood-aster	1	1	1	0	0	U	U	3	5	Box, Cac, Rch, Slt, Sev, Sum, Was
<i>Gaillardia arizonica</i>	Arizona blanket-flower	1	1	1	0	0	1	U	4	5	Wsh	

## Appendix 4. UNPS Rare Plant List: Medium Priority List, continued

Family	Species	Common Name	Range	# Pops	# Indiv	Hab Spec	Intrin Rar	Threat	Trend	Min Score	Pot Score	County Dist. & Legal Status
Asteraceae (Compositae)	<i>Gaillardia flava</i>	Yellow blanket-flower	2	1	0	0	0	U	U	3	5	Emr, Grn
	<i>Glyptopleura setulosa</i>	Setose crustweed	1	1	1	0	0	1	0	4	4	Wsh
	<i>Grindelia arizonica</i>	Leafybase gumweed	1	1	1	0	0	U	U	3	5	Snj
	<i>Gutierrezia petradoria</i>	Golden snakeweed	2	1	0	1	0	0	U	4	5	Mil
	<i>Helianthus anomalus</i>	Sand sunflower	1	0	0	1	1	1	U	4	5	Emr, Grf, Grn, Kan, Snj, Way
	<i>Helianthus deserticola</i>	Desert sunflower	1	0	0	1	1	1	U	4	5	Jub, Mil, Toe, Wsh
	<i>Helianthus pumilus</i>	Little sunflower	1	1	1	0	0	U	U	3	5	Kan
	<i>Hieracium fendleri</i>	Fendler's hawkweed	1	1	1	0	0	U	U	3	5	Wsh
	<i>Hulsea heterochroma</i>	Great hulsea	1	1	1	0	0	1	U	4	5	Wsh
	<i>Hymenopappus filifolius</i> var. <i>eriopodus</i>	Bulb hyalineherb	1	1	U	0	0	1	U	3	5	Wsh
	<i>Hymenoxys subintegra</i>	Entire hymenoxys	1	1	1	0	0	U	U	3	5	Snj, Wsh?
	<i>Ionactis alpina</i>	Lava aster	1	1	1	0	0	U	U	3	5	Box
	<i>Logfia filaginoides</i>	Fluffweed	1	U	1	0	0	1	U	3	5	Snj, Wsh
	<i>Lorandersonia baileyi</i>	Pretty rabbitbrush	1	1	1	0	0	U	U	3	5	Emr, Snj, Way
	<i>Madia gracilis</i>	Slender tarweed	1	1	1	0	0	U	U	3	5	Cch, Sl, Web
	<i>Malacothrix coulteri</i>	Snakeshead desert-dandelion	1	1	1	0	0	1	U	4	5	Wsh
	<i>Malacothrix stebbinsii</i>	Stebbins' desert-dandelion	1	1	1	0	0	1	U	4	5	Wsh
	<i>Monoptilon bellidiforme</i>	Monoptilon	1	1	U	0	0	1	U	3	5	Wsh
	<i>Nothocalais troximoides</i>	Dandelion microseris	1	1	1	0	0	U	U	3	5	Box, Cch
	<i>Palafoxia arida</i>	Spanish needle	1	1	U	0	0	1	U	3	5	Wsh
	<i>Parthenium incanum</i>	Mariola	1	1	U	0	0	1	U	3	5	Wsh
	<i>Parthenium ligulatum</i>	Low feverfew	1	1	U	1	0	0	U	3	5	Dag, Dch, Emr, Sev, Uin, Way
	<i>Perityle stansburyi</i>	Stansbury's rock-daisy	1	0	U	1	0	1	U	3	5	Bvr, Jub, Mil, Sl, Snp, Sev, Toe
<i>Platyschkuhria integrifolia</i> var. <i>ourolepis</i>	Uintah bahia	1	1	U	0	0	1	U	3	5	Dch, Emr, Grn, Uin	

## Appendix 4. UNPS Rare Plant List: Medium Priority List, continued

Family	Species	Common Name	Range	# Pops	# Indiv	Hab Spec	Intrin Rar	Threat	Trend	Min Score	Pot Score	County Dist. & Legal Status
Asteraceae (Compositae)	<i>Porophyllum gracile</i>	Odora	1	1	1	0	0	1	U	4	5	Snj, Wsh
	<i>Psathyrotes pilifera</i>	Piliferous turtle-back	1	1	U	1	0	0	U	3	5	Grf, Grn, Kan, Snj, Wsh
	<i>Pseudognaphalium thermale</i>	Small cudweed	1	1	1	0	0	U	U	3	5	Web
	<i>Pyrrocoma crocea</i> var. <i>crocea</i>	Saffron goldenweed	1	1	1	0	0	1	U	4	5	Grn, Snj
	<i>Pyrrocoma hirta</i>	Tacky goldenweed	1	1	1	0	0	U	U	3	5	Box
	<i>Rafinesquia californica</i>	California chicory	1	1	1	0	0	1	U	4	5	Wsh
	<i>Senecio bigelovii</i> var. <i>hallii</i>	Bigelow's groundsel	1	1	U	0	0	1	U	3	5	Grn, Snj
	<i>Senecio pudicus</i>	Bashful groundsel	1	1	1	0	0	1	U	4	5	Crb, Dag, Dch, Grf
	<i>Solidago mollis</i>	Velvety goldenrod	1	1	1	0	0	U	U	3	5	Rch
	<i>Sphaeromeria capitata</i>	Cluster-head chicken-sage	1	1	1	1	0	0	U	4	5	Grf, Mil
	<i>Stephanomeria parryi</i>	Parry's wire-lettuce	1	1	1	0	0	1	U	4	5	Kan, Wsh
	<i>Stylocline intertexta</i>	Morefield's nest-straw	1	1	1	0	0	1	U	4	5	Wsh
	<i>Stylocline psilocarphoides</i>	Peck's nest-straw	1	1	U	0	0	1	U	3	5	Wsh
	<i>Tetradymia axillaris</i>	Longspine horsebrush	1	1	1	0	0	1	0	4	4	Wsh
	<i>Tetranneuris acaulis</i> var. <i>nana</i>	Low hymenoxys	1	1	U	0	0	1	U	3	5	Dch, Emr, Grf, Sev, Way
	<i>Thelesperma megapotamicum</i>	Hopi-tea	1	1	1	0	0	U	U	3	5	Snj, Wsh
	<i>Thelesperma subnudum</i> var. <i>alpinum</i>	Alpine green-thread	2	1	1	0	0	0	U	4	5	Way
	<i>Townsendia scapigera</i>	Eaton's townsendia	1	1	1	0	0	U	U	3	5	Box, Mil
	<i>Xanthisma spinulosum</i> var. <i>gooddingii</i>	Spiny goldenweed	1	1	1	0	0	U	U	3	5	Kan, Wsh
	<i>Xylorhiza glabriuscula</i> var. <i>glabriuscula</i>	Smooth woody-aster	1	1	1	1	0	0	U	4	5	Dag
Betulaceae	<i>Ostrya knowltonii</i>	Western hop-hornbeam	1	1	1	1	0	0	U	4	5	Grf, Grn, Kan, Snj
Boraginaceae	<i>Cryptantha angustifolia</i>	Narrowleaf cryptanth	1	1	U	0	0	1	U	3	5	Kan, Wsh

## Appendix 4. UNPS Rare Plant List: Medium Priority List, continued

Family	Species	Common Name	Range	# Pops	# Indiv	Hab Spec	Intrin Rar	Threat	Trend	Min Score	Pot Score	County Dist. & Legal Status
Boraginaceae	<i>Cryptantha breviflora</i>	Uinta Basin cryptanth	1	1	0	1	0	1	U	4	5	Dch, Uin, Was
	<i>Cryptantha caespitosa</i>	Tufted cryptanth	1	1	1	0	0	U	U	3	5	Dag, Rch
	<i>Cryptantha capitata</i>	Head cryptanth	1	1	1	0	0	U	U	3	5	Grf, Kan, Snj, Way
	<i>Cryptantha cinerea</i> var. <i>abortiva</i>	Abortive cryptanth	1	1	1	0	0	U	U	3	5	Bvr, Irn, Wsh
	<i>Cryptantha cinerea</i> var. <i>arenicola</i>	Sand cryptanth	1	1	1	1	0	0	U	4	5	Grf, Kan, Wsh
	<i>Cryptantha dumetorum</i>	Scrambling cryptanth	1	1	1	0	0	1	U	4	5	Wsh
	<i>Cryptantha inaequata</i>	Unequal cryptanth	1	1	U	0	0	1	U	3	5	Kan, Snj, Wsh
	<i>Cryptantha interrupta</i>	Elko cryptanth	1	1	U	1	0	0	U	3	5	Box
	<i>Cryptantha longiflora</i>	Long-flower cryptanth	1	1	1	0	0	U	U	3	5	Emr, Grn
	<i>Cryptantha paradoxa</i>	Paradox cryptanth	1	1	1	0	0	U	U	3	5	Dch, Emr, Uin
	<i>Cryptantha scoparia</i>	Desert cryptanth	1	1	1	0	0	U	U	3	5	Box, Toe, Web
	<i>Cryptantha spiculifera</i>	Snake River cryptanth	1	1	1	0	0	U	U	3	5	Box
	<i>Cryptantha virginensis</i>	Virgin River cryptanth	1	1	U	0	0	1	U	3	5	Wsh
	<i>Mertensia lanceolata</i> var. <i>coriacea</i>	Lanceleaf bluebell	1	1	1	0	0	U	U	3	5	Dch, Emr, Uin
	<i>Plagiobothrys jonesii</i>	Jones' popcorn-flower	1	1	1	0	0	1	U	4	5	Snj, Wsh
	<i>Plagiobothrys tenellus</i>	Slender popcorn-flower	1	1	1	0	0	1	U	4	5	Kan, Slt, Wsh
<i>Tiquilia canescens</i>	Hairy tiquilia	1	1	U	1	0	1	0	4	5	Wsh	
Brassicaceae (Cruciferae)	<i>Athysanus pusillus</i>	Common sandweed	1	1	1	0	0	1	U	4	5	Wsh
	<i>Boechera thompsonii</i>	Thompson's rock-cress	1	1	0	0	1	U	U	3	5	Crb, Dag, Dch, Emr, Grf, Grn, Kan, Snj, Uin
	<i>Caulanthus cooperi</i>	Cooper's wild cabbage	1	1	1	0	0	U	U	3	5	Wsh
	<i>Caulanthus major</i>	Slender wild cabbage	1	1	1	0	0	U	U	3	5	Emr, Grf, Kan, Snj

## Appendix 4. UNPS Rare Plant List: Medium Priority List, continued

Family	Species	Common Name	Range	# Pops	# Indiv	Hab Spec	Intrin Rar	Threat	Trend	Min Score	Pot Score	County Dist. & Legal Status
Brassicaceae (Cruciferae)	<i>Caulanthus pilosus</i>	Hairy wild cabbage	1	1	1	0	0	U	U	3	5	Bvr, Mil, Toe
	<i>Cusickiella douglasii</i>	Douglas' draba	1	1	1	0	0	U	U	3	5	Box
	<i>Descurainia paradisa</i>	Paradise tansy-mustard	1	1	1	0	0	U	U	3	5	Box
	<i>Draba abajoensis</i>	Abajo draba	1	1	1	0	0	1	U	4	5	Grn, Snj
	<i>Draba brachystylis</i>	Wasatch draba	1	1	1	0	0	1	U	4	5	Dch, Jub, Sl, Uta
	<i>Draba fladnizensis</i>	Patterson's draba	1	1	1	0	0	1	U	4	5	Bvr, Dag?, Dch, Grn, Jub, Snj, Snp, Uin?
	<i>Draba incerta</i>	Yellowstone draba	1	1	1	0	0	U	U	3	5	Box, Cch, Sl, Uta
	<i>Draba novolympica</i>	Trelease's draba	1	1	1	0	0	U	U	3	5	Jub, Toe
	<i>Draba pedicellata</i>	Pedicelled draba	1	1	1	0	0	U	U	3	5	Toe
	<i>Draba pennellii</i>	Pennell's draba	1	1	1	0	0	U	U	3	5	Jub
	<i>Draba zionensis</i>	Zion draba	2	1	0	1	0	0	U	4	5	Irn, Kan, Wsh
	<i>Lepidium alyssoides</i>	Rushy tall pepperwort	1	1	1	0	0	U	U	3	5	Kan?, Snj
	<i>Lepidium dictyotum</i>	Alkali pepperwort	1	1	1	0	0	U	U	3	5	Sl, Web
	<i>Phoenicaulis cheiranthoides</i>	False daggerpod	1	1	1	0	0	U	U	3	5	Box
	<i>Physaria acutifolia</i> var. <i>stylosa</i>	Littleleaf twinpod	2	1	1	0	0	0	U	4	5	Dch, Uin, Was
	<i>Physaria cordiformis</i>	Wassuk Range bladderpod	1	1	1	0	0	U	U	3	5	Box
	<i>Physaria fendleri</i>	Fendler's bladderpod	1	1	1	0	0	U	U	3	5	Snj
	<i>Physaria lepidota</i> var. <i>lepidota</i>	Lepidote twinpod	2	1	U	0	0	0	U	3	5	Grf, Kan
	<i>Physaria lepidota</i> var. <i>membranacea</i>	Lepidote twinpod	2	1	U	0	0	0	U	3	5	Grf, Kan
	<i>Physaria multiceps</i>	Wasatch bladderpod	1	1	1	0	0	U	U	4	5	Cch, Dav, Rch, Web
	<i>Physaria prostrata</i>	Prostrate bladderpod	1	1	1	0	0	U	U	3	5	Rch
<i>Physaria rubicundula</i> var. <i>rubicundula</i>	Breaks bladderpod	2	1	0	1	0	0	U	4	5	Grf, Irn, Kan	
<i>Thelypodium integrifolium</i> ssp. <i>complanatum</i>	Folded thelypody	1	1	1	0	0	U	U	3	5	Bvr, Box, Jub, Mil, Rch, Toe	

## Appendix 4. UNPS Rare Plant List: Medium Priority List, continued

Family	Species	Common Name	Range	# Pops	# Indiv	Hab Spec	Intrin Rar	Threat	Trend	Min Score	Pot Score	County Dist. & Legal Status
Brassicaceae (Cruciferae)	<i>Thelypodium milleflorum</i>	Manyflower thelypody	1	1	1	0	0	U	U	3	5	Box
	<i>Thelypodium wrightii</i>	Wright's thelypody	1	1	1	0	0	U	U	3	5	Grf, Kan, Wsh?
	<i>Transberingia bursifolia</i> ssp. <i>virgata</i>	Strictweed	1	1	1	0	0	U	U	3	5	Day, Was
Cactaceae	<i>Coryphantha vivipara</i> "var. <i>deserti</i> "	Mohave pincushion cactus	1	1	1	0	0	1	U	4	5	Irn, Wsh
	<i>Coryphantha vivipara</i> "var. <i>vivipara</i> "	Pincushion cactus	1	1	1	0	0	1	U	4	5	Crb, Dch
	<i>Cylindropuntia acanthocarpa</i> var. <i>acanthocarpa</i>	Buckhorn cholla	1	1	U	0	0	1	U	3	5	Wsh
	<i>Cylindropuntia acanthocarpa</i> var. <i>coloradensis</i>	Buckhorn cholla	1	1	U	0	0	1	U	3	5	Wsh
	<i>Opuntia aurea</i>	Pipe Spring pricklypear	1	1	0	1	0	1	U	4	5	Kan, Wsh
	<i>Opuntia basilaris</i> var. <i>basilaris</i>	Beavertail cactus	1	1	U	0	0	1	1	4	5	Snj, Wsh
	<i>Opuntia basilaris</i> var. <i>heilii</i>	Heil's beavertail cactus	2	0	U	0	0	1	U	3	5	Emr, Grf, Way
	<i>Opuntia basilaris</i> var. <i>longiareolata</i>	Grand Canyon beavertail cactus	1	1	U	1	0	0	U	3	5	Grf, Kan, Snj
	<i>Opuntia chlorotica</i>	Pancakce pricklypear	1	1	1	0	0	1	U	4	5	Wsh
	<i>Opuntia x curvispina</i>	Curve-spined pricklypear	1	1	1	0	0	1	U	4	5	Kan?, Snj, Wsh
	<i>Opuntia engelmannii</i> var. <i>engelmannii</i>	Frying pan pricklypear	1	1	1	0	0	1	U	4	5	Snj, Wsh
	<i>Opuntia phaeacantha</i> var. <i>castorea</i>	Beaver Dam pricklypear	2	1	1	0	0	0	U	4	5	Wsh
	<i>Opuntia phaeacantha</i> var. <i>phaeacantha</i>	Berry pricklypear	1	1	1	0	0	1	U	4	5	Wsh?
	<i>Opuntia pinkavae</i>	Pinkava's pricklypear	1	1	U	0	0	1	U	3	5	Kan?, Wsh
	<i>Opuntia polyacantha</i> var. <i>nicholii</i>	Nichol's pricklypear	1	1	1	0	0	1	U	4	5	Grf, Kan, Snj
<i>Sclerocactus whipplei</i>	Whipple's fishhook cactus	1	1	1	0	0	1	U	4	5	Crb, Dch, Emr, Grf, Grn, Kan, Snj, Uin	



## Appendix 4. UNPS Rare Plant List: Medium Priority List, continued

Family	Species	Common Name	Range	# Pops	# Indiv	Hab Spec	Intrin Rar	Threat	Trend	Min Score	Pot Score	County Dist. & Legal Status
Campanulaceae	<i>Campanula uniflora</i>	Arctic harebell	1	1	U	0	0	1	U	3	5	Dag, Dch, Grn, Snj, Sum, Uin
	<i>Nemacladus longiflorus</i> var. <i>breviflorus</i>	Long-flower nemacladus	1	1	1	0	0	1	U	4	5	Kan
Caprifoliaceae	<i>Symphoricarpos occidentalis</i>	Western snow-berry	1	1	U	0	0	1	U	3	5	Cch?, Dag, Dch, Sum?, Uin, Uta?, Was, Web?
Caryophyllaceae	<i>Achyronychia cooperi</i>	Achyronychia	1	1	1	0	0	1	U	4	5	Wsh
	<i>Eremogone aculeata</i>	Prickly sandwort	1	1	U	0	0	1	U	3	5	Box
	<i>Eremogone congesta</i> var. <i>subcongesta</i>	Looseflower sandwort	1	1	U	0	0	1	U	3	5	Bvr, Mil
	<i>Minuartia pusilla</i>	Dwarf sandwort	1	1	1	0	0	1	U	4	5	Wsh
	<i>Silene hitchguirei</i>	Mountain campion	1	1	U	0	0	1	U	3	5	Dag, Dch, Grn, Snj, Sum, Uin
	<i>Silene scouleri</i>	Scouler's campion	1	1	1	0	0	1	U	4	5	Grf, Grn, Irn, Piu, Snj, Wsh
	<i>Silene verecunda</i>	Shy campion	1	1	1	0	0	U	U	3	5	Bvr, Kan, Wsh
	<i>Stellaria nitens</i>	Shining starwort	1	1	1	0	0	U	U	3	5	Cch, Slt, Toe, Wsh
	<i>Stellaria obtusa</i>	Blunt starwort	1	1	1	0	0	U	U	3	5	Cch, Slt, Snp, Uta
Celastraceae	<i>Mortonia utahensis</i>	Mortonia	1	1	0	1	0	1	U	4	5	Wsh
Chenopodiaceae (Amaranthaceae)	<i>Atriplex argentea</i> var. <i>rydbergii</i>	Rydberg's orach	1	1	U	1	0	0	U	3	5	Grn, Snj
	<i>Atriplex saccaria</i> var. <i>asterocarpa</i>	Horned orach	1	1	U	1	0	0	U	3	5	Grf, Snj
	<i>Atriplex saccaria</i> var. <i>cornuta</i>	Blade orach	1	1	U	1	0	0	U	3	5	Emr, Grn, Snj, Way
	<i>Chenopodium chenopodioides</i>	Low goosefoot	1	1	1	1	0	0	U	4	5	Dav, Grf, Irn, Snp, Sev
	<i>Monolepis pusilla</i>	Tiny povertyweed	1	1	1	1	0	0	U	4	5	Box, Dag, Grf, Mil, Uin
Convolvulaceae	<i>Calystegia longipes</i>	Longstalk bindweed	1	1	U	0	0	1	U	3	5	Wsh
	<i>Convolvulus equitans</i>	Perennial bindweed	1	1	0	1	0	1	U	4	5	Wsh
Cuscutaceae (Convolvulaceae)	<i>Cuscuta cephalanthi</i>	Slenderflower dodder	1	1	U	0	1	0	U	3	5	Cch, Emr, Slt, Uin
	<i>Cuscuta megalocarpa</i>	Largefruit dodder	1	1	U	0	1	0	U	3	5	Cch, Slt, Uta

## Appendix 4. UNPS Rare Plant List: Medium Priority List, continued

Family	Species	Common Name	Range	# Pops	# Indiv	Hab Spec	Intrin Rar	Threat	Trend	Min Score	Pot Score	County Dist. & Legal Status
Cyperaceae	<i>Carex arapahoensis</i>	Arapaho sedge	1	1	1	0	0	1	U	4	5	Grf, Grn, Snj
	<i>Carex atosquama</i>	Dark-scale sedge	1	1	1	0	0	1	U	4	5	Dch
	<i>Carex brunnescens</i> ssp. <i>brunnescens</i>	Brownish sedge	1	1	0	1	0	1	U	4	5	Dch, Slt, Sum, Uin
	<i>Carex buxbaumii</i>	Buxbaum's sedge	1	1	0	1	0	1	U	4	5	Dag, Dch, Sum, Uin
	<i>Carex capitata</i>	Capitate sedge	1	1	1	0	0	1	U	4	5	Dch, Sum
	<i>Carex cordillerana</i>	Back's sedge	1	1	1	0	0	U	U	3	5	Cch, Dag, Jub, Slt, Uta
	<i>Carex cusickii</i>	Cusick's sedge	1	1	1	0	0	U	U	3	5	Sum
	<i>Carex fuliginosa</i>	Shortleaf sedge	1	1	1	0	0	U	U	3	5	Dch, Sum
	<i>Carex geophila</i>	White Mountain sedge	1	1	1	0	0	1	U	4	5	Bvr, Wsh, Way
	<i>Carex scoparia</i> var. <i>scoparia</i>	Broom sedge	1	1	1	0	0	U	U	3	5	Kan, Wsh
	<i>Carex stenoptila</i>	Riverbank sedge	1	1	U	0	0	1	U	3	5	Bvr?, Piu
	<i>Carex subfusca</i>	Rusty sedge	1	1	1	0	0	U	U	3	5	Sev, Wsh, Way
	<i>Cyperus schweinitzii</i>	Sand flat-sedge	1	1	1	1	0	0	U	4	5	Kan
	<i>Cyperus strigosus</i>	Strigose flat-sedge	1	1	1	0	0	U	U	3	5	Wsh
<i>Kobresia sibirica</i>	Siberian kobresia	1	1	1	0	0	1	U	4	5	Dch	
Elaeagnaceae	<i>Elaeagnus commutata</i>	Silverberry	1	1	0	1	0	1	U	4	5	Dag, Dch, Grf, Sum
Ericaceae	<i>Arctostaphylos pringlei</i>	Pringle's manzanita	1	1	1	0	0	1	U	4	5	Wsh
Euphorbiaceae	<i>Chamaesyce revoluta</i>	Revolute spurge	1	1	U	0	0	1	U	3	5	Bvr, Piu, Toe?, Wsh
	<i>Chamaesyce setiloba</i>	Fringed spurge	1	1	U	0	0	1	U	3	5	Wsh
	<i>Euphorbia exstipulata</i>	Square-seed spurge	1	1	1	0	0	U	U	3	5	Bvr, Irn
	<i>Phyllanthus warnockii</i>	Sand-ghost	1	1	0	1	0	1	U	4	5	Kan, Snj, Wsh
Fabaceae (Leguminosae)	<i>Astragalus alpinus</i>	Alpine milkvetch	1	1	1	0	0	1	U	4	5	Box, Grn, Slt
	<i>Astragalus amphioxys</i> var. <i>modestus</i>	Modest milkvetch	1	1	1	0	0	1	U	4	5	Kan, Snj
	<i>Astragalus aretioides</i>	Cushion milkvetch	1	1	1	0	0	U	U	3	5	Dag
	<i>Astragalus barnebyi</i>	Barneby's milkvetch	1	1	1	1	0	0	U	4	5	Grf, Way

## Appendix 4. UNPS Rare Plant List: Medium Priority List, continued

Family	Species	Common Name	Range	# Pops	# Indiv	Hab Spec	Intrin Rar	Threat	Trend	Min Score	Pot Score	County Dist. & Legal Status
Fabaceae (Leguminosae)	<i>Astragalus calycosus</i> var. <i>scaposus</i>	Scapose milkvetch	1	1	1	0	0	U	U	3	5	Jub, Snj
	<i>Astragalus castaneiformis</i>	Chestnut milkvetch	1	1	1	1	0	0	U	4	5	Kan
	<i>Astragalus chmaemeniscus</i>	Ground-crescent milkvetch	1	1	1	0	0	U	U	3	5	Bvr, Irn
	<i>Astragalus consobrinus</i>	Bicknell milkvetch	2	0	1	1	0	0	U	4	5	Emr, Grf, Sev, Way
	<i>Astragalus convallarius</i> var. <i>finitimus</i>	Enterprise milkvetch	1	1	U	0	0	1	U	3	5	Irn, Wsh
	<i>Astragalus duchesnensis</i>	Duchesne milkvetch	1	0	U	1	0	1	U	3	5	Dag, Dch, Uin
	<i>Astragalus filipes</i>	Basalt milkvetch	1	1	1	0	0	U	U	3	5	Bvr
	<i>Astragalus flavus</i> var. <i>argillosus</i>	Clay milkvetch	2	0	0	1	0	U	U	3	5	Emr, Grf, Grn, Way
	<i>Astragalus flavus</i> var. <i>higginsii</i>	Higgins' milkvetch	1	1	0	1	0	1	U	4	5	Wsh
	<i>Astragalus fucatus</i>	Hopi milkvetch	1	1	1	0	0	U	U	3	5	Emr, Grf, Snj, Way
	<i>Astragalus hallii</i> var. <i>fallax</i>	Hall's milkvetch	1	1	U	1	0	0	U	3	5	Grf?, Kan
	<i>Astragalus iodanthus</i> var. <i>iodanthus</i>	Humboldt River milkvetch	1	1	1	0	0	U	U	3	5	Box
	<i>Astragalus lancearius</i>	Lancer milkvetch	1	1	1	0	0	1	U	4	5	Kan, Snj, Wsh
	<i>Astragalus lentiginosus</i> var. <i>scorpionis</i>	Scorpion milkvetch	1	1	1	0	0	U	U	3	5	Jub
	<i>Astragalus missouriensis</i> var. <i>amphibolus</i>	Missouri milkvetch	1	1	1	0	0	U	U	3	5	Snj
	<i>Astragalus nidularius</i>	Birds-nest milkvetch	2	1	U	0	0	0	U	3	5	Grf, Snj, Way
	<i>Astragalus nyensis</i>	Nye milkvetch	1	1	1	0	1	0	U	4	5	Wsh
	<i>Astragalus oophorus</i> var. <i>lonchocalyx</i>	Pink egg milkvetch	1	1	1	0	0	1	U	4	5	Bvr, Irn
	<i>Astragalus praelongus</i> var. <i>avonensis</i>	Avon milkvetch	2	0	1	1	0	0	0	4	4	Bvr, Irn, Mil
	<i>Astragalus praelongus</i> var. <i>lonchopus</i>	Longstipe milkvetch	1	1	0	1	0	U	U	3	5	Snj
<i>Astragalus racemosus</i> var. <i>treleasei</i>	Trelease's alkali milkvetch	1	0	U	1	0	1	U	3	5	Dch, Uin	

## Appendix 4. UNPS Rare Plant List: Medium Priority List, continued

Family	Species	Common Name	Range	# Pops	# Indiv	Hab Spec	Intrin Rar	Threat	Trend	Min Score	Pot Score	County Dist. & Legal Status
Fabaceae (Leguminosae)	<i>Astragalus straturensis</i>	Pine Valley milkvetch	1	1	U	0	0	1	U	3	5	Bvr, Irn, Mil, Wsh
	<i>Astragalus subcinereus</i> var. <i>basalticus</i>	Basalt milkvetch	2	1	1	0	0	0	U	4	5	Emr, Sev
	<i>Lathyrus eucosmus</i>	Seemly sweetpea	1	1	1	0	0	U	U	3	5	Emr, Grn, Snj
	<i>Lotus wrightii</i>	Wright's trefoil	1	1	1	0	0	U	U	3	5	Snj
	<i>Lupinus kingii</i> var. <i>argillaceus</i>	King's lupine	1	1	1	0	0	U	U	3	5	Grf, Way
	<i>Lupinus latifolius</i> var. <i>leucanthus</i>	Broad-leaved lupine	1	1	1	0	0	U	U	3	5	Wsh
	<i>Lupinus sericeus</i> var. <i>jonesii</i>	Jones' lupine	2	1	U	0	0	0	U	3	5	Kan, Wsh
	<i>Oxytropis besseyi</i> var. <i>ventosa</i>	Wind River locoweed	1	1	U	1	0	0	U	3	5	Dag
	<i>Parryella filifolia</i>	Narrowleaf dunebroom	1	1	U	1	0	0	U	3	5	Grn, Snj
	<i>Psoralidium lanceolatum</i> var. <i>stenophyllum</i>	Slenderleaf scurfpea	2	1	0	1	0	0	U	4	5	Emr, Grf, Grn, Kan, Snj, Way
	<i>Psorothamnus thompsoniae</i> var. <i>thompsoniae</i>	Thompson's indigobush	2	1	U	0	0	0	U	3	5	Emr, Grf, Kan, Snj
	<i>Psorothamnus thompsoniae</i> var. <i>whitingii</i>	Whiting's indigobush	1	1	1	0	0	1	U	4	5	Snj
	<i>Trifolium eriocephalum</i> var. <i>villiferum</i>	Woolly clover	1	1	1	0	0	U	U	3	5	Bvr?, Jub, Piu, Sev
	<i>Trifolium variegatum</i> var. <i>variegatum</i>	Variegated clover	1	1	1	0	0	U	U	3	5	Box, Cch, Sl, Web
	<i>Trifolium wormskioldii</i> var. <i>arizonicum</i>	Arizona cow clover	1	1	1	0	0	U	U	3	5	Kan
<i>Trifolium wormskioldii</i> var. <i>wormskioldii</i>	Cow clover	1	1	1	0	0	U	U	3	5	Box, Cch, Sl, Toe	
Fagaceae	<i>Quercus x eastwoodiae</i>	Eastwood's oak	1	1	U	1	0	0	U	3	5	Grf, Grn, Kan, Snj
Gentianaceae	<i>Gentianella tortuosa</i>	Jones' gentian	1	1	U	1	0	0	U	3	5	Emr, Grf, Irn, Kan, Snp, Sev, Uta, Was
	<i>Gentianopsis barbellata</i>	Barbellate gentian	1	1	1	0	0	1	U	4	5	Dch, Grn, Snj, Snp, Sum

## Appendix 4. UNPS Rare Plant List: Medium Priority List, continued

Family	Species	Common Name	Range	# Pops	# Indiv	Hab Spec	Intrin Rar	Threat	Trend	Min Score	Pot Score	County Dist. & Legal Status
Geraniaceae	<i>Geranium bicknellii</i>	Bicknell's crane's-bill	1	1	0	1	0	U	U	3	5	Cch, Dag, Slt, Uin, Uta
Hydrocharitaceae	<i>Elodea bifoliata</i>	Two-leaf waterweed	1	1	1	0	0	U	U	3	5	Was
Hydrophyllaceae (Boraginaceae)	<i>Emmenanthe penduliflora</i>	Whispering-bells	1	1	1	0	0	1	0	4	4	Wsh
	<i>Hydrophyllum capitatum</i> var. <i>alpinum</i>	Alpine waterleaf	1	1	1	0	0	U	U	3	5	Box, Jub, Toe
	<i>Hydrophyllum fendleri</i>	Fendler's waterleaf	1	1	1	0	0	U	U	3	5	Snj
	<i>Nemophila parviflora</i> var. <i>austinae</i>	Smallflower nemophila	1	1	1	0	0	U	U	3	5	Cch, Rch, Web
	<i>Phacelia anelsonii</i>	Aven Nelson's phacelia	1	1	1	0	0	1	0	4	4	Wsh
	<i>Phacelia coerulea</i>	Blue phacelia	1	1	1	0	0	1	U	4	5	Wsh
	<i>Phacelia cryptantha</i>	Cryptanth phacelia	1	1	1	0	0	1	U	4	5	Wsh
	<i>Phacelia curvipes</i>	Washoe phacelia	1	1	1	0	0	1	U	4	5	Wsh
	<i>Phacelia franklinii</i>	Franklin's phacelia	1	1	1	0	0	U	U	3	5	Was
	<i>Phacelia glandulifera</i>	Glandular-hair phacelia	1	1	1	1	0	0	U	4	5	Box
	<i>Phacelia lemmonii</i>	Lemmon's phacelia	1	1	1	0	0	U	U	3	5	Bvr, Wsh
Juncaceae	<i>Juncus articulatus</i>	Jointed rush	1	0	U	1	0	1	U	3	5	Box, Dag, Grn, Rch, Snj, Sum, Toe, Uta, Was
	<i>Juncus bryoides</i>	Moss rush	1	1	1	1	0	0	U	4	5	Dag, Kan, Slt, Sev, Uin, Wsh
Lamiaceae (Labiatae)	<i>Hedeoma nana</i> ssp. <i>nana</i>	Dwarf pennyroyal	1	1	1	0	0	U	U	3	5	Kan, Snj, Wsh
	<i>Monarda fistulosa</i> var. <i>mentifolia</i>	Beebalm	1	1	1	0	0	U	U	3	5	Snj, Wsh
	<i>Monarda pectinata</i>	Plains beebalm	1	1	1	0	0	U	U	3	5	Kan, Snj, Wsh
	<i>Physostegia parviflora</i>	Purple dragonhead	1	1	1	0	0	U	U	3	5	Cch, Rch
	<i>Scutellaria antirrhinoides</i>	Snapdragon skullcap	1	1	1	0	0	U	U	3	5	Dch, Mor, Web
	<i>Scutellaria nana</i>	Dwarf skullcap	1	1	1	0	0	U	U	3	5	Dch, Irn, Wsh
	<i>Teucrium canadensis</i> var. <i>occidentale</i>	American germander	1	1	1	0	0	U	U	3	5	Cch, Piu, Uta

## Appendix 4. UNPS Rare Plant List: Medium Priority List, continued

Family	Species	Common Name	Range	# Pops	# Indiv	Hab Spec	Intrin Rar	Threat	Trend	Min Score	Pot Score	County Dist. & Legal Status
Liliaceae (Amaryllidaceae, Melanthiaceae)	<i>Allium lemmonii</i>	Lemmon's onion	1	1	1	0	0	U	U	3	5	Wsh
	<i>Allium parvum</i>	Small onion	1	1	1	0	0	U	U	3	5	Jub, Mil, Toe?
	<i>Anticlea vaginatus</i>	Alcove death camas	1	1	1	1	0	0	U	4	5	Grn, Kan, Snj, Wsh
	<i>Calochortus ambiguus</i>	Jones' mariposa	1	1	1	0	0	U	U	3	5	Wsh
	<i>Calochortus bruneaunis</i>	Bruneau mariposa	1	1	1	0	0	1	U	4	5	Box, Jub, Rch
	<i>Calochortus kennedyi</i>	Kennedy's mariposa	1	1	1	0	0	U	1	4	5	Kan
	<i>Lloydia serotina</i> var. <i>serotina</i>	Alp-lily	1	1	1	0	0	1	U	4	5	Cch, Dag, Dch, Slr, Sum, Uin, Uta
Loasaceae	<i>Mentzelia decapetala</i>	Ten-petaled blazing-star	1	1	1	0	0	U	U	3	5	Bvr?, Box, Cch
	<i>Mentzelia pumila</i>	Wyoming stickleaf	1	1	1	0	0	U	U	3	5	Dag, Dch
	<i>Mentzelia tricuspis</i>	Glorious blazingstar	1	1	U	0	0	1	U	3	5	Wsh
Malvaceae	<i>Abutilon parvulum</i>	Small Indian-mallow	1	1	1	0	0	U	U	3	5	Wsh
	<i>Eremalche exilis</i>	Small-flower malvastrum	1	1	1	0	0	1	U	4	5	Wsh
	<i>Eremalche rotundifolia</i>	Desert five-spot	1	1	1	0	0	1	U	4	5	Wsh
	<i>Iliamna grandiflora</i>	Large-flower wild hollyhock	1	1	1	0	0	U	1	4	5	Snj
	<i>Sphaeralcea angustifolia</i>	Narrowleaf globemallow	1	1	1	0	0	U	U	3	5	Wsh
	<i>Sphaeralcea digitata</i>	Juniper globe-mallow	1	1	1	0	0	U	1	4	5	Snj
	<i>Sphaeralcea rusbyi</i> var. <i>rusbyi</i>	Rusby's globe-mallow	1	1	0	1	0	U	U	3	5	Irn, Wsh
Nyctaginaceae	<i>Abronia argillosa</i>	Clay sand-verbena	1	1	0	1	0	U	U	3	5	Dch, Emr, Grn, Uin
	<i>Acleisanthes nevadensis</i>	Moonpod	1	1	U	0	0	1	U	3	5	Kan, Snj, Wsh
	<i>Mirabilis linearis</i> var. <i>decipiens</i>	New Mexico umbrellawort	1	1	1	0	0	U	U	3	5	Grf, Piu, Snj
	<i>Tripterocalyx carneus</i>	Wooton's sand-verbena	1	1	1	0	0	U	U	3	5	Grf, Kan, Snj
Oleaceae	<i>Menodora scabra</i>	Rough menodora	1	1	1	0	0	U	U	3	5	Grf, Kan, Wsh

## Appendix 4. UNPS Rare Plant List: Medium Priority List, continued

Family	Species	Common Name	Range	# Pops	# Indiv	Hab Spec	Intrin Rar	Threat	Trend	Min Score	Pot Score	County Dist. & Legal Status
Onagraceae	<i>Camissonia andina</i>	Andean camissonia	1	1	1	0	0	U	U	3	5	Bvr, Cch, Reh, Was
	<i>Camissonia multijuga</i>	Manylobe camissonia	1	1	1	0	0	1	0	4	4	Kan?, Wsh
	<i>Camissonia parryi</i>	Parry's camissonia	1	0	U	1	0	1	1	4	5	Wsh
	<i>Camissonia pterosperma</i>	Wingseed camissonia	1	1	1	0	0	U	U	3	5	Kan, Mil, Toe, Uin, Wsh
	<i>Camissonia pusilla</i>	Obscure camissonia	1	1	1	0	0	U	U	3	5	Bvr, Irn?, Piu, Wsh
	<i>Gayophytum humile</i>	Low groundsmoke	1	1	1	0	0	U	U	3	5	Cch, Was
	<i>Oenothera acutissima</i>	Large yellow evening-primrose	1	1	0	1	0	1	U	4	5	Dag, Dch, Uin
	<i>Oenothera caespitosa</i> var. <i>macroglottis</i>	Plains evening-primrose	1	1	1	0	0	U	U	3	5	Grn, Snj
	<i>Oenothera caespitosa</i> var. <i>purpurea</i>	Purple evening-primrose	1	1	1	0	0	U	U	3	5	Box
Orchidaceae	<i>Coeloglossum viride</i>	Longbract bog-orchid	1	1	1	0	0	1	U	4	5	Dch, Sum
	<i>Listera borealis</i>	Northern tway-blade	1	1	1	0	0	1	U	4	5	Cch, Dch, Slt, Snj, Sev, Sum
	<i>Listera cordata</i> var. <i>nephrophylla</i>	Heart-leaved twayblade	1	1	1	0	0	1	U	4	5	Dch, Sum, Was
	<i>Platanthera obtusata</i>	Small bog orchid	1	1	1	0	0	1	U	4	5	Dch, Sum
Paeoniaceae	<i>Paeonia brownii</i>	Western peony	1	1	1	0	0	U	U	3	5	Box, Snp?
Papaveraceae	<i>Argemone corymbosa</i> ssp. <i>arenicola</i>	San Rafael prickly-poppy	1	1	U	1	0	0	U	3	5	Emr, Grf, Grn, Kan, Snj, Way
Plumbaginaceae	<i>Armeria maritima</i> ssp. <i>sibirica</i>	Sea-pink	1	1	1	0	0	1	U	4	5	Sum
Poaceae	<i>Achnatherum lemmonii</i> ssp. <i>lemmonii</i>	Lemmon's needlegrass	1	1	1	0	0	1	U	4	5	Cch, Uin, Was
	<i>Achnatherum nevadense</i>	Nevada needlegrass	1	1	1	0	0	1	U	4	5	Bvr, Irn, Piu?, Slt
	<i>Achnatherum perplexum</i>	New Mexico needlegrass	1	1	1	0	0	U	U	3	5	Grf, Kan, Snj
	<i>Achnatherum scribneri</i>	Scribner needlegrass	1	1	1	0	0	U	U	3	5	Way
	<i>Achnatherum thurberianum</i>	Thurber's needlegrass	1	1	1	0	0	U	U	3	5	Box, Jub, Slt
	<i>Alopecurus carolinianus</i>	Carolina foxtail	1	1	1	0	0	U	U	3	5	Cch, Dav

## Appendix 4. UNPS Rare Plant List: Medium Priority List, continued

Family	Species	Common Name	Range	# Pops	# Indiv	Hab Spec	Intrin Rar	Threat	Trend	Min Score	Pot Score	County Dist. & Legal Status
Poaceae (Gramineae)	<i>Bouteloua hirsuta</i>	Hairy grama	1	1	1	0	0	U	1	4	5	Crb?, Snj, Wsh
	<i>Calamovilfa gigantea</i>	Big sandreed	1	1	0	1	0	1	U	4	5	Kan, Snj, Toe, Wsh
	<i>Festuca sororia</i>	Ravine fescue	1	1	1	0	0	U	U	3	5	Emr, Irn, Snj, Uta?
	<i>Festuca subulata</i>	Bearded fescue	1	1	1	0	0	U	U	3	5	Cch, Dav, Slt, Uta
	<i>Helictotrichon mortonianum</i>	Morton's alpine oatgrass	1	1	1	0	0	1	U	4	5	Dag, Dch, Sum, Uin
	<i>Leptochloa fusca</i> ssp. <i>uninervia</i>	Mexican sprangletop	1	1	1	0	0	U	U	3	5	Uta
	<i>Melica porteri</i>	Porter's melic	1	1	1	0	0	U	U	3	5	Snj
	<i>Muhlenbergia arsenei</i>	Navajo muhly	1	1	1	0	0	U	U	3	5	Kan, Snj, Wsh
	<i>Muhlenbergia filiculmis</i>	Slimstem muhly	1	1	1	0	0	U	U	3	5	Grf, Snj, Way
	<i>Muhlenbergia microsperma</i>	Littleseed muhly	1	1	U	0	0	1	U	3	5	Wsh
	<i>Muhlenbergia repens</i>	Creeping muhly	1	1	1	0	0	U	U	3	5	Kan
	<i>Muhlenbergia schreberi</i>	Nimblewill muhly	1	1	1	0	0	U	U	3	5	Wsh
	<i>Oryzopsis asperifolia</i>	Roughleaf rice-grass	1	1	1	0	0	1	U	4	5	Dag, Dch, Jub, Uin
	<i>Poa bolanderi</i>	Bolander's blue-grass	1	1	1	0	0	U	U	3	5	Cch, Grf, Reh
	<i>Poa laxa</i> ssp. <i>banffiana</i>	Banff bluegrass	1	1	1	0	0	1	U	4	5	Grn?, Snj
	<i>Schizachne purpurascens</i>	False melic	1	1	1	0	0	U	U	3	5	Dag, Dch, Uin
	<i>Sphenopholis intermedia</i>	Intermediate wedgegrass	1	1	U	0	0	1	U	3	5	Bvr, Grf, Irn?, Piu?
	<i>Sporobolus pyramidatus</i>	Cushion dropseed	1	1	1	0	0	U	1	4	5	Snj
	<i>Sporobolus texanus</i>	Texas dropseed	1	1	1	0	0	U	U	3	5	Grn
	<i>Trisetum canescens</i>	Tall trisetum	1	1	1	0	0	1	U	4	5	Cch, Slt, Snj
Polemoniaceae	<i>Aliciella haydenii</i>	San Juan gilia	1	1	1	0	0	U	U	3	5	Snj
	<i>Aliciella latifolia</i> ssp. <i>latifolia</i>	Spiny gilia	1	1	U	0	0	1	U	3	5	Wsh
	<i>Allophyllum giloides</i> ssp. <i>violaceum</i>	Stragglng gilia	1	1	1	0	0	U	U	3	5	Wsh
	<i>Collomia wilkenii</i>	Wilken's collomia	1	1	1	0	0	U	U	3	5	Box, Toe?



## Appendix 4. UNPS Rare Plant List: Medium Priority List, continued

Family	Species	Common Name	Range	# Pops	# Indiv	Hab Spec	Intrin Rar	Threat	Trend	Min Score	Pot Score	County Dist. & Legal Status
Polemoniaceae	<i>Gilia flavocincta</i> ssp. <i>australis</i>	Yellow-throat gilia	1	1	1	0	0	U	U	3	5	Kan
	<i>Leptosiphon aureus</i>	Golden linanthus	1	1	1	0	0	1	U	4	5	Wsh
	<i>Leptosiphon harknesii</i>	Harkness' linanthus	1	1	1	0	0	U	U	3	5	Cch, Emr, Mor, Rch, Slt, Sum, Uta, Was
	<i>Linanthus dichotomous</i> ssp. <i>dichotomous</i>	Evening-snow	1	1	1	0	0	U	U	3	5	Kan, Wsh
	<i>Linanthus filiformis</i>	Yellow gilia	1	1	U	0	0	1	U	3	5	Wsh
	<i>Navarretia capillaris</i>	Thread navarretia	1	1	1	0	0	U	U	3	5	Cch
	<i>Navarretia furnissii</i>	Furniss' navarretia	1	1	1	0	0	U	U	3	5	Cch, Grf, Sum, Was
	<i>Navarretia leucocephala</i>	White-headed navvaretia	1	1	1	0	0	U	U	3	5	Cch
	<i>Phlox cluteana</i>	Navajo Mountain phlox	1	1	1	0	0	U	U	3	5	Snj
	<i>Phlox tumulosa</i>	Mound phlox	1	1	1	0	0	U	U	3	5	Bvr, Irn, Wsh
	<i>Polemonium brandegeei</i>	Pale sky-pilot	1	U	1	0	0	U	1	3	5	Piu
<i>Polemonium micranthum</i>	Annual Jacob's-ladder	1	1	U	0	0	1	U	3	5	Cch, Dav, Slt, Uta	
Polygalaceae	<i>Polygala verticillata</i>	Whorled milkwort	1	1	1	0	0	U	U	3	5	Uin
Polygonaceae	<i>Chorizanthe rigida</i>	Devil's spine-flower	1	1	1	0	0	U	U	3	5	Snj, Wsh
	<i>Chorizanthe watsonii</i>	Watson's spine-flower	1	1	1	0	0	U	U	3	5	Box, Kan
	<i>Eriogonum arcuatum</i> var. <i>rupicola</i>	Slickrock wild buckwheat	2	1	0	1	0	0	0	4	4	Kan, Wsh
	<i>Eriogonum baileyi</i> var. <i>baileyi</i>	Bailey's wild buckwheat	1	1	1	0	0	U	U	3	5	Bvr
	<i>Eriogonum brevicaule</i> var. <i>bannockense</i>	Bannock wild buckwheat	1	1	U	1	0	0	U	3	5	Box, Rch
	<i>Eriogonum clavellatum</i>	Comb Wash wild buckwheat	1	1	0	1	0	U	U	3	5	Snj
	<i>Eriogonum darrovii</i>	Darrow's wild buckwheat	1	1	1	1	0	0	U	4	5	Kan
<i>Eriogonum desertorum</i>	Desert wild buckwheat	1	1	1	0	0	U	U	3	5	Box, Toe	

## Appendix 4. UNPS Rare Plant List: Medium Priority List, continued

Family	Species	Common Name	Range	# Pops	# Indiv	Hab Spec	Intrin Rar	Threat	Trend	Min Score	Pot Score	County Dist. & Legal Status
Polygonaceae	<i>Eriogonum heermannii</i> var. <i>sulcatum</i>	Heermann;s grooved wild buckwheat	1	1	0	1	0	1	U	4	5	Wsh
	<i>Eriogonum leptophyllum</i>	Slenderleaf wild buckwheat	1	1	1	0	0	U	U	3	5	Snj
	<i>Eriogonum nidularium</i>	Bird nest wild buckwheat	1	1	U	0	0	1	U	3	5	Wsh
	<i>Eriogonum nutans</i> var. <i>nutans</i>	Dugway wild buckwheat	1	1	1	0	0	U	U	3	5	Bvr, Crb, Jub, Mil, Piu, Snp, Sev, Toe
	<i>Eriogonum ostlundii</i>	Elsinore wild buckwheat	2	1	0	1	0	0	U	4	5	Piu, Sev
	<i>Eriogonum</i> <i>pharnaceoides</i> var. <i>cervinum</i>	Wirestem wild buckwheat	1	1	U	0	0	1	U	3	5	Irn, Wsh
	<i>Eriogonum polycladon</i>	Leafy wild buck- wheat	1	1	U	1	0	0	U	3	5	Kan
	<i>Eriogonum thompsoniae</i> var. <i>thompsoniae</i>	Thompson's wild buckwheat	1	1	0	1	0	1	U	4	5	Kan, Wsh
	<i>Eriogonum umbellatum</i> var. <i>juniporinum</i>	Juniper wild buck- wheat	1	1	1	0	0	U	U	3	5	Snj, Wsh
	<i>Polygonum utahense</i>	Utah knotweed	1	1	1	1	0	0	U	4	5	Grf, Kan, Wsh
Portulacaceae	<i>Cistanthe monandra</i>	Roseate calyptidium	1	1	1	0	0	U	U	3	5	Grf, Kan, Snj, Wsh
	<i>Cistanthe parryi</i>	Parry's calyptidium	1	1	1	0	0	U	U	3	5	Mil, Sev
	<i>Montia linearis</i>	Linear-leaf candy- flower	1	1	1	0	0	U	U	3	5	Mor, Web
Pteridaceae (Polypodiaceae)	<i>Argyroschosma jonesii</i>	Jones' cloakfern	1	1	U	1	0	0	U	3	5	Kan, Wsh
	<i>Aspidotis densa</i>	Dense lace-fern	1	1	1	1	0	0	U	4	5	Slt, Uta
	<i>Myriopteris gracillima</i> ( <i>Cheilanthes gracillima</i> )	Lace-fern	1	1	U	1	0	0	U	3	5	Cch
	<i>Pentagramma triangularis</i>	Goldback fern	1	1	1	0	0	U	U	3	5	Kan, Wsh
Ranunculaceae	<i>Anemone piperi</i>	Piper's anemone	1	1	1	0	0	U	U	3	5	Cch, Slt
	<i>Delphinium x burkei</i>	Two-spike lark- spur	1	1	1	0	0	U	U	3	5	Box
	<i>Ranunculus pedatifidus</i> var. <i>affinis</i>	Northern buttercup	1	1	1	0	0	1	U	4	5	Sum

## Appendix 4. UNPS Rare Plant List: Medium Priority List, continued

Family	Species	Common Name	Range	# Pops	# Indiv	Hab Spec	Intrin Rar	Threat	Trend	Min Score	Pot Score	County Dist. & Legal Status
Ranunculaceae	<i>Ranunculus ranunculinus</i>	Little buttercup	1	1	1	0	0	U	U	3	5	Cch
	<i>Thalictrum occidentale</i>	Western meadow-rue	1	1	1	0	0	1	U	4	5	Dch, Uta
	<i>Thalictrum venulosum</i>	Veiny leaf meadow-rue	1	1	1	0	0	1	U	4	5	Dch, Sum, Uin
Rosaceae	<i>Chamaerhodos erecta</i>	Little ground-rose	1	1	1	0	0	1	U	4	5	Piu, Sev, Way?
	<i>Crataegus macracantha</i>	Big-spine hawthorn	1	1	U	0	0	1	U	3	5	Uta
	<i>Physocarpus monogynus</i>	Mountain ninebark	1	1	1	0	0	U	U	3	5	Crb, Sev, Uta, Was
	<i>Potentilla cottamii</i>	Cottam's cinquefoil	1	1	1	1	0	0	U	4	5	Box
	<i>Potentilla plattensis</i>	Platte River cinquefoil	1	1	1	0	0	U	U	3	5	Box, Grf, Kan, Sev, Way
	<i>Prunus emarginatus</i>	Bitter cherry	1	1	1	0	0	1	U	4	5	Wsh
Rubiaceae	<i>Galium mexicanum</i> var. <i>asperulum</i>	Rough bedstraw	1	1	1	0	0	U	U	3	5	Cch, Mor, Slr, Toe?
	<i>Galium stellatum</i> var. <i>eremicum</i>	Stellate bedstraw	1	1	1	0	0	U	U	3	5	Wsh
	<i>Galium wrightii</i>	Wright's bedstraw	1	1	U	1	0	0	U	3	5	Wsh
	<i>Houstonia rubra</i>	Wright's bluets	1	1	1	0	0	U	U	3	5	Snj
Scrophulariaceae (Orobanchaceae, Phrymaceae, Plantaginaceae)	<i>Castilleja scabrada</i> var. <i>barnebyana</i>	Barneby's paintbrush	1	1	U	1	0	0	U	3	5	Bvr, Jub, Mil
	<i>Mimulus breweri</i>	Brewer's monkeyflower	1	1	1	0	0	U	U	3	5	Box, Rch, Sev, Sum, Toe
	<i>Mimulus eastwoodiae</i>	Eastwood's monkeyflower	1	1	U	1	0	0	U	3	5	Grf, Grn, Kan, Snj
	<i>Mimulus primuloides</i> var. <i>primuloides</i>	Primrose monkeyflower	1	1	1	0	0	U	U	3	5	Bvr, Dch, Irn, Wsh
	<i>Neogaerrhinum filipes</i>	Yellow twining snapdragon	1	1	U	0	0	1	U	3	5	Wsh
	<i>Pedicularis contorta</i> var. <i>contorta</i>	White coil-beak lousewort	1	1	1	0	0	U	U	3	5	Box
	<i>Pedicularis parryi</i> var. <i>purpurea</i>	Parry's lousewort	1	1	1	0	0	U	U	3	5	Cch
	<i>Pedicularis procera</i>	Gray's lousewort	1	1	1	0	0	U	U	3	5	Grn, Snj, Sev
	<i>Penstemon angustifolius</i> var. <i>dulcis</i>	Sweet penstemon	2	1	0	0	0	1	U	4	5	Jub, Mil

## Appendix 4. UNPS Rare Plant List: Medium Priority List, continued

Family	Species	Common Name	Range	# Pops	# Indiv	Hab Spec	Intrin Rar	Threat	Trend	Min Score	Pot Score	County Dist. & Legal Status
Scrophulariaceae (Orobanchaceae, Phrymaceae, Plantaginaceae)	<i>Penstemon caespitosus</i> var. <i>desertipicti</i>	Painted penstemon	1	1	0	1	0	U	U	3	5	Bvr, Grf, Kan, Piu, Way
	<i>Penstemon crandallii</i> var. <i>atratus</i>	La Sal penstemon	2	1	1	0	0	0	U	4	5	Grn, Snj
	<i>Penstemon higginsii</i>	Higgins' penstemon	2	1	0	0	0	1	0	4	4	Irn, Wsh
	<i>Penstemon humilis</i> var. <i>desereticus</i>	Deseret penstemon	1	1	U	1	0	0	U	3	5	Bvr, Irn, Jub, Mil, Toe
	<i>Penstemon humilis</i> var. <i>obtusifolius</i>	Zion penstemon	2	1	0	0	0	1	0	4	4	Wsh
	<i>Penstemon immanifestus</i>	Unrevealed penstemon	1	1	U	1	0	0	U	3	5	Jub, Mil, Toe
	<i>Penstemon lentus</i> var. <i>albiflorus</i>	Whiteflower penstemon	2	1	1	0	0	0	U	4	5	Snj
	<i>Penstemon parvus</i>	Aquarius penstemon	2	1	0	0	0	1	U	4	5	Grf, Piu, Sev, Way
	<i>Penstemon patricus</i>	Father's penstemon	2	1	0	1	0	0	U	4	5	Jub, Mil, Toe
	<i>Penstemon platyphyllus</i>	Broadleaf penstemon	2	1	U	0	0	0	U	3	5	Dav, Dch, Slt, Uta, Web
	<i>Penstemon pseudoputus</i>	Dirty penstemon	1	1	1	0	0	1	U	4	5	Grf, Kan
<i>Penstemon pseudospectabilis</i>	Spectacular penstemon	1	1	1	0	0	U	U	3	5	Kan, Wsh?	
Solanaceae	<i>Quincula lobata</i>	Purple ground-cherry	1	1	1	0	0	U	U	3	5	Grn, Snj
	<i>Solanum jamesii</i>	James' potato	1	1	1	0	0	1	U	4	5	Grf, Snj
Valerianaceae (Caprifoliaceae)	<i>Valeriana arizonica</i>	Arizona valerian	1	1	1	0	0	U	U	3	5	Wsh
Verbenaceae	<i>Phyla lanceolata</i>	Northern fogfruit	1	1	1	0	0	U	U	3	5	Grn
	<i>Verbena macdougalii</i>	New Mexico vervain	1	1	1	0	0	U	U	3	5	Grf
Violaceae	<i>Viola lithion</i>	Rock violet	1	1	1	1	0	0	U	4	5	Box
Viscaceae (Santalaceae)	<i>Arceuthobium abietinum</i>	Fir dwarf mistletoe	1	1	1	1	0	0	U	4	5	Kan
	<i>Arceuthobium americanum</i>	Lodgepole pine dwarf mistletoe	1	1	1	1	0	0	U	4	5	Cch, Dag, Dch, Sum, Uin, Was
Zygophyllaceae	<i>Kallstroemia parviflora</i>	Orange kallstroemia	1	1	1	0	0	U	U	3	5	Grn, Wsh

UNPS Medium Priority List: Ranking Comments

*Yucca baileyi*

Family: Agavaceae or Asparagaceae

Comments: Regional endemic. The limited range and the potential impacts of grazing and climate change of this taxon warrants further research into its status. Yucca are under collected and this taxon has as limited a range in Utah as *Y. angustissima* var. *toftiae*. Intrinsic Rarity scored as "unknown" due to the lack of information about the status of its moth pollinator. Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys.

Scored By/Date: J. Alexander/2014

Revisions: Moved from Low Priority to Medium Priority

*Amaranthus acanthochiton*

Synonym: *Acanthochiton wrightii*

Family: Amaranthaceae

Comments: Peripheral. Only 2 specimens at BRY have been collected. It has only been collected in Kane County in Utah (Atwood & Kaneko 3360, 3360a BRY). It was also collected in Kane County in September of 1958 by L.C. Anderson (1706b, UTC). It's primary distribution is in the Southwestern U.S. and Mexico. The most recent collections of this taxon near the Utah border are from Wetherill Mesa (*Clifford & Heil 01-1095*, 17 August 2001, SJNM), NE of Kayenta, which is ca. 7 miles south of the Utah stateline. Although it is possible that this taxon is no longer found in Utah, it should also be looked for in San Juan County, Utah.

Scored By/Date: J. Alexander/2015

*Tidestromia lanuginosa* ssp. *eliassoniana*

Synonym: *Cladothrix lanuginosa*

Family: Amaranthaceae

Comments: Peripheral. Washington County phase, differentiated from var. *lanuginosa* based on pollen morphology. Information needed on number of individuals and trends.

Scored By/Date: UNPS Rare Plant Comm./2008

*Bupleurum americanum*

Family: Apiaceae or Umbelliferae

Comments: Peripheral. Only 1 specimen at BRY has been collected. It has been found in Utah in Rich County (Moon & Moon 468, 14 Jun 2005, BRY). This taxon's primary range is in the Pacific Northwest and the Rocky Mountains. Habitat Specificity scored as "0" since the habitat does not seem unusual according to FNA ("Hillside with juniper, pinyon, and forbs"). Threats to this taxon may be primarily from disturbance related to farming and grazing-related impacts but it is scored as unknown due to uncertainty. Trends are scored as "unknown".

Scored By/Date: J. Alexander/2014

Revisions: Moved from Low Priority to Medium Priority

*Cymopterus lapidosus*

Family: Apiaceae or Umbelliferae

Comments: Regional Endemic. Only 4 specimens at BRY have been collected, all of which were collected in western Summit County. The primary distribution is reported to be in southwestern Wyoming. Habitat Specificity is scored as "0" since the habitat does not seem unusual according to A Utah Flora ("Sagebrush, juniper, and mountain mahogany communities"). Threats to this taxon may be primarily from grazing-related impacts, but it scored as unknown due to uncertainty. Trends are scored as "unknown".

Scored By/Date: J. Alexander/2014

Revisions: Moved from Low Priority to Medium Priority

*Cymopterus macdougallii*

Synonym: *Aletes macdougallii* ssp. *breviradiatus*

Family: Apiaceae or Umbelliferae

Comments: Regional Endemic. Few populations, but these seem secure given remote and isolated canyon habitat

Scored By/Date: UNPS Rare Plant Comm./2008

*Cymopterus purpureus* var. *jonesii*

Synonym: *Cymopterus jonesii*

Family: Apiaceae or Umbelliferae

Comments: Regional Endemic. Known from fewer than 20 populations in Utah, endemic to Great Basin. Habitat specificity low, threats and trends not known.

Scored By/Date: UNPS Rare Plant Comm./2008

*Cymopterus purpureus* var. *rosei*

Synonym: *Cymopterus rosei*

Family: Apiaceae or Umbelliferae

Comments: Local endemic. Mostly on Carmel Formation ridgetops, threats probably low overall, well protected in Zion NP. Found to be locally common on Carmel outcrops in remote parts of Zion NP by Fertig in 2009-2010, including areas burned by wildfire.

Scored By/Date: Fertig/2010

*Ligusticum grayi*

Family: Apiaceae or Umbelliferae

Comments: Peripheral. Lovages are potentially threatened by harvest for medicinal uses. Few populations in Utah, but habitat not especially unusual. Abundance not known.

Scored By/Date: UNPS Rare Plant Comm./2008

*Lomatium cous*

Family: Apiaceae or Umbelliferae

Comments: Peripheral. Common outside of Utah, but known from just 3 collections in the Raft River and Grouse Creek ranges in Utah. As an edible plant this may be vulnerable to overharvest.

Scored By/Date: Fertig/2016

## UNPS Medium Priority List: Ranking Comments

*Lomatium minimum*

Family: Apiaceae or Umbelliferae

Comments: Local endemic. Claron endemic, often locally abundant but patchy, threats seem low, many populations are protected in Cedar Breaks NM. Abundant on bare sites in Cedar Breaks and apparently expanding into disturbed meadow areas that have had topsoil eroded.

Scored By/Date: Fertig/2009

*Lomatium nudicaule*

Family: Apiaceae or Umbelliferae

Comments: Peripheral. Only 8 specimens at BRY have been collected. It has been collected in Box Elder County (Grouse Creek Mountains, Raft River Mountains). In the Deep Creek Range, it has been found in Tom Creek Canyon (*Kass 3563, BRY, NY*) and in Middle Canyon (*Goodrich 18918, NY, BRY; Welsh 16905, BRY, NY*) in Juab County. This taxon's primary range is in the Pacific Northwest and California. Habitat Specificity is scored as "0" since the habitat does not seem unusual based on the description in *A Utah Flora* (2008). At least in the Deep Creek Range, this is one of several taxa that may be threatened by the proposed introduction of naturalized mountain goats by the State of Utah. Climate change is also a threat. Although the climate threats alone do not warrant changes, threats will be upgraded to "1" if the introductions proceed. Trends are "unknown".

Scored By/Date: J. Alexander/2014

Revisions: Moved from Low Priority to Medium Priority

*Lomatium ravenii*

Family: Apiaceae or Umbelliferae

Comments: Peripheral. Known from a single report in western Utah, habitat unspecialized, threats and trends poorly known.

Scored By/Date: UNPS Rare Plant Comm./2008

*Perideridia bolanderi*

Family: Apiaceae or Umbelliferae

Comments: Peripheral. This taxon has been found in the Deep Creek Range (Juab County) and the Raft River Mountains (Box Elder County) in Utah. Only 15 specimens at BRY have been collected. This taxon's primary range is in California, Oregon and Idaho. At least in the Deep Creek Range, this is one of several taxa that may be threatened by the proposed introduction of naturalized mountain goats by the State of Utah. Climate change is also a threat. Although the climate threats alone do not warrant changes, threats will be upgraded to "1" if the introductions proceed. Trends are scored as "unknown".

Scored By/Date: J. Alexander/2014

Revisions: Moved from Low Priority to Medium Priority

*Yabea microcarpa*

Family: Apiaceae or Umbelliferae

Comments: Peripheral. Uncommon in shaded canyons and crevices of rocks in Washington Co., abundance poorly known.

Scored By/Date: UNPS Rare Plant Comm./2008

*Aralia racemosa* ssp. *bicrenata*

Family: Araliaceae

Comments: Peripheral. Populations small, wet canyon habitat unusual (perhaps not enough to call a specialist), protected in Zion NP.

Scored By/Date: Fertig/2009

*Asclepias erosa*

Family: Asclepiadaceae or Apocynaceae

Comments: Regional endemic. It has been found in washes in far western Washington County. This taxon's primary range is in Arizona, California, and Nevada. It is threatened by grazing, development and ATV recreation. Trends are scored as "unknown".

Scored By/Date: J. Alexander/2014

Revisions: Moved from Low Priority to Medium Priority

*Asclepias hallii*

Family: Asclepiadaceae or Apocynaceae

Comments: Regional endemic. Only 9 specimens at BRY have been collected. It has been reported based mostly on single-specimen occurrences in Emery, Garfield, Grand, Kane, Morgan, Sevier, Uintah, Utah, and Washington Counties in Utah. This taxon's primary range is in Arizona, Colorado, New Mexico, and Nevada. Habitat Specificity is scored as "0" since the habitat does not seem unusual according to *A Utah* ("rocky slopes in sagebrush, mountain brush, pinyon-juniper, ponderosa pine, and aspen communities"). Threats and Trends are scored as "unknown" due to uncertainty of the types and magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys.

Scored By/Date: J. Alexander/2015

Revisions: Moved from Low priority to Medium Priority

*Asclepias involucreta*

Family: Asclepiadaceae or Apocynaceae

Comments: Peripheral. Although only 1 specimen at BRY has been collected, it has been collected 7 times in San Juan County in the vicinity of Lake Powell according to SEINet (*Gaines 962, 1 May 1957, MNA; Higgins 13299, 24 May 1983, DES, BRY?; Hodgson 9279, 19 June 1995, DES; Hodgson 9311, 20 June 1995, DES; Hill 101, 20 May 2003; ASC; Rink 9327, 19 May 2010; Goodwin 2330, 18 July 2010; ASC*). Some of these records may be misidentifications for *A. macrosperma*, which has been called *A. involucreta* var. *tomentosa* in older treatments. Specimens from other Utah counties are likely *A. macrosperma*, also.

Scored By/Date: J. Alexander/2015

*Asclepias rusbyi*

Family: Asclepiadaceae or Apocynaceae

Comments: Regional Endemic. Only 8 specimens at BRY have been collected. This taxon's primary range is in Arizona and Nevada. Habitat Specificity is scored as "0" since the habitat does not seem unusual according to *A Utah Flora* ("Sagebrush, oak brush, pinyon-juniper, mountain brush, and ponderosa pine communities").

UNPS Medium Priority List: Ranking Comments

The populations of this taxon are found in the pinyon-juniper zone and higher, which is becoming more heavily impacted by fires and grazing in Utah, especially in Washington County. Additionally, ATV recreational activities and grazing-related impacts may be increasing threats to this species. Trends are scored as "unknown".  
Scored By/Date: J. Alexander/2014  
Revisions: Moved from Low Priority to Medium Priority

*Sarcostemma cynanchoides* var. *hartwegii*  
Synonym: *Funastrum cynanchoides* ssp. *hartwegii*  
Family: Asclepiadaceae or Apocynaceae  
Comments: Peripheral. Only 12 specimens at BRY have been collected. It has been collected in Garfield, Kane, San Juan, and Washington Counties in Utah. This taxon's primary range is in Arizona, California, and New Mexico. Habitat Specificity is scored as "0" since the habitat is variable does not seem unusual according to A Utah ("Creosote bush, yucca, desert shrub, and hanging garden communities"). Threats and Trends are scored as "unknown".  
Scored By/Date: J. Alexander/2015  
Revisions: Moved from Low Priority to Medium Priority

*Asplenium adiantum-nigrum*  
Synonym: *Asplenium andrewsii*  
Family: Aspleniaceae or Polypodiaceae  
Comments: Disjunct. Scattered in western North America, otherwise found in Eurasia and Africa. Known from just 3-4 occurrences in Utah, all in Zion NP. Populations small, with 5-30 individuals, threats low, trend not known.  
Scored By/Date: Fertig/2010

*Asplenium trichomanes* ssp. *trichomanes*  
Family: Aspleniaceae or Polypodiaceae  
Comments: Peripheral. Reported by Welsh from rock outcrops and talus slopes at 3 sites in northern Utah, threats considered low, trends not known. Not included for Utah in Vol 2 of FNA in 1993 [Alexander 2015].  
Scored By/Date: UNPS Rare Plant Comm./2008

*Adenophyllum cooperi*  
Family: Asteraceae or Compositae  
Comments: Peripheral. Locally common in alluvial fans and small drainages in the Beaver Dam Wash sensu A Utah Flora. Threats to populations of this taxon have in the past been mainly due to grazing-related impacts, but has recently increased due to ATV recreation disturbance on the alluvial fans and desert washes in which this species inhabits. Trends are scored as "unknown"  
Scored By/Date: J. Alexander/2014

*Ageratina occidentalis*  
Synonym: *Eupatorium occidentale*  
Family: Asteraceae or Compositae  
Comments: Peripheral. Found in talus and rocky sites at few locations in northern Utah, threats probably low, trends not known.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Agoseris grandiflora*  
Family: Asteraceae or Compositae  
Comments: Peripheral. Only 2 specimens at BRY have been collected. It has been found in Cache and Tooele Counties in Utah. An additional collection of this taxon was made in Granite Canyon, Deep Creek Range, Juab County (*Maguire & Beecraft 2871*, 20 Jun 1933, UTC), however it was annotated as *Agoseris retrorsa* by G.N. Jones in 1953. It is doubtful that this taxon is a part of the Deep Creek Range flora. The Tooele voucher cited in A Utah Flora is not known, however, it may be misidentified also. This taxon's primary range is in the Pacific Northwest. Habitat does not seem unusual according to A Utah Flora. Threats to this taxon may be primarily from grazing-related impacts, but it scored as unknown due to uncertainty. Trends are scored as "unknown".  
Scored By/Date: J. Alexander/2014  
Revisions: Moved from Low Priority to Medium Priority

*Agoseris heterophylla*  
Family: Asteraceae or Compositae  
Comments: Sparse. Only 5 specimens at BRY have been collected. This taxon's primary range is in the Pacific Northwest and Arizona. Habitat does not seem unusual according to A Utah Flora ("Sagebrush-grass and mountain brush communities"). Threats to this taxon may be primarily from grazing-related impacts, but it scored as unknown due to uncertainty. Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys  
Scored By/Date: J. Alexander/2014  
Revisions: Moved from Low Priority to Medium Priority

*Agoseris retrorsa*  
Family: Asteraceae or Compositae  
Comments: Peripheral. Only 11 specimens at BRY have been collected. It has been found in Iron, Juab, Millard, Tooele, and Washington Counties in Utah. Its primary range is in the Arizona, California, the Pacific Northwest, and Nevada. Habitat does not seem unusual according to A Utah Flora ("Mixed desert shrub and pinyon-juniper communities"). Threats to this taxon may be primarily from grazing-related impacts, but it scored as unknown due to uncertainty. Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys.  
Scored By/Date: J. Alexander/2015  
Revisions: Moved from Low Priority to Medium Priority

*Ambrosia eriocentra*  
Family: Asteraceae or Compositae  
Comments: Regional Endemic. Locally common in Beaver Dam Wash area, but threatened by urban sprawl and recreation. Trend may be downward.  
Scored By/Date: J. Alexander/2009

UNPS Medium Priority List: Ranking Comments

*Amphipappus fremontii* var. *spinus*

Family: Asteraceae or Compositae

Comments: Regional Endemic. Locally common in alluvial fans and small drainages in the Beaver Dam Mts. Trend may be downward.

Scored By/Date: J. Alexander/2009

*Arnica fulgens*

Family: Asteraceae or Compositae

Comments: Peripheral. Only 12 specimens at BRY have been collected. It has been found in Daggett and Uintah Counties in Utah. Primary range is in the Rocky Mountains and Canada. Habitat Specificity scored a "0" since it does not seem unusual according to FNA ("Prairies and grasslands to montane conifer forests") but it may be a riparian meadow species according to A Utah Flora ("Seasonally moist meadows in ponderosa pine-big sagebrush"). Threats include riparian habitat modification and disturbance from the grazing-related impacts of cattle and naturalized mountain goats. Climate change is also a threat. Droughts and rapid snowmelt due to wind-blown sediments are melting snowpack earlier than normal in our region. These are the primary reasons for the upgrade of threats to a "1". Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys.

Scored By/Date: J. Alexander/2014

Revisions: Moved from Low Priority to Medium Priority

*Arnica sororia*

Family: Asteraceae or Compositae

Comments: Peripheral. Only 5 specimens at BRY have been collected. It has been found in Cache and Rich Counties in Utah. This taxon's primary range is in the Rocky Mountains and Canada. Habitat does not seem unusual according to A Utah Flora ("Meadows and foothills in sagebrush and aspen communities"). Threats to this taxon may be primarily from grazing-related impacts, but it scored as unknown due to uncertainty. Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys.

Scored By/Date: J. Alexander/2014

Revisions: Moved from Low Priority to Medium Priority

*Baccharis wrightii*

Family: Asteraceae or Compositae

Comments: Peripheral. Less than 5 occurrences, habitat relatively unspecialized, trends not known, may be threatened by disturbance of desert scrub and blackbrush habitats.

Scored By/Date: UNPS Rare Plant Comm./2008

*Bahia absinthifolia*

Family: Asteraceae or Compositae

Comments: Peripheral. New record for UT (Higgins in 2003), more info needed - is this truly native in St. George area?

Scored By/Date: Fertig/2009

*Bebbia juncea* var. *aspera*

Family: Asteraceae or Compositae

Comments: Regional Endemic. Locally common in alluvial fans and small drainages in Beaver Dam Wash and the Beaver Dam Mountains. Trend may be downward.

Scored By/Date: J.Alexander/2009

*Brickellia eupatorioides* var. *chlorolepis*

Synonym: *Kuhnia eupatorioides* var. *chlorolepis*

Family: Asteraceae or Compositae

Comments: Peripheral. Only 4 specimens at BRY have been collected all of which were collected in the Uinta Mountains in Uintah County. This taxon's primary range is in the Rocky Mountain, southwestern U.S. and Mexico. Habitat Specificity scored as "0" since the habitat is variable and does not seem unusual according to A Utah Flora ("Rabbitbrush, juniper, ponderosa pine, Gambel oak, bitterbrush, and sagebrush communities, intermittent stream courses, and on rock outcrops"). Threats to this taxon include grazing-related impacts from cattle and naturalized mountain goats. Climate change is also a threat. Droughts and rapid snowmelt due to wind-blown sediments are melting snowpack earlier than normal in our region. These are the primary reasons for the upgrade of threats to a "1". Trends "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys.

Scored By/Date: J. Alexander/2014

Revisions: Moved from Low Priority to Medium Priority

*Calycoseris parryi*

Family: Asteraceae or Compositae

Comments: Peripheral. Known from fewer than 5 populations in SW Utah, number of individuals presumed to be relatively low, habitat not specialized, may be threatened by development sprawl and off road recreation, but trends not known.

Scored By/Date: UNPS Rare Plant Comm./2008

*Calycoseris wrightii*

Family: Asteraceae or Compositae

Comments: Peripheral. Few populations in SW UT, abundance and trends not known, habitat unspecialized but potentially threatened by development and off road recreation.

Scored By/Date: UNPS Rare Plant Comm./2008

*Chrysothamnus scopulorum* var. *scopulorum*

Synonym: *Haplopappus scopulorum* (includes vars. *hirtellus* and *scopulorum*)

Family: Asteraceae or Compositae

Comments: Regional Endemic. The var. *hirtellus* recognized in A Utah Flora does not have a new combination in *Chrysothamnus*. It is recognized as a synonym of *C. scopulorum* in FNA. The treatment in FNA does not recognize varieties however the authors in a separate paper made the new combination for Welsh's var. *canonis* within *C. scopulorum*. This list is recommending to continue to recognize var. *canonis* since there is a valid



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combination within the currently recognized species. Additionally, the authors do not state in FNA reasons for not recognizing varieties in this species. However, it is not recommended to continue to recognize var. *hirtellus* as a separate variety. In the strict sense, var. *scopulorum* would be an endemic to the Zion Canyon region, however, with the inclusion of var. *hirtellus*, it can no longer be recognized as a local endemic.

Scored By/Date: J. Alexander/2014

Revisions: Scientific name changed

*Cirsium arizonicum* var. *bipinnatum*

Synonym: *Cirsium calcareum* var. *calcareum*

Family: Asteraceae or Compositae

Comments: Local Endemic. The plants called *C. calcareum* in Utah belong to the *C. arizonicum* complex according to FNA. The var. *bipinnatum* includes *C. calcareum* and *C. calcareum* var. *pulchellum* in synonymy. As such, the former *C. calcareum* var. *calcareum* is no longer an endemic to Utah and forms matching the type can also be found throughout the Colorado Plateau in Arizona, Colorado and New Mexico.

Scored By/Date: J. Alexander/2014

Revisions: Scientific name changed.

*Cirsium clavatum* var. *americanum*

Synonym: *Cirsium centaureae*

Family: Asteraceae or Compositae

Comments: Peripheral. This taxon is cited under two different taxa in A Utah Flora, one under *C. centaureae* and one under *C. clavatum*, as var. *americanum* (in the discussion text following the description). Apparently Welsh did not realize that FNA placed *C. centaureae* into synonymy with *C. clavatum*. No matter where the taxon is placed, nomenclaturally, this taxon is restricted in Utah to the Abajo Mountains, the Awapa Plateau, and the Markagunt Plateau in San Juan, Wayne, Sevier and Piute Counties. Even if one were to prioritize the taxonomy in A Utah Flora, the ranking would not change since the plant would still be considered a regional endemic and have a score of "1".

Scored By/Date: J. Alexander/2014

Revisions: Scientific name changed

*Cirsium clavatum* var. *markaguntense*

Family: Asteraceae or Compositae

Comments: Local Endemic. Taxonomic issues? Single collection from Cedar Canyon has glabrate, thin, toothed leaves. And was last observed in 1973. Immature plants of several *Cirsium* species can have this appearance—possibly this entity is based on a neotenic individual that flowered while retaining juvenile foliage? [Fertig 2009].

Only 1 specimen at BRY has been collected. The single specimen is also the type of this variety. It has only been collected in Iron County in Utah (Atwood & Higgins 5918, 18 Aug 1973, BRY). FNA places this specimen within *C. clavatum* var. *clavatum* and states: "The recently described *C. clavatum* var. *markaguntense* S. L. Welsh is a minor variant with subentire glabrous

leaves." Documenting this taxon's presence in Utah requires more collections.

Scored By/Date: J. Alexander/2015

*Cirsium eatonii* var. *murdockii*

Synonym: *Cirsium murdockii*

Family: Asteraceae or Compositae

Comments: Regional Endemic. Uinta Mts endemic, info needed on pop size, threats. Is it a habitat specialist? [UNPS 2008]. According to the description in A Utah Flora, this taxon is endemic to the Uinta Mountains. However, D.J. Keil in FNA has found that this taxon also occurs in the central Rocky Mountains in Colorado, Idaho, Montana, and Wyoming. Status changed to a Regional Endemic based on FNA. Although the original scoring comments suggested that there was some question whether this taxon was a edaphic endemic, habitat specificity was scored as a "1" without any explanation. The habitat in A Utah Flora does not state that this taxon is restricted to a specific type of substrate or rock formation. Since the habitat also appears to be variable and not specific in FNA ("Talus slopes, rocky subalpine and alpine ridges, openings in subalpine forests, subalpine meadows"), Habitat Specificity was rescored a "0". Threats to this taxon include grazing-related impacts from cattle and naturalized mountain goats. Climate change is also a threat. Droughts and rapid snowmelt due to wind-blown sediments are melting snowpack earlier than normal in our region. These are the primary reasons for the upgrade of the threats to this species to a "1". Trends are scored as "unknown".

Scored By/Date: UNPS Rare Plant Comm./2008

Revisions: Moved from Watch list to Medium Priority

*Cirsium pulcherrimum* var. *pulcherrimum*

Family: Asteraceae or Compositae

Comments: Peripheral. Only 11 specimens at BRY have been collected. It has been collected in Cache, Duchesne, Rich, Summit, and Uintah Counties in Utah. This taxon's primary range is in Wyoming. Habitat Specificity is scored as "0" since the habitat is variable does not seem unusual according to A Utah ("Sagebrush, mountain brush, aspen, and mixed conifer communities") and FNA ("Grasslands, sagebrush scrub, coniferous forest openings, roadsides, often in stony soil"). Threats and Trends are scored as "unknown" due to uncertainty of the types and magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys.

Scored By/Date: J. Alexander/2015

Revisions: Moved from Low Priority to Medium Priority

*Cirsium rydbergii*

Family: Asteraceae or Compositae

Comments: Regional Endemic. Borderline Local Endemic? Mostly in hanging gardens, populations tend to be small, threats probably low

Scored By/Date: UNPS Rare Plant Comm./2008

## UNPS Medium Priority List: Ranking Comments

*Dieteria asteroides* var. *glandulosum*

Synonym: *Machaeranthera asteroides* var. *glandulosa*

Family: Asteraceae or Compositae

Comments: Peripheral. Fewer than 10 collections in SW Utah, more common in N Arizona, populations intergrade somewhat with *Dieteria* [*Machaeranthera*] *canescens* var. *leucanthemifolia*. Abundance and trends not known.

Scored By/Date: UNPS Rare Plant Comm./2008

Revisions: Scientific name changed

*Encelia farinosa*

Family: Asteraceae or Compositae

Comments: Peripheral. Abundant species in Sonoran Desert below Mogollon Rim and in Mohave outside of Utah. Single Utah population—possibly escaped from cultivation in St. George vicinity?

Scored By/Date: UNPS Rare Plant Comm./2008

*Ericameria albida*

Synonym: *Chrysothamnus albidus*

Family: Asteraceae or Compositae

Comments: Regional Endemic. Only 10 specimens at BRY have been collected all of which were collected in the Great Basin of western Utah from Box Elder County south to Beaver County. This taxon's primary range is in Nevada. Habitat Specificity scored as "1" due to its status as a alkaline spring mound riparian species according to A Utah Flora ("salt grass, pickleweed, rabbitbrush, and alkali sacaton communities in fine-textured saline or alkaline substrates"). Threats scored as a "1" due to continuing threats of riparian habitat modification and disturbance from the grazing-related impacts of cattle and due to increasing threats from hay farming-related and municipal water pumping (i.e. Las Vegas Valley Water District) and pipeline activities in the Great Basin. Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys.

Scored By/Date: J.Alexander/2014

Revisions: Moved from Low Priority to Medium Priority

*Ericameria nauseosa* var. *bigelovii*

Synonym: *Chrysothamnus nauseosus* var. *bigelovii*

Family: Asteraceae or Compositae

Comments: Peripheral. Only 9 specimens at BRY have been collected. It has been collected in Emory, Garfield, and San Juan Counties. This taxon's primary range is in the Pacific Northwest and Arizona. Habitat Specificity was scored as "0" since the habitat does not seem unusual according to A Utah Flora ("*Grayia*, matchweed, pinyon-juniper communities, mainly on rim rock, or in crevices"). Further research may indicate this taxon being an edaphic endemic restricted to rim rock and rock crevices, but such a classification at this time is not warranted. Threats to this taxon may be primarily from grazing-related impacts, but it scored as unknown due to uncertainty. Trends are scored as "unknown" due to

uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys.

Scored By/Date: J. Alexander/2014

Revisions: Moved from Low Priority to Medium Priority

*Ericameria obovata*

Synonym: *Haplopappus watsonii* var. *rydbergii*

Family: Asteraceae or Compositae

Comments: Regional Endemic. Very similar to *Ericameria watsonii* (treated as two vars of same species in **Utah Flora 2008**), "*obovata*" is apparently the more common of the two in Utah. Abundance and trend not well known, restricted to limestone, sandstone and quartz rock outcrops.

Scored By/Date: UNPS Rare Plant Comm./2008

*Ericameria watsonii*

Synonym: *Haplopappus watsonii* var. *watsonii*

Family: Asteraceae or Compositae

Comments: Peripheral. The only record for Juab County (near Haystack Peak, Deep Creek Range, *Madsen & Parker 2722*, 24 Sept. 2005, UNM) was obtained by searching SEINet. It is only known from Millard and Beaver Counties in A Utah Flora. At least in the Deep Creek Range, this is one of several taxa that will be threatened by the proposed introduction of naturalized mountain goats by the State of Utah. Climate change is also a threat. Although the climate threats alone do not warrant changes, threats will be upgraded to "1" if the introductions proceed. Trends are scored as "unknown".

Scored By/Date: J. Alexander./2014

*Erigeron abajoensis*

Synonym: includes *Erigeron awapensis*

Family: Asteraceae or Compositae

Comments: Local endemic. *Erigeron awapensis*, also a local endemic, was lumped in Utah Flora (2008). Habitat not specific (sagebrush, pinyon-juniper), but range small. Abundance and trends not well documented.

Scored By/Date: UNPS Rare Plant Comm./2008

*Erigeron bloomeri* var. *bloomeri*

Family: Asteraceae or Compositae

Comments: Peripheral. Known from less than 5 populations, habitat general, threats and trends not well known.

Scored By/Date: UNPS Rare Plant Comm./2008

*Erigeron concinnus* var. *subglaber*

Synonym: *Erigeron zothecinus*, *E. pumilus* var. *subglaber*

Family: Asteraceae or Compositae

Comments: Regional Endemic. Welsh includes the basionym for Nesom's *E. concinnus* var. *subglaber* in the synonymy of his *E. zothecinus*. Therefore whether or not one recognizes this taxon at the species or varietal level, the taxon delimitations are the same in Utah.

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However, Welsh did not report specimens from outside Utah for *E. zothecinus* and it is not known whether he searched for specimens outside of Utah or he found specimens and considered them some other taxon. Nesom in FNA has determined that specimens from Arizona and Colorado as this taxon and placed them within the concept of var. *subglaber*. This re-ranks this taxon as a "regional endemic" and places it on the "medium" list instead of the "watch" list. Even if one recognizes this taxon at the species level as did Welsh, more research is needed before this taxon can be re-considered a local endemic. Morphologic characters have to be found that can distinguish between the Utah populations and populations in Colorado and Arizona also determined as var. *subglaber* by Nesom. This evidence currently does not exist.

Scored By/Date: J. Alexander/2014

Revisions: Moved from Watch List to Medium Priority

*Erigeron corymbosus*

Family: Asteraceae or Compositae

Comments: Peripheral. Only 7 specimens at BRY have been collected all of which were collected in the Rich County. Its primary range is in the Rocky Mountains, Pacific Northwest, and Canada. Habitat Specificity is scored as "0" since the habitat does not seem unusual according to A Utah Flora ("Sagebrush, rabbitbrush, grassland, and sparse juniper communities"). Threats may be primarily from grazing-related impacts, but it scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys.

Scored By/Date: UNPS Rare Plant Comm./2008

*Erigeron coulteri*

Family: Asteraceae or Compositae

Comments: Peripheral. Only 3 specimens at BRY have been collected, all of which were collected Wasatch Range and possibly the far western Uinta Mountains in Salt Lake, Utah and Summit Counties. Its primary range is in the Rocky Mountains and the Pacific Northwest. Habitat Specificity is scored as "0" since the habitat does not seem unusual according to A Utah Flora ("Aspen and spruce-fir communities"). Threats include grazing-related impacts from cattle and naturalized mountain goats. Climate change is also a threat. These are the primary reasons for the upgrade of the threats to this species to a "1". Trends are scored as "unknown".

Scored By/Date: UNPS Rare Plant Comm./2008

*Erigeron filifolus*

Family: Asteraceae or Compositae

Comments: Peripheral. One collection from Logan area is historical (*C.P. Smith 1737* from 1909). Also collected at mouth of Logan Canyon more recently (*Thompson 4*, 1981). Report from Daggett County cited in Welsh et al. (2008) is not in SEINet. A fourth report from Canaan Peak Road in Garfield County needs confirmation.

Abundance presumed to be low, but little info on threat or trends. Might be better treated as Need Data or Status Uncertain.

Scored By/Date: Fertig/2016

*Erigeron humilis*

Family: Asteraceae or Compositae

Comments: Peripheral. Only 3 specimens at BRY have been collected in Utah. This species is known from the La Sal Mountains in Grand and San Juan Counties. It has been reported in A Utah Flora from the Tushar Mountains, however it was not listed in Taye (1995; Alpine Vascular Flora of the Tushar Mountains, Utah). Its primary range is in the Rocky Mountains and Canada. Habitat Specificity re-scored a "0". Although this is an alpine species, its habitat is variable and does not appear to be an edaphic endemic or live in an otherwise specialized habitat sensu FNA ("Arctic and alpine tundra, snowbed slopes, pond and stream margins, boulder ridges in streambeds, heaths, ledges, dry gravelly slopes"). Threats include grazing-related impacts from cattle and naturalized mountain goats. Climate change is also a threat. These are the primary reasons for the upgrade of the threats to this species to a "1". Trends are scored as "unknown".

Scored By/Date: UNPS Rare Plant Comm./2008

*Erigeron pumilus* var. *intermedius*

Synonym: *Erigeron pumilus* var. *gracillior*

Family: Asteraceae or Compositae

Comments: Peripheral. Reported from several counties in northern Utah by Cronquist, but few specimens have been identified as this variety at BYU or other herbaria. Little data on abundance (assumed low) or threats and trends. Probably better treated as Need Data or Status Uncertain.

Scored By/Date: Fertig/2016

*Eriophyllum lanatum* var. *integrifolium*

Family: Asteraceae or Compositae

Comments: Peripheral. Only 3 specimens at BRY have been collected, all of which were collected in foothills of mountains in Box Elder County. Its primary range is in the Rocky Mountains, Pacific Northwest, and Canada. Habitat Specificity is scored as "0" since the habitat does not seem unusual according to A Utah Flora ("Sagebrush-juniper community"). Threats may be primarily from grazing-related impacts, but it scored as "unknown" due to uncertainty. Trends are unknown.

Scored By/Date: UNPS Rare Plant Comm./2008

*Eurybia integrifolia*

Synonym: *Aster integrifolius*

Family: Asteraceae or Compositae

Comments: Peripheral. Only 13 specimens at BRY have been collected. It has been found in Box Elder, Cache, Rich, Salt Lake, Sevier, Summit and Wasatch Counties in Utah. Habitat Specificity scored as "0" since the habitat does not seem unusual according to A Utah Flora

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("Meadows and moist woods in sedge-willow, sagebrush, Douglas fir, and spruce communities") and is variable in FNA ("Drier meadows, open, moist woodlands, in sedge-willow, sagebrush, Douglas fir, and spruce communities"). Threats may be primarily from grazing-related impacts, but it scored as "unknown". Trends scored as "unknown".

Scored By/Date: UNPS Rare Plant Comm./2008

*Gaillardia arizonica*

Family: Asteraceae or Compositae

Comments: Peripheral. Cited by Welsh et al. (2008) as "rare" from Beaver Dam slope in Washington County, where known from 3 collections. Habitat is Joshua tree-blackbrush-creosote bush (scored as 0). Trends unknown.

Scored By/Date: UNPS Rare Plant Comm./2008

*Gaillardia flava*

Family: Asteraceae or Compositae

Comments: Local Endemic. Known from about 20 locations in small area north of Green River. Riparian species of limited range in central Utah along the Desolation and Price rivers, often on Mesa Verde Formation (habitat specificity perhaps should be 1 instead of 0). Threats and trends unknown.

Scored By/Date: UNPS Rare Plant Comm./2008

*Glyptopleura setulosa*

Family: Asteraceae or Compositae

Comments: Regional Endemic. Uncommon in alluvial fans in Washington Co. Trend may be downward due to impacts of current and future construction, recreational, and grazing disturbance in this area.

Scored By/Date: J. Alexander/2009

*Grindelia arizonica*

Synonym: *Grindelia laciniata*

Family: Asteraceae or Compositae

Comments: Regional Endemic. Found mostly on roadsides and edges of fields in San Juan County. Type of *G. laciniata* collected by Rydberg and Garrett (9692, NY) from E of Monticello. May be a native weedy species. Threats and trends scored as unknown.

Scored By/Date: UNPS Rare Plant Comm./2008

Revisions: Scientific name changed.

*Gutierrezia petradoria*

Synonym: *Xanthocephalum petradoria*

Family: Asteraceae or Compositae

Comments: Local Endemic. Found in mountain brush and forest communities on quartzite in the Pavant and Canyon ranges. Threats low, trends not known.

Scored By/Date: UNPS Rare Plant Comm./2008

*Helianthus anomalus*

Family: Asteraceae or Compositae

Comments: Regional Endemic. This taxon is endemic to the Colorado Plateau and it occurs in Utah in Emery, Garfield, Grand, Kane, San Juan, and Wayne Counties. Number of populations and number of individuals scored as "0" since the species is relatively common on wet years in sandy habitats. This species is more common than the other hybrid sunflower in Utah, *H. deserticola*. Habitat Specificity scored as "1" since it is restricted to sand dune habitats. Intrinsic Rarity scored as a "1" due to the unique origins of this ancient hybrid species. This and other hybrid sunflowers will not in our current climate conditions arise again naturally since the factors leading to the hybridization events are no longer present (Pleistocene glaciation cycles and buffalo migrations). Due to grazing-related impacts, the subsequent invasion of exotic weeds, and the increased ATV disturbance in quaternary dune fields and sandy areas across the Colorado Plateau, threats are scored as a "1" Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys.

Scored By/Date: J. Alexander/2014

*Helianthus deserticolus*

Synonym: Included in *Helianthus anomalus* by some authors

Family: Asteraceae or Compositae

Comments: Regional Endemic. "the geographically disparate populations have a high degree of interfertility, especially compared to interspecific crosses, indicating that *H. deserticola* is a "good" species. The species likely originated between  $170000 \pm 12000$  and  $63000 \pm 11000$  years before present, and thus its inception likely preceded human disturbance and was the result of hybridization events in the wild [between Pleistocene populations of *H. annuus* and *H. petiolaris*]. Unfortunately, it is impossible to say which of the diploid hybrid sunflowers came first, as the other studies yield similar dates: the estimated origin of *H. anomalus* is between 144000 and 116000 years before present, while *H. paradoxus* likely originated between 208000 and 78000 years ago. However, note that the estimated dates place the origin of all three hybrid species after the colonization of North America by bison approximately 200,000 years BP. Bison are considered to be the primary dispersal agent for sunflower and may have brought the parental species into contact and created the habitat disturbances that appear to facilitate hybridization between them. The patterns of genetic variation within *H. deserticola*, when compared with the parental species, have two potential explanations, neither of which appears to be superior. It is possible that there was a single origin for the species, followed by cytoplasmic and nuclear introgression with different populations of the parental species. It is also possible that *H. deserticola* originated from up to three unique hybrid speciation events and that the present day populations are the

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Result of parallel selection pressure and a coordinate response based on a common genetic starting point." (Gross et al. 2003, Am. J. Bot. 90: 1708-1719). Despite the assertions of Welsh and other taxonomists who have synonymized this species into *H. anomalus*, ample evidence has been published that this taxon is a separate species genetically and evolutionarily than the other hybrid sunflowers and either parental species. It is recognized at the species level herein. This taxon is endemic to the southern Great Basin and Mojave Desert and it occurs in Utah in Juab, Millard, Tooele and Washington Counties. Number of populations and number of individuals scored as "0" since the species is relatively common on wet years in sandy habitats. More complete surveys of this species in Utah may indicate that this plant is more rare than is currently assumed. Habitat Specificity scored as "1" since it is restricted to sand dune habitats. Intrinsic rarity scored as a "1" due to the unique origins of this ancient hybrid species. This and other hybrid sunflowers will not in our current climate arise again naturally since the factors leading to the hybridization events are no longer present (Pleistocene glaciation cycles and buffalo migrations). Due to grazing-related impacts, the subsequent invasion of exotic weeds, and the increased ATV disturbance in Quaternary dune fields and sandy areas across the Great Basin and Mojave Desert, threats are scored as a "1" Trends are scored as "unknown".

Scored By/Date: UNPS Rare Plant Comm./2008

Revisions: New to Medium Priority list

*Helianthus pumilus*

Family: Asteraceae or Compositae

Comments: Disjunct. Only 1 specimen at BRY has been collected. It has been found in Kane County (Seaman Wash loop road, 1.25 mi e of Petrified Hollow Wash, T43S, R4W, s12, 24 Jun 2003, *W. Fertig 20563*). This taxon's primary range is in Colorado and Wyoming. Habitat Specificity scored as "0" since the habitat does not seem unusual according to FNA ("Dry, rocky soil in open areas"). The one voucher from Utah was collected "sandy clay derived from Moenkopi Formation", but this species does not seem to be an edaphically restricted species. It is apparently not restricted to this habitat type in other parts of its range according to the description in FNA. Threats to this taxon may be primarily from grazing-related impacts and ATV disturbance, but it is scored as "unknown" due to uncertainty. Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys.

Scored By/Date: J. Alexander/2014

Revisions: New to Medium Priority list

*Hieracium fendleri*

Family: Asteraceae or Compositae

Comments: Peripheral. Only 5 specimens at BRY have been collected. It has been found in the vicinity of the Pine Valley Mountains in Washington County and

recently in Zion National Park. This taxon's primary range is in the Rocky Mountains, southwestern U.S. and Mexico. Habitat Specificity scored as "0" since the habitat does not seem unusual according to A Utah Flora. However the descriptions in FNA and A Utah Flora suggest this may be a mesic species that sometimes associated with streams, springs, or meadows. Trends are unknown. Threats may be primarily from grazing-related impacts, development, riparian disturbance, and ATV recreation, but it is scored as "unknown".

Scored By/Date: J. Alexander/2014

*Hulsea heterochroma*

Family: Asteraceae or Compositae

Comments: Peripheral. In Utah, known only from the Beaver Dam Mountains in pinyon-juniper, oak, and scrub communities. Habitat specificity low, threats considered high, trends not known.

Scored By/Date: UNPS Rare Plant Comm./2008

*Hymenopappus filifolius* var. *eriopodus*

Family: Asteraceae or Compositae

Comments: Regional Endemic. White-flowered phase with bulbous stem bases from SW Utah (more common to west), population size and trends not known.

Scored By/Date: UNPS Rare Plant Comm./2008

*Hymenoxys subintegra*

Family: Asteraceae or Compositae

Comments: Regional Endemic. Locally common on Kaibab Plateau in northern Arizona, where it appears to be unthreatened by grazing or recreation. Known from just two reports in central Utah (where disjunct in Sanpete County) and Washington County. Threats & trends not known.

Scored By/Date: UNPS Rare Plant Comm./2008

*Ionactis alpina*

Synonym: *Aster scopulorum*

Family: Asteraceae or Compositae

Comments: Peripheral. Only 10 specimens at BRY have been collected, all of which were collected in foothills of mountains in Box Elder County. Its primary range is in the Rocky Mountains, Pacific Northwest, and Canada. Habitat Specificity is scored as "0", since the habitat does not seem unusual according to A Utah Flora ("Sagebrush, juniper, and mountain brush communities"). Threats may be primarily from grazing-related impacts, but it scored as unknown due to uncertainty. Trends are scored as "unknown"

Scored By/Date: J. Alexander/2014

Revisions: Scientific name changed

*Logfia filaginoides*

Synonym: *Filago californica*

Family: Asteraceae or Compositae

Comments: Peripheral. Only 5 specimens at BRY have been collected, all of which were collected deserts in San Juan and Washington Counties. Its primary range is in

## UNPS Medium Priority List: Ranking Comments

California, Arizona, and Mexico. Habitat Specificity is scored as "0" since the habitat does not seem unusual according to A Utah Flora ("Joshua tree, blackbrush, and other warm desert shrubs"). Threats in San Juan county may be primarily from grazing-related and ATV recreation impacts, but in Washington County threats have increased due to development and ATV recreation disturbance on the alluvial fans and desert valleys in which this species inhabits. Trends are scored as "unknown"

Scored By/Date: J. Alexander/2014

Revisions: Scientific name changed

*Lorandersonia baileyi*

Synonym: *Chrysothamnus pulchellus* var. *baileyi*, *Eri-cameria pulchella*

Family: Asteraceae or Compositae

Comments: Peripheral. Known from 4 collections from E Utah; not a habitat specialist, abundance low, threats and trends not known.

Scored By/Date: UNPS Rare Plant Comm./2008

Revisions: Scientific name changed

*Madia gracilis*

Family: Asteraceae or Compositae

Comments: Peripheral. Two records from northern Utah in openings in montane brush communities. Threats and trends not known.

Scored By/Date: UNPS Rare Plant Comm./2008

*Malacothrix coulteri*

Family: Asteraceae or Compositae

Comments: Peripheral. One historic herbarium collection, observed by Fertig in 2005 at state line in area infested by annual weeds, vulnerable to wildfire. Trends may be downward - more information needed.

Scored By/Date: Fertig & Alexander/2009

*Malacothrix stebbinsii*

Synonym: *Malacothrix clevelandii* var. *stebbinsii*

Family: Asteraceae or Compositae

Comments: Peripheral. Rare in Washington Co. More info needed on population trend. Small populations found in Zion Canyon in Zion NP along busy trails to Emerald Pools [Fertig 2011].

Scored By/Date: J. Alexander/2009

Revisions: Scientific name changed

*Monoptilon bellidiforme*

Family: Asteraceae or Compositae

Comments: Peripheral. Early flowering desert annual that may not be present or common in dry years. Number of individuals and trends not known.

Scored By/Date: UNPS Rare Plant Comm./2008

*Nothocalais troximoides*

Synonym: *Microseris troximoides*

Family: Asteraceae or Compositae

Comments: Peripheral. Known from 2 collections in

northern Utah in sagebrush communities (habitat specificity = 0), threats and trends poorly known.

Scored By/Date: UNPS Rare Plant Comm./2008

Revisions: Scientific name changed

*Palafoxia arida*

Family: Asteraceae or Compositae

Comments: Peripheral. Only 11 specimens at BRY have been collected, all of which were found in Washington County. Its primary range is in California, Arizona, and Mexico. Habitat Specificity is scored as "0" since the habitat does not seem unusual according to A Utah Flora ("Old man sagebrush, dropseed, creosote bush, burro bush, blackbrush, and ambrosia communities, often in sand"). Threats have increased due to residential-highway development and ATV recreation disturbance on the alluvial fans and desert valleys in which this species inhabits. Trends are scored as "unknown". Relocation of populations have not been attempted recently to determine how many are threatened by development.

Scored By/Date: J. Alexander/2014

*Parthenium incanum*

Family: Asteraceae or Compositae

Comments: Peripheral. Found in limestone cliffs in desert shrub communities of SW Washington County in Utah (habitat specificity might warrant a score of 1 instead of 0); number of individuals and trend is not known. Threatened by wildfire from abundant cheat-grass.

Scored By/Date: Fertig/2010

*Parthenium ligulatum*

Synonym: *Parthenium alpinum* var. *ligulatum*, *Bo-lophyta ligulata*

Family: Asteraceae or Compositae

Comments: Regional Endemic. Found on calcareous and gypsiferous outcrops in desert shrub and grass communities of eastern Utah and adjacent Colorado. Related species have been used for natural rubber production. Threats probably low. Abundance and trends poorly known.

Scored By/Date: Fertig/2010

*Perityle stansburyi*

Synonym: *Perityle stansburyana*

Family: Asteraceae or Compositae

Comments: Regional Endemic. Found on limestone and dolomite outcrops in Great Basin of western Utah. May be threatened by development of solar power farms in area. Abundance and trends not known.

Scored By/Date: UNPS Rare Plant Comm./2008

*Platyschkuhria integrifolia* var. *ourolepis*

Synonym: *Bahia nudicaulis* var. *ourolepis*

Family: Asteraceae or Compositae

Comments: Regional Endemic. Found in saltbush and desert shrub communities in E Utah (Habitat specificity scored 0). Abundance and trends not known, may be

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threatened by grazing and mineral development.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Porophyllum gracile*

Family: Asteraceae or Compositae  
Comments: Peripheral. Uncommon in alluvial fans in Utah. Not included for Utah in FNA. Only 2 collections cited by Welsh et al. (2008). Habitat specificity scored as low, trends unknown.  
Scored By/Date: J. Alexander/2009

*Psathyrotes pilifera*

Family: Asteraceae or Compositae  
Comments: Regional Endemic. Usually on gypsum-rich soils of Moenkopi, Chinle, or Cutler formations. Abundance and trends not known. Threats scored as low, but might be impacted by gypsum mining or trampling associated with off-road vehicles.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Pseudognaphalium thermale*

Synonym: *Gnaphalium microcephalum* var. *thermale*  
Family: Asteraceae or Compositae  
Comments: Peripheral. Known from a single collection in northern Utah. Elsewhere, this species is frequently associated with geothermal features (habitat not known in Utah and scored 0, though perhaps unknown would be more appropriate). Threats and trends not known.  
Scored By/Date: Fertig/2011  
Revisions: Scientific name changed

*Pyrrocoma crocea* var. *crocea*

Synonym: *Haplopappus croceus*  
Family: Asteraceae or Compositae  
Comments: Regional Endemic. Only 3 specimens at BRY have been collected. It has been found in the La Sal Mountains in Utah. Its primary range is in the Rocky Mountains. Threats to this taxon include grazing-related impacts from cattle and naturalized mountain goats. Climate change is also a threat. Droughts and rapid snowmelt due to wind-blown sediments are melting snowpack earlier than normal in our region. These are the primary reasons for the upgrade of threats to a "1". Trends are scored as "unknown".  
Scored By/Date: J. Alexander/2014  
Revisions: Scientific name changed

*Pyrrocoma hirta*

Synonym: *Haplopappus hirtus*  
Family: Asteraceae or Compositae  
Comments: Peripheral. Found in wet meadows. Known from 4 collections in Utah (Welsh et al. 2008). Threats and trends not well known.  
Scored By/Date: UNPS Rare Plant Comm./2008  
Revisions: Scientific name changed

*Rafinesquia californica*

Family: Asteraceae or Compositae  
Comments: Peripheral. Known only from Cedar Pockets area on alluvial fans. May be threatened by impacts from habitat loss and recreation in Washington Co area.  
Scored By/Date: J. Alexander/2009

*Senecio bigelovii* var. *hallii*

Synonym: *Ligularia bigelovii* var. *hallii*  
Family: Asteraceae or Compositae  
Comments: Regional Endemic. Only 8 specimens at BRY have been collected. It has been found in the La Sal Mountains and the Abajo Mountains in Utah. Primary range is in the Rocky Mountains. Habitat Specificity was scored as "0" since the habitat does not seem unusual according to A Utah Flora ("Mountain brush, ponderosa pine, aspen, and spruce-fir communities"). Threats are high in the La Sal Mountains, but it is not known if that holds true throughout this species' range in Utah. Threats include grazing-related impacts from cattle and naturalized mountain goats. Climate change is also a threat. These are the primary reasons for upgrading threats to "1". Trends scored as "unknown".  
Scored By/Date: J. Alexander/2014

*Senecio pudicus*

Family: Asteraceae or Compositae  
Comments: Regional Endemic. Only 14 specimens at BRY have been collected, all of which were from Daggett, Carbon, Duchesne, and Garfield Counties. This taxon's primary range is in the Rocky Mountains. Habitat Specificity was scored as "0" since the habitat does not seem unusual based on the description in A Utah Flora ("Rocky, damp or drying hillsides, often coniferous and aspen woodlands"). At least in the Uinta Mountains, threats to this taxon include grazing-related impacts from cattle and naturalized mountain goats. It is not known if that holds true throughout this species' range in Utah. Climate change is also a threat. These are the primary reasons for the upgrade of threats to a "1". Trends are scored as "unknown".  
Scored By/Date: J. Alexander/2014

*Solidago mollis*

Family: Asteraceae or Compositae  
Comments: Disjunct. No specimens at BRY have been collected of this taxon. It is reported for Utah in A Utah Flora from a specimen collected in the Monte Cristo Range near Birch Creek Reservoir in Rich County (*Holmgren 15850*, 01 Aug 2008, UTC, NY; data from SEINet). The data cited in A Utah Flora is incomplete and the date "13 Oct 2008" is incorrect. Primary range is in the Great Plains. Habitat Specificity scored as "0" since the habitat does not seem unusual according to FNA ("Dry or drying prairies, open woods, along fence rows"). Threats may be primarily from grazing-related impacts, but it scored as "unknown". Trends are scored as "unknown".  
Scored By/Date: J. Alexander/2015

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*Sphaeromeria capitata*

Synonym: *Tanacetum capitatum*

Family: Asteraceae or Compositae

Comments: Disjunct. The majority of Utah specimens come from Claron Formation outcrops in Garfield County at an elevation greater than 2300 m. Trends not known, but threats probably low.

Scored By/Date: UNPS Rare Plant Comm./2008

*Stephanomeria parryi*

Family: Asteraceae or Compositae

Comments: **Peripheral. Type locality is from "near St. George"** (*Parry 132*, GH, in 1874), but it has been collected infrequently since in Kane, Washington, and possibly Wayne counties (*Holmgren et al. 2126*, NY collection on SEINet), most recently in 2003. Habitat apparently general, population size low, trends not known, but may be downward, threats scored as 1.

Scored By/Date: UNPS Rare Plant Comm./2008

*Stylocline intertexta*

Family: Asteraceae or Compositae

Comments: Regional Endemic. Known from one collection by Beaver Dam Well (*Neese 13026* BRY) in 1983. Habitat creosote bush-Joshua tree community (scored 0), may be threatened by off-road vehicle recreation and wildfire. Trends not known.

Scored By/Date: UNPS Rare Plant Comm./2008

*Stylocline psilocarphoides*

Family: Asteraceae or Compositae

Comments: Peripheral. Known from at least 4 collections in various desert community types in Washington County. Threatened by competition from exotic annual and increased wildfire frequency. Abundance and trends not known.

Scored By/Date: UNPS Rare Plant Comm./2008

*Tetradymia axillaris*

Family: Asteraceae or Compositae

Comments: Peripheral. Populations generally all very small. Trend may be downward in St. George area.

Scored By/Date: J. Alexander/2009

*Tetraneuris acaulis* var. *nana*

Synonym: *Hymenoxys acaulis* var. *nana*

Family: Asteraceae or Compositae

Comments: Regional Endemic. Treated by Cronquist in Intermountain Flora in a broader sense to include dwarf, caespitose forms (often separated as var. *caespitosa*, a more widespread taxon). In strict sense, var. *nana* is restricted to central Utah in the San Rafael Swell and vicinity. Often on rock outcrops of Navajo Sandstone or Carmel Formation. Abundance and trends not known.

Scored By/Date: UNPS Rare Plant Comm./2008

Revisions: Scientific name changed

*Thelesperma megapotamicum*

Family: Asteraceae or Compositae

Comments: Peripheral. Only 10 specimens at BRY have been collected of this taxon. It has been found in Washington and San Juan Counties in Utah. In Washington County, it is restricted to the Lava Point area of Zion National Park. Primary range is in the Great Plains. Habitat Specificity scored as "0" since the habitat is variable and does not seem unusual according to A Utah Flora ("Desert shrub, ponderosa pine-manzanita, and riparian... communities") and FNA ("Disturbed places on sands or clays, oak/juniper woodlands, desert scrub, yellow-pine forests"). Threats may be primarily from grazing-related impacts, but it scored as "unknown" due to uncertainty. Trends are scored as "unknown".

Scored By/Date: J. Alexander/2015

*Thelesperma subnudum* var. *alpinum*

Synonym: *Thelesperma windhamii*

Family: Asteraceae or Compositae

Comments: Local Endemic. Eleven collections cited in Utah Flora (2008), mostly on Carmel limestone and Navajo & Entrada sandstones, only known from Wayne County in the Teasdale-Bicknell area. Trends unknown. Trends probably low, but should be investigated.

**This species may warrant "watch" status.**

Scored By/Date: UNPS Rare Plant Comm./2008; W. Fertig/2016

*Townsendia scapigera*

Family: Asteraceae or Compositae

Comments: Peripheral. Found in sagebrush and alpine habitats, known from 2 UT collections (Welsh et al. 2008), threats and trends not known.

Scored By/Date: UNPS Rare Plant Comm./2008

*Xanthisma spinulosum* var. *gooddingii*

Synonym: *Haplopappus spinulosus* var. *gooddingii*,

*Machaeranthera spinulosa* ssp. *gooddingii*

Family: Asteraceae or Compositae

Comments: Peripheral. Four collections cited by Welsh et al. (2008), found in Mojave desert scrub communities and pinyon-juniper in Washington and Kane counties, threats and trends unknown.

Scored By/Date: UNPS Rare Plant Comm./2008

Revisions: Scientific name changed

*Xylorhiza glabriuscula* var. *glabriuscula*

Synonym: *Machaeranthera glabriuscula*

Family: Asteraceae or Compositae

Comments: Peripheral. Found in badland clay communities associated with Mancos Shale; two collections cited from Utah, more common to east in SW Wyoming. Populations small but trends not known.

Scored By/Date: UNPS Rare Plant Comm./2008



UNPS Medium Priority List: Ranking Comments

*Ostrya knowltonii*

Family: Betulaceae

Comments: Regional Endemic. Populations tend to be small. Largely restricted to slickrock hanging gardens or shady canyons, threats probably low.

Scored By/Date: Fertig/2009

*Cryptantha angustifolia*

Family: Boraginaceae

Comments: Peripheral. Only 2 specimens at BRY have been collected. It has been found in Kane and Washington County in Utah. The primary range is in Arizona, California, and Nevada. It is threatened by grazing, development and ATV recreation. Trends are scored as "unknown. It may be more common than reported due to being overlooked by botanists.

Scored By/Date: J. Alexander/2014

*Cryptantha breviflora*

Family: Boraginaceae

Comments: Regional Endemic. Known from ca 45 main sites in the Uinta Basin, mostly restricted to Morrison and Duchesne River formations, may be threatened by mineral exploration and development, trends not known. (Number of populations may need to be revised to 0).

Scored By/Date: Fertig/2010

*Cryptantha caespitosa*

Family: Boraginaceae

Comments: Regional Endemic. Only 12 specimens at BRY have been collected, all of which were collected in Daggett and Rich Counties. The primary distribution is reported to be in southern Wyoming. Threats may be primarily from grazing-related impacts, but it scored as unknown due to uncertainty. Trends are scored as "unknown"

Scored By/Date: J. Alexander/2014

*Cryptantha capitata*

Family: Boraginaceae

Comments: Regional Endemic. Only 11 specimens at BRY have been collected. It has been found in Garfield, Kane, San Juan, and Wayne Counties in Utah. Primary range is in Arizona. Habitat Specificity is scored as "0" since the habitat does not seem unusual according to A Utah Flora ("Sandy to loamy soils in pinyon-juniper, sagebrush, and mountain brush communities"). Threats may be primarily from ATV and grazing-related impacts, but it scored as "unknown" due to uncertainty. Trends are scored as "unknown" .

Scored By/Date: J. Alexander/2015

*Cryptantha cinerea* var. *abortiva*

Family: Boraginaceae

Comments: Peripheral. Only 11 specimens at BRY have been collected. It has been found in Beaver, Iron and Washington Counties in Utah. Primary range is in Nevada and California. Habitat Specificity is scored as "0"

since the habitat does not seem unusual according to A Utah Flora (" Rocky or gravelly slopes and ridges in sagebrush, and pinyon-juniper communities"). Threats may be primarily from grazing-related impacts, but it scored as "unknown" due to uncertainty. Trends are unknown.

Scored By/Date: J. Alexander/2015

*Cryptantha cinerea* var. *arenicola*

Family: Boraginaceae

Comments: Regional Endemic. Borderline local endemic. Strange, "hairy fruit" phase occasionally found NW of Kanab. Navajo sand dune endemic, populations often small, scattered, threats probably low except for ATV recreation.

Scored By/Date: Fertig/2009

*Cryptantha dumetorum*

Family: Boraginaceae

Comments: Peripheral. Welsh et al. (2008) report 6 collections from Creosote bush-Joshua tree-blackbrush communities in Washington County, threats high from competition with exotic annuals to increased wildfire, trends not known.

Scored By/Date: UNPS Rare Plant Comm./2008

*Cryptantha inaequata*

Synonym: included in *C. angustifolia* by some authors

Family: Boraginaceae

Comments: Peripheral. Only 5 specimens at BRY have been collected. It has been found in San Juan, Kane and Washington Counties in Utah. Primary range is in Arizona, California, and Nevada. It is threatened by grazing, development and ATV recreation. Trends scored "unknown". It may be more common than reported due to being overlooked by botanists.

Scored By/Date: J. Alexander/2014

Revisions: New to Medium Priority List

*Cryptantha interrupta*

Family: Boraginaceae

Comments: Regional Endemic. Found on white tuffaceous outcrops in 6 main areas in Grouse Creek range and vicinity of NW Utah; abundance and trends poorly known.

Scored By/Date: UNPS Rare Plant Comm./2008

*Cryptantha longiflora*

Family: Boraginaceae

Comments: Regional Endemic. Found in salt desert shrub habitats in central Utah and adjacent western Colorado. Threats and trends not known. On Entrada sands and Mancos shale (habitat specificity perhaps should change to high).

Scored By/Date: UNPS Rare Plant Comm./2008

## UNPS Medium Priority List: Ranking Comments

*Cryptantha paradoxa*

Family: Boraginaceae

Comments: Regional Endemic. 40 specimens at BRY have been collected. It has been found in Duchesne, Emery, and Uintah Counties in Utah. Its primary range is in Colorado and New Mexico. Habitat Specificity is scored as "0" since the habitat does not seem unusual according to A Utah Flora ("Salt desert shrub, mixed desert shrub, sagebrush, and pinyon-juniper communities"). Threats may be primarily from ATV and grazing-related impacts, but scored as "unknown" due to uncertainty. Trends "unknown"

Scored By/Date: J. Alexander/2014

*Cryptantha scoparia*

Family: Boraginaceae

Comments: Peripheral. Only 3 specimens at BRY have been collected, all of which were collected in Box Elder, Tooele, and Weber Counties. The primary distribution is reported to be in Pacific Northwest. It may be more common than reported due to being overlooked by botanists. Threats may be primarily from grazing-related impacts, but it scored as unknown. Trends are scored as "unknown".

Scored By/Date: J. Alexander/2014

*Cryptantha spiculifera*

Family: Boraginaceae

Comments: Peripheral. Cited from a single specimen in Box Elder County by Welsh et al.: (2008), but additional records known from as far south as the Deep Creek and Transverse ranges in Tooele and Utah counties (in SEINet). Can be difficult to distinguish from other perennial species. Threats and trends unknown.

Scored By/Date: UNPS Rare Plant Comm./2009

*Cryptantha virginensis*

Family: Boraginaceae

Comments: Regional Endemic. Mostly in Virgin River drainage in SW Utah (with one outlier reported from Garfield Co), habitat not specialized, abundance and trends not well known.

Scored By/Date: UNPS Rare Plant Comm./2008

*Mertensia lanceolata* var. *coriacea*

Synonym: included in *Mertensia viridis* by some authors

Family: Boraginaceae

Comments: Regional Endemic. Only 11 specimens at BRY have been collected. It has been found in Daggett, Summit, and Uintah Counties in Utah. Primary range is in Colorado and Wyoming. This taxon was considered a synonym of a *Mertensia viridis* in IMF. It may be a lower elevation form of that species and not a separate variety. Welsh recognizes the alpine variant of this taxon as *M. lanceolata* var. *nivalis*, with *M. viridis* as a synonym. Other authors have also agreed with A Utah Flora's delimitation. There appears to be widespread taxonomic disagreement between authors where the limits of *M.*

*lanceolata*, *M. oblongifolia*, and *M. viridis* lie, specifically within which species various subtaxa belong. Habitat Specificity is scored as "0" since the habitat does not seem unusual according to A Utah Flora ("In open sites in sagebrush, pinyon-juniper, mountain mahogany, mountain shrub, and ponderosa pine communities"). Threats may be primarily from ATV and grazing-related impacts, but it scored as "unknown". Trends are scored as "unknown".

Scored By/Date: J. Alexander/2015

Revisions: New to Medium Priority list

*Plagiobothrys jonesii*

Family: Boraginaceae

Comments: Peripheral. Only 16 specimens at BRY have been collected, all of which were collected in San Juan and Washington Counties. The primary distribution is reported to be in Arizona, California, and Nevada. The populations in Washington County are in desert habitats that are becoming significantly degraded by development, recreational ATV use, target shooting, and grazing. Trends are scored as "unknown", but it is likely downward.

Scored By/Date: J. Alexander/2014

*Plagiobothrys tenellus*

Family: Boraginaceae

Comments: Peripheral. Only 11 specimens at BRY have been collected, all of which were collected in Kane, Salt Lake, and Washington Counties. Primary distribution is reported to be in Arizona, California, and Nevada. The populations of this taxon are found in the sagebrush and Pinyon-Juniper Zones upward. Threats include increased disturbance due to fires, recreational ATV use, target shooting, and grazing. In addition, the populations in Salt Lake and Washington County may be impacted by residential-highway developments in the foothills. Trends are scored as "unknown".

Scored By/Date: J. Alexander/2014

*Tiquilia canescens*

Family: Boraginaceae

Comments: Peripheral. Relatively common on limestone outcrops in the Beaver Dam Mountains vicinity, but potentially threatened by recreation and urban growth and with a downward trend.

Scored By/Date: J. Alexander/2009

*Athysanus pusillus*

Family: Brassicaceae or Cruciferae

Comments: Peripheral. Only 1 specimen at BRY has been collected. It has been found in Washington County. Its primary range is in the southwestern United States. Habitat Specificity is scored as "0" since the habitat does not seem unusual according to A Utah Flora ("Creosote bush-blackbrush community") and FNA ("open grassy slopes, grassy glades in woodlands, chaparral, sandy and gravelly flats, flood plains, rock outcrops, cliffs and ledges, on limestone, serpentine, sandstone, granitic

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and basaltic substrates"). Threats in Washington County have increased due to development and ATV recreation disturbance on the alluvial fans and desert valleys in which this species inhabits. Trends are scored as "unknown" but is likely downward.  
Scored By/Date: J. Alexander/2014

*Boecheera thompsonii*

Synonym: *Arabis thompsonii*

Family: Brassicaceae or Cruciferae

Comments: Regional Endemic. A single southeastern Utah specimen from San Juan County was the basis for Welsh's (2003) *Arabis thompsonii*. Holmgren (2005) did not find any other specimens that match the type and Windham & Al-Shehbaz (2006a) synonymized it within their expanded concept of *B. pallidifolia*. Since neither Welsh (2003) nor Holmgren (2005) recognized *B. pallidifolia* from Utah, it cannot be deduced whether or not these two authors agree with Windham & Al-Shehbaz's expanded species delimitation. Recent molecular studies by Windham (see below) show that *B. pallidifolia* is an apomictic diploid hybrid between *B. crandallii* and *B. thompsonii* and is not found in Utah. Instead, populations from Utah called *B. pallidifolia* in FNA and most called *B. selbyi* in A Utah Flora and IMF are now considered *B. thompsonii*. Number of Individuals rescored to "0" based on Windham's comments. Habitat Specificity rescored from "unknown" to "0", since it has been reported to be the most common *Boecheera* species in eastern Utah. Range was changed from Local Endemic to Regional Endemic at the suggestion of Windham based on its expanded distribution. It is not currently known if this taxon is found outside of Utah. Formal publication of a revised delimitation of *B. thompsonii* by Windham may require additional changes to this ranking. It may in the future be re-ranked as a 3 or lower and placed on the "Excluded" list. Microsatellite studies indicate that *Boecheera pallidifolia* is an apomictic diploid hybrid between *B. crandallii* and *B. thompsonii*, thus the latter needs to be recognized as a separate species. Most of the Utah plants formerly called *B. selbyi* belong here and thus this taxon is one of the most common *Boecheera* species in the Colorado Plateau portion of the state. It has been documented for 8 additional counties (Carbon, Daggett, Duchesne, Emery, Garfield, Grand, Kane, and Uintah) [Windham Mar 2015].

Scored By/Date: J. Alexander & M. Windham/2015

Revisions: Scientific name changed. Moved from Status Uncertain to Medium Priority.

*Caulanthus cooperi*

Family: Brassicaceae or Cruciferae

Comments: Peripheral. Only 16 specimens at BRY have been collected. It has only been collected in Washington County. Its primary range is in California and Arizona. Habitat Specificity scored as "0" since the habitat does not seem unusual according to A Utah Flora. Trends are unknown. Threats may be primarily from grazing-

related impacts, but it is scored as "unknown".  
Scored By/Date: J. Alexander/2014

*Caulanthus major*

Synonym: *Caulanthus crassicaulis* var. *major*

Family: Brassicaceae or Cruciferae

Comments: Peripheral. Only 16 specimens at BRY have been collected. It has been collected in Emery, Garfield, Kane, and San Juan Counties. Primary range is in E California, Nevada, and SE Oregon. Habitat Specificity scored as "0" since the habitat does not seem unusual according to A Utah Flora. Trends are unknown. Threats may be primarily from grazing-related impacts, but it is scored as "unknown".

Scored By/Date: UNPS Rare Plant Comm./2008

Revisions: Scientific name changed

*Caulanthus pilosus*

Family: Brassicaceae or Cruciferae

Comments: Peripheral. Only 15 specimens at BRY have been collected. It has been collected in Beaver, Millard, and Tooele Counties This taxon's primary range is in the Great Basin and Pacific Northwest. Habitat Specificity scored as "0" since the habitat does not seem unusual according to A Utah Flora. Trends are unknown. Threats may be primarily from grazing-related impacts, but it is scored as "unknown" due to uncertainty.

Scored By/Date: J. Alexander/2014

*Cusickiella douglasii*

Synonym: *Draba douglasii* var. *douglasii*

Family: Brassicaceae or Cruciferae

Comments: Peripheral. Only 2 specimens at BRY have been collected (*Goodrich & Atwood 17127, 1982; Thorne & Thorne 10899, 1994*). This species has only been found in the vicinity of the Grouse Creek Mountains in Box Elder County. Its primary range is in the Pacific Northwest. Habitat Specificity scored as "0" since the habitat is does not seem unusual according to A Utah Flora ("Windswept ridge crests and in spruce-fir community") and variable in FNA ("Scree, serpentine ridges, red barren hillsides, rocky ridges, loose volcanic hillsides"). Threats may include habitat disturbance due to grazing-related impacts, but it is scored as "unknown" due to uncertainty. Climate change could also a threat. Trends are scored as "unknown".

Scored By/Date: J. Alexander/2014

Revisions: Scientific name changed

*Descurainia paradisica*

Synonym: *Descurainia pinnata* var. *paradisica*

Family: Brassicaceae or Cruciferae

Comments: Regional Endemic. This species is not reported for Utah in FNA. It is likely that the FNA authors missed the Utah Specimens. Only 2 specimens at BRY have been collected. It is known only from Box Elder County in Utah (*Thorne 10587, 5 Jun 1993, BRY; Dixon 847, 11 Jun 1997, BRY*). This taxon's primary distribution is in California, Nevada, and Oregon.

## UNPS Medium Priority List: Ranking Comments

Scored By/Date: J. Alexander/2015

Revisions: Scientific name changed

*Draba abajoensis*

Synonym: *Draba spectabilis*, misapplied

Family: Brassicaceae or Cruciferae

Comments: Regional Endemic. Described in 2007, known from the La Sal and Abajo mountains in SE UT and adjacent AZ and NM. Information needed on abundance, threats, and trend [UNPS 2008].

From FNA: "plants of *Draba abajoensis* were treated by C. L. Hitchcock (1941), R. C. Rollins (1993), and N. H. Holmgren (2005b) as *D. spectabilis*. The differences between these taxa in chromosome number and trichome morphology strongly support their recognition as separate species (I. A. Al-Shehbaz and M. D. Windham 2007)." *Draba spectabilis* is not found in Utah, therefore all of the specimens at BRY considered this species by Welsh (a total of 29) are *D. abajoensis*. Habitat Specificity scored as "0" since the habitat is variable and does not seem unusual according to FNA ("Talus, rocky hillsides, meadows in open conifer forests, aspen groves, and alpine communities"). It does not appear to be a rare plant with small populations and it has been collected numerous times. Threats are high in at least the La Sal Mountains, but it is not known if that holds true throughout this species' range in Utah. Threats include grazing-related impacts from cattle and naturalized mountain goats. Climate change is also a threat. These are the primary reasons for the upgrade of threats to a "1". Trends are scored "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys.

Scored By/Date: J. Alexander/2014

Revisions: Scientific name changed

*Draba brachystylis*

Family: Brassicaceae or Cruciferae

Comments: Regional Endemic. Only 7 specimen at BRY have been collected in Utah. It is known from the Uinta Mountains (Duchesne Co.), Sanpitch Mountains (Jubb Co.), Deep Creek Range (Jubb Co.), and the Wasatch Mountains (Cache, Salt Lake and Utah Cos.). Although it has been long reported for Nevada (since 1941 by Cronquist) and recently collected in the Spring Mountains (Clark Co.; *Niles 6037*, RENO, UNLV) and the Pilot Peak (Elko Co.; *Tiehm 10737*, NY) in Nevada, FNA states that this taxon is endemic to Utah. FNA does not report this taxon for Nevada. It is not known what species the authors determined the Nevada material to be. Although this suggests that the taxon is a local endemic, the status of a regional endemic is retained until this taxonomic discrepancy is resolved. Threats include grazing-related impacts from cattle and naturalized mountain goats. In the Deep Creek Range, this is one of several taxa that may be threatened by the proposed introduction of naturalized mountain goats by the State of Utah. Climate change is also a threat. These are the primary reasons for the upgrade of threats to a "1". Trends are unknown.

Scored By/Date: J. Alexander/2015

*Draba fladnizensis*

Family: Brassicaceae or Cruciferae

Comments: Peripheral. A taxon not included in previous versions of the UNPS Rare Plant list, but its apparent rarity in Utah warrants further research. Only 7 specimens at BRY have been collected. This species has been found in the Tushar Mountains, La Sal Mountains, and Wasatch Plateau in Beaver, Duchesne, Grand, San Juan, Sanpete Counties. It is reported but not confirmed from the Uinta Mountains in Daggett or Uintah County. It is a circumpolar species found in Canada and Europe and the Rocky Mountains. Habitat Specificity scored a "0". Although this is an alpine tundra species, it does not appear to be an edaphic endemic or live in an otherwise specialized habitat sensu A Utah Flora and FNA. Threats are high in at least the Uinta, Tushar and La Sal Mountains, but it is not known if that holds true throughout this species' range in Utah. In the Deep Creek Range, this is one of several taxa that may be threatened by the proposed introduction of naturalized mountain goats by the State of Utah. Climate change is also a threat. These are the primary reasons for the upgrade of the threats to this species to a "1". Trends are scored as "unknown".

Scored By/Date: J. Alexander/2014

*Draba incerta*

Family: Brassicaceae or Cruciferae

Comments: Peripheral. Only 3 specimens at BRY have been collected. This species has been found in the Raft River Mountains and the Wasatch Range in Box Elder, Cache, and Utah Counties. It has recently been documented in Salt Lake County by Windham, although the data for this record is unknown. Its primary range is in the Rocky Mountains, Alaska, and Canada. Habitat Specificity scored a "0" Although this is an alpine tundra species, it does not appear to be an edaphic endemic or live in an otherwise specialized habitat sensu A Utah Flora and FNA. Threats scored as "unknown". Climate change may be a threat. Droughts and rapid snowmelt due to wind-blown sediments are melting snowpack earlier than normal in our region. Trends are scored as "unknown" [Alexander Mar 2015]; Specimens now known from Salt Lake County [Windham Mar 2015].

Scored By/Date: J. Alexander & M. Windham/2015

*Draba novolympica*

Synonym: *Draba paysonii* var. *treleasii*

Family: Brassicaceae or Cruciferae

Comments: Peripheral. Although no specimens at BRY have been reported, a specimen from the Deep Creek Range, Juab County, Utah has been determined as this taxon (*Holmgren & Windham 12419*, 19 July 1995, Deep Creek Range, Indian Farm Creek drainage, NY, UTC). It is a regional endemic that is also found in similar habitats in Nevada and Colorado. In the Deep Creek Range, this is one of several taxa that may be threatened by the proposed introduction of naturalized mountain goats by the State of Utah. Climate change is also a threat. Although the climate threats alone do not warrant

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changes, threats will be upgraded to "1" if the introductions proceed. Trends are scored as "unknown".

Scored By/Date: J. Alexander/2015

Revisions: Scientific name changed

*Draba pedicellata*

Family: Brassicaceae or Cruciferae

Comments: Regional Endemic. In FNA, this taxon was reported from rock outcrops, talus, steep gravel slopes in pinyon-juniper, mixed conifer, and subalpine meadow communities. N. H. Holmgren (2005b) divided *D. pedicellata* into two varieties: var. *pedicellata*, which has been found on limestone throughout the species range, and var. *wheelerensis*, which has been found on non-calcareous substrates in White Pine County." This might suggest that the two varieties of this taxon are edaphic endemics, however, Jim Harris at UVSC has identified specimens of var. *pedicellata* from the Schell Creek Range in quartzite substrates. This suggests that the varietal delimitations by Holmgren may not hold up under further taxonomic scrutiny. It is for this reason and other morphological evidence that Windham does not recognize varieties in this taxon in FNA. Habitat Specificity is kept scored as "0" based on these data. This taxon has a very limited range in Utah based on specimens collected by Jim Harris at UVSC. It has only been collected in Goshute Canyon in the Deep Creek Range, Tooele County (*Harris 3145, 4075, 4096, 4098; Harris & Harris 3334, 3357, 4105; Harris et al. 4205a, 4205b*). Based on these data, Number of Individuals is rescored to "1". At least in the Deep Creek Range, this is one of several taxa that may be threatened by the proposed introduction of naturalized mountain goats by the State of Utah. Climate change is also a threat. Although the climate threats alone do not warrant changes, threats will be upgraded to "1" if the introductions proceed. Trends are scored as "unknown"

Scored By/Date: J. Alexander/2014

Revisions: Moved from Need Data to Medium Priority

*Draba pennellii*

Family: Brassicaceae or Cruciferae

Comments: Regional Endemic. In FNA this taxon was reported from "rock outcrops and talus slopes in pinyon-juniper, sagebrush, mountain shrub, and mixed conifer communities. *Draba pennellii* is known from White Pine County in east-central Nevada." However, specimens at UVSC collected by Jim Harris in the Deep Creek Range extend the range of this taxon into neighboring Juab County, Utah (Birch Creek Canyon, *Harris 4897, Harris 4925, Harris 4932*). Based on these data, Number of Individuals is rescored to "1". At least in the Deep Creek Range, this is one of several taxa that may be threatened by the proposed introduction of naturalized mountain goats by the State of Utah. Climate change is also a threat. Although the climate threats alone do not warrant changes, threats will be upgraded to "1" if the introductions proceed. Trends are scored as "unknown" These changes re-rank this taxon to the "Medium" list.

Scored By/Date: J. Alexander/2014

Revisions: Moved from Need Data to Medium Priority

*Draba zionensis*

Synonym: *Draba asprella* var. *zionensis*

Family: Brassicaceae or Cruciferae

Comments: Local Endemic, mostly on Navajo Sandstone. Sensus FNA, "Rollins (1993) treated *Draba zionensis* as a variety of *D. asprella*, but its true relationships appear to lie with two other southern Utah endemics, *D. sobolifera* and *D. subalpina*. *Draba zionensis* is easily distinguished from *D. subalpina* by having orange-yellow (versus white) petals, and from *D. asprella* and *D. sobolifera* by its glabrous (versus pubescent) pedicels and stems distally. Nearly all populations of the species are found in and around Zion National Park in southwestern Utah (Iron, Kane, and Washington counties). A specimen supposedly from the Deep Creek Mountains (Juab County) may be mislabeled." Molecular research in the genus may continue to support the assertion that this species is not closely related to *D. asprella*.

Scored By/Date: J. Alexander/2014

Revisions: Scientific name changed

*Lepidium alyssoides*

Synonym: *Lepidium alyssoides* var. *junceum*

Family: Brassicaceae or Cruciferae

Comments: Regional Endemic. Sensus FNA, "Of the five varieties of *Lepidium alyssoides* recognized by R. C. Rollins (1993), one (var. *mexicanum* Rollins) is a short-tufted form of the species restricted to Mexico that does not seem to merit recognition, another (var. *junceum*) is a glabrescent form of the type variety, a third (var. *eastwoodiae*) is treated below as a distinct species, and the fourth (var. *angustifolium*) is included here within *L. alyssoides*." Taxon kept as a regional endemic based the FNA treatment. The scoring remains the same whether or not varieties are recognized. This is the only other variety of this taxon listed in A Utah Flora besides *L. eastwoodiae*. If the variety is recognized as in other studies, then it should be rescored.

Scored By/Date: J. Alexander/2014

Revisions: Scientific name changed.

*Lepidium dictyotum*

Family: Brassicaceae or Cruciferae

Comments: **Peripheral. "Evidently rare in Utah" according to Welsh et al. (2008).** Found in greasewood communities. Known from 2 collections in Utah, both from Salt Lake area, last observed in 1971. Trends scored 0 but probably downward.

Scored By/Date: UNPS Rare Plant Comm./2008

*Phoenocaulis cheiranthoides*

Family: Brassicaceae or Cruciferae

Comments: Peripheral. This taxon was reported for **Utah in A Utah Flora and IMF "reported for "n.w. Utah" in Int. Fl. 2B: 397. 2005, but no specimens are cited and I have seen none from the state" This taxon is also reported for Utah in FNA. There is only a single specimen**

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from Utah of this species in SEINet (*Windham & Allphin 3361*, 04 May 2005, NNE of Etna on isolated peak south of Dry Creek Basin, NMC). This species seems to be restricted to the Grouse Creek Mountain in Box Elder County. It may also be found in the Raft River Mountains. Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population surveys.  
Scored By/Date: J. Alexander/2014

*Physaria acutifolia* var. *stylosa*

Family: Brassicaceae or Cruciferae  
Comments: Local Endemic. See also comments for var. *repanda* and var. *purpurea*. Although this is recognized as a synonym of *P. acutifolia* in FNA, it seems reasonable to keep each of the varieties of *P. acutifolia* recognized by Welsh as separate entities until a more conclusive study is performed.  
Scored By/Date: J. Alexander/2014

*Physaria cordiformis*

Synonym: *Lesquerella kingii* var. *cordiformis*  
Family: Brassicaceae or Cruciferae  
Comments: Regional Endemic. Limited to the Grose Creek Valley in sagebrush and juniper communities, associated with volcanic ash. Few populations, abundance presumed to be low, but threats and trends not well known.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Physaria fendleri*

Family: Brassicaceae or Cruciferae  
Comments: Peripheral. Only 12 specimens at BRY have been collected. It has been found San Juan County. This taxon's primary range is in the Southwestern United States and Mexico. Habitat Specificity is scored as "0" since the habitat does not seem unusual according to A Utah Flora ("Shadscale, blackbrush, and juniper communities"). Threats may be primarily from grazing-related and ATV recreation impacts, but it is scored as "unknown" due to uncertainty. Trends "unknown".  
Scored By/Date: J. Alexander/2014

*Physaria lepidota* var. *lepidota*

Synonym: included in *Physaria chambersii* var. *membranacea*, by some authors  
Family: Brassicaceae or Cruciferae  
Comments: Local Endemic. As with the character Welsh uses to split two varieties of *P. chambersii*, it is possible that the characteristics used to separate the two varieties of *P. lepidota* are genetic and not just phenotypic changes due to the environment. It seems reasonable to keep each of the varieties of *P. lepidota* recognized by FNA as separate entities until a more conclusive study is performed.  
Scored By/Date: J. Alexander/2014  
Revisions: Scientific name changed

*Physaria lepidota* var. *membranacea*

Synonym: *Physaria chambersii* var. *membranacea*  
Family: Brassicaceae or Cruciferae  
Comments: Local Endemic. See comments above for *P. lepidota* var. *lepidota*. [Alexander 2014]. Surveys in burned Carmel Formation ridges in Zion found this species to be locally common and unaffected by recent wildfires.  
Scored By/Date: J. Alexander/2014; Fertig /2016  
Revisions: Scientific name changed

*Physaria multiceps*

Synonym: *Lesquerella multiceps*  
Family: Brassicaceae or Cruciferae  
Comments: Peripheral. Only 9 specimens at BRY have been collected of this taxon. It has been found in Cache, Davis, Rich, and Weber Counties in Utah. In Utah, this species is restricted to the northern Wasatch Range. Its primary range is in the Idaho and Wyoming (it is considered rare in WY too, where it occurs on calcareous desert ridges). Habitat Specificity scored as "0" since the habitat is variable and does not seem unusual according to A Utah Flora ("Desert shrub, ponderosa pine –manzanita, and riparian... communities") and FNA ("Douglas-fir or spruce woodlands, limestone ridges, damp open slopes, soil pockets among rocks, crevices of rocks, decomposed calcareous rocks"). Threats may be primarily from grazing-related impacts, but it scored as "unknown". Trends are scored as "unknown".  
Scored By/Date: J. Alexander/2015

*Physaria prostrata*

Synonym: *Lesquerella prostrata*  
Family: Brassicaceae or Cruciferae  
Comments: Peripheral. Only 6 specimens at BRY have been collected. It has been found in Rich County in Utah. This taxon's primary range is in Idaho and Wyoming. Habitat Specificity is re-scored from a "1" to a "0" since the habitat does not seem unusual according to A Utah Flora (sagebrush, grass, and juniper communities) and FNA (whitish sand and small rocks on steep slopes, dry hillsides, windswept knolls, shaley slopes, sometimes found on igneous substrates). It was considered by Fertig in the original scoring to be an edaphic endemic based on habitat where it is found in Wyoming. A broader interpretation based on FNA has been used herein. Threats may be primarily from grazing-related impacts, but it is scored as "unknown" due to uncertainty. Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population surveys.  
Scored By/Date: J. Alexander/2014

*Physaria rubicundula* var. *rubicundula*

Synonym: *Lesquerella rubicundula*  
Family: Brassicaceae or Cruciferae  
Comments: Local Endemic. Locally common on Claron Formation in SW Utah, threats probably low  
Scored By/Date: UNPS Rare Plant Comm./2008

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*Thelypodium integrifolium* ssp. *complanatum*

Family: Brassicaceae or Cruciferae

Comments: Peripheral. Only 16 specimens at BRY have been collected. This taxon's primary range is in California, Nevada and Oregon. Habitat Specificity scored as "0" since the habitat does not seem unusual according to FNA (Alkaline areas, desert shrub communities, canyons). Threats may be primarily from grazing-related impacts, but it scored as "unknown". Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys.

Scored By/Date: J. Alexander/2014

*Thelypodium milleflorum*

Family: Brassicaceae or Cruciferae

Comments: Peripheral. One population noted in Welsh et al. (2008). Only record in SEINet is from 1960 and was collected in a pinyon-juniper site (soil not described). Better information needed on current status (abundance, threats, trends) - may be better suited for Need Data list.

Scored By/Date: Fertig/2016

*Thelypodium wrightii*

Family: Brassicaceae or Cruciferae

Comments: Peripheral. Found in Bigtooth maple, oak-brush, and Douglas-fir communities (habitat specificity = 0), information lacking on threats and trends. Closely related to *T. laxiflorum* and older literature confuses the ranges of the two.

Scored By/Date: UNPS Rare Plant Comm./2008

*Transberingia bursifolia* ssp. *virgata*

Synonym: *Halimolobos virgata*

Family: Brassicaceae or Cruciferae

Comments: Peripheral. Only 2 specimens at BRY have been collected. This taxon's primary range is in the Rocky Mountains, Pacific Northwest and Canada. Habitat Specificity scored as "0" since the habitat does not seem unusual according to FNA (Alkaline flats, plains, meadows, brushy hillsides, alpine areas, foothills, mountain slopes, ridges, dry knolls, grassy areas). Threats may be primarily from grazing-related impacts, but it scored as "unknown" due to uncertainty. Trends are scored as "unknown".

Scored By/Date: J. Alexander/2014

Revisions: Scientific name changed

*Coryphantha vivipara* var. *deserti*

Synonym: *Escobaria vivipara* var. *deserti*, *Coryphantha chlorantha*

Family: Cactaceae

Comments: Regional Endemic. Few populations, habitat generalist, some threats from over-collection. Trend data lacking. Can be difficult to distinguish from other *Coryphantha* taxa without flowers.

Scored By/Date: Fertig/2009

*Coryphantha vivipara* var. *vivipara*

Synonym: *Escobaria vivipara* var. *vivipara*

Family: Cactaceae

Comments: Peripheral. Few populations, habitat generalist, some threats from overcollection. True status in Utah needs to be determined. Welsh et al. (2008) note just 2 counties and collections, but at least 5 recorded in SEINet from a wider area of the state.

Scored By/Date: Fertig/2009

*Cylindropuntia acanthocarpa* var. *acanthocarpa*

Synonym: *Opuntia acanthocarpa* var. *acanthocarpa*

Family: Cactaceae

Comments: Regional Endemic. Difficult to distinguish varieties, information needed on population size, trends.

Scored By/Date: J. Alexander 2009.

Revisions: Scientific name changed

*Cylindropuntia acanthocarpa* var. *coloradensis*

Synonym: *Opuntia acanthocarpa* var. *coloradensis*

Family: Cactaceae

Comments: Peripheral. Difficult to distinguish varieties, information needed on population size, trends.

Scored By/Date: J. Alexander 2009.

Revisions: Scientific name changed

*Opuntia aurea*

Synonym: *Opuntia erinacea* var. *aurea*

Family: Cactaceae

Comments: Regional Endemic. Often common within small range, many sites being impacted by subdivision, trampling, recreation, and possible impact from over-harvest by cactus collectors. This species readily hybridizes with other *Opuntia* taxa in Washington and Kane counties, complicating efforts to assess its abundance and distribution. In the past it has also been confused with other spineless or nearly spineless *Opuntia* species, such as *O. basilaris* and *O. pinkavae*.

Scored By/Date: Fertig/2009

Revisions: Scientific name changed

*Opuntia basilaris* var. *basilaris*

Family: Cactaceae

Comments: Regional Endemic. Locally common in limestone canyons and slopes, & alluvial fans in the Beaver Dam Mountains area. It has often been confused with spineless forms of *Opuntia erinacea*. Trends may be downward.

Scored By/Date: J. Alexander/2009

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*Opuntia basilaris* var. *heilii*

Family: Cactaceae

Comments: Local Endemic. Sensu the 2012 Segó lily article by Dorde Woodruff, "It is rare because of its restricted distribution in certain places within a polygon only 24 by 29 miles across. In the photo above (a low bench between the north end of the Henry Mountains and the Fremont River) plants are especially large and numerous. They are also abundant on the south end of **the Factory Butte road. Heil's beavertail cactus is confined to sandy - clay or clayey - sand substrates. It is often on mesas and benches, but also sometimes on hillsides that are not too steep. Distribution stretches from the very southwest corner of the San Rafael Swell to the benches on the north side of the Henry Mountains and from just outside Hanksville to the west side of North Caineville Reef, with an outlier in eastern Cathedral Valley.**"

Scored By/Date: J. Alexander/2014

*Opuntia basilaris* var. *longiareolata*

Family: Cactaceae

Comments: Regional Endemic. Sensu the 2012 Segó lily article by Dorde, "**The closest relative of Heil's beavertail cactus is var. *longiareolata* which grows in Grand Canyon, Marble Canyon, lower Glen Canyon below the dam, and Cataract Canyon. It is reasonable to speculate that var. *longiareolata* came up the Dirty Devil in a favorable time and could have crossed with the upland dry-fruited *Opuntias* to become more hardy when the climate changed. Var. *longiareolata* mostly grows in narrow river canyons. It was only reported once (in 1938, as *O. brachyclada*, a different member of the *Basilares*) from the more open part of Glen Canyon, where it must have largely died out.**"

Scored By/Date: J. Alexander/2014

*Opuntia chlorotica*

Family: Cactaceae

Comments: Peripheral. Locally common in canyons and slopes in the Beaver Dam Mountains, Pine Valley Mountains and in Zion Canyon. Trends may be downward - more information needed.

Scored By/Date: J. Alexander/2009

*Opuntia x curvispina*

Synonym: *Opuntia littoralis* var. *martiniana*

Family: Cactaceae

Comments: Regional Endemic. Sensu FNA, "*Opuntia x curvispina* is a nothospecies resulting from hybridization of *O. chlorotica* and *O. phaeacantha*. B. D. Parfitt (1980) separated the tetraploid *Opuntia martiniana* (L. D. Benson) B. D. Parfitt [*O. littoralis* Engelm. var. *martiniana* (L. D. Benson) L. D. Benson] from *O. x curvispina* on the basis of having style obovoid (widest at or above the middle) versus ovoid (widest near the base) and other differences, often overlapping, such as more yellow spines, fewer areoles per stem segment, and size differences of fruit. Because both are tetraploid pu-

hybrids, grow in proximity, and share many character states, I am reluctant to separate them until more evidence is obtained."

Scored By/Date: J. Alexander/2014

Revisions: Scientific name changed

*Opuntia engelmannii* var. *engelmannii*

Synonym: *Opuntia phaeacantha* var. *discata*

Family: Cactaceae

Comments: Peripheral. Distribution and abundance in Utah is difficult to determine because of confusion over taxonomy and tendency of populations to hybridize with related pricklypear species, especially in vicinity of Zion NP. **Perhaps better treated as "Need Data" due to basic questions over abundance, distribution, and trends.**

Scored By/Date: UNPS Rare Plant Comm./2008

Revisions: Scientific name changed

*Opuntia phaeacantha* var. *castorea*

Family: Cactaceae

Comments: Local Endemic. Described in 2003, only known from type locality?, several unknowns - especially habitat specificity. Rare cacti sought after by collectors, = high threat. Trend probably downward.

Scored By/Date: J. Alexander/2009

*Opuntia phaeacantha* var. *phaeacantha*

Synonym: includes var. *major*

Family: Cactaceae

Comments: Peripheral. If considered in the broader sense (as including var. *major*) this taxon is more widespread and common in Utah than previously reported for var. *phaeacantha* alone. Better information needed on number of occurrences, abundance, and trends.

Scored By/Date: Fertig/2016

*Opuntia pinkavae*

Synonym: *Opuntia erinacea* var. *woodburyi*, *Opuntia basilaris* var. *woodburyi*

Family: Cactaceae

Comments: Regional Endemic. Sensu FNA, "The name *O. pinkavae* replaces *Opuntia basilaris* var. *woodburyi* W. Earle" From the type publication in *Rhodora* 99:223 it has been collected two times in Washington County (Warner Valley [SE of St. George]. T43S R14 S7. *Gierisch* 5049 BRY; 16 mi SSW of Hurricane on Fort Pierce Wash. Earle s.n., ASU). From the type publication: "Plants of *Opuntia pinkavae* in the Warner Valley of Washington County, southwestern Utah, are often spineless or nearly so and pink-flowered.. **Plants in that population share a greater number of morphological characters with *O. pinkavae* than with *O. basilaris*. Furthermore, *O. basilaris* is diploid.. and Warner Valley plants are octoploid.. The Warner Valley plants are a robust somewhat tuberculate-stemmed form of *O. pinkavae*." This taxon does not sound like an edaphic endemic since "the species occurs from the arid grasslands to the margins of pinyon-juniper woodlands. It is also found to persist in grasslands that have been**



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damaged by excessive grazing and subsequent erosion. **The substrate is usually fine, red sand; much less often it is limestone-derived loam.** It was reported by the author to be common in NW Arizona and extreme SW Utah. Only 2 specimens at BRY have been reported for this taxon in A Utah Flora from Washington and Kane Counties. Wendy Hodgson has collected this taxon in Kane County (East of Kanab, East Eight Mile Gap Road, 25155 DES, 25156 DES). Number of populations is re-scored as "1". These changes re-rank this taxon to the "Medium" list.

Scored By/Date: J. Alexander/2015

*Opuntia polyacantha* var. *nicholii*

Synonym: *Opuntia nicholii*

Family: Cactaceae

Comments: Regional Endemic. Welsh et al. (2008) note 3 collections from SE Utah, including the type from the Glen Canyon area. Appears to be a habitat generalist. Better information needed on trends.

Scored By/Date: UNPS Rare Plant Comm./2008

Revisions: Scientific name changed

*Sclerocactus whipplei*

Synonym: *Sclerocactus whipplei* var. *roseus*

Family: Cactaceae

Comments: Regional Endemic. Widely distributed across central and southern Utah (141 collections noted by Welsh et al. 2008), suggesting that number of populations should be changed to low (0). Abundance considered low. Threats potentially high from over-collecting by cactus enthusiasts and impacts from beetle predation and grazing. Trends may be downward

Scored By/Date: UNPS Rare Plant Comm./2008

*Campanula uniflora*

Family: Campanulaceae

Comments: Peripheral. Only 17 specimens at BRY have been collected. It has been found in the Uinta Mountains, and La Sal Mountains in Utah. It is a circumboreal species that has been found in the Rocky Mountains, Canada and Eurasia. Threats include grazing-related impacts from cattle and naturalized mountain goats. Climate change is also a threat. These are the primary reasons for the upgrade of threats to a "1". Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys.

Scored By/Date: J. Alexander/2014

*Nemacladus longiflorus* var. *breviflorus*

Family: Campanulaceae

Comments: Disjunct. Cryptic species, easily overlooked, juniper sand dune habitat may be specialized, may be threatened by proliferation of roads in habitat

Scored By/Date: Fertig/2009

*Symphoricarpos occidentalis*

Family: Caprifoliaceae

Comments: Peripheral. Only 10 specimens at BRY have been collected. It has been found in Daggett, Duchesne, and Uintah Counties. Specimens have been identified from Cache, Weber, Summit, Utah, and Wasatch Counties, but they are typically misidentified specimens of *S. oreophilus*. Specimens are often misidentified since flowering state is needed for definitive ID and many specimens of *Symphoricarpos* are collected in the vegetative or fruiting stage. This taxon's primary range is in the Rocky Mountains and Canada. Threats are high in at least the Uinta Mountains, but it is not known if that holds true throughout this species' range in Utah. Threats to this taxon include riparian habitat modification and disturbance from the grazing-related impacts of cattle and naturalized mountain goats. Climate change is also a threat. Droughts and rapid snowmelt due to wind-blown sediments are melting snowpack earlier than normal in our region. These are the primary reasons for the upgrade of the threats to this species to a "1". Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys.

Scored By/Date: J. Alexander/2014

*Achyronychia cooperi*

Family: Caryophyllaceae

Comments: Peripheral. Known from a single collection in Utah; population size assumed to be low, threats high from competition with annual weeds and increased risk of wildfire; trends not known.

Scored By/Date: UNPS Rare Plant Comm./2008

*Eremogone aculeata*

Synonym: *Arenaria fendleri* var. *aculeata*

Family: Caryophyllaceae

Comments: Peripheral. Only 8 specimens at BRY have been collected, all of which were collected in foothills of mountains in Box Elder County. Its primary range is in the Pacific Northwest and Canada. Habitat Specificity is scored as "0" since the habitat does not seem unusual according to FNA ("Rocky slopes, alluvium, volcanic areas") and A Utah Flora ("Sagebrush and pinyon-juniper communities"). Threats may be primarily from grazing-related impacts. Number of Individuals and Trends are unknown.

Scored By/Date: J. Alexander/2014

Revisions: Scientific name changed

*Eremogone congesta* var. *subcongesta*

Synonym: *Arenaria congesta* var. *subcongesta*

Family: Caryophyllaceae

Comments: Peripheral. Only 7 specimens at BRY have been collected. This species has been found in the in Beaver, Millard and Washington Counties. Habitat Specificity scored a "0" This is neither an exclusively alpine tundra species nor does it appear to be an edaphic endemic sensu A Utah Flora ("Sagebrush, white

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fir, and bristlecone pine communities") and FNA ("Open, rocky, sagebrush slopes and flats, volcanic soils"). Threats may be primarily from grazing-related impacts. In the populations from alpine tundra and bristlecone pine communities, climate change may also be a threat. Droughts and rapid snowmelt due to wind-blown sediments are melting snowpack earlier than normal in our region. This is the primary reason for the score of the threats to this species to a "1". Trends scored as "unknown".

Scored By/Date: J. Alexander/2014

Revisions: Scientific name changed

*Minuartia pusilla*

Synonym: *Arenaria pusilla*

Family: Caryophyllaceae

Comments: Peripheral. Known from at least 5 collections in sandy Ponderosa pine communities in Zion area. Threats may be high from competition with annual weeds and increased wildfire risk. Trends not known.

Scored By/Date: UNPS Rare Plant Comm./2008

Revisions: Scientific name changed

*Silene hitchguirei*

Synonym: *Lychnis apetala* var. *montana*

Family: Caryophyllaceae

Comments: Peripheral. Only 3 specimens at BRY have been collected. This taxon's primary range is in the Rocky Mountains. It has been found in the Uinta Mountains and the La Sal Mountains in Utah. Sensu FNA, "*Silene hitchguirei* is similar to *S. suksdorfii*, except that the latter species has larger seeds, an urceolate fruiting calyx with a contracted base, an inflorescence that is sometimes branched with up to three flowers, and short, erect stems that have three or four pairs of leaves. It is probably closely related to *S. involuocrata* subsp. *tenella* and *S. ostenfeldii* but differs in its small size, its usually solitary flowers, and short petals." Threats to this taxon include grazing-related impacts from cattle and naturalized mountain goats. Climate change is also a threat.

These are the primary reasons for the upgrade of threats to a "1". Trends are "unknown".

Scored By/Date: J. Alexander/2014

Revisions: Scientific name changed.

*Silene scouleri*

Synonym: *Silene scouleri* ssp. *hallii*

Family: Caryophyllaceae

Comments: Peripheral. Only 14 specimens at BRY have been collected. Its primary range is in the Rocky Mountains, southwestern United States and Mexico. The identification of Utah materials to a subtaxon level is in dispute. A Utah flora states, "our material was designated provisionally as belonging to ssp. *hallii*...", but apparently does not differ in any substantial way from other southern specimens of the species regarded as ssp. *pringlei*. Recognition of our material at infraspecific level seems moot." FNA treats Utah material exclusively as ssp. *pringlei*. One of the subtaxa has been found in Utah, but

a determination cannot be resolved at this time without further examination of Utah specimens. *S. scouleri* is recognized in this list at the species level, without a subtaxon designation until further research is completed. Threats include grazing-related impacts from cattle and naturalized mountain goats. Climate change is also a threat. These are the primary reasons for the upgrade of threats to a "1". Trends are scored as "unknown".

Scored By/Date: J. Alexander/2014

Revisions: Scientific name changed

*Silene verecunda*

Synonym: *Silene verecunda* ssp. *andersonii*

Family: Caryophyllaceae

Comments: Peripheral. Only 6 specimens at BRY have been collected. It has been found in Beaver, Kane, and Washington Counties. Its primary range is in the Great Basin, southwestern U.S., and Mexico. Sensu FNA, "*Silene verecunda* is an exceptionally variable species, very difficult to circumscribe and tending to intergrade with *S. bernardina*, *S. oregana*, and *S. grayi*. Hitchcock and Maguire divided *S. verecunda* into subsp. *verecunda*, subsp. *platyota*, and subsp. *andersonii*. Of these, subsp. *andersonii* is the most distinct, with a scabrous-puberulent indumentum, very narrow, stiff leaves, and rigid stems that are decumbent at the base, with marcescent leaf bases. The claw of the petals also is often more uniformly ciliate. Subspecies *verecunda* has a very different appearance, its mature calyx being shorter, broader, and markedly clavate. It is a short, stocky, viscid-glandular plant of exposed coastal habitats and may simply be a local ecotype. Subspecies *platyota* encompasses the remainder of the variation in the complex. All these forms of *S. verecunda* appear to intergrade freely and, based on current information, any separation would be arbitrary." *Silene verecunda* ssp. *andersonii* is the morphotype consistently reported for Utah. It is apparent that the populations from Beaver County Utah are allied with the typical Great Basin populations formerly determined as "ssp. *andersonii*" However, Grand Canyon populations similar to *S. verecunda* have been recognized as a distinct species, *Silene rectiramea*. There may be misidentified populations of this taxon in Kane County (see discussion of *S. rectiramea* in "Status Uncertain" list).

Scored By/Date: J. Alexander/2014

Revisions: Scientific name changed

*Stellaria nitens*

Family: Caryophyllaceae

Comments: Peripheral. Only 4 specimens at BRY have been collected. It has been found in Cache, Salt Lake, Tooele, and Washington Counties. Its primary range is in California and the Pacific Northwest. Habitat Specificity scored as "0" since the habitat does not seem unusual according to FNA ("Dry, open habitats: sand dunes, stream banks, rocky outcrops, open woodlands, beneath boulders, disturbed areas"). Threats may be primarily from disturbance related to development and

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grazing activities, but it scored as unknown due to uncertainty. Trends scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population surveys.  
Scored By/Date: J. Alexander/2014

*Stellaria obtusa*

Family: Caryophyllaceae  
Comments: Peripheral. Only 5 specimens at BRY have been collected. It has been found in Cache, Salt Lake, Sanpete, and Utah Counties. Its primary range is in the Rocky Mountains and Canada. Habitat Specificity scored as "0" since the habitat does not seem unusual according to A Utah Flora ("Damp areas in sagebrush, aspen, spruce-fir, and grass-sedge communities"). Threats primarily from disturbance related to development and grazing activities, but it scored as unknown due to uncertainty. Trends are scored as "unknown".  
Scored By/Date: J. Alexander/2014

*Mortonia utahensis*

Synonym: *Mortonia scabrella* var. *utahensis*  
Family: Celastraceae  
Comments: Regional Endemic. Relatively common on limestone outcrops and cliffs in the Beaver Dam Mountains. May be threatened by wildfire, recreation, grazing, and urban expansion, but more info needed on trend.  
Scored By/Date: UNPS Rare Plant Comm./2008  
Revisions: Scientific name changed

*Atriplex argentea* var. *rydbergii*

Synonym: *Atriplex pachypoda*  
Family: Chenopodiaceae or Amaranthaceae  
Comments: Regional Endemic. Found mostly in barren exposures of Mancos Shale and the Morrison Formation in the Four Corners region. Abundance and trends poorly known.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Atriplex saccaria* var. *asterocarpa*

Synonym: *Atriplex asterocarpa*  
Family: Chenopodiaceae or Amaranthaceae  
Comments: Regional Endemic. Found on semi-barren Chinle and Entrada sites with desert scrub. Abundance and trend data needed.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Atriplex saccaria* var. *cornuta*

Synonym: *Atriplex cornuta*  
Family: Chenopodiaceae or Amaranthaceae  
Comments: Regional Endemic. Found on Mancos Shale and the Morrison Formation. Abundance and trend information lacking.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Chenopodium chenopodioides*

Family: Chenopodiaceae or Amaranthaceae  
Comments: Sparse. Occurs on saline lakeshores at low density over broad area of Utah. Just 5 collections noted

in 2008 Utah Flora. Trends not known.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Monolepis pusilla*

Synonym: *Micromonolepis pusilla*  
Family: Chenopodiaceae or Amaranthaceae  
Comments: Peripheral. Tiny plant that may easily be under-collected. Mostly found in clayey saltbush and greasewood or horsebrush communities. Only 5 records noted in Welsh et al. (2008).  
Scored By/Date: UNPS Rare Plant Comm./2008

*Calystegia longipes*

Family: Convolvulaceae  
Comments: Regional Endemic. Found in warm desert shrub and pinyon-juniper communities in desert mountains of SW Utah west of Veyo and Enterprise. Abundance and trends not known.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Convolvulus equitans*

Family: Convolvulaceae  
Comments: Peripheral. Found in Joshua tree and creosote bush stands in the limestone foothills of the Beaver Dam Mountains (habitat specialization = 1), populations considered large but trends not known.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Cuscuta cephalanthii*

Family: Cuscutaceae or Convolvulaceae  
Comments: Peripheral. Parasitic on various hosts (intrinsic rarity = 1), abundance and trends not known, just 5 collections noted in Welsh et al. (2008).  
Scored By/Date: UNPS Rare Plant Comm./2008

*Cuscuta megalocarpa*

Family: Cuscutaceae or Convolvulaceae  
Comments: Peripheral. Parasitic mostly on *Chenopodium*, *Urtica*, and *Sambucus*, noted from 7 collections in 2008 Utah Flora, abundance and trends unknown.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Carex arapahoensis*

Family: Cyperaceae  
Comments: Peripheral. Only 4 specimens at BRY have been collected. This species has been found in the La Sal Mountains. Its primary range is in the Rocky Mountains. Habitat Specificity was scored as "0" since the habitat is variable and does not seem unusual according to A Utah Flora ("alpine communities") and in FNA ("dry mountainsides, high meadows. 3400–4000 m."). It also does not appear to be an edaphic endemic. Threats include riparian habitat modification and disturbance from the grazing-related impacts of cattle and naturalized mountain goats. Climate change is also a threat. These are the primary reasons for the upgrade of threats to "1". Trends are scored as "unknown".  
Scored By/Date: J. Alexander/2015

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*Carex atosquama*

Family: Cyperaceae

Comments: Peripheral. Only 6 specimens at BRY have been collected. It has been found in the Uinta Mountains in Duchesne County. Its primary range is in the Rocky Mountains. Habitat Specificity scored as "0" since the habitat does not seem unusual according to A Utah Flora ("spruce forests and openings, and alpine communities"), although the description in FNA suggests it may be a riparian species ("subalpine and alpine meadows, river gravels, shorelines"). Threats include riparian habitat modification and disturbance from the grazing-related impacts of cattle and naturalized mountain goats. Climate change is also a threat. These are the primary reasons for the upgrade of the threats to this species to a "1". Trends are scored as "unknown".

Scored By/Date: J. Alexander/2014

*Carex brunnescens* ssp. *brunnescens*

Family: Cyperaceae

Comments: Peripheral. Only 12 specimens at BRY have been collected. It has been found in the Wasatch Mountains and in Uinta Mountains. Its primary range is in the Rocky Mountains, Eastern U.S., and Canada. Habitat Specificity scored as "1" due to its status as a riparian species according to A Utah Flora ("Wet meadows and other wet places") and FNA ("Damp, temporarily dry areas, thin-peated mires, thickets, woodlands, heaths, rocky slopes"). Threats are high in at least the Uinta Mountains, but it is not known if that holds true throughout this species' range in Utah. In the Wasatch Mountains, threats include riparian habitat modification and disturbance related to development and farming. Threats include riparian habitat modification and disturbance from the grazing-related impacts of cattle and naturalized mountain goats. Climate change is also a threat. These are the primary reasons for the upgrade of the threats to this species to a "1". Trends are scored as "unknown".

Scored By/Date: J. Alexander/2014

*Carex buxbaumii*

Family: Cyperaceae

Comments: Peripheral. Only 17 specimens at BRY have been collected. It has been found in Uinta Mountains in Daggett, Duchesne, Summit, and Uintah Counties. This taxon's primary range is in the Rocky Mountains, Eastern U.S., and Canada. Habitat Specificity scored as "1" due to its status as a riparian species according to A Utah Flora ("Wet and boggy meadows and seeps") and FNA ("Wet meadows, marshes, fens"). Threats include riparian habitat modification and disturbance from the grazing-related impacts of cattle and naturalized mountain goats. Climate change is also a threat. These are the primary reasons for the upgrade of the threats to this species to a "1". Trends are scored as "unknown".

Scored By/Date: J. Alexander/2014

*Carex capitata*

Family: Cyperaceae

Comments: Peripheral. Only 10 specimens at BRY have been collected. It has been found in Uinta Mountains in Duchesne and Summit Counties. Its primary range is in the Rocky Mountains and Canada. This taxon is not listed for Utah in FNA, "A. Cronquist (1969) placed *Carex capitata* in Utah; the species is not listed by B. J. Albee et al. (1988), nor have specimens been seen from there." The status of the determination of the vouchers at BRY needs confirmed. Habitat Specificity scored as "0" since the habitat does not seem unusual according to A Utah Flora ("Moist or dry alpine tundra"), and FNA ("alpine zone of eastern and western mountain ranges, primarily on calcareous substrates"). Threats include grazing-related impacts from cattle and naturalized mountain goats. Climate change is also a threat. These are the primary reasons for upgrading threats to "1". Trends are scored as "unknown".

Scored By/Date: J. Alexander/2014

*Carex cordillerana*

Family: Cyperaceae

Comments: Peripheral. Only 6 specimens at BRY have been collected. It has been found in Cache, Daggett, Juab, Salt Lake, and Utah Counties. Its primary range is in the Rocky Mountains and Canada. Habitat Specificity scored as "0" since the habitat does not seem unusual according to A Utah Flora ("Oak-maple communities"), and FNA ("Naturally disturbed, rocky slopes with organic layer and leaf litter in mesic mixed forests, or disturbed, open, grassy slopes"). Threats may be primarily from disturbance related to development, farming, and grazing activities, but it is scored as unknown. Trends are scored as "unknown".

Scored By/Date: J. Alexander/2014

*Carex cusickii*

Family: Cyperaceae

Comments: Peripheral. This species may be misidentified in Utah. Sensu FNA, "Although infrequent or local in most parts of its range, *Carex cusickii* is fairly common in and west of the Cascade Mountains. Reports of *C. cusickii* from Utah probably are based on specimens of *C. diandra*."

Scored By/Date: J. Alexander/2014

*Carex fuliginosa*

Family: Cyperaceae

Comments: Peripheral. Only 7 specimens at BRY have been collected. It has been found in the Uinta Mountains in Duchesne and Summit Counties. Its primary range is in the Rocky Mountains and Canada. Habitat Specificity scored as "0" since the habitat does not seem unusual according to A Utah Flora ("Alpine tundra communities"), and FNA ("Tundra, scree, sedge meadows"). Threats include grazing-related impacts from cattle and naturalized mountain goats. Climate change is also a threat. These are the primary reasons for the

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upgrade of threats to a "1". Trends scored as "unknown".  
Scored By/Date: J. Alexander/2014

*Carex geophila*

Family: Cyperaceae

Comments: Peripheral. Only 5 specimens at BRY have been collected. It has been found in Beaver, Washington, and Wayne Counties. The Beaver County Records are from the Tushar Mountains (*Taye 1853*, 09 May 1984, BRY; *Taye 1964*, 24 May 1984, BRY; *Taye 4420*, 28 May 1989, BRY) Its primary range is in the Southwestern U.S. and Mexico. Habitat Specificity scored as "0" since the habitat does not seem unusual based on the description in A Utah Flora ("Pinyon-juniper, Ponderosa pine, and aspen-spruce-fir communities"), and FNA ("Dry to mesic, open or shaded sagebrush, pine, juniper, oak, and aspen woodlands, slopes, canyons, and outcrops"). Threats are high in at least the Tushar Mountains, but it is not known if that holds true throughout this species' range in Utah. Threats include grazing-related impacts from cattle and naturalized mountain goats. Climate change is also a threat. These are the primary reasons for the upgrade of threats to "1". Trends scored as "unknown".

Scored By/Date: J. Alexander/2014

Revisions: New to Medium Priority list

*Carex scoparia* var. *scoparia*

Family: Cyperaceae

Comments: Disjunct. Populations small, those in Kane Co impacted by grazing (despite being inside an enclosure). *Carex scoparia* was not reported for Utah, Nevada or Arizona in FNA. There are three vouchers from Kane County, (*Thorne 10481*, 16 July 1992, Hancock Road BRY; *Fertig 22843*, 26 July 2006, Colorado Plateau: Coral Pink Sand Dunes, Sand Springs, about 2 miles S of Hancock Road and 7 miles WNW of Kanab, BRY; *Fertig 25929*, 21 July 2010, Colorado Plateau: Sand Spring, on E side of Coral Pink Sand Dunes, UT, UTC) and one voucher from Washington County (*Meretsky 182*, 26 July 1998, Zion National Park BRY). The status of the determination of these vouchers at BRY and other Utah herbaria needs to be confirmed. These specimens represent a very large disjunction from the species distribution represented in FNA and are not representative of a peripheral population. This taxon has been reclassified as "Disjunct" This taxon is currently on the "Medium" list, but it may be placed on the "Status Uncertain" or "Excluded" list if these specimens can be confirmed as being determined incorrectly based on the FNA treatment.

Scored By/Date: J. Alexander/2014

*Carex stenoptila*

Family: Cyperaceae

Comments: Regional Endemic. Sensu FNA "Open rocky places, coniferous woods" Although no specimens at BRY have been collected, at least one specimen has been determined for Utah and it has been reported for Utah

by FNA. It has been documented in the Tushar Mountains in Piute County (*Goodrich 21380*, 14 August 1984, Tushar Mountains, Gold Mountain - Mt. Belknap, BRY). Its primary range is in Rocky Mountains. Habitat Specificity scored as "0" since the habitat does not seem unusual according to FNA ("Open rocky places, coniferous woods"). Threats are high in at least the Tushar Mountains, but it is not known if that holds true throughout this species' potential range in Utah. Threats include grazing-related impacts from cattle and naturalized mountain goats. Climate change is also a threat. These are the primary reasons for the upgrade of threats to a "1". Trends are scored as "unknown".

Scored By/Date: J. Alexander & R. Fitts/2014

*Carex subfusca*

Family: Cyperaceae

Comments: Peripheral. Only 6 specimens at BRY have been collected. It has been found in Sevier, Washington, and Wayne Counties. Its primary range is in Pacific Northwest, Great Basin and California. Habitat Specificity scored as "0" since the habitat does not seem unusual according to A Utah Flora ("Dry meadow, ponderosa pine-white fir and spruce-maple communities"), but it may be a riparian or meadow species according to FNA ("Seasonally moist mountain meadows, along water-courses"). Threats may be primarily from disturbance related to grazing-related impacts of cattle, but it is scored as unknown. Trends are scored as "unknown".

Scored By/Date: J. Alexander/2014

*Cyperus schweinitzii*

Synonym: *Mariscus schweinitzii*

Family: Cyperaceae

Comments: Peripheral. Locally common in sand dune sites in S UT, populations few, threats overall probably low to modest.

Scored By/Date: Fertig/2009

*Cyperus strigosus*

Family: Cyperaceae

Comments: Peripheral. Only 1 specimen at BRY has been collected. It has only been collected along Beaver Dam Wash in Washington County in Utah (*Baird 1826* BRY).

Scored By/Date: J. Alexander/2015

*Kobresia sibirica*

Family: Cyperaceae

Comments: Peripheral. Only 2 specimens at BRY have been collected. It has been found in the Uinta Mountains in Duchesne County. *Kobresia sibirica* was not reported for Utah in FNA. Its primary range is in the Rocky Mountains and Canada. Habitat Specificity scored as "0" since the habitat does not seem unusual according to A Utah Flora ("Alpine ridges"), and FNA ("Dry to mesic tundra"). Threats include grazing-related impacts from cattle and naturalized mountain goats. Climate change is also a threat. These are the primary

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reasons for the upgrade of threats to "1". Trends are scored as "unknown".

Scored By/Date: J. Alexander/2014

*Elaeagnus commuata*

Family: Elaeagnaceae

Comments: Peripheral. Only 8 specimens at BRY have been collected. It has been found mostly in the Uinta Mountains in Daggett, Duchesne, and Summit Counties, with an outlier on the plateaus in Garfield County. Its primary range is in the Rocky Mountains and Canada. Habitat Specificity scored as "1" due to its status as a riparian species according to A Utah Flora ("Riparian zone with willow and poplar"). Threats include riparian habitat modification and disturbance from the grazing-related impacts of cattle and naturalized mountain goats. Climate change is also a threat. These are the primary reasons for upgrading threats to "1". Trends are scored as "unknown".

Scored By/Date: J. Alexander/2014

*Arctostaphylos pringlei*

Family: Ericaceae

Comments: Peripheral. Only 15 specimens at BRY have been collected, all of which were collected in Washington County. Its primary range is in the Mojave Desert and in Mexico. The populations in Washington County are restricted to the Beaver Dam Mountains. These habitats are becoming significantly degraded by recreational ATV use, grazing, and fires. The trend is likely downward but relocation of populations has not been attempted recently to determine how many are threatened by these disturbances.

Scored By/Date: J. Alexander/2014

*Chamaesyce revoluta*

Synonym: *Euphorbia revoluta*

Family: Euphorbiaceae

Comments: Peripheral. Only 11 specimens at BRY have been collected. It has been found in Beaver, Piute, and Washington Counties. It may also be in Tooele County. Its primary range is in the southwestern U.S. and Mexico. Specimens on SEINet from other counties (Grand, Kane, San Juan) may be misidentifications. Habitat Specificity scored as "0" since the habitat does not seem unusual according to A Utah Flora ("Creosote bush, Joshua tree, and blackbrush communities"). At least the Washington County populations are threatened by increased ATV disturbance, invasion of exotic weeds, and residential-highway development. Disturbance due to grazing activities may also be a threat throughout its range. Trends are scored as "unknown".

Scored By/Date: J. Alexander/2014

*Chamaesyce setiloba*

Synonym: *Euphorbia setiloba*

Family: Euphorbiaceae

Comments: Peripheral. Only 16 specimens at BRY have been collected. It has been found mostly along Beaver

Dam Wash in Washington County. Its primary range is in the southwestern U.S and Mexico. Habitat Specificity scored as "0" since the habitat does not seem unusual according to A Utah Flora ("Creosote bush, Joshua tree, blackbrush, and other warm desert shrub communities"). The Washington County populations are threatened by increased ATV disturbance, invasion of exotic weeds, and grazing-related disturbances. Trends scored as "unknown".

Scored By/Date: J. Alexander/2014

*Euphorbia exstipulata*

Family: Euphorbiaceae

Comments: Peripheral. Known from two sites on limestone soils on the west side of the Wah Wah Range in western Utah. Abundance assumed to be low. Threats and trends not known.

Scored By/Date: UNPS Rare Plant Comm./2008

*Phyllanthus warnockii*

Synonym: *Reverchonnia arenaria*

Family: Euphorbiaceae or Phyllanthaceae

Comments: Peripheral. Limited to stabilized sand dunes in southern Utah. Threats and trends not known. Blooms late in summer and fall and may be under-collected.

Scored By/Date: UNPS Rare Plant Comm./2008

Revisions: Scientific name changed.

*Astragalus alpinus*

Family: Fabaceae or Leguminosae

Comments: Peripheral. Only 4 specimen at BRY has been collected. It has been found in Box Elder, Grand, and Salt Lake Counties. Its primary range is in the northern U.S. and Canada. Sensu A Utah Flora, "In Utah it is rare, but in much of North America it is the most common species in the genus." Habitat Specificity scored as "0" since the habitat does not seem unusual according to FNA ("Aspen and coniferous woods"). Threats to this taxon may be primarily from disturbance related to grazing-related impacts but it is scored as unknown. Trends are scored as "unknown".

Scored By/Date: UNPS Rare Plant Comm./2008

*Astragalus amphioxys* var. *modestus*

Family: Fabaceae or Leguminosae

Comments: Regional Endemic. Relatively few populations in S UT, habitat broad, some populations may be threatened by ATV recreation, trends unknown.

Scored By/Date: Fertig/2009

*Astragalus aretioides*

Synonym: *Astragalus sericoleucus* var. *aretioides*, *Orophaca aretioides*

Family: Fabaceae or Leguminosae

Comments: Regional Endemic. Populations small, found on white tuffaceous Browns Park Formation (habitat less specific outside UT), threats not known

Scored By/Date: Fertig/2009

Revisions: Scientific name changed

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*Astragalus barnebyi*

Synonym: *Astragalus desperatus* var. *conspectus*

Family: Fabaceae or Leguminosae

Comments: Regional Endemic. On slate-like Carmel outcrops or sandstone, only in central UT and AZ. Threats probably low, trends not known.

Scored By/Date: UNPS Rare Plant Comm./2008

*Astragalus calycosus* var. *scaposus*

Family: Fabaceae or Leguminosae

Comments: Peripheral. Long-scaped phase of species from Beaver Dam Mountains, Great Basin, and San Juan County in Utah; threats and trends not known; habitat not specialized.

Scored By/Date: UNPS Rare Plant Comm./2008

*Astragalus castaneiformis*

Family: Fabaceae or Leguminosae

Comments: Regional Endemic. Single population, Kaibab limestone, threats probably low overall.

Scored By/Date: Fertig/2009

*Astragalus chamaemeniscus*

Family: Fabaceae or Leguminosae

Comments: Regional Endemic. Great Basin species just entering western Utah (2 populations cited in Utah Flora), habitat not specialized, threats and trends not known.

Scored By/Date: UNPS Rare Plant Comm./2008

*Astragalus consobrinus*

Synonym: *Astragalus castaneiformis* var. *consobrinus*

Family: Fabaceae or Leguminosae

Comments: Local Endemic. Populations small, range localized in C Utah, but number of populations is high, information needed on threats

Scored By/Date: D. Clark/2008

*Astragalus convallarius* var. *finitimus*

Family: Fabaceae or Leguminosae

Comments: Regional Endemic. Pine Valley/Bull Valley Mountains endemic, information needed on population size, may be threatened by wildfire. Habitat not specialized.

Scored By/Date: Fertig/2009

*Astragalus duchesnensis*

Family: Fabaceae or Leguminosae

Comments: Regional Endemic. This taxon is reported for Daggett, Duchesne, and Uintah Counties in A Utah Flora. It is also found in Moffatt and Rio Blanco Counties in Colorado.

Scored By/Date: J. Alexander/2015

*Astragalus filipes*

Family: Fabaceae or Leguminosae

Comments: Peripheral. This taxon may be increasing its range in Utah due to rangeland seeding programs. A specialized cultivar (NBR-1 germplasm basalt milk-

vetch/*Astragalus filipes*) is currently available for use in seed mixes for use in depleted or fire-disturbed rangelands according to the Logan Forage and Range Research Lab, USDA-ARS. One of the original collection locations for this cultivar was in Box Elder Co., Utah.

New populations of this taxon should be watched for in Utah. These plantings should be considered introduced.

Scored By/Date: J. Alexander/2015

*Astragalus flavus* var. *argillosus*

Family: Fabaceae or Leguminosae

Comments: Local Endemic. Pink-flowered phase, not recognized by some authors, information needed on population size, threats.

In IMF, Barneby subsumed all varieties as synonyms of *A. flavus*. A Utah Flora proposed the alternative arrangement with a morphological segregates as separate varieties. It has still not been conclusively documented whether these morphological variants have discrete population boundaries. Until such research has been conducted, this project will continue to track the rare varietal segregates.

Scored By/Date: Fertig/2009; J. Alexander/2015

*Astragalus flavus* var. *higginsii*

Family: Fabaceae or Leguminosae

Comments: Regional Endemic. Populations range from 20 to several thousands of individuals in nearly every Chinle outcrop in SW Utah and probably occurs in similar formations. May also occur in AZ and NV. ATV recreation and development are threats, but some habitat is being preserved in the St. George area for sympatric species such as *Arctomecon humilis* and *Astragalus ampullariodes*. Sizeable occurrences also protected in Zion NP. Trend may be decreasing over the past decade due to development in St. George.

See discussion of varieties under *A. flavus* var. *argillosus*, above. Fresh flowers of Zion populations of var. *higginsii* have a distinct odor of grape popsicles, suggesting they may be genetically distinct [Fertig 2016].

Scored By/Date: J. Alexander/2015

*Astragalus fucatus*

Family: Fabaceae or Leguminosae

Comments: Regional Endemic. Does not seem to be a habitat specialist, information needed on population size and threats.

Scored By/Date: Fertig/2009

*Astragalus hallii* var. *fallax*

Family: Fabaceae or Leguminosae

Comments: Regional Endemic. Associated with limestone and siltstone. Abundance and trends not known.

Scored By/Date: UNPS Rare Plant Comm./2008

## UNPS Medium Priority List: Ranking Comments

*Astragalus iodanthus* var. *iodanthus*Synonym: *Astragalus lentiginosus* var. *iodanthus*Family: Fabaceae or LeguminosaeComments: Peripheral. Found in juniper & sagebrush (habitat specificity low), just 2 collections cited in A Utah Flora (2008), threats & trends unknown.Scored By/Date: UNPS Rare Plant Comm./2008*Astragalus lancearius*Synonym: *Astragalus episcopus* var. *lancearius*Family: Fabaceae or LeguminosaeComments: Regional Endemic. Populations mostly small, some threats from ATV recreation, grazing management. Found in variety of desert shrub communities.Scored By/Date: Fertig/2009*Astragalus lentiginosus* var. *scorpionis*Family: Fabaceae or LeguminosaeComments: Regional Endemic. Recently recollected in Utah (voucher at UVSC) in the Deep Creek Range where it was last seen in the 1940's. This is the farthest eastern population of this Great Basin endemic. When found, this taxon is locally common but restricted to more shaded, high elevation mountain slopes or Aspen groves where there is seasonally saturated soil. There may be more populations on high elevation mountain tops in western Utah. In Utah, var. *negundo* is similar to these lower elevation var. *scorpionis*, and may be best placed in this variety.Scored By/Date: J. Alexander/2009*Astragalus missouriensis* var. *amphibolus*Family: Fabaceae or LeguminosaeComments: Regional Endemic. Threats poorly known, need clarification on habitat specificity - perhaps = 1 [UNPS Rare Plant Comm. 2008].Only 2 specimen at BRY have been collected. It has only been collected in San Juan County in Utah. The primary distribution for this taxon is in Colorado and New Mexico. It is known from three localities in SEINet: near Monticello (*Rydberg & Garrett 9153*, 24 July 1911, NY), Dry Wash, southwest of Abajo Mountains (*Rydberg & Garrett 9603*, 10 August 1911, NY), and Ucolo-Lisbon Valley road, 4.8 km (3 miles) north of U.S. Highway 666, 2.1 km (1.3 miles) air distance from Colorado border (*Holmgren & Holmgren 11879*, 15 June 1993, NY). There are too few collections from Utah to know if this plant is habitat specific in its range, however, IMF states that it "belongs to a cooler higher zone in the mountain foothills" and Holmgren's collection was from "sagebrush-grass vegetation." At this time, there is not sufficient data to support Habitat being rescored as a "1".Scored By/Date: J. Alexander/2015*Astragalus nidularius*Family: Fabaceae or LeguminosaeComments: Local Endemic. Abundance and trends not known. Habitat specificity low. Welsh et al (2008) notethat an unusual collection (*Roth 446*) from the Rainbow Bridge Trail may be a different taxon.Scored By/Date: UNPS Rare Plant Comm./2008*Astragalus nyensis*Family: Fabaceae or LeguminosaeComments: Regional Endemic. This plant is scattered throughout southern Nevada and is more common than specimens suggest since it is sympatric with and confused with *A. nuttallianus*; Intrinsic Rarity may be high only if you consider that it is often mistook for *A. nuttallianus* and most botanists cannot tell the two apart, hence it's apparent rarity. In southern Nevada, where *A. nuttallianus* has been found, you generally can also find *A. nyensis* and *A. acutirostris*; Threats: Low, though St. George vicinity populations in UT and AZ threatened by development. Difficult to census since it is in widespread small populations and usually intermixed with massive populations of *Erodium* and *A. nuttallianus*.Scored By/Date: J. Alexander/2009*Astragalus oophorus* var. *lonchocalyx*Family: Fabaceae or LeguminosaeComments: Regional Endemic. Perhaps a local endemic?, information needed on population size, threats in Needle & Bull Valley Mountains, UT. Habitat specialization low.Scored By/Date: Fertig/2009*Astragalus praelongus* var. *avonensis*Synonym: *Astragalus avonensis*Family: Fabaceae or LeguminosaeComments: Local Endemic. Many populations of 20-100 individuals remotely scattered throughout the saline playa and saline sandy soils in Western Utah from Iron County northward just south of the Sevier Lake region. It is not found at every site of potential habitat, however. A full census has not be completed and it may just be on the border of falling into the "low" score for # of individuals. Threats: Low at this time, but ATV use in the sandy saline playas in this region could increase over time. This species has a high potential for threats to increase in magnitude]. This taxon appears to have a separate evolutionary history than the otherwise similar var. *elisiae*, endemic to the Colorado Plateau. Monographic and molecular research in progress will likely support the varietal delimitation for var. *avonensis*.Scored By/Date: J. Alexander/2009*Astragalus praelongus* var. *lonchopus*Family: Fabaceae or LeguminosaeComments: Regional Endemic. Found on selenium-rich barren soils., but may be locally common. Threats and trends unknown.Scored By/Date: UNPS Rare Plant Comm./2008



UNPS Medium Priority List: Ranking Comments

*Astragalus racemosus* var. *treleasei*

Family: Fabaceae or Leguminosae

Comments: Regional Endemic. Number of collections cited in UT Flora seems high - perhaps this was over-collected because of someone studying seleniferous plants and the number of specimens does not correlate with number of actual populations. (Map in SEINet shows ca 15 main populations in Utah, all in the Uintah Basin where threats may be high from habitat disturbance associated with mineral development and exploration.

Scored By/Date: UNPS Rare Plant Comm./2008

*Astragalus straturensis*

Family: Fabaceae or Leguminosae

Comments: Regional Endemic. Habitat specificity low. Abundance and trends unknown. Additional collections from outside the Great Basin in the Colorado Plateau are thought to be mislabeled by Welsh et al. (2008).

Scored By/Date: Fertig/2009

*Astragalus subcinereus* var. *basalticus*

Family: Fabaceae or Leguminosae

Comments: Local Endemic. Found around Fremont Junction in central Utah. Taxonomic issues—could even be related to *A. flexuosus* var. *diehlii* with which it can co-occur (Welsh et al. 2008).

Scored By/Date: UNPS Rare Plant Comm./2008

*Lathyrus eucosmus*

Family: Fabaceae or Leguminosae

Comments: Sparse. More information needed on threats, may be habitat specialist on clay soils. Only 5 collections known from Utah (also rare in Wyoming).

Scored By/Date: Fertig/2009

*Lotus wrightii*

Family: Fabaceae or Leguminosae

Comments: Regional Endemic. Only 4 specimen at BRY has been collected. It has been found in Utah in San Juan County. Reports from other counties in Utah are likely misidentifications. Its primary range is in the southwestern U.S. Habitat Specificity scored as "0" since the habitat does not seem unusual according to FNA ("Ponderosa pine woods"). Threats may be primarily from disturbance related to grazing-related impacts but it is scored as unknown. Trends scored as "unknown".

Scored By/Date: J. Alexander/2014

*Lupinus kingii* var. *argillaceus*

Family: Fabaceae or Leguminosae

Comments: Regional Endemic. Taxonomic questions—differs from var. *kingii* in length of flowering scape and whether it is embedded within the leaves. Known from 3 records in Utah Flora (2008). Threats and trends unknown.

Scored By/Date: UNPS Rare Plant Comm./2008

*Lupinus latifolius* var. *leucanthus*

Synonym: *Lupinus latifolius* var. *columbianus*

Family: Fabaceae or Leguminosae

Comments: Disjunct. Type of var. *leucanthus* from Springdale, outside Zion NP. Now considered part of a more wide-ranging variety, but Utah populations isolated from core of its range. Abundance low, few populations, threats and trends not known. Occurs in oak-cottonwood communities, often near water in valleys.

Scored By/Date: UNPS Rare Plant Comm./2008

*Lupinus sericeus* var. *jonesii*

Family: Fabaceae or Leguminosae

Comments: Local Endemic. Type locality is Silver Reef, near Zion NP. Found in variety of montane forest and meadow settings (habitat specificity low); abundance and trends unknown.

Scored By/Date: UNPS Rare Plant Comm./2008

*Oxytropis besseyi* var. *ventosa*

Synonym: *Oxytropis nana* var. *ventosa*

Family: Fabaceae or Leguminosae

Comments: Regional Endemic. Often on chalky sandstone or limestone in sparse sagebrush or pinyon-juniper (habitat specificity high based on soils); threats probably low, abundance and trends not known.

Scored By/Date: UNPS Rare Plant Comm./2008

*Parryella filifolia*

Family: Fabaceae or Leguminosae

Comments: Regional Endemic. Associated with stabilized sand dunes in SE Utah. Occasional populations have individuals with broad-leaves, but these are probably not taxonomically significant according to Barneby and Welsh. Abundance and trends unknown.

Scored By/Date: UNPS Rare Plant Comm./2008

*Psoralidium lanceolatum* var. *stenophyllum*

Family: Fabaceae or Leguminosae

Comments: Local Endemic. Taxonomic questions, perhaps a Regional Endemic instead of local endemic (1 pt). Found in very sandy sites. May be locally common, but trends not known.

Scored By/Date: UNPS Rare Plant Comm./2008

*Psorothamnus thompsoniae* var. *thompsoniae*

Family: Fabaceae or Leguminosae

Comments: Local Endemic. Sandy and rocky areas of southern Utah in blackbrush, pinyon-juniper, and desert shrub communities (habitat specificity low). Abundance and trends unknown.

Scored By/Date: UNPS Rare Plant Comm./2008

*Psorothamnus thompsoniae* var. *whitingii*

Family: Fabaceae or Leguminosae

Comments: Regional Endemic. Restricted to the Navajo Basin (Navajo Mountain and San Juan River south into northern Arizona). Habitat non-specialized. Trends not known.

Scored By/Date: UNPS Rare Plant Comm./2008

## UNPS Medium Priority List: Ranking Comments

*Trifolium eriocephalum* var. *villiferum*

Family: Fabaceae or Leguminosae

Comments: Regional Endemic. Only 7 specimens at BRY have been collected. It has been found in Beaver, Juab, Piute, and Sevier Counties. The record for the Deep Creek Range and Ibapah vicinity in Juab County was collected by Marcus Jones on 22 June 1891 (NY). The record for the Tushar Mountains was collected by Edward Palmer in 1877 (*Palmer 91*, US, BRY, NY; although Welsh asserts that this specimen was collected in Beaver Valley, Palmer also traveled up North Creek in the Tushars and collected specimens. Therefore any of his collections from this trip could also have been collected in the Tushar Mountains or the "Beaver Mountains" as he called them). This taxon not been recollected in either of these two areas since. In the Deep Creek Range (if there are still extant populations!), this is one of several taxa

that may be threatened by the proposed introduction of naturalized mountain goats by the State of Utah. Populations in the Tushar Mountains are already threatened by goats. Climate change is also a threat. Because this taxon has not been collected from these two mountain ranges in the past 70 or more years, the threats are scored as "unknown". Also, it is not known if these threats are consistent in the remainder of its range in Utah. Trends are scored as "unknown".

Scored By/Date: J. Alexander/2015

*Trifolium variegatum* var. *variegatum*

Family: Fabaceae or Leguminosae

Comments: Peripheral. Found at a few scattered locations around the state (geographic range should be sparse, not peripheral, although this does not change the scoring); found in seeps and stream margins. Threats and trends not well known.

Scored By/Date: UNPS Rare Plant Comm./2008

*Trifolium wormskjoldii* var. *arizonicum*

Synonym: *Trifolium wormskjoldii* var. *arizonicum*, *T. mucronatum* ssp. *lacerum*

Family: Fabaceae or Leguminosae

Comments: Peripheral. Found only in Kane County in Utah. May be associated with sand seep wetlands. Threats and trends unknown. Might be confused with *Trifolium variegatum* var. *parunuweapense*.

Scored By/Date: UNPS Rare Plant Comm./2008

*Trifolium wormskjoldii* var. *wormskjoldii*

Synonym: *Trifolium wormskjoldii* var. *wormskjoldii*

Family: Fabaceae or Leguminosae

Comments: Peripheral. Sporadic in wetlands in northern Utah (less than 5 collections); threats and trends poorly known.

Scored By/Date: UNPS Rare Plant Comm./2008

*Quercus x eastwoodiae*

Synonyms: Included in *Quercus gambelii* var. *gambelii* in Intermountain Flora (2012).

Family: Fagaceae

Comments: Regional Endemic. Hybrid involving *Quercus gambelii* x *Q. welshii*, not recognized by some authors as distinct; habitat not specialized, abundance and trends not known. Similar to *Quercus x pauciloba* but more persistently hairy and leaves not as green. Might be better treated as Needs Data or Status Uncertain.

Scored By/Date: Fertig/2016

*Gentianella tortuosa*

Synonym: *Gentiana tortuosa*

Family: Gentianaceae

Comments: Regional Endemic. Usually found on Claron or similar limestone or calcareous-derived sediments, usually where rocky and vegetative cover is low. Can be locally common in some areas (such as Cedar Breaks NM along the amphitheater rim) but total numbers not known.

Scored By/Date: UNPS Rare Plant Comm./2008

*Gentianopsis barbellata*

Family: Gentianaceae

Comments: Peripheral. Only 17 specimens at BRY have been collected. It has been found mostly in the central Utah Plateaus, the Uinta Mountains, and the La Sal Mountains. Primary range is in the southwestern U.S. and the Rocky Mountains. Habitat Specificity scored as "0" since the habitat does not seem unusual according to A Utah Flora ("Spruce-fir and alpine tundra communities, typically on limestone and often in meadows"). Threats are high in at least the La Sal and Uinta Mountains, but it is not known if that holds true throughout this species' range in Utah. Threats include grazing-related impacts from cattle and naturalized mountain goats. Climate change is also a threat. These are the primary reasons for the upgrade of threats to "1". Trends are scored as "unknown".

Scored By/Date: J. Alexander/2014

Revisions: Moved from Low Priority to Medium Priority

*Geranium bicknellii*

Family: Geraniaceae

Comments: Peripheral. Only 6 specimens at BRY have been collected. It is known from Utah by mostly a single collection in 5 Counties. Primary range is in the Pacific Northwest, Eastern U.S., and Canada. Habitat Specificity scored as "0" since the habitat does not seem unusual according to A Utah Flora. It is primarily a forest understory species in lodgepole and ponderosa pine forest up to the treeline. It also has been reported to invade burn areas after fires. Habitat Specificity scored as "1" due to its status as a riparian species according to A Utah Flora ("Pond and lake margins"). Riparian habitat modification and disturbance from the grazing-related impacts of cattle may be a threat to this species, however it is scored as "unknown". Trends are scored as "unknown".

Scored By/Date: J. Alexander/2014

UNPS Medium Priority List: Ranking Comments

*Elodea bifoliata*

Synonym: *Elodea longivaginata*

Family: Hydrocharitaceae

Comments: Peripheral. Welsh et al. (2008) note a single collection in Utah in Wasatch County. Aquatic species of slow-moving water (ponds and lakes). Threats and trends not well known.

Scored By/Date: UNPS Rare Plant Comm./2008

*Emmenanthe penduliformia*

Family: Hydrophyllaceae or Boraginaceae

Comments: Peripheral. Uncommon in mixed shrub and pinyon-juniper communities in the Beaver Dam Mountains vicinity. Like many Washington County species, may be impacted by current and future construction, recreational, and grazing disturbance in the area.

Scored By/Date: J. Alexander/2009

*Hydrophyllum capitatum* var. *alpinum*

Family: Hydrophyllaceae or Boraginaceae

Comments: Peripheral. Only 15 specimens at BRY have been collected. This taxon's primary range is in California, Oregon and Idaho. It has been found in the Deep Creek Range (Juab and Tooele Counties), the Goose Creek Mountains, and Raft River mountains (Box Elder County) in Utah. Habitat Specificity scored as "0" since the habitat does not seem unusual based on the description in A Utah Flora ("Sagebrush, pinyon-juniper, aspen, spruce-fir, and grassy meadow communities"). Threats may be primarily from grazing-related impacts, but it scored as unknown due to uncertainty. In the Deep Creek Range, this is one of several taxa that may be threatened by the proposed introduction of naturalized mountain goats by the State of Utah. Climate change is also a threat. Although the climate threats alone do not warrant changes, threats will be upgraded to "1" if the introductions proceed. Trends are scored as "unknown".

Scored By/Date: J. Alexander/2014

*Hydrophyllum fendleri*

Family: Hydrophyllaceae or Boraginaceae

Comments: Peripheral. Only 5 specimens at BRY have been collected. Its primary range is in Rocky Mountains, Pacific Northwest, and Canada. This taxon has been found in the Abajo Mountains (San Juan County) in Utah. Habitat Specificity scored as "0" since the habitat does not seem unusual according to A Utah Flora ("Pinyon, mountain mahogany, oak, ponderosa pine, and spruce communities"). Threats may be primarily from grazing-related impacts, but it scored as unknown due to uncertainty. Trends are scored as "unknown".

Scored By/Date: J. Alexander/2014

*Nemophila parviflora* var. *austini*

Family: Hydrophyllaceae or Boraginaceae

Comments: Peripheral. Only 4 specimens at BRY have been collected. Primary range is in Rocky Mountains, Pacific Northwest, and Canada. This taxon has been found in Cache, Rich, and Weber Counties. Habitat Specificity scored as "0" since the habitat does not seem

unusual according to A Utah Flora ("Mountain brush community"). Threats may be primarily from grazing-related impacts, but it scored as unknown due to uncertainty. Trends are scored as "unknown".

Scored By/Date: J. Alexander/2014

*Phacelia anelsonii*

Family: Hydrophyllaceae or Boraginaceae

Comments: Regional Endemic. Uncommon on alluvial wash banks in the Beaver Dam Wash vicinity. It may also be found in washes and cliffs of Navajo Sandstone, similar to the habitat found in southern Nevada. It is one of the many species from Washington Co. that is impacted by current and future construction, recreational, and grazing disturbance in the area.

Scored By/Date: J. Alexander/2009

*Phacelia coerulea*

Family: Hydrophyllaceae or Boraginaceae

Comments: Peripheral. Found in warm desert shrub communities along the Beaver Dam slope in SW Utah. Three records noted in Welsh et al. (2008). Abundance presumed to be low, but trends not known.

Scored By/Date: UNPS Rare Plant Comm./2008

*Phacelia cryptantha*

Family: Hydrophyllaceae or Boraginaceae

Comments: Peripheral. 19 specimens at BRY have been collected, all of which were collected in Washington County. Primary range is in the Mojave Desert. Habitat Specificity is scored as "0" since the habitat does not seem unusual according to A Utah Flora ("Joshua tree, creosote bush, other warm desert shrub, chaparral, and pinyon-juniper communities"). Threats have increased due to residential-highway development and ATV recreation disturbance on the alluvial fans and desert valleys in which this species inhabits. Trends scored as "unknown", but it is likely downward. Relocation of populations have not been attempted recently to determine how many are threatened by development.

Scored By/Date: J. Alexander/2014

Revisions: New to Medium Priority list.

*Phacelia curvipes*

Family: Hydrophyllaceae or Boraginaceae

Comments: Peripheral. Only 11 specimens at BRY have been collected, all of which were collected in Washington County. Primary range is in the Mojave Desert. Habitat Specificity is scored as "0" since the habitat does not seem unusual according to A Utah Flora ("Warm desert shrub, pinyon-juniper, oak, and sagebrush communities"). Threats have increased due to residential-highway development and ATV recreation disturbance on the alluvial fans and desert valleys in which this species inhabits. Trends are scored as "unknown", but it is likely downward.

Scored By/Date: J. Alexander/2014

Revisions: New to Medium Priority list.

## UNPS Medium Priority List: Ranking Comments

*Phacelia franklinii*

Family: Hydrophyllaceae or Boraginaceae  
Comments: Peripheral. Only 11 specimens at BRY have been collected of this taxon. It has been found only in Wasatch County in Utah. Primary range is in the Pacific Northwest, Canada, and Alaska. Habitat Specificity scored as "0" since the habitat is variable and does not seem unusual according to A Utah Flora ("Sagebrush-grass, aspen, and spruce-fir communities"). Threats may be primarily from grazing-related impacts, but it scored as "unknown". Trends are scored as "unknown"  
Scored By/Date: J. Alexander/2015  
Revisions: New to Medium Priority list.

*Phacelia glandulifera*

Synonym: *Phacelia ivesiana* var. *glandulifera*  
Family: Hydrophyllaceae or Boraginaceae  
Comments: Peripheral. Found on volcanic gravels or sandy sites in NW Utah. Only 3 collections noted in Welsh et al. (2008). Trends not known.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Phacelia lemmonii*

Family: Hydrophyllaceae or Boraginaceae  
Comments: Peripheral. Only 10 specimens at BRY have been collected of this taxon. It has been found only in Beaver and Washington Counties in Utah. Primary range is in California and Nevada. Habitat Specificity scored as "0" since the habitat is variable and does not seem unusual according to A Utah Flora ("Pinyon-juniper community (an understory species) or in moist sites"). Threats may be primarily from grazing-related impacts, but it scored as "unknown". Trends are scored as "unknown"  
Scored By/Date: J. Alexander/2015  
Revisions: New to Medium Priority list

*Juncus articulatus*

Family: Juncaceae  
Comments: Disjunct. Although only 5 specimens at BRY have been reported for A Utah Flora from Grand, San Juan, Tooele, and Utah Counties, SEINet has 33 specimens from these and 6 additional counties (and some are at BRY but were not included in A Utah Flora by Welsh): Box Elder, Carbon, Daggett, Rich, Summit, and Wasatch. It is a species that is mostly in the northeastern U.S. with scattered disjunct populations across the Midwest and Western U.S. Habitat Specificity scored as "1" due to its status as a riparian species according to FNA ("Wet ground in ditches, lake and stream margins, and a variety of other habitats, often a calceophile"). This species has more than 25 populations in Utah (assuming the determination of the SEINet records are mostly correct) and likely is common locally. Number of Individuals is scored as "unknown" since this species may have large local populations. Riparian habitat modification and disturbance from farming, residential development, and the grazing-related impacts of cattle are a threat to this species. Trends are scored as "unknown".

Scored By/Date: J. Alexander/2014  
Revisions: New to Medium Priority list.

*Juncus bryoides*

Family: Juncaceae  
Comments: Sparse. Can be locally abundant in wet years, restricted to sand seep communities, probably under-collected (at first glance looks like a moss with sporophytes). Trends not known.  
Scored By/Date: Fertig/2009

*Hedeoma nana* ssp. *nana*

Synonym: *Hedeoma nanum*  
Family: Lamiaceae  
Comments: Peripheral. Only 11 specimens at BRY have been collected of this taxon. It has been found in Kane, San Juan and Washington Counties in Utah. Primary range is in Arizona and New Mexico. Habitat Specificity scored as "0" since the habitat is variable and does not seem unusual according to A Utah Flora ("Hanging gardens, warm desert shrub, pinyon-juniper, ponderosa pine, and cottonwood-ash communities"). Threats may be primarily from grazing-related impacts, but it scored as "unknown". Trends are scored as "unknown".  
Scored By/Date: J. Alexander/2015  
Revisions: New to Medium Priority list.

*Monarda fistulosa* var. *menthifolia*

Family: Lamiaceae  
Comments: Peripheral. Only 11 specimens at BRY have been collected of this taxon. It has been found only in San Juan and Washington Counties in Utah. Primary range is in the Rocky Mountains and Canada. Habitat Specificity scored as "0" since the habitat is variable and does not seem unusual according to A Utah Flora ("Mountain brush, pinyon-juniper, and ponderosa pine communities"). Threats may be primarily from grazing-related impacts, but it scored as "unknown". Trends are scored as "unknown".  
Scored By/Date: J. Alexander/2015  
Revisions: New to Medium Priority list.

*Monarda pectinata*

Family: Lamiaceae  
Comments: Peripheral. Only 11 specimens at BRY have been collected of this taxon. It has been found in Kane, San Juan and Washington Counties in Utah. Primary range is in the Great Plains. Habitat Specificity scored as "0" since the habitat is variable and does not seem unusual according to A Utah Flora ("Pinyon-juniper, mountain brush, ponderosa pine, and sagebrush communities"). Threats may be primarily from grazing-related impacts, but it scored as "unknown". Trends are scored as "unknown".  
Scored By/Date: J. Alexander/2015  
Revisions: New to Medium Priority list.

UNPS Medium Priority List: Ranking Comments

*Physostegia parviflora*

Synonym: *Dracocephalum nuttallii*

Family: Lamiaceae

Comments: Peripheral. Found in riparian habitats in northern Utah (habitat specificity low). Only 4 collections noted in 2008 Utah Flora. Threats and trends poorly known.

Scored By/Date: UNPS Rare Plant Comm./2008

*Scutellaria antirrhinoides*

Family: Lamiaceae

Comments: Peripheral. Only 6 specimens at BRY have been collected. This taxon has been found in Duchesne, Morgan, and Weber Counties. Its primary range is in the Pacific Northwest. Habitat Specificity scored as "0" since the habitat does not seem unusual according to A Utah Flora ("Mountain brush and sage-grass communities"). Threats may be primarily from grazing-related impacts, but it scored as unknown due to uncertainty. Trends are scored as "unknown".

Scored By/Date: J. Alexander/2014

*Scutellaria nana*

Family: Lamiaceae

Comments: Peripheral. Only 6 specimens at BRY have been collected. This taxon has been found in Duchesne, Iron, and Washington Counties. Primary range is in California, Nevada and the Pacific Northwest. Habitat Specificity scored as "0" since the habitat does not seem unusual according to A Utah Flora ("Sagebrush and pinyon-juniper communities"). Threats may be primarily from grazing-related impacts, but it scored as unknown due to uncertainty. Trends are scored as "unknown".

Scored By/Date: J. Alexander/2014

*Teucrium canadensis* var. *occidentale*

Family: Lamiaceae

Comments: Sparse. Welsh et al. (2008) note 3 collections from Utah at BRY. Found in riparian areas at widely scattered locations in the state. Threats and trends not known.

Scored By/Date: UNPS Rare Plant Comm./2008

*Allium lemmonii*

Family: Liliaceae or Alliaceae or Amaryllidaceae

Comments: Peripheral. Six collections cited in Utah Flora (2008). Found in variety of pinyon-juniper and meadow habitats (specificity low); threats and trends poorly known.

Scored By/Date: UNPS Rare Plant Comm./2008

*Allium parvum*

Family: Liliaceae or Alliaceae or Amaryllidaceae

Comments: Regional Endemic. Only 9 specimens at BRY have been collected. Its primary range is in California, Oregon and Nevada. The majority of specimens come from the House Range in Millard County. Habitat Specificity scored as "0" since the habitat does not seem unusual according to A Utah Flora ("Pinyon-juniper and

oak-maple communities"). Threats may be primarily from grazing-related impacts, but it scored as unknown due to uncertainty. Trends are scored as "unknown".

Scored By/Date: J. Alexander/2014

*Anticlea vaginata*

Synonym: *Zigadenus vaginatus*

Family: Liliaceae or Melanthiaceae

Comments: Regional Endemic. Found in hanging gardens. Specimens from Zion NP are atypical. Abundance usually low, threats scored as low (de-watering wetlands would be a potential threat), trends unknown.

Scored By/Date: UNPS Rare Plant Comm./2008

Revisions: Scientific name changed

*Calochortus ambiguus*

Family: Liliaceae or Calochortaceae

Comments: Regional Endemic. Only 3 specimens at BRY have been collected, all from extreme southeastern Washington County. Primary range is in Arizona. Habitat Specificity scored as "0" since the habitat does not seem unusual according to A Utah Flora ("sagebrush, oak, snowberry") and FNA ("dry soils"). Threats may be primarily from grazing-related impacts and ATV-recreational disturbance, but it scored as unknown. Trends are scored as "unknown".

Scored By/Date: J. Alexander/2014

*Calochortus bruneanus*

Family: Liliaceae or Calochortaceae

Comments: Regional Endemic. Only 3 specimens at BRY have been collected. It has been found in Box Elder, Juab, and Rich Counties. Primary range is in Pacific Northwest. Habitat Specificity scored as "0" since the habitat does not seem unusual based on the description in A Utah Flora ("Sagebrush, grass, pinyon-juniper, white fir, and aspen communities") and FNA ("Dry brushy, grassy slopes, flats, pinyon-juniper woodlands"). In the Deep Creek Range, this is one of several taxa that may be threatened by the proposed introduction of naturalized mountain goats. Climate change is also a threat. Although the climate threats alone do not warrant changes, threats will be upgraded to "1" if the introductions proceed. Trends are scored as "unknown".

Scored By/Date: J. Alexander/2014

*Calochortus kennedyi*

Family: Liliaceae or Calochortaceae

Comments: Peripheral. Historical record from Kanab area was last collected in 1925 and might be an escape from cultivation. Another population in Washington County shows affinities with yellow-flowered *C. aureus*. If native, trends apparently downward. Threats not well identified.

Scored By/Date: UNPS Rare Plant Comm./2008

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*Lloydia serotina*

Family: Liliaceae

Comments: Peripheral. 22 specimens at BRY have been collected. It was reported by A Utah Flora from Daggett, Duchesne, Salt Lake, Summit, and Utah Counties. It has also been found in Cache County (*Tillett 365*, 19 July 1954, Northern side of Mt. Magog, UTC; *Maguire 14089*, 17 July 1936, Bear River Range, above White Pine Lake, UTC). The single record from Salt Lake County was collected in Big Cottonwood Canyon (*Allen 16176*, 22 June 1960, Lake Blanch, Dromedary Pass, BRY, UTC). Primary range is in the Rocky Mountains and Canada. Habitat does not seem unusual according to FNA ("gravelly to rocky slopes and cliff faces or rock crevices, grassy tundra") and A Utah Flora ("Alpine tundra, in fellfield/rockstripes, and krummholz"). Threats include disturbance from the grazing-related impacts of cattle and naturalized mountain goats. Climate change is also a threat. These are the primary reasons for the upgrade of the threats to this species to a "1". Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population surveys. It is alarming that across its range in Utah, the last specimen was collected over 50 years ago.

Scored By/Date: J. Alexander/2014

Revisions: New to Medium Priority list

*Mentzelia decapetala*

Family: Loasaceae

Comments: Peripheral. Only 2 specimens at BRY have been collected. It has been found in Utah in Box Elder County (*Holmgren 15638*, 29 July 2007, Bear River Valley, State Route 30, NY; *Holmgren 15642*, 29 July 2007, Bear River Valley, Cutler Dam Road, NY) and Cache County (*Schenk 1769*, 07 August 2006, Route 30, at mile marker post 100, 0.5 miles East of Box Elder County line, UTC; *Holmgren & Holmgren 15132*, 13 July 2004, Cache Valley, hills west of Cornish, along the Cutler Hollow Road, UTC; *Holmgren 15637*, 29 July 2007, North end of the Wellsville Mountains, NY; . There is a single historical collection from Beaver County (*Williams Jr. 6*, 30 August 1941, SW end of Rocky Ford Reservoir, UTC). its primary range is in the Eastern U.S. and Mexico. Habitat Specificity scored as "0" but the habitat descriptions are incomplete in A Utah Flora. This may need updating from a more complete taxonomic work. Threats include grazing-related impacts from cattle and residential-highway disturbance, but it is scored as "unknown". Trends are scored as "unknown".

Scored By/Date: J. Alexander/2014

*Mentzelia pumila*

Family: Loasaceae

Comments: Regional Endemic. Known from the Uinta Mountains in NE Utah (more common across central Wyoming); only 6 collections noted by Welsh et al. (2008) of var. *pumila* (var. *lagarosa* from southern Utah is not recognized by other authorities on the

genus); abundance low, threats and trends unknown.  
Scored By/Date: Fertig/ 2009

*Mentzelia tricuspis*

Family: Loasaceae

Comments: Peripheral. Found in warm desert shrub communities in SW Utah; only 7 collections noted in Utah Flora (2008), abundance and trends not known.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Abutilon parvulum*

Family: Malvaceae

Comments: Peripheral. Single population, last observed in early 1970s?, Found in wetland habitats [UNPS Rare Plant Comm. 2008].

The voucher for Utah was collected near Veyo, Washington Co. (*S.E. Meyer 4111*, 21 Jun 1975, BRY, UNLV). This plant has been rarely collected in Utah and Nevada. It can also be found in neighboring Clark County, Nevada, where it has not been collected since the 1970's. Most recently, this taxon was collected adjacent to the Utah border by F. Landau in 1992 (Meadow Valley Wash, Lincoln County, Nevada UNLV) and L. Higgins in 2000 (Black Rock Mountain area, Sullivan Canyon and Black Rock Gulch, UNLV BRY).

Scored By/Date: J. Alexander/2015

*Eremalche exilis*

Family: Malvaceae

Comments: Peripheral. Only 11 specimens at BRY have been collected of this taxon. It has been found only in Washington County in Utah. Primary range is in the Arizona and California. Habitat Specificity scored as "0" since the habitat is variable and does not seem unusual according to A Utah Flora ("Blackbrush, *Hymenoclea*, creosote brush, and pinyon-juniper communities, or less commonly in riparian habitats"). Threats may be primarily from grazing-related impacts, but it scored as "unknown". Trends are scored as "unknown".

Scored By/Date: J. Alexander/2015

*Eremalche rotundifolia*

Family: Malvaceae

Comments: Peripheral. The single voucher for Utah was collected in Beaver Dam Wash, Washington Co. (*Atwood, Furniss, and Spencer*, 12 Apr 1997 BRY).

Scored By/Date: J. Alexander/2015

*Iliamna grandiflora*

Family: Malvaceae

Comments: Regional Endemic. The two vouchers for Utah were collected in the Abajo Mountains vicinity, San Juan Co. (*Rydberg & Garrett 9207*, 25 July 1911, NY; *Rydberg & Garrett 9835*, 19 August 1922, NY).

Scored By/Date: J. Alexander/2015

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*Sphaeralcea angustifolia*

Family: Malvaceae

Comments: Peripheral. Only 10 specimens at BRY have been collected of this taxon. It has been found only in Washington County in Utah. Primary range is in the Arizona and California. A Utah Flora suggests that this species is introduced in Utah, since it was first collected at BRY in 1931. However, specimens of this taxon were collected in the lower Virgin River Valley in neighboring Clark County, Nevada, by Edward Palmer in 1877, which suggests that this plant is native to the Virgin River drainage system. Higgins' observation in A Utah Flora that it is "spreading quickly over Washington County low elevation regions" may be a natural occurrence due to climate change and the encroachment of drier desert habitats northward. In addition, *S. parvifolia* and *S. ambigua* spread along disturbed roadsides in Utah and Nevada, and this species, although much less common, may have a similar colonizing ability. Habitat Specificity scored as "0" since the habitat is variable and does not seem unusual according to A Utah Flora ("Mixed warm desert shrub community"). Threats may be primarily from residential development and grazing-related impacts, but it scored as "unknown". Trends are scored as "unknown".

Scored By/Date: J. Alexander/2015

*Sphaeralcea digitata*

Family: Malvaceae

Comments: Peripheral. The two vouchers for Utah were collected in along the San Juan River near Bluff, San Juan Co. (*Rydberg & Garrett 9907*, 25 August 1911, NY; *Rydberg & Garrett 9957*, 25 August 1922, NY).

Scored By/Date: J. Alexander/2015

*Sphaeralcea rusbyi* var. *rusbyi*

Family: Malvaceae

Comments: Regional Endemic. Mostly on Chinle, Moenkopi, Kaibab, and other calcareous substrates or alluvium in desert shrub communities (habitat specificity high). Populations can be locally common, but threats and trends not well documented.

Scored By/Date: UNPS Rare Plant Comm./2008

*Abronia argillosa*

Family: Nyctaginaceae

Comments: Regional Endemic. Found in sparse desert shrub communities on Mancos Shale and the Green River Formation in eastern Utah and adjacent Colorado. Reported as locally abundant in CO. Threats and trends poorly known.

Scored By/Date: UNPS Rare Plant Comm./2008

*Acleisanthes nevadensis*

Synonym: *Selinocarpus diffusus* ssp. *nevadensis*

Family: Nyctaginaceae

Comments: Regional Endemic. Occurs in warm desert shrub and creosote bush communities in southern Utah. Some populations near St. George are being lost to urban sprawl, or are vulnerable to competition and

increased wildfire risk from spreading invasive annuals. Abundance and trends unknown rangewide.

Scored By/Date: UNPS Rare Plant Comm./2008

Revisions: Scientific name changed.

*Mirabilis linearis* var. *decipiens*

Family: Nyctaginaceae

Comments: Regional Endemic. Only 14 specimens at BRY have been collected of this taxon. It has been found in Garfield, Piute, and San Juan Counties in Utah. This taxon's primary range is in Arizona, Colorado, and New Mexico. Habitat Specificity scored as "0" since the habitat is variable and does not seem unusual according to A Utah Flora ("Pinyon-juniper, ponderosa pine, riparian, aspen, and spruce-fir communities"). Threats to this taxon may be primarily from grazing-related impacts, but it scored as "unknown" due to uncertainty. Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys.

Scored By/Date: J. Alexander/2015

Revisions: New to Medium Priority list

*Tripterocalyx carneus*

Family: Nyctaginaceae

Comments: Peripheral. 17 specimens at BRY have been collected of this taxon. It has been found in Garfield, Kane, and San Juan Counties in Utah. Primary range is in Arizona, Colorado, New Mexico, Texas and Mexico. Habitat Specificity scored as "0" since the habitat is variable and does not seem unusual according to A Utah Flora ("Blackbrush, *Ephedra-Vanclavea*, purple sage, sand sagebrush, and indigo bush communities").

Threats may be primarily from grazing-related impacts, but it scored as "unknown". Trends scored as "unknown".

Scored By/Date: J. Alexander/2015

Revisions: New to Medium Priority list.

*Menodora scabra*

Family: Oleaceae

Comments: Peripheral. Only 10 specimens at BRY have been collected. It has been found in Beaver, Garfield, Kane and Washington Counties. Primary range is in the southern U.S. and Mexico. Habitat Specificity scored as "0" Threats include grazing-related impacts from cattle, but it is scored as "unknown". Trends scored as "unknown"

Scored By/Date: J. Alexander/2014

*Camissonia andina*

Synonym: *Holmgrenia andina*

Family: Onagraceae

Comments: Peripheral. Two records noted for Utah in Welsh et al. (2008). Found in sagebrush communities (habitat specificity low). Populations small, but threats and trends unknown.

Scored By/Date: UNPS Rare Plant Comm./2008

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*Camissonia multijuga*Synonym: *Chylismia multijuga*Family: OnagraceaeComments: Peripheral. Relatively common in the Beaver Dam Mountains and St. George vicinity, but like other species from this area it is threatened by current and future construction, recreational activities, and grazing disturbance.Scored By/Date: J. Alexander/2009*Camissonia parryi*Synonym: *Chylismia parryi*Family: OnagraceaeComments: Regional Endemic. Relatively common on gypsum outcrops throughout Washington Co., but due to development and ATV disturbance, it's range is shrinking. Trend probably downward.Scored By/Date: J. Alexander/2014*Camissonia pterosperma*Synonym: *Chylismiella pterosperma*Family: OnagraceaeComments: Sparse. Changed distribution to sparse (few pops over wide area), population size and threats not known, probably under-collected.Scored By/Date: Fertig/2009*Camissonia pusilla*Family: OnagraceaeComments: Peripheral. Only 5 specimens at BRY have been collected of this taxon. It has been found in Beaver and Piute Counties in Utah and reported by an unknown source, for Iron and Washington Counties. Its primary range is in California, Oregon, and Nevada. Habitat Specificity scored as "0" since the habitat is variable and does not seem unusual according to A Utah Flora ("Mixed desert shrub, sagebrush, rabbitbrush, pinyon-juniper, and mountain brush communities"). Threats may be primarily from grazing-related impacts, but it scored as "unknown". Trends are scored as "unknown".Scored By/Date: J. Alexander/2015*Gayophytum humile*Family: OnagraceaeComments: Peripheral. Vouchers for this taxon are not reported in A Utah Flora. It is reported for Cache and Wasatch Counties in Utah in IMF. In SEINet, one specimen from Heber Valley Camp in Wasatch County (*Herrin CSH08-0298* 25 August 2008 BRY) and one specimen from Tony Grove Lake in Cache County (*Snell s.n.* 22 July 1937 UTC) documents this taxon for Utah. Others in SEINet determined as the synonym *G. nuttallii* are likely *G. diffusum*. *G. nuttallii* has been historically confused with these two species. This taxon's primary range is in California, the Pacific Northwest, the northern Rocky Mountains, and Canada. Habitat Specificity scored as "0" since the habitat is variable and does not seem unusual according to A Utah Flora ("moist to dry, open or sparsely wooded places"). Threats may be

primarily from grazing-related impacts, but it scored as "unknown" due to uncertainty. Trends "unknown".

Scored By/Date: J. Alexander/2015*Oenothera acutissima*Synonym: *Oenothera flava* var. *acutissima*Family: OnagraceaeComments: Regional Endemic. A Utah Flora 4th ed. states that this plant is also found in Colorado. Habitat Specificity originally scored as "0". A Utah Flora ("often in openings and depressions where temporarily moist in spring and early summer") and IMF ("seasonally moist or wet places, mostly in drainage channels or rocky meadows with shallow soil") suggest this is a ephemeral pool or seasonally wet meadow species. Due to these data, it is changes to a "1". It mostly occurs below the elevation where grazing disturbance by goats in the Uinta Mountains is a major threat. However, disturbance from the grazing-related impacts of cattle and climate change are still a threat. These are the primary reasons for the upgrade of threats to "1". Trends are scored as "unknown".Scored By/Date: J. Alexander/2015Revisions: Scientific name changed*Oenothera caespitosa* var. *macroglottis*Family: OnagraceaeComments: Peripheral. Only 1 specimen at BRY has been collected. It has been found in the La Sal Mountains in Grand County in Utah. It is also reported for the Abajo Mountains in San Juan County in A Utah Flora. Primary range is in the Rocky Mountains. Habitat Specificity scored as "0" since the habitat is variable and does not seem unusual according to A Utah Flora ("Igneous substrates in pinyon-juniper and mountain brush communities"). Threats may be primarily from grazing-related impacts, but it scored as "unknown" due to uncertainty. Trends scored as "unknown".Scored By/Date: J. Alexander/2015*Oenothera caespitosa* var. *purpurea*Family: OnagraceaeComments: Peripheral. Only 2 specimens at BRY has been collected. It has been found only in the Goose Creek Mountains of Box Elder County in Utah. Primary range is in the Pacific Northwest. Habitat Specificity scored as "0" since the habitat does not seem unusual according to A Utah Flora ("sagebrush and juniper communities"). Threats may be primarily from grazing-related impacts, but it scored as "unknown". Trends are scored as "unknown".Scored By/Date: J. Alexander/2015*Coeloglossum viride*Synonym: *Habenaria viridis* var. *bracteata*Family: OrchidaceaeComments: Peripheral. Only 2 specimen at BRY have been collected. It has been found in Duchesne and Summit Counties. Habitat Specificity scores as a "0". This



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taxon appears not to be restricted to riparian or meadow habitats according to A Utah Flora. Threats include disturbance from the grazing-related impacts of cattle. Climate change is also a threat. These are the primary reasons for the upgrade of the threats to this species to a "1". Trends are scored as "unknown"

Scored By/Date: J. Alexander/2014

Revisions: Scientific name changed

*Listera borealis*

Family: Orchidaceae

Comments: Peripheral. Only 7 specimens at BRY have been collected. It has been found in Cache, Duchesne, San Juan, Salt Lake, and Summit Counties. Primary range is in the Rocky Mountains and Canada. Habitat does not seem unusual according to FNA ("In moist, rich humus of mossy coniferous or mixed hardwood forests, swamps, often along cold streams fed by melting snow, prefers high acidic soils"). Threats include habitat modification and disturbance from the grazing-related impacts of cattle and naturalized mountain goats. Climate change is also a threat. These are the primary reasons for upgrading threats to a "1". Trends are "unknown"

Scored By/Date: J. Alexander/2014

*Listera cordata* var. *nephrophylla*

Family: Orchidaceae

Comments: Peripheral. Only 7 specimens at BRY have been collected. It has been found in Duchesne, Summit, and Wasatch Counties. Primary range is in the Rocky Mountains and Canada. Not reported for Utah in FNA. It is likely the authors missed the specimens for Utah. Habitat does not seem unusual according to FNA ("Shaded humus of rich, well-drained, coniferous or coniferous-hardwood forest"). Threats include habitat modification and disturbance. Climate change is also a threat. These are the primary reasons for the upgrade of threats to a "1". Trends are scored as "unknown"

Scored By/Date: J. Alexander/2014

Revisions: Scientific name changed

*Platanthera obtusata*

Synonym: *Habenaria obtusata*

Family: Orchidaceae

Comments: Peripheral. Only 5 specimens at BRY have been collected. It has been found in Daggett and Duchesne Counties. Primary range is in the Rocky Mountains and Canada. Habitat does not seem unusual according to FNA ("Mesic to wet coniferous forest, forested fens, sphagnum bogs, stream banks, tundra, moist roadsides"). Threats include habitat modification and disturbance from the grazing-related impacts. Climate change is also a threat. These are the primary reasons for the upgrade of threats to a "1". Trends are scored as "unknown"

Scored By/Date: J. Alexander/2014

Revisions: Scientific name changed

*Paeonia brownii*

Family: Paeoniaceae

Comments: Peripheral. Only 5 specimens at BRY has been collected. It has been found in the Goose Creek Mountains of Box Elder County in Utah. A historical specimen from the Ephraim Canyon Experimental Station in Sanpete County may be mislabeled or a specimen from a planting (*Crane s.n.* 12 June 1936 UTC). Primary range is in California and the Pacific Northwest. Habitat Specificity scored as "O" since the habitat does not seem unusual according to A Utah Flora ("Sagebrush, mountain brush, and aspen communities"). Threats may be primarily from grazing-related impacts, but it scored as "unknown". Trends are scored as "unknown".

Scored By/Date: J. Alexander/2014

*Argemone corymbosa* ssp. *arenicola*

Synonym: *Argemone arenicola*

Family: Papaveraceae

Comments: Regional Endemic. Found on Tropic Shale, Entrada, Carmel, and Cutler formations in desert shrub communities (habitat specialization high), abundance and trends not known.

Scored By/Date: UNPS Rare Plant Comm./2008

*Armeria maritima* ssp. *sibirica*

Family: Plumbaginaceae

Comments: Peripheral. This taxon is not reported for Utah in FNA. The Colorado population of *Armeria maritima* is determined as ssp. *sibirica* in FNA, therefore it is reasonable that the Uinta Mountains population is this taxon also. It is however, not resolved. The Utah population may yet be a different subspecies. It is likely the authors missed the specimens for Utah. Habitat Specificity scored as "O" since the habitat does not seem unusual based on the description in A Utah Flora. According to FNA, the species has a variable habitat preference due to its circumboreal nature. It does not appear to be an edaphic endemic. Threats include grazing-related impacts from naturalized mountain goats. Climate change is also a threat. These are the primary reasons for the upgrade of threats to a "1". Trends are scored as "unknown".

Scored By/Date: J. Alexander/2015

*Achnatherum lemmonii* ssp. *lemmonii*

Synonym: *Stipa lemmonii*

Family: Poaceae or Gramineae

Comments: Peripheral. Although no specimens are present at BRY, there is one voucher at GH from Salt Lake County (Wasatch Range, *Jones s.n.*), one voucher at UTC from Wasatch County (*Matthews 147*, 18 Aug 1964), and 12 at UTC from Cache and Uintah counties. It has been found in the Bear River Range, Wasatch Range, and Uintah Mountains. This taxon's primary range is in California, and the Pacific Northwest. Habitat Specificity scored as "O" since the habitat does not seem unusual based on the description in A Utah Flora ("Grass and sagebrush communities and open woodlands"). Trends scored as "unknown". These data rank

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this taxon to the "Medium" list, but it may be placed on the "Status Uncertain" or "Excluded" list if specimens were determined incorrectly based on the FNA treatment. Threats include grazing-related impacts from cattle and naturalized mountain goats. In the Deep Creek Range, this is one of several taxa that may be detrimentally impacted by the proposed introduction of naturalized mountain goats by the State of Utah. Climate change is also a threat. These are the primary reasons for the upgrade of threats to a "1". Trends unknown.

Scored By/Date: J. Alexander/2014

Revisions: Scientific name changed

*Achnatherum nevadense*

Synonym: *Stipa nevadensis*

Family: Poaceae or Gramineae

Comments: Peripheral. Only 1 specimen at BRY has been collected. It has been found in the Tushar Mountains in Beaver County (*Taye 4700*, Indian Creek, 4 Jul 1989 BRY). FNA also reports this taxon for Iron and Salt Lake Counties. Its primary range is in Nevada and California. Habitat Specificity scored as "0" since the habitat does not seem unusual according to A Utah Flora ("Pinyon-juniper, manzanita, mountain mahogany community"). Threats may be primarily from the grazing-related impacts of cattle and naturalized mountain goats. Climate change is also a threat. This is the primary reason for scoring threats to this species as a "1". Trends are scored as "unknown". This taxon is ranked on the "Medium" list, but it may be placed on the "Status Uncertain" or "Excluded" list if this specimen is determined incorrectly based on the FNA treatment.

Scored By/Date: J. Alexander/2014

Revisions: Scientific name changed

*Achnatherum perplexum*

Synonym: *Stipa perplexa*

Family: Poaceae or Gramineae

Comments: Peripheral. Although no specimens at BRY have been collected of this taxon, there are 4 vouchers at UTC in Garfield County, 1 voucher at UTC in Kane County (*Collotzi et al 426*, 24 Jun 1965) and 1 voucher at UTC in San Juan County (*Padgett s.n.* 18 July 1985). Its primary range is in California, and the Pacific Northwest. Habitat Specificity scored as "0" since the habitat does not seem unusual according to FNA ("pinyon pine communities"). This taxon has been confused with *A. scribneri* and *A. nelsonii* in Utah. Since the species is not recognized in A Utah Flora, some records at BRY may be misidentified *sensu* the FNA treatment. Disturbance related to grazing activities may be a threat to this species, however it is scored as "unknown". Trends are scored as "unknown".

Scored By/Date: J. Alexander/2014

Revisions: New to Medium Priority list

*Achnatherum scribneri*

Synonym: *Stipa scribneri*

Family: Poaceae or Gramineae

Comments: Peripheral. Population in Capitol Reef NM (specimen in CARE herbarium) confirmed by Fertig and Mary Barkworth, little information available, population size probably small, threats not known; number of populations updated to 1 [Fertig 2009].

The record for Utah for this taxon is *Porter 4083* in the Capitol Reef N.P. Herbarium.

Scored By/Date: J. Alexander/2014

Revisions: Scientific name changed

*Achnatherum thurberianum*

Synonym: *Stipa thurberiana*

Family: Poaceae or Gramineae

Comments: Peripheral. Only 2 specimens at BRY. It has been found on Mount Nebo in Juab County and in the Grouse Creek Mountains in Box Elder County (A Utah Flora does not list the voucher at BRY, but there are specimens at UTC from both localities). This taxon's primary range is in Nevada, California, and the Pacific Northwest. Habitat Specificity scored as "0" since the habitat does not seem unusual according to A Utah Flora ("Sagebrush, Gambel oak, and pinyon-juniper communities"). Disturbance related to grazing activities may be a threat to this species, however it is scored as "unknown". Trends are scored as "unknown". This taxon is ranked on the "Medium" list, but it may be placed on the "Status Uncertain" or "Excluded" list if the specimens are determined incorrectly based on the FNA treatment.

Scored By/Date: J. Alexander/2014

Revisions: Scientific name changed

*Alopecurus carolinianus*

Family: Poaceae or Gramineae

Comments: Peripheral. Vouchers for Utah were collected along Farmington Bay, Davis Co. (*Maguire 13898*, 22 June 1936, BRY, UTC); near the Logan Airport in Cache County (*Maguire 2255*, 9 June 1933, UTC); and at Dry Lake near Sardine Canyon, Cache County (*Maguire 13221*, 14 May 1934, UTC). A record for Garfield County from Capitol Reef National Park (*Porter 4263*, 17 July 1987) is misidentified according to W. Fertig in the NPS Checklist. It was determined by him as *A. aequalis*.

Scored By/Date: J. Alexander/2015

*Bouteloua hirsuta*

Synonym: *Chondrosium hirsutum*

Family: Poaceae or Gramineae

Comments: Peripheral. Historical, waif in Zion NP in 1940s - perhaps a short-lived introduction? [Fertig 2008].

Although no specimens at BRY have been collected, it was collected once in the Zion Canyon vicinity in Washington County (*Booth s.n.*, 9 Oct 1946, UTC). This is the only record cited for Utah in A Utah Flora. However, in

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Barkworth et al. 2007 (Manual of Grasses for North America), there are also reports of this taxon from Carbon Co. and San Juan Co. A specimen from SEINet that was collected near Blanding, San Juan County (*Heil & Mietty 17766*, 9 Sep 2001, NAVA, SJNM) may be one of the vouchers. The details of the Carbon County voucher reported by Barkworth is not known.  
Scored By/Date: J. Alexander/2015

*Calamovilfa gigantea*

Family: Poaceae or Gramineae  
Comments: Peripheral. Locally common on shifting sand dunes, may be impacted by ATV recreation, otherwise threats low.  
Scored By/Date: Fertig/2009

*Festuca sororia*

Family: Poaceae or Gramineae  
Comments: Peripheral. Only 3 specimens at BRY have been collected. It has been found in the Abajo Mountains (San Juan County) and in central Utah (Emery and Iron Counties). FNA also reports a record for Utah County. Primary range is in Arizona and New Mexico. Habitat Specificity scored as "0" since the habitat does not seem unusual according to A Utah Flora ("Spruce-fir communities in more or less dense shade"). Threats to this taxon include grazing-related impacts from cattle, but it is scored as "unknown". Climate change is also a threat. Droughts and rapid snowmelt due to wind-blown sediments are melting snowpack earlier than normal in our region. Trends are scored as "unknown".  
Scored By/Date: J. Alexander/2014

*Festuca subulata*

Family: Poaceae or Gramineae  
Comments: Peripheral. Only 6 specimens at BRY have been collected. It has been found in Cache, Davis, Salt Lake, and Utah Counties. Primary range is in the Pacific Northwest and Canada. Habitat Specificity scored as "0" since the habitat does not seem unusual according to A Utah Flora ("Mesic to moist sites, usually in dense shade within maple-aspens, aspen-mountain brush, and aspen-spruce-fir communities"). Threats include grazing-related impacts from cattle, but it is scored as "unknown". Climate change is also a threat. Trends are scored as "unknown".  
Scored By/Date: J. Alexander/2014  
Revisions:

*Helictotrichon mortonianum*

Family: Poaceae or Gramineae  
Comments: Peripheral. Only 5 specimens at BRY have been collected. It has been found in Daggett, Duchesne, Summit and Uintah Counties. It is endemic to the Rocky Mountains. Habitat Specificity scored as "0" since the habitat does not seem unusual according to A Utah Flora ("Grass-sedge communities. along lake margins, and on open slopes above timberline in alpine tundra") and FNA ("alpine and subalpine meadows and summits").

Threats include habitat modification and disturbance from the grazing-related impacts of cattle and naturalized mountain goats. Climate change is also a threat. Droughts and rapid snowmelt due to wind-blown sediments are melting snowpack earlier than normal in our region. These are the primary reasons for upgrading threats to "1". Trends are scored as "unknown".  
Scored By/Date: J. Alexander/2014

*Leptochloa fusca* ssp. *uninervia*

Synonym: *Leptochloa uninervia*  
Family: Poaceae or Gramineae  
Comments: Peripheral. The voucher for Utah was collected in Utah Co. (*Menzies 8001*, BRY).  
Scored By/Date: J. Alexander/2015  
Revisions: Scientific name changed

*Melica porteri*

Family: Poaceae or Gramineae  
Comments: Peripheral. Only 1 specimen at BRY has been collected. It has been found in the Abajo Mountains in San Juan County (*Thompson s.n.* 12 Aug 1961). Primary range is in the Southwestern U.S. and Mexico. Two varieties are recognized in FNA, but it is not known which variety is represented in Utah. In addition, *Melica porteri* was not reported for Utah in FNA. The determination of the BRY voucher needs to be confirmed. Habitat Specificity scored as "0" since the habitat does not seem unusual according to A Utah Flora ("aspen-mountain brush community"). Trends are scored as "unknown". This taxon is on the "Medium" list, but it may be placed on the "Status Uncertain" or "Excluded" list if the specimen is determined incorrectly based on the FNA treatment.  
Scored By/Date: J. Alexander/2014

*Muhlenbergia arsenei*

Synonym: *Muhlenbergia pauciflora*, in part  
Family: Poaceae or Gramineae  
Comments: Peripheral. Although no specimens at BRY have been collected, it is reported for Washington County (*Shultz et al. 1555*, 10 Oct 1974, Zion National Park top of Walter's Wiggles, trailhead to Angel's landing, NY, UTC; *Holmgren et al. 15998*, 20 Sep 1974, Zion National Park Trail to Angel Landing, 1/2 mile from bridge, NY) in Barkworth et al. 2007 (Manual of Grasses for North America). There are also records for this taxon from Kane County just E of Zion NP (*Fertig 27986* UTC) and San Juan County (*Welsh & Moore 2508*, 15 Aug 1963, Natural Bridges National Monument, Armstrong Canyon, between Kachina Bridge and Owachomo Bridge, BRY NY). A Utah Flora includes this taxon within a broad concept of *M. pauciflora*. The report for *M. polycaulis* for Utah is also based on a specimen that has since been determined as *M. arsenei* (*Rydberg & Garrett 9498*, Aug 1911, Armstrong and White Canyons, near the Natural Bridges, southeastern Utah, NY). Habitat Specificity scored as "0" since the habitat does not seem unusual according to FNA ("among granitic

## UNPS Medium Priority List: Ranking Comments

boulders, on rocky slopes, limestone rock outcrops, and in arroyos"). Threats include grazing-related impacts from cattle, but it is scored as "unknown". Trends are scored as "unknown".

Scored By/Date: J. Alexander/2014

*Muhlenbergia filiculmis*

Family: Poaceae or Gramineae

Comments: Peripheral. Although no specimens at BRY have been collected, it is reported for Garfield County (Reese 947, 21 July 1978, Iron Springs Draw, Escalante Mountains, UTC; Helmkamp s.n., 21 August 1975, N of Hwy Utah-14 on dirt road to Mammoth Creek, UCR), San Juan County (Hevly s.n. 28 June 1972, Navajo Mountain, ASC) and Wayne County (Collier 307, Along (near) edge of a small draw [Antelope Spring Draw, W of Boulder Mountain], UTC) in Barkworth et al. 2007 (Manual of Grasses for North America). A Utah Flora excludes this species from Utah and states that none of the specimens seen by the authors have the characters of this taxon. They assert that reports of this are misidentified specimens of *M. filliformis*. Habitat Specificity scored as "0" since the habitat does not seem unusual according to FNA ("on rocky slopes, dry meadows, and dry gravelly flats in forest openings"). Threats include grazing-related impacts from cattle, but it is scored as "unknown". Trends are scored as "unknown".

Scored By/Date: J. Alexander/2014

Revisions: New to Medium Priority list

*Muhlenbergia microsperma*

Family: Poaceae or Gramineae

Comments: Peripheral. May be threatened by competition from exotics, wildfire. Found on rocky limestone sites in Beaver Dam Mountains. Abundance and trend unknown.

Scored By/Date: UNPS Rare Plant Comm./2008

*Muhlenbergia repens*

Family: Poaceae or Gramineae

Comments: Peripheral. The three vouchers for Utah were collected in Kane Co. (Morden 649 UT; Welsh & Thorne 25177, 25 Sep 1992, BRY) and in San Juan Co. (Heil et al. 22948, 16 Sep 2003, SJNM). This taxon is only reported for San Juan Co. in Barkworth et al. 2007 (Manual of Grasses for North America), but also reported for Kane Co. in A Utah Flora. This taxon is likely present in both counties and the vouchers above are likely correctly determined.

Scored By/Date: J. Alexander/2015

*Muhlenbergia schreberi*

Family: Poaceae or Gramineae

Comments: Disjunct. Only 1 specimen at BRY has been collected. It was found in Washington County (Deming 159, 03 July 1937, Water Canyon [along Short Creek, N of Hildale]). Its primary range is in the Eastern U.S. and Canada with disjunct populations in Colorado and Arizona. Habitat Specificity scored as "0" since the habitat does not seem unusual according to FNA ("moist to dry

woods and prairies on rocky talus slopes, in ravines, and along sandy riverbanks"). Threats include grazing-related impacts from cattle, but it is scored as "unknown". Trends are scored as "unknown".

Scored By/Date: J. Alexander/2014

*Oryzopsis asperifolia*

Family: Poaceae or Gramineae

Comments: Peripheral. Only 9 specimen at BRY has been collected. It has been found in the Deep Creek Range (Juab County) and the Uinta Mountains in Daggett, Duchesne, and Uintah Counties. This taxon's primary range is in the Rocky Mountains and Canada. Habitat Specificity scored as "0" since the habitat does not seem unusual based on the description in A Utah Flora ("Moist to mesic sites under aspen, ponderosa pine, and lodgepole pine"). Threats to this taxon include grazing-related impacts. In the Deep Creek Range, this is one of several taxa that may be threatened by the proposed introduction of naturalized mountain goats by the State of Utah. Climate change is also a threat. These are the primary reasons for the upgrade of the threats to this species to a "1". Trends are scored as "unknown".

Scored By/Date: J. Alexander/2014

*Poa bolanderi*

Family: Poaceae or Gramineae

Comments: Disjunct. Only 3 specimens at BRY have been collected. It has been found in Cache, Garfield, and Rich Counties. It was also reported for San Juan County in FNA. Primary range is in the Pacific Northwest and California. Habitat Specificity scored as "0" since the habitat does not seem unusual according to A Utah Flora ("Dry to moist, open or wooded habitats"). Threats include grazing-related impacts from cattle, but it is scored as "unknown" due to uncertainty. Climate change is also a threat. Trends are scored as "unknown".

Scored By/Date: J. Alexander/2014

*Poa laxa ssp. banffiana*

Family: Poaceae or Gramineae

Comments: Disjunct. Although no specimens at BRY have been collected, it has been found in the La Sal Mountains in San Juan County (Maguire & Redd 1659, 05 July 1932, Saddle between Mt. Peale and Mt. Tukungivatz, UTC). Habitat Specificity scored as "0" since the habitat does not seem unusual according to FNA ("mesic alpine locations"). Threats include grazing-related impacts from cattle and naturalized mountain goats. Climate change is also a threat. Droughts and rapid snowmelt due to wind-blown sediments are melting snowpack earlier than normal in our region. These are the primary reasons for the upgrade of the threats to this species to a "1". Trends are scored as "unknown" but may be downward since this species has not been collected since 1932.

Scored By/Date: J. Alexander/2014

Revisions: New to Medium Priority list.

UNPS Medium Priority List: Ranking Comments

*Schizachne purpurascens*

Family: Poaceae or Gramineae

Comments: Peripheral. Only 9 specimens at BRY have been collected. It has been found in Daggett, Duchesne, and Uintah Counties in Utah. Primary range is in the Rocky Mountains, eastern U.S., and Canada. Habitat does not seem unusual according to A Utah Flora ("Mesic to moist sites, in aspen, lodgepole, and ponderosa pine communities, streamside and in wet meadows") Threats include grazing-related impacts from cattle and naturalized mountain goats. Climate change is also a threat. These are the primary reasons for the upgrade of threats to a "1". Trends are scored as "unknown".

Scored By/Date: J. Alexander/2014

*Sphenopholis intermedia*

Synonym: *Sphenopholis obtusata*

Family: Poaceae or Gramineae

Comments: Peripheral. Although no specimens at BRY have been collected, it has been found in the Tushar Mountains in Beaver County (*Taye 3002*, 05 August 1984, Beaver River Canyon, UTC) and in the Henry Mountains in Garfield County (*Stanton 4944*, 25 June 1930, East side of Mt. Ellen, UTC). It may also be in Piute and Iron County (the map in FNA is too hard to read accurately). This taxon is included in synonymy with *S. obtusata* in A Utah Flora. Habitat Specificity scored as "0" since the habitat seems variable and does not seem unusual according to FNA ("in wet to damp sites. in forest, meadows, and waste places"). At least in the Tushar Mountains, threats to this taxon include grazing-related impacts from cattle and naturalized mountain goats. Climate change is also a threat. These are the primary reasons for the upgrade of threats to a "1". It is not known if these threats are consistent in the remainder of its range in Utah. Trends are scored as "unknown".

Scored By/Date: J. Alexander/2014

Revisions: Scientific name changed

*Sporobolus pulvinatus*

Family: Poaceae or Gramineae

Comments: Peripheral. The one voucher for Utah was collected NW of Four Corners in San Juan Co. (*Harrison 12183*, 26 Aug 1953, BRY, UTC).

Scored By/Date: J. Alexander/2015

*Sporobolus texanus*

Family: Poaceae or Gramineae

Comments: Peripheral. The one voucher for Utah was collected in Ida Gulch in Grand Co. (*Franklin 4344*, 3 Oct 1986, BRY).

Scored By/Date: J. Alexander/2015

*Trisetum canescens*

Family: Poaceae or Gramineae

Comments: Disjunct. Only 3 specimens at BRY have been collected. It has been found in Cache, Salt Lake, and San Juan Counties. It was last collected for San Juan County in the Abajo Mountains by Rydberg in

1911. This taxon's primary range is in the Pacific Northwest and California. Habitat Specificity scored as "0" since the habitat does not seem unusual according to A Utah Flora ("Under maple, aspen, and spruce-fir, and on open slopes"). Threats include grazing-related impacts from cattle, but it is scored as "unknown" due to uncertainty. Climate change is also a threat. Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys.

Scored By/Date: J. Alexander/2014

*Aliciella haydenii*

Synonym: *Gilia haydenii*

Family: Polemoniaceae

Comments: Regional Endemic. Welsh et al. (2008) note 6 collections for Utah from San Juan County. Found in unspecialized desert shrub communities. Threats and trends unknown.

Scored By/Date: UNPS Rare Plant Comm./2008

Revisions: Scientific name changed.

*Aliciella latifolia* ssp. *latifolia*

Synonym: *Gilia latifolia*

Family: Polemoniaceae

Comments: **Regional Endemic. Type locality is "Valley of the Virgen, near St. George" (*Parry 188* GH)** collected in 1874. Documented just a few times since then. Abundance and trends poorly known. Habitat is not specialized.

Scored By/Date: UNPS Rare Plant Comm./2008

Revisions: Scientific name changed

*Allophyllum gilioides* ssp. *violaceum*

Synonym: *Gilia gilioides*

Family: Polemoniaceae

Comments: Peripheral. Known from 2 collections by Larry Higgins from vicinity of Enterprise in pinyon-juniper/sagebrush communities (habitat specialization = 0); threats and trends poorly known.

Scored By/Date: UNPS Rare Plant Comm./2008

Revisions: Scientific name changed

*Collomia wilkenii*

Family: Polemoniaceae

Comments: Regional Endemic. Only 3 specimens at BRY have been collected. It has been found only in the vicinity of the Pilot Range, Burnt Mountain, the Bovine Mountains, and the Grouse Creek Mountains in Box Elder County in Utah. At least one specimen from Tooele County is based on a typographical error. A voucher from Tooele County at BRY (Crystal Spring area, 7500 ft. *Harper s.n.* 14 June 1973) is mislabeled. There are no Crystal Springs in the Pilot Range and none in Tooele County. The highest elevation of the portion of the Pilot Range in Tooele County is 5400 ft. In the portion of the Pilot Range in Box Elder County, Sheep Range Spring is the only one above 7,000 ft. In SEINet, collections of other species from this same

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collector and date at BRY and NY are also labeled as "Washington County, Crystal Springs area, Pilot Peak", further confusing the situation and adding doubt to the accuracy of the label data. Additionally, all online specimens from this date have Pilot Peak in the location (irrespective of the county), therefore, this must be an error. These could have been collected at higher elevations above one of two Crystal Springs in Box Elder County or at higher elevations on ridges above springs in the Pilot Range in Box Elder County. This taxon's primary range is in Nevada. Habitat Specificity scored as "0" since the habitat does not seem unusual according to A Utah Flora ("sagebrush"). Disturbance related to grazing activities may be a threat to this species, however it is scored as "unknown" due to uncertainty. Trends are scored as "unknown".

Scored By/Date: J. Alexander/2015

Revisions: New to Medium Priority list

*Gilia flavocincta ssp. australis*

Family: Polemoniaceae

Comments: Peripheral. Single population from Tropic Shale in Kane Co, last collected in 1973 (*Atwood 4547* BRY).

Scored By/Date: J. Alexander/2015

*Leptosiphon aureus*

Synonym: *Linanthus aureus*

Family: Polemoniaceae

Comments: Peripheral. One undated Utah collection from "Slopes above Clear Creek" - exact locality uncertain. Found in Ponderosa pine (habitat unspecialized). Trends not known.

Scored By/Date: UNPS Rare Plant Comm./2008

Revisions: Scientific name changed

*Leptosiphon harknessii*

Synonym: *Linanthus harknessii*

Family: Polemoniaceae

Comments: Peripheral. Only 13 specimens at BRY have been collected. It has been found in Cache, Emery, Morgan, Rich, Salt Lake, Summit, Utah, and Wasatch Counties in Utah. The citation of a specimen from Washington County in A Utah Flora (*Parry 196*, 14 April 1974) is an error. The same specimen is cited as a voucher of *Linanthus demissus*. This is an error and not an indicator of a mixed specimen since *L. harknessii* is not found in southern Utah and Parry only collected as far north as Iron, western Garfield and Piute County in 1874 (far outside the range of this taxon in Utah). Primary range is in Nevada, California, and the Pacific Northwest. Habitat Specificity scored as "0" since the habitat is variable and does not seem unusual according to A Utah Flora ("Open sites in mountain brush, sagebrush, aspen, and spruce-fir communities"). Disturbance related to grazing activities may be a threat to this species, however it is scored as "unknown". Trends "unknown".

Scored By/Date: UNPS Rare Plant Comm./2008

Revisions: Scientific name changed

*Linanthus dichotomous ssp. dichotomous*

Family: Polemoniaceae

Comments: Peripheral. Population size variable - spring ephemeral responding to moisture, habitat variable; threats and trends not known.

Scored By/Date: Fertig/2009

*Linanthus filiformis*

Synonym: *Gilia filiformis*

Family: Polemoniaceae

Comments: **Peripheral. Holotype from "valley of the Virgin, near St. George" (*Parry 187* GH);** also known from Beaver Dam Wash and Beaver Dam slope in SW Utah. Found on gravelly soils in warm desert shrub communities and with Joshua trees. May be threatened by competition with invasive annuals and increased wildfire frequency. Abundance and trends not known.

Scored By/Date: UNPS Rare Plant Comm./2008

Revisions: Scientific name changed

*Navarretia capillaris*

Synonym: *Gilia capillaris*

Family: Polemoniaceae

Comments: Peripheral. The one voucher for Utah was collected in the Bear River Range in Cache Co. (*Thorne & Chandler 4801A*, 5 Jul 1986, BRY). Habitat not specialized. Abundance and trends not known.

Scored By/Date: UNPS Rare Plant Comm./2008

Revisions: Scientific name changed

*Navarretia furnissii*

Family: Polemoniaceae

Comments: Regional Endemic. *N. furnissii* is no less common than many other species. It is diminutive, small flowered, and easily overlooked. It is probably more common in Utah than *N. propinqua* (*N. intertexta* ssp. *propinqua*), and definitely more abundant than other species that aren't on the list. I don't think it needs to be on the list at all, even the watch list, though I will admit I don't have the criteria you are using for listing before me". [Johnson Jan 2014]; the Number of Individuals was rescored to "0" which ranks this taxon at a maximum value of "4". It has been placed on the Medium list [J. Alexander Mar 2015]

Scored By/Date: J. Alexander & L. Johnson/2014

Revisions: Moved from Need Data to Medium Priority.

*Navarretia leucocephala*

Family: Polemoniaceae

Comments: Peripheral. Two collections noted in 2008 Utah Flora, both taken in 1983 (trend unknown). Found along muddy lake shores. Abundance low, threats unknown.

Scored By/Date: UNPS Rare Plant Comm./2008

UNPS Medium Priority List: Ranking Comments

*Phlox cluteana*

Family: Polemoniaceae

Comments: Regional Endemic. Type locality from Navajo Mountain. Five records notes in 2008 Utah Flora. Ponderosa pine habitat is not specialized. Threats and trends unknown.

Scored By/Date: UNPS Rare Plant Comm./2008

*Phlox tumulosa*

Family: Polemoniaceae

Comments: Regional Endemic. Only 15 specimens at BRY have been collected. It has been found in Beaver, Iron and Washington Counties in Utah. Primary range is in Nevada. Habitat Specificity scored as "0" since the habitat does not seem unusual according to A Utah Flora ("Black and big sagebrush and pinyon-juniper communities"). Threats may be primarily from grazing-related impacts, but it scored as "unknown". Trends are scored as "unknown".

Scored By/Date: J. Alexander/2015

*Polemonium brandegeei*

Synonym: *Polemonium viscosum* ssp. *mellitum*

Family: Polemoniaceae

Comments: Disjunct. Historical in Tushars, disjunct from WY and CO, distinct species from *P. viscosum* (not a yellow or albino phase as sometimes suggested) [Fertig 2008].

The Utah voucher is from the Tushar Mountains, Piute County (*Jones 5942*, from 1894, NY). Sensus IMF: "The NY specimen of this collection, annotated by Davidson as *P. viscosum* subsp. *mellitum*, is in my [A. Cronquist] opinion a dwarf form of *P. viscosum*. It has leaflets only 1.5-3 mm long and corollas about 15 mm long, the original color now indeterminable." There are multiple collections of *P. viscosum* from the Tushars on SEINet and none have been determined to *P. brandegeei*.

Scored By/Date: J. Alexander/2014

*Polemonium micranthum*

Family: Polemoniaceae

Comments: Peripheral. Found in weedy, disturbed areas (may be impacted by competition from other annuals), but threats scored as unknown; last collection made in 1970 suggests population is declining, current abundance not known.

Scored By/Date: UNPS Rare Plant Comm./2008

*Polygala verticillata*

Synonym: *Polygala verticillata* var. *isocycla*

Family: Polygalaceae

Comments: Disjunct. The one voucher for Utah was collected in Uintah Co. (2 mi s. of Whiterock, *S. Hutchings 285*, 9 Jul 1932, BRY).

Scored By/Date: J. Alexander/2015

*Chorizanthe rigida*

Family: Polygonaceae

Comments: Peripheral. Only 14 specimens at BRY have been collected. It has been found only in the Beaver Dam Mountains vicinity in Utah. Its primary range is in Arizona, California, and Nevada. Habitat Specificity scored as "0" since the habitat is variable and does not seem unusual according to A Utah Flora ("Creosote bush, Joshua tree, bursage, and other warm desert shrub communities"). Invasion of habitat by exotic weeds such as *Brassica tournefortii* and disturbance related to grazing activities may be a threat to this species, however it is scored as "unknown" due to uncertainty. Trends are scored as "unknown".

Scored By/Date: J. Alexander/2015

*Chorizanthe watsonii*

Family: Polygonaceae

Comments: Peripheral. Only 4 specimens at BRY have been collected. It has been found only in Box Elder and Kane Counties in Utah. Its primary range is in California, Nevada, and the Pacific Northwest. Habitat Specificity scored as "0" since the habitat is variable and does not seem unusual according to A Utah Flora ("Juniper and pinyon and mixed desert shrub communities"). Disturbance related to grazing activities may be a threat to this species, however it is scored as "unknown". Trends are scored as "unknown".

Scored By/Date: J. Alexander/2015

*Eriogonum arcuatum* var. *rupicola*

Synonym: *Eriogonum jamesii* var. *rupicola*

Family: Polygonaceae

Comments: Local Endemic. Populations in Zion NP are largest in the East Side canyons and most are in areas not significantly impacted by tourist trampling (such as crevices in sandstone cliffs). Trend in Zion is stable.

Scored By/Date: J. Alexander/2009

Revisions: Scientific name changed

*Eriogonum baileyi* var. *baileyi*

Family: Polygonaceae

Comments: Peripheral. The two vouchers for Utah were collected in the Mineral Mountains in Beaver Co. (*Welsh & Taylor s.n.*, 26 Sep 1976 BRY; *Thorne 14479*, 4 Sep. 1976, BRY).

Scored By/Date: J. Alexander/2015

*Eriogonum brevicaulis* var. *bannockense*

Family: Polygonaceae

Comments: Regional Endemic. Eight collections at BRY noted by Welsh et al. (2008). Found in sagebrush and juniper on clay-shale or tuff soils (habitat specialization considered high due to unusual soils). Abundance and trends not known.

Scored By/Date: UNPS Rare Plant Comm./2008

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*Eriogonum clavellatum*

Family: Polygonaceae

Comments: Regional Endemic. Restricted to Four Corners area in Utah and Colorado; found on Cutler Formation in desert shrub or cushion plant communities; threats and trends unknown.

Scored By/Date: UNPS Rare Plant Comm./2008

*Eriogonum darrovii*

Family: Polygonaceae

Comments: Regional Endemic. Kaibab limestone endemic, 2 populations on Buckskin Mountain, Kane Co (latest disc 2004), populations small, threats low [Fertig 2009].

Vouchers for Utah were collected in Buckskin Mountain vicinity, Kane Co. (*Gierisch 4483*, 6 Sep 1978, ASU; *Rooks 423*, 3 Sep 2009, BRY; *Fertig 20912*, 28 Jan 2004, BRY; *Fertig 21228*, 21 July 2004).

Scored By/Date: Fertig/ 2009, Alexander/2015

*Eriogonum desertorum*

Synonym: *Eriogonum brevicaulis* var. *desertorum*

Family: Polygonaceae

Comments: Regional Endemic. Only 5 specimens at BRY have been collected. It has been found only in the Elko County in Nevada and Box Elder and Tooele Counties in Utah. Habitat Specificity scored as "0" since the habitat does not seem unusual according to A Utah Flora ("Sagebrush, bitterbrush, and juniper communities") and variable in FNA ("Gravelly or silty to clayey flats, slopes, and ridges, often on limestone soils, mixed grassland, saltbush, and sagebrush communities, pinyon-juniper woodlands"). Disturbance related to grazing activities may be a threat to this species, however it is scored as "unknown". Trends are scored as "unknown".

Scored By/Date: J. Alexander/2015

Revisions: Scientific name changed

*Eriogonum heermannii* var. *sulcatum*

Family: Polygonaceae

Comments: Regional Endemic. Relatively common on limestone outcrops in Beaver Dam Mountains, trends may be downward.

Scored By/Date: J. Alexander/2009

*Eriogonum leptophyllum*

Family: Polygonaceae

Comments: Regional Endemic. Welsh et al. (2008) cite a single collection in Utah (*Heil & Porter s.n.* BRY from 1985) in desert shrub vegetation in San Juan County. 1985) in desert shrub vegetation in San Juan County. Four other occurrences mapped in SEINet, all in SE Utah. Threats and trends unknown.

Scored By/Date: Fertig/2016

*Eriogonum nidularium*

Family: Polygonaceae

Comments: Peripheral. Found in warm desert shrub communities in SW Utah (habitat specificity low), may

be threatened by urban expansion in St. George area, increased recreation, and heightened fire risk. Abundance and trends not known.

Scored By/Date: UNPS Rare Plant Comm./2008

*Eriogonum nutans* var. *nutans*

Family: Polygonaceae

Comments: Peripheral. Since A Utah Flora recognizes this taxon as a synonym, it is difficult to determine how many specimens at BRY have been collected. It has been found in Beaver, Carbon, Juab, Millard, Piute, Sanpete, Sevier, and Tooele counties in Utah. The Carbon County record is from east of Wellington (*Ripley & Barneby 8640*, CAS, NY), although it has not been seen there since 1947. Primary range is in California, Nevada, and Oregon. Habitat Specificity scored as "0" since the habitat is variable and does not seem unusual according to FNA ("Sandy flats and slopes, saltbush, greasewood, sagebrush, and mountain mahogany communities, pinyon-juniper woodlands"). Disturbance related to grazing activities may be a threat to this species, however it is scored as "unknown" due to uncertainty. Trends unknown.

Scored By/Date: J. Alexander/2015

Revisions: New to Medium Priority list

*Eriogonum ostlundii*

Synonym: *Eriogonum batemanii* var. *ostlundii*

Family: Polygonaceae

Comments: Local Endemic. Restricted to Sevier River Canyon and vicinity, usually on igneous or ash flow tuffs on talus slopes and bedrock (habitat specificity high). Populations locally abundant (0), trends unknown.

Scored By/Date: UNPS Rare Plant Comm./2008

Revisions: Scientific name changed

*Eriogonum pharnaceoides* var. *cervinum*

Family: Polygonaceae

Comments: Regional Endemic. Known from 9 main locations in mountains of SW Utah. Habitat unspecialized, abundance and trends unknown.

Scored By/Date: UNPS Rare Plant Comm./2008

*Eriogonum polycladon*

Family: Polygonaceae

Comments: Peripheral. Found in stabilized sand dune communities at about 6 locations in Zion NP and north of Kanab. Abundance and trends unknown.

Scored By/Date: UNPS Rare Plant Comm./2008

*Eriogonum thompsoniae* var. *thompsoniae*

Synonym: *Eriogonum corymbosum* var. *thompsoniae*

Family: Polygonaceae

Comments: Regional Endemic. Common when found, but habitat specialized (Chinle and Moenkopi clay barrens), some threats from weeds and ATV recreation.

Scored By/Date: Fertig/2009

Revisions: Scientific name changed



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*Eriogonum umbellatum* var. *juniporinum*

Synonym: included in *Eriogonum umbellatum* var. *subaridum* by some authors

Family: Polygonaceae

Comments: Peripheral. Since A Utah Flora recognizes this taxon as a synonym, it is difficult to determine how many specimens at BRY have been collected. It has been found only in San Juan (Navajo Mountain) and Washington (Beaver Dam Mountains) counties in Utah. This taxon's primary range is in California and Nevada. Habitat Specificity scored as "0" since the habitat is variable and does not seem unusual according to FNA ("Sandy to gravelly flats and slopes, saltbush and sagebrush communities, pinyon-juniper and occasionally montane conifer woodlands"). Disturbance related to grazing activities may be a threat to this species, however it is scored as "unknown" due to uncertainty. Trends are unknown.

Scored By/Date: J. Alexander/2015

Revisions: New to Medium Priority list

*Polygonum utahense*

Synonym: *Polygonum douglasii* var. *utahense*

Family: Polygonaceae

Comments: Regional Endemic. Seems like a good taxon to me (at species level), Perhaps should be changed to Local Endemic?, populations typically small, on Navajo sand dunes, often with juniper cover, threats low overall

Scored By/Date: Fertig/2009

Revisions: Scientific name changed

*Cistanthe monandra*

Synonym: *Calyptridium monandrum*

Family: Portulacaceae or Montiaceae

Comments: Peripheral. Only 13 specimens at BRY have been collected. It has been found only in Washington County in Utah. Primary range is in Arizona, California, and Nevada. Habitat Specificity is scored as "0" since the habitat is variable does not seem unusual according to A Utah ("Creosote bush, blackbrush, Joshua tree, and pinyon-juniper communities"). Threats and Trends are scored as "unknown".

Scored By/Date: J. Alexander/2015

Revisions: Scientific name changed

*Cistanthe parryi*

Synonym: *Calyptridium parryi*

Family: Portulacaceae or Montiaceae

Comments: Disjunct. The three vouchers for Utah were collected in Millard Co. (*Tilley & Tilley 1265*, 3 Jun 2000, BRY) and Sevier Co. (*Albee 4850*, 18 Jul 1980 BRY; *Franklin 7220*, 25 Jun 1990, BRY).

Scored By/Date: J. Alexander/2015

Revisions: Scientific name changed

*Montia linearis*

Synonym: *Montiastrum lineare*

Family: Portulacaceae or Montiaceae

Comments: Peripheral. Found in sagebrush, meadows, and riparian habitats in northern Utah (habitat specificity low). Threats and trends poorly known,

Scored By/Date: UNPS Rare Plant Comm./2008

*Argyrochosma jonesii*

Synonym: *Pellaea jonesii*, *Notholaena jonesii*

Family: Pteridaceae or Polypodiaceae

Comments: Peripheral. Found in crevices in limestone or sandstone cliffs in desert scrub communities in SW Utah. Abundance and trends unknown.

Scored By/Date: UNPS Rare Plant Comm./2008

Revisions: Scientific name changed

*Aspidotis densa*

Synonym: *Cheilanthes siliquosa*, *Pellaea densa*

Family: Pteridaceae or Polypodiaceae

Comments: Disjunct. Two collections noted in Utah Flora (2008) from rock crevices in mountains of northern Utah. Trends not known.

Scored By/Date: UNPS Rare Plant Comm./2008

*Myriopteris gracillima*

Synonym: *Cheilanthes gracillima*

Family: Pteridaceae or Polypodiaceae

Comments: Disjunct. Found in rocky crevices in mountains of Cache County. Number of individuals and threats not known.

Scored By/Date: UNPS Rare Plant Comm./2008

Revisions: Scientific name changed

*Pentagramma triangularis*

Synonym: *Pityrogramma triangularis*

Family: Pteridaceae or Polypodiaceae

Comments: Peripheral. Only 9 specimens at BRY have been collected. It has been found only in Kane and Washington Counties in Utah. Primary range is in Mexico, California, and Arizona. There are 4 subspecies of this taxon reported for North America in FNA. Although Windham confirmed this taxon for Utah for this list revision, the subspecies for our region was not identified. Utah was not listed in the distribution of any of the subtaxa of this species in FNA either. The closest to our region is ssp. *maxonii*, which is found in northern and southern Arizona. Habitat Specificity scored as "0" since the habitat does not seem unusual based on the description in FNA ("Desert scrub and in pine and oak woodlands") and A Utah Flora ("crevices and in soil on shaded rocky slopes in pinyon-juniper, oak-maple, Douglas-fir, and ponderosa pine communities"). Threats and Trends are scored as "unknown".

Scored By/Date: J. Alexander/2015

Revisions: Scientific name changed

## UNPS Medium Priority List: Ranking Comments

*Anemone piperi*

Family: Ranunculaceae

Comments: Disjunct. The two vouchers for Utah were collected in Cache Co. (*Hatch 128*, 6 May 1966, NY) and Salt Lake Co. (*Cottam s.n.* 9 June 1961 NY, BRY).

Scored By/Date: J. Alexander/2015

*Delphinium x burkei*

Synonym: *Delphinium depauperatum*

Family: Ranunculaceae

Comments: Peripheral. *Delphinium depauperatum* is not reported for Utah in FNA. In fact, even Welsh states that the specimens he determined to this taxon do not resemble typical *D. depauperatum*, but he lumps them into this taxon anyway: "Whether *D. burkei* has resulted from introgression involving *D. depauperatum* and *D. nuttallianum* is not clear from the specimens examined; i.e., *D. burkei* seems to have a life of its own independent of the two supposed parental types" The Utah material is treated herein following FNA by listing this taxon as the Nothospecies hybrid name and not lumping it within *D. depauperatum*, s.s. The two vouchers from Utah were collected in Box Elder County (*Dixon 772*, 22 May 1997, BRY, NY; *Dixon & Hardy 233* 6 Jun 1996, BRY, NY). The NY vouchers are determined as *D. andersonii*, which may be their original determination and not reflective of an annotation for IMF.

Scored By/Date: J. Alexander/2015

Revisions: Scientific name changed

*Ranunculus pedatifidus* var. *affinis*

Family: Ranunculaceae

Comments: Peripheral. Threats to this taxon include disturbance from the grazing-related impacts of cattle and naturalized mountain goats. Climate change is also a threat. Droughts and rapid snowmelt due to wind-blown sediments are melting snowpack earlier than normal in our region. These are the primary reasons for the upgrade of threats to a "1". Trends are scored as "unknown".

Scored By/Date: J. Alexander/2015

*Ranunculus ranunculinus*

Family: Ranunculaceae

Comments: Regional Endemic. Only 5 specimens at BRY have been collected. It has been found only in Cache County in Utah. Primary range is in the Rocky Mountains. Habitat Specificity scored as "0" since the habitat is variable and does not seem unusual according to A Utah Flora ("Aspen and spruce-fir or mountain brush communities, often in crevices in limestone cliffs") and FNA ("Open grassy or brushy slopes"). Disturbance related to grazing activities may be a threat to this species, however it is scored as "unknown" due to uncertainty. Trends are scored as "unknown".

Scored By/Date: J. Alexander/2015

*Thalictrum occidentale*

Family: Ranunculaceae

Comments: Peripheral. Only 7 specimens at BRY have been collected. It has been found only in the Uinta and Wasatch Mountains in Duchesne and Utah Counties in Utah. Primary range in North America is the Pacific Northwest, northern Rocky Mountains and Canada. Habitat Specificity scored as "0" since the habitat is variable and does not seem unusual according to A Utah Flora ("Aspen, white fir, Douglas fir, spruce-fir, and less commonly mountain brush communities") and FNA ("Open woods, meadows, and copses"). Threats include grazing-related impacts from cattle, sheep, and naturalized mountain goats. Climate change is also a threat. These are the primary reasons for the upgrade of threats to a "1". Trends are scored as "unknown".

Scored By/Date: J. Alexander/2015

*Thalictrum venulosum*

Family: Ranunculaceae

Comments: Disjunct. Only 5 specimens at BRY have been collected. It has been found only in the Uinta Mountains in Duchesne, Summit and Uintah Counties in Utah. Primary range is in the Pacific Northwest, the Rocky Mountains and Canada. Habitat Specificity scored as "0" since the habitat is variable and does not seem unusual according to A Utah Flora ("Sagebrush and mountain brush upward to spruce-fir communities") and FNA ("Prairies, riparian woods, and coniferous, deciduous, and mixed forests"). Threats include grazing-related impacts from cattle, sheep, and naturalized mountain goats. Climate change is also a threat. These are the primary reasons for the upgrade of threats to "1". Trends are scored as "unknown".

Scored By/Date: J. Alexander/2015

*Chamaerhodos erecta*

Synonym: *Chamaerhodos erecta* var. *parviflora*

Family: Rosaceae

Comments: Peripheral. 19 specimens at BRY have been collected. It has been found on Thousand Lake Mountain and in the Tushar Mountains in Beaver, Piute, and Sevier Counties. It has been reported for Wayne County in A Utah Flora. Primary range is in Alaska, the Rocky Mountains, and Canada. Habitat Specificity scored as "0" since the habitat is variable and does not seem unusual according to A Utah Flora ("Igneous gravel and sandy loam in fringed sagebrush, erigeron, sedge, grassland, krummholz, stunted aspen, and alpine tundra") and FNA ("Prairies, dry hilltops, knolls, outcrops, buttes, rocky and sandy soil or gravel, exposed and disturbed sites"). At least in the Tushar Mountains, threats to this taxon include grazing-related impacts from cattle and naturalized mountain goats. Climate change is also a threat. These are the primary reasons for the upgrade of the threats to this species to a "1". It is not known if these threats are consistent in the remainder of its range in Utah. Trends are scored as "unknown".

Scored By/Date: J. Alexander/2015

Revisions: Scientific name changed

UNPS Medium Priority List: Ranking Comments

*Crataegus macracantha*

Synonym: *Craetagus columbiana*, misapplied

Family: Rosaceae

Comments: Disjunct. In FNA, *C. columbiana* is recognized as a synonym of *C. douglasii*, which no longer considered to be found in Utah. Utah populations are now considered to be *C. rivularis*. The hirsutulous plants with red pomes from the canyons along the Wasatch are placed in *C. macracantha*, not *C. columbiana*. Habitat Specificity scored as "0" since it does not seem to be a riparian species according to A Utah Flora ("Indigenous on dry gravelly slopes in the mountain brush"). Threats scored as "1" since riparian habitat modification and disturbance related to residential-highway development and grazing-related impacts are impacting canyons in northern Utah. Trends are scored as "unknown".

Scored By/Date: J. Alexander/2015

Revisions: Scientific name changed. New to Medium Priority list.

*Physocarpus monogynus*

Family: Rosaceae

Comments: Peripheral. Only 4 specimens at BRY have been collected. It has been found Carbon, Sevier, Utah and Wasatch Counties. Primary range is in Alaska, the Rocky Mountains, the Great Plains, and Texas. Habitat Specificity scored as "0" since the habitat is variable and does not seem unusual according to A Utah Flora ("Canyon bottoms and moist slopes in mountain brush, aspen, and Douglas fir communities") and FNA ("Open rocky wooded slopes, seepage ledges, canyons"). The grazing-related impacts of cattle may be a threat to this species, however it is scored as "unknown". Trends are scored as "unknown".

Scored By/Date: J. Alexander/2015

*Potentilla cottamii*

Family: Rosaceae

Comments: Regional Endemic. Great Basin mountain species, found in crevices in quartzite cliffs in NW Utah. Abundance low but trends not known.

Scored By/Date: UNPS Rare Plant Comm./2008

*Potentilla plattensis*

Synonym: Includes *Potentilla diversifolia* var. *madsenii*

Family: Rosaceae

Comments: **Disjunct. Ertter and Reveal place Welsh's** *P. diversifolia* var. *madsenii* within *P. plattensis*. It is no longer considered a variety of *P. diversifolia* (which is also now recognized as *P. glaucophylla* now that the types of *P. diversifolia* have been determined as a hybrid; even if you recognize var. *madsenii* as a separate variety, it has been orphaned without a new combination in the legitimate new names *P. glaucophylla* or *P. plattensis*). In A Utah flora, var. *madsenii* is known only from the type specimen. Including those types, *P. plattensis* is known from 6 collections at BRY. It has been found in Box Elder, Garfield, Kane, Sevier, and Wayne Counties in Utah. Its primary range is in the

Rocky Mountains, Great Plains, and Canada. Habitat Specificity scored as "0", although it might warrant changing to 1 (mostly found in moist meadows rangewide). Disturbance related to wetland development, ATV recreation, and grazing activities may be a threat to this species, however it is scored as "unknown" due to uncertainty. Trends are scored as "unknown" due to uncertainty of the magnitude and types of disturbance on extant populations and the lack of population surveys.

Scored By/Date: J. Alexander/2015

Revisions: *Potentilla diversifolia* var. *madsenii* was previously on the Need Data list. *Potentilla plattensis* was on the Medium Priority list.

*Prunus emarginata*

Family: Rosaceae

Comments: Peripheral. The three vouchers from Utah were collected in the Pine Valley Mts., Washington Co. (*Warrick 1046 BRY*; *Warrick 1474 BRY NY*; *Warrick 2597 BRY*). It was last collected in Utah in 1986.

Scored By/Date: J. Alexander/2015

*Galium mexicanum* var. *asperulum*

Family: Rubiaceae

Comments: Peripheral. Only 4 specimens at BRY have been collected. It has been found in the Cache, Morgan, and Salt Lake Counties in Utah. It has been reported for Tooele County in A Utah Flora. Primary range is in California and the Pacific Northwest. Habitat Specificity scored as "0" since the habitat is variable and does not seem unusual according to A Utah Flora ("Oak, maple, juniper, Douglas fir, aspen, and fir communities"). Threats may include grazing-related impacts from cattle, but it is scored as "unknown". Trends unknown.

Scored By/Date: J. Alexander/2015

*Galium stellatum* var. *eremicum*

Family: Rubiaceae

Comments: Peripheral. Only 4 specimens at BRY have been collected. It has been found in the Cache, Morgan, and Salt Lake Counties in Utah. It has been reported for Tooele County in A Utah Flora. This taxon's primary range is in California and the Pacific Northwest. Habitat Specificity scored as "0" since the habitat is variable and does not seem unusual according to A Utah Flora ("Larrea, Joshua tree, blackbrush, bursage, *Ephedra*-Bigelow sagebrush, *Bebbia-Mortonia-Krameria*, and *Buddleja* communities, mainly in crevices of basalt, sandstone, limestone, or dolomite outcrops"). Threats may include grazing-related impacts from cattle, but it is scored as "unknown". Trends are scored as "unknown".

Scored By/Date: J. Alexander/2015

*Galium wrightii*

Family: Rubiaceae

Comments: Peripheral. Taxonomic of Utah plants is uncertain—may belong to var. *rothrockii*. Found in hanging garens and along washes in variety of mountain

## UNPS Medium Priority List: Ranking Comments

1 but might be 0); abundance and trends not known, cited from only 5 collections in Utah FLora (2008) in SW Utah (Zion area).

Scored By/Date: UNPS Rare Plant Comm./2008

*Houstonia rubra*

Family: Rubiaceae

Comments: Peripheral. A taxon not included in previous versions of the UNPS Rare Plant list, but its apparent rarity in Utah warrants further research. Only 7 specimens at BRY have been collected. It has been found only in San Juan County in Utah. This taxon's primary range is in Arizona, New Mexico, and Texas. Habitat Specificity scored as "0" since the habitat does not seem unusual according to A Utah Flora ("Ephedra, sand sage, blackbrush, and juniper communities"). Threats to this taxon may include grazing-related impacts from cattle, but it is scored as "unknown" due to uncertainty. Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys. This taxon is ranked on the "Medium" list.

Scored By/Date: J. Alexander/2015

*Castilleja scabrida* var. *barnebyana*

Family: Scrophulariaceae or Orobanchaceae

Comments: Regional Endemic. Found in rock crevices of limestone, dolomite, or volcanic rhyolite in desert mountains of western Utah. Abundance and trends unknown.

Scored By/Date: UNPS Rare Plant Comm./2008

*Mimulus breweri*

Synonym: *Erythranthe breweri*

Family: Scrophulariaceae or Phrymaceae

Comments: Peripheral. Only 7 specimens at BRY have been collected. It has been found in Box Elder, Rich, Sevier, Summit, and Tooele Counties in Utah. Primary range is in California, the Pacific Northwest, and the Rocky Mountains. Habitat Specificity scored as "0" since the habitat is variable and does not seem unusual according to A Utah Flora ("Mountain mahogany, oak, ponderosa pine, manzanita, aspen, Douglas fir, common juniper, and alpine fir communities"). Threats may include grazing-related impacts from cattle, but it is scored as "unknown". Trends are scored as "unknown".

Scored By/Date: UNPS Rare Plant Comm./2008

*Mimulus eastwoodiae*

Synonym: *Erythranthe eastwoodiae*

Family: Scrophulariaceae or Phrymaceae

Comments: Regional Endemic. Habitat specialized (hanging gardens and seeps in shady sandstone canyons), range limited to Colorado River drainage; abundance and trends not known.

Scored By/Date: UNPS Rare Plant Comm./2008

*Mimulus primuloides* var. *primuloides*

Synonym: *Erythranthe primuloides*

Family: Scrophulariaceae or Phrymaceae

Comments: Peripheral. Only 10 specimens at BRY have been collected. It has been found in Beaver, Duchesne, Iron and Washington Counties in Utah. Primary range is in California, the Pacific Northwest, and the Rocky Mountains. Habitat Specificity scored as "0" since the habitat is vague and does not seem unusual according to A Utah Flora ("moist areas"). Threats may include grazing-related impacts from cattle, but it is scored as "unknown". Trends are scored as "unknown".

Scored By/Date: UNPS Rare Plant Comm./2008

*Neogaerrhinum filipes*

Synonym: *Antirrhinum filipes*

Family: Scrophulariaceae or Plantaginaceae

Comments: Peripheral. Nine collections noted by Welsh et al. (2008) from variety of warm desert shrub communities of Washington County, UT (habitat specificity low), threats high from competition with invasive annuals and increased incidence of wildfire, abundance and trends unknown.

Scored By/Date: UNPS Rare Plant Comm./2008

Revisions: Scientific name changed

*Pedicularis contorta* var. *contorta*

Family: Scrophulariaceae or Orobanchaceae

Comments: Peripheral. Only 9 specimens at BRY have been collected. It has been found only in the Raft River Mountains in Box Elder County in Utah. Primary range is in the northern Rocky Mountains and Pacific Northwest. Habitat Specificity scored as "0" since the habitat is variable and does not seem unusual according to A Utah Flora ("Sagebrush, limber pine, mountain mahogany, and spruce-fir communities"). Threats may include grazing-related impacts from cattle, but it is scored as "unknown". Trends are scored as "unknown".

Scored By/Date: J. Alexander/2015

*Pedicularis parryi* var. *purpurea*

Family: Scrophulariaceae or Orobanchaceae

Comments: Regional Endemic. One voucher was seen by Welsh for A Utah Flora, but the collector information was not published. In SEINet, a specimen from Mount Naomi in Cache County is determined as this taxon (*Snell s.n.*, 05 July 1937). The BRY specimen may be a duplicate of this collection. In either case the identification of two specimens warrant reverification. This is the only record for this taxon outside its primary range in Idaho and Montana. This population may also have been extirpated since it was last collected in 1937. This is also the only record for *Pedicularis parryi* in Cache County.

Scored By/Date: J. Alexander/2015

UNPS Medium Priority List: Ranking Comments

*Pedicularis procera*

Family: Scrophulariaceae or Orobanchaceae  
Comments: Peripheral. Only 8 specimens at BRY have been collected. It has been found only in Grand, San Juan, and Sevier Counties in Utah. This taxon's primary range is in the southern Rocky Mountains. Habitat Specificity scored as "0" since the habitat is variable and does not seem unusual according to A Utah Flora ("Aspen, meadow, aspen-fir, and spruce-fir communities"). Threats to this taxon may include grazing-related impacts from cattle, but it is scored as "unknown". Trends are scored as "unknown".  
Scored By/Date: J. Alexander/2015

*Penstemon angustifolius* var. *dulcis*

Family: Scrophulariaceae or Plantaginaceae  
Comments: Local Endemic. One huge population, rest very small, habitat seems general (sagebrush, pinyon-juniper, fourwing saltbush communities). Trends not known.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Penstemon caespitosus* var. *desertipicti*

Family: Scrophulariaceae or Plantaginaceae  
Comments: Regional Endemic. Known from about 20 main populations in central Utah, where it is found on Claron and Wasatch limestone. Abundance can be high. Might be threatened by over-collection or seed harvest (it is a showy, matted species suitable for rock gardens) but magnitude of threat is unknown, as are trends.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Penstemon crandallii* var. *atratus*

Family: Scrophulariaceae or Plantaginaceae  
Comments: Local Endemic. Found in pinyon-juniper, ponderosa, and mountain brush communities at mid elevations of the La Sal and Abajo Mountains (habitat specialization low), threats probably low, trends unknown.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Penstemon higginsii*

Synonym: *Penstemon leonardii* var. *higginsii*  
Family: Scrophulariaceae or Plantaginaceae  
Comments: Local Endemic. Populations in Zion NP probably number over 30,000 individuals and are extensive where they occur. Trend is stable.  
Scored By/Date: J. Alexander/2009

*Penstemon humilis* var. *desereticus*

Family: Scrophulariaceae or Plantaginaceae  
Comments: Regional Endemic. Only 15 specimen at BRY has been collected. It is known from Beaver, Iron, Juab, Millard, and Tooele Counties in Utah. At least in the Deep Creek Range, this is one of several taxa that may be threatened by the proposed introduction of naturalized mountain goats by the State of Utah. Climate change is also a threat. Although the climate threats alone do not warrant changes, threats will be upgraded

to "1" if the introductions proceed. Trends are scored as "unknown".

Scored By/Date: J. Alexander/2015

*Penstemon humilis* var. *obtusifolius*

Family: Scrophulariaceae or Plantaginaceae  
Comments: Local Endemic. Zion populations are large probably contain over 30,000 individuals found throughout the park. Trend is stable.  
Scored By/Date: J. Alexander/2009

*Penstemon immanifestus*

Family: Scrophulariaceae or Plantaginaceae  
Comments: Regional Endemic. Found in greasewood and shadscale vegetation in clay soils or playas (habitat scored 1), abundance and trends not known, threats probably low.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Penstemon lentus* var. *albiflorus*

Family: Scrophulariaceae or Plantaginaceae  
Comments: Local Endemic. Known from about 20 main populations centered on the Abajo Mountains and vicinity of SW Utah. Populations small, habitat not unusual (sagebrush, pinyon, oak, Ponderosa pine), threats probably low (unless collection for garden specimens becomes an issue), trends not known.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Penstemon parvus*

Family: Scrophulariaceae or Plantaginaceae  
Comments: Local Endemic. Over 60,000 plants located in recent surveys. Found in black sagebrush, big sagebrush and meadow communities in mountains of southern Utah, threats probably low, trends unknown.  
Scored By/Date: D. Clark/2008

*Penstemon patricus*

Synonym: *Penstemon leonardii* var. *patricus*  
Family: Scrophulariaceae or Plantaginaceae  
Comments: Local Endemic. Only 17 specimens at BRY have been collected. It is known from the House Range (Millard Co.) and the Deep Creek Range (Juab and Tooele Counties) in Utah. It has been found in similar habitat in Nevada. The change from a Regional Endemic to Local Endemic in the last version of this list was not documented. It should be a regional if the specimens in Nevada are still considered this taxon. At least in the Deep Creek Range, this is one of several taxa that may be threatened by the proposed introduction of naturalized mountain goats by the State of Utah. Climate change is also a threat. Although the climate threats alone do not warrant changes, threats will be upgraded to "1" if the introductions proceed. Trends are scored as "unknown".  
Scored By/Date: J. Alexander/2015

## UNPS Medium Priority List: Ranking Comments

*Penstemon platyphyllus*

Family: Scrophulariaceae or Plantaginaceae

Comments: Local Endemic. Found in mountain brush communities in Wasatch Range, abundance and trends unknown.

Scored By/Date: UNPS Rare Plant Comm./2008

*Penstemon pseudoputus*

Family: Scrophulariaceae or Plantaginaceae

Comments: Regional Endemic. The one voucher in Utah cited by A Utah Flora was collected SE of Panguitch Lake in Garfield County (*Foster 4489*, 6 July 1977, BRY, NY). It has since been collected farther south in Kane County: N of Podunk (*Foster 10918*, 22 July 1993, NY) and Hancock Road vicinity, 6 air miles northwest of Kanab (*Fertig 21944*, 15 June 2005, NY). These two records are not reported for Utah in A Utah Flora.

Scored By/Date: J. Alexander/2015

*Penstemon pseudospectabilis*

Family: Scrophulariaceae or Plantaginaceae

Comments: Regional Endemic. The record for Washington County in A Utah Flora for this taxon is based on cultivated specimens and should not be considered native in the rare plant rankings. Otherwise, only one voucher was collected from Utah in Kane County (*Moore 410*, BRY). Other than the cultivated specimens, this taxon was last collected in Utah in 1965. This population may now be extirpated.

Scored By/Date: J. Alexander/2015

*Quincula lobata*

Synonym: *Physalis lobata*

Family: Solanaceae

Comments: Disjunct. The two vouchers for Utah were collected in the foothills of the La Sal Mountains in Grand Co. (*Goodrich & Atwood 20393*, May 1984, BRY) and San Juan Co. (*Atwood et al. 8738*, May 1982, BRY). This taxon was last collected in Utah in 1984.

Scored By/Date: UNPS Rare Plant Comm./2008

Revisions: Scientific name changed

*Solanum jamesii*

Family: Solanaceae

Comments: Peripheral. Populations few and small, habitat seems general, but there may be unknown reasons for its rarity - past overharvest a threat? [Fertig 2009]

The vouchers for Utah were collected NE of Escalante in Garfield Co. (*Hall 20a*, 14 July 1950, BRY,UTC; *Hall 22a*, 15 July 1950, BRY, UTC) and SW of the Abajo Mountains in San Juan Co. (*Rydberg 9308*, 30 July 1911, NY). The only record for Utah that is not historical was collected 7.5 miles WSW of Escalante in Garfield Co. (*Fertig 21425*, 15 Oct 2004, BRY, UTC). Fertig's re-discovery of this taxon documents that it is still present in Utah despite a lack of documentation for over 50 years. It still was last collected in San Juan County in 1911.

Scored By/Date: J. Alexander/2015

*Valeriana arizonica*

Family: Valerianaceae or Caprifoliaceae

Comments: Peripheral. Found in cool, shady canyons in Ponderosa pine forests in Zion NP. Threats and trends unknown.

Scored By/Date: UNPS Rare Plant Comm./2008

*Phyla lanceolata*

Synonym: *Lippia lanceolata*

Family: Verbenaceae

Comments: Peripheral. The only voucher for Utah was collected in the Scott M. Matheson wetlands (Moab slough) along the Colorado River in Grand Co. (*Pendelton 121*, Sep 1991, BRY; *Pendelton 264* [as *Lippia lanceolata*], Oct 1992, SSLP).

Scored By/Date: J. Alexander/2015

*Verbena macdougalii*

Family: Verbenaceae

Comments: Peripheral. Only 1 specimen at BRY has been collected. It has been found only in Garfield County in Utah. This taxon's primary range is in Arizona and New Mexico. Habitat Specificity scored as "0" since the habitat is vague and does not seem unusual according to A Utah Flora ("ponderosa pine forest"). Threats to this taxon may include grazing-related impacts from cattle, but it is scored as "unknown". Trends unknown.

Scored By/Date: J. Alexander/2015

*Viola lithion*

Family: Violaceae

Comments: Regional Endemic. The only voucher for Utah was collected in the foothills of Pilot Peak in Box Elder Co. (*Cottam 4535*, 6 Jul 1929, BRY). This taxon was last collected in Utah in 1929. It was last collected by Arnold Tiehm on the Nevada side of Pilot Peak in 1989. The Utah population may be extirpated.

Scored By/Date: J. Alexander/2015

*Arceuthobium abietinum*

Family: Viscaceae or Santalaceae

Comments: Peripheral. 1-2 UT records in Kane Co, limited to White fir (could grow on subalpine fir too), may be under-collected and more widespread. Relocated in Zion NP in 2011.

Scored By/Date: Fertig/ 2009

*Arceuthobium americanum*

Family: Viscaceae or Santalaceae

Comments: Peripheral. Few populations, mostly restricted to Lodgepole pine forest, probably under-collected

Scored By/Date: Fertig/2009

*Kallstroemia parviflora*

Family: Zygophyllaceae

Comments: Peripheral. Discovered in Arches NP in October 2007- late flowering species that may be under-collected.

Scored By/Date: UNPS Rare Plant Comm./2008

## Appendix 5. UNPS Rare Plant List: Need Data List

The following table includes 89 species with three or more ranking criteria scored as “unknown”. A large number of these species have only recently been named or discovered within Utah, and additional field surveys are needed to confirm their abundance, distribution, habitat needs, life history patterns, potential threats, and trends. Some species on the list have taxonomic questions that still need to be resolved. All of the plants included here have the potential to be ranked as extremely high or high priority, or as watch species, once needed studies are completed. Species are arranged alphabetically by family and species. Additional information is provided on county-level distribution (see Figure 1 for codes) and data needs. Legal Status: Bureau of Land Management (BLM) and US Forest Service (USFS) Sensitive = S; US Fish and Wildlife Service (USFWS) Candidate = C.

Family	Species	Common Name	County Dist. & Legal Status	Information Needed and UT Distribution
Apiaceae (Umbelliferae)	<i>Cymopterus basalticus</i>	Shadscale spring-parsley	Bvr, Mil	Info needed on # of individuals, threats, & trends (Regional endemic)
	<i>Cymopterus crawfordensis</i>	Crawford Mountain spring-parsley	Rch	Info needed on # of individuals, habitat specificity, threats, trends (Local endemic). May have taxonomic issues.
	<i>Cymopterus globosus</i>	Ball spring-parsley	Box, Jub, Mil, Toe	Info needed on habitat specificity, intrinsic rarity, threats, & trends (Regional endemic)
Asteraceae (Compositae)	<i>Agoseris glauca</i> var. <i>cronquistii</i>	Cronquist's agoseris	Bvr, Dag, Dch, Grf, Piu, Snj, Snp, Sum, Uin	Info needed on # of populations, # of individuals, intrinsic rarity, & trend (Local endemic)
	<i>Artemisia laciniata</i> ssp. <i>parryi</i>	Parry's wormwood	Grn, Snj	Info needed on # of individuals, threats, & trends (Regional endemic)
	<i>Artemisia tridentata</i> ssp. <i>parishii</i>	Parish's big sagebrush	Grf, Snj, Wsh	Info needed on # of individuals, # of populations, threats, trends, and range in Utah (Sparse)
	<i>Cirsium arizonicum</i> var. <i>chellyense</i>	Canyon de Chelley thistle	Snj	Info needed on habitat specificity, # individuals, intrinsic rarity, threat, and trend (Peripheral)
	<i>Cirsium cymosum</i> var. <i>canovirens</i>	Gray-green thistle	Crb	Info needed on # populations, # of individuals, threat, and trend (Peripheral)
	<i>Cirsium eatonii</i> var. <i>harrisonii</i>	Harrison's thistle	Bvr, Piu	Info needed on # populations, # individuals, and trend. (Local endemic)
	<i>Cirsium wheeleri</i> var. <i>salinense</i>	Salina thistle	Irn, Mil, Snp, Sev, Wsh	Taxonomic questions. Info needed on # individuals, threats, and trend (Regional endemic)
	<i>Crepis runcinata</i> var. <i>aculeolata</i>	Utah hawksbeard	Kan	Taxonomic questions, info needed on habitat specificity, threats, & trends (Local endemic)
	<i>Ericameria x uintahensis</i>	Uinta rabbitbrush	Dag, Uin	Info needed on # of individuals, threats, & trends (Local endemic)
	<i>Erigeron katieae</i>	Katie's daisy	Rch	Info needed on habitat specificity, threats, & trends; some taxonomic questions (Local endemic)
	<i>Lygodesmia juncea</i> var. <i>rostrata</i>	Beaked skeleton-weed	Kan	Info needed on # populations, # of individuals, and trends (Peripheral)
<i>Senecio bairdii</i>	Baird's groundsel	Box	Info needed on habitat specificity, intrinsic rarity, threats, trends (Local endemic)	

## Appendix 5. UNPS Rare Plant List: Need Data List, continued

Family	Species	Common Name	County Dist. & Legal Status	Information Needed
Asteraceae (Compositae)	<i>Vernonia marginata</i>	Plains ironweed	Way	Info needed on # individuals, threats, & trends (Disjunct)
	<i>Xanthisma spinulosum</i> var. <i>paradoxum</i>	Goodding's tansy- aster	Emr, Snj	Info needed on habitat specificity, threats, & trends (Regional Endemic)
Berberidaceae	<i>Mahonia repens</i> var. <i>scopulatilis</i>	Oregon-grape	Wsh	Info needed on habitat specificity, # of individuals, threats, and trend (Local endemic). Taxonomic issues?
Brassicaceae (Cruciferae)	<i>Boechea cobrensis</i>	Sagebrush rock- cress	Bvr	Info needed on habitat specificity, threat, and trend (Peripheral)
	<i>Boechea lignifera</i>	Sweetwater rock- cress	Bvr, Box, Dag, Emr, Rch, Snp, Sum, Toe, Uin	Info needed on # of individuals, threats, & trends (Sparse)
	<i>Boechea "derensis"</i>	Desert Experi- mental Range rockcress	Box, Mil, Toe	Taxonomic questions, info needed on distribution, habitat specificity, threats, & trends (Local endemic?)
	<i>Draba densifolia</i> "var. <i>decipiens</i> "	Rockcress draba	Jub, Slt, Uta	Info needed on # individuals, populations, threats, and trends (Local Endemic). May not be taxonomically distinct from <i>Draba globosa</i>
	<i>Draba globosa</i>	Beavertip draba	Dch, Sum	Info needed on # individuals, threat, & trend (Regional Endemic)
	<i>Physaria acutifolia</i> var. <i>repanda</i>	Indian Canyon twinpod	Crb, Dch, Emr, Sev, Uin, Uta, Was	Info needed on # of individuals, threats, & trends (Local Endemic). May be a regional endemic instead. Taxonomic questions.
	<i>Thelypodopsis aurea</i>	Golden thelypod	Snj	Info needed on # of individuals, threats, & trends (Regional Endemic)
	<i>Thelypodopsis vermicu- laris</i>	Wormwood thelypod	Box, Irn, Jub, Mil, Snp, Sev, Toe, Uta	Info needed on # of individuals, threats, & trends (Regional Endemic)
<i>Thelypodium rollinsii</i>	Rollins' thelypod	Bvr, Crb, Jub, Mil, Piu, Snp, Sev	Info needed on # of individuals, threats, & trends (Local Endemic). Probably a regional endemic instead.	
Capparaceae (Cleomaceae)	<i>Wislizenia refracta</i>	Spectacle-fruit	Snj	Info needed on habitat specificity, threats, and trends (Peripheral)
Chenopodiaceae (Amaranth- aceae)	<i>Atriplex powellii</i> var. <i>minuticarpa</i>	Green River orach	Emr, Gra, Way	Info needed on # of individuals, threats, & trends (Local Endemic)
	<i>Atriplex welshii</i>	Welsh's saltbush	Grn	Taxonomic questions; info needed on # of individuals, threats, & trends (Local Endemic)
Elatinaceae	<i>Bergia texana</i>	Bergia	Mil, Uin	Info needed on # of individuals, intrinsic rarity, threat, & trend (Sparse)
	<i>Elatine californica</i>	California water- wort	Cch	Info needed on # of individuals, intrinsic rarity, threat, & trend (Peripheral)



## Appendix 5. UNPS Rare Plant List: Need Data List, continued

Family	Species	Common Name	County Dist. & Legal Status	Information Needed
Elatinaceae	<i>Elatine rubella</i>	Three-lobed waterwort	Dch, Grf, Rch, Sl, Snj, Uin, Uta, Wsh	Info needed on # of individuals, intrinsic rarity, threats, & trends (Sparse)
Fabaceae (Leguminosae)	<i>Astragalus brandegei</i>	Brandegee's milkvetch	Emr, Grf, Irr, Piu, Sev, Way	Info needed on # of individuals, threats, & trends (Regional Endemic)
	<i>Astragalus callithrix</i>	Callaway milkvetch	Mil	Info needed on # of individuals, threats, & trends (Regional Endemic)
	<i>Astragalus desperatus</i> var. <i>petrophilus</i>	Rock-loving milkvetch	Emr	Info needed on # of individuals, threats, & trends (Local Endemic)
	<i>Astragalus eastwoodiae</i>	Eastwood's milkvetch	Emr, Grf, Grn, Snj, Way	Info needed on # of individuals, threats, & trends (Regional Endemic)
	<i>Astragalus laccoliticus</i> ( <i>A. chamaeleuce</i> var. <i>laccoliticus</i> )	Laccolite milkvetch	Grf, Way	Info needed on # of individuals, threats, & trends (Local Endemic)
	<i>Astragalus lentiginosus</i> var. <i>negundo</i>	Box Elder freckled milkvetch	Box	Newly described, info needed on # of individuals, threats, & trends (Local Endemic)
	<i>Astragalus lentiginosus</i> var. <i>stramineus</i>	Straw milkvetch	Wsh?	Reports from UT need confirmation; info needed on # of individuals, # of populations, & trends (Regional Endemic)
	<i>Astragalus pardalinus</i>	Panther milkvetch	Emr, Grf, Grn, Way	Info needed on # of individuals, threats, & trends (Local Endemic)
	<i>Astragalus pattersonii</i>	Patterson's milkvetch	Crb, Emr, Grf, Snj, Sev, Uin, Way	Info needed on # of individuals, threats, & trends (Regional Endemic)
	<i>Astragalus pinonis</i> var. <i>pinonis</i>	Pinyon milkvetch	Bvr, Jub	Info needed on habitat specificity, threats, & trends (Regional Endemic)
	<i>Astragalus preussii</i> var. <i>laxiflorus</i>	Littlefield milkvetch	Wsh?	Reports for UT need confirmation; info needed on # of individuals, # of populations, & trends (Regional Endemic)
	<i>Astragalus pubentissimus</i> var. <i>peabodianus</i>	Peabody's milkvetch	Emr, Grn	Taxonomic questions, info needed on # of individuals, threats, & trends; BLM: S (Local Endemic)
	<i>Astragalus rafaensis</i>	San Rafael milkvetch	Emr, Grn	Info needed on # of individuals, threats, & trends (Regional Endemic)
	<i>Astragalus woodruffii</i>	Woodruff's milkvetch	Emr, Grf, Way	Info needed on # of individuals, threats, & trends (Local Endemic)
<i>Dalea flavescens</i> var. <i>epica</i>	Hole-in-the-Rock prairie-clover	Grf, Snj	Taxonomic questions; info needed on # of individuals, threats, & trends; BLM: S (Local Endemic)	
<i>Lupinus flavoculatus</i>	Yellow-eye lupine	Wsh	Info needed on # of individuals, intrinsic rarity, & trends (Regional Endemic)	

## Appendix 5. UNPS Rare Plant List: Need Data List, continued

Family	Species	Common Name	County Dist. & Legal Status	Information Needed
Fabaceae (Leguminosae)	<i>Pedimelum aromaticum</i> var. <i>ambiguum</i>	Ambiguous bread-root	Grn	Info needed on habitat specificity, # of individuals, intrinsic rarity, threats, & trends (Local Endemic)
	<i>Trifolium andinum</i> var. <i>canone</i>	Canyon Mountains clover	Mil	Newly described, info needed on # of individuals, threats, & trends (Local Endemic)
	<i>Trifolium andinum</i> var. <i>navajoense</i>	Navajo clover	Snj	Newly described, info needed on habitat specificity, threats, & trends (Local Endemic)
	<i>Trifolium andinum</i> var. <i>wahwahense</i>	Wah Wah clover	Bvr	Newly described, info needed on # of individuals, threats, & trends (Local Endemic)
	<i>Vicia americana</i> var. <i>lathyroides</i>	Pavant vetch	Mil	Newly described, info needed on habitat specificity, threats, & trends (Local Endemic)
Hydrangeaceae (Saxifragaceae)	<i>Jamesia americana</i> var. <i>rosea</i>	Rosy cliff jamesia	Irn	Taxonomic questions, info needed on # of populations, intrinsic rarity, threats, trends (Disjunct)
Hydrophyllaceae (Boraginaceae)	<i>Phacelia crenulata</i> var. <i>orbicularis</i>	Henry Mountains phacelia	Grf, Way	Info needed on # of individuals, threats, & trends (Local Endemic)
	<i>Phacelia petrosa</i>	Forgotten phacelia	Grf, Kan, Snj	Info needed on # of individuals, threats, & trends (Regional Endemic)
Loasaceae	<i>Mentzelia multicaulis</i> var. <i>librina</i>	Horse Canyon stickleaf	Crb, Emr	Info needed on # of individuals, threats, & trends; BLM: S (Local Endemic)
	<i>Mentzelia thompsonii</i>	Thompson's stickleaf	Grn, Uin	Info needed on # of individuals, threats, & trends (Regional Endemic)
	<i>Petalonyx nitidus</i>	Shiny-leaf sandpaper-plant	Wsh	Reports from UT need confirmation; info needed on # of individuals, # of populations, & trends (Peripheral)
Onagraceae	<i>Camissonia bolanderi</i>	Bolander's camissonia	Emr, Way?	Newly described, info needed on # of individuals, threats, & trends; BLM: S (Local Endemic)
Ophioglossaceae	<i>Botrychium hesperium</i>	Western moonwort	Jub, Sum	Confirmation needed, info needed on # of individuals, # of populations, threats, & trends (Disjunct)
	<i>Botrychium lanceolatum</i>	Lance-leaf grapefern	Jub	Info needed on habitat specificity, intrinsic rarity, threats, & trends (Peripheral)
	<i>Botrychium paradoxum</i>	Paradox moonwort	Dch, Grf	Confirmation needed; info needed on # of individuals, threats, & trends; USFS: S (Disjunct)
	<i>Botrychium pinnatum</i>	Northern moonwort	Sum	Info needed on habitat specialization, intrinsic rarity, threats, & trends (Peripheral)

## Appendix 5. UNPS Rare Plant List: Need Data List, continued

Family	Species	Common Name	County Dist. & Legal Status	Information Needed
Papaveraceae	<i>Argemone parva</i>	San Rafael prickly-poppy	Grf, Grn, Snj,	Recently described; info needed on # of individuals, threats, & trends (Local Endemic)
Poaceae (Gramineae)	<i>Bouteloua uniflora</i>	One-flower grama	Wsh?	Confirmation needed; info needed on # of individuals, habitat specificity, # of populations, threats, & trends (Disjunct)
	<i>Leersia oryzoides</i>	Rice cutgrass	Dav, Uta, Web	Info needed on # of individuals, threats, & trends (Sparse)
Polemoniaceae	<i>Aliciella "karenae"</i>	Karen's gilia	Emr	Recently described species (as <i>Gilia karenae</i> ), info needed on # of individuals, # of populations, threats, & trends (Local Endemic)
	<i>Ipomopsis congesta</i> var. <i>goodrichii</i>	Goodrich gilia	Dch	Info needed on # of individuals, threats, & trends (Local Endemic)
	<i>Langloisia schottii</i>	Schott's langloisia	Wsh	Info needed on # of individuals, threats, & trends (Peripheral)
	<i>Phlox albomarginata</i>	White-margined phlox	Rch	Info needed on # of individuals, habitat specificity, # of individuals, threats, & trends (Regional Endemic)
	<i>Phlox austromontana</i> var. <i>jonesii</i> ( <i>P. jonesii</i> )	Jones' phlox	Kan, Wsh	Taxonomic questions; info needed on # of individuals, threats, & trends (Local Endemic)
	<i>Phlox austromontana</i> var. <i>prostrata</i>	Silver Reef phlox	Kan, Wsh	Taxonomic questions; info needed on # of individuals, threats, & trends (Local Endemic)
Polygonaceae	<i>Eriogonum arcuatum</i> var. " <i>higginsii</i> "	Higgins' wild buckwheat	Snj	Variety not recognized by Reveal in Holmgren et al. (2012); info needed on # of individuals, threats, & trends (Local Endemic)
	<i>Eriogonum contortum</i>	Grand Valley wild buckwheat	Grn	Info needed on # of individuals, threats, & trends (Regional Endemic)
	<i>Eriogonum corymbosum</i> var. <i>revealianum</i>	Reveal's wild buckwheat	Grf, Kan, Piu, Way	var. <i>heilii</i> recently pulled out, updated status info needed on remaining pops, including # of individuals, threats, trends (Local Endemic)
	<i>Eriogonum howellianum</i>	Howell's wild buckwheat	Jub, Mil, Toe	Info needed on # of individuals, threats, & trends (Regional Endemic)
	<i>Eriogonum hylophilum</i>	Gate Canyon wild buckwheat	Dch	Info needed on # of individuals, threats, & trends (Local Endemic)
	<i>Eriogonum lonchophyllum</i> var. <i>lonchophyllum</i>	Longleaf wild buckwheat	Emr, Grn, Snj, Uin	Info needed on # of individuals, threats, trends (Regional Endemic)
	<i>Eriogonum microthecum</i> var. <i>lapidicola</i>	Slender buckwheat	Jub?, Mil, Wsh	Taxonomic questions; info needed on # of individuals, threats, & trends (Regional Endemic)

## Appendix 5. UNPS Rare Plant List: Need Data List, continued

Family	Species	Common Name	County Dist. & Legal Status	Information Needed
Polygonaceae	<i>Eriogonum natum</i>	Son's wild buck-wheat	Mil	Info needed on # of individuals, threats, & trends (Local Endemic)
	<i>Eriogonum spathulatum</i> "var. <i>kayeae</i> "	Kaye's wild buck-wheat	Bvr	Taxonomic questions. <i>E. artificis</i> considered a separate species by Reveal in Holmgren et al. (2012); info needed on # of individuals, threats, & trends; BLM: S (Local Endemic)
	<i>Eriogonum viridulum</i>	Duchesne wild buckwheat	Dch, Uin	Info needed on # of individuals, threats, & trends (Local Endemic)
Scrophulariaceae (Plantaginaceae)	<i>Penstemon acaulis</i> var. <i>yampaensis</i> ( <i>P. yampaensis</i> )	Yampa penstemon	Dag	Info needed on # of individuals, threats, & trends (Local Endemic)
	<i>Penstemon cyananthus</i> var. <i>judyae</i>	Judy's penstemon	Uta	Recently described, info needed on # of individuals, threats, & trends (Local Endemic)
	<i>Penstemon moffatii</i>	Mofatt penstemon	Dch, Emr, Grf, Grn, Snj, Uta, Way	Info needed on # of individuals, threats, & trends (Regional Endemic)
	<i>Penstemon nanus</i>	Dwarf penstemon	Bvr, Im?, Mil	Info needed on # of individuals, threats, & trends (Local Endemic)
Typhaceae	<i>Typha x glauca</i>	Blue cattail	Cch?	Info needed on # of individuals, # of populations, and trend. May be introduced (Peripheral)

UNPS Need Data List: Ranking Comments

*Cymopterus basalticus*

Family: Apiaceae or Umbelliferae

Comments: Regional Endemic. Found on dolomite outcrops in scattered locations in western Utah. More information needed on abundance, threats, & trends.

Scored By/Date: UNPS Rare Plant Comm./2008

*Cymopterus crawfordensis*

Family: Apiaceae or Umbelliferae

Comments: Local Endemic. Newly described in 2008, Crawford Mountain endemic, more information needed on population size, trends, threats. May be taxonomic questions [Fertig, Feb 2009].

A population formerly considered to be *Cymopterus hendersonii*. It is not known if Apiaceae specialists will recognize this taxon in FNA.

Scored By/Date: J. Alexander/2014

*Cymopterus globosus*

Family: Apiaceae or Umbelliferae

Comments: Regional Endemic. Only 7 specimens at BRY have been collected of the species. The primary distribution of this taxon ranges across central Nevada and eastern California.

Scored By/Date: J. Alexander/2014

Revisions: New to Need Data list

*Agoseris glauca* var. *cronquistii*

Family: Asteraceae or Compositae

Comments: Local Endemic. Taxonomic issues regarding its status as a taxon and endemic variety persist and require further investigation. In FNA this taxon is listed as a synonym of *A. aurantiaca* var. *purpurea*. If so, then this is not a local endemic. According to A Utah Flora, this taxon is a dwarf alpine endemic variety found in the La Sal Mountains, Tushar Mountains, and the Uinta Mountains with satellite populations on the Aquarius and Wasatch Plateaus. A large part of this taxon's habitat is threatened by exotic mountain goat populations introduced by the state of Utah.

Scored By/Date: J. Alexander/2014

Revisions: New to Need Data list.

*Artemisia laciniata* ssp. *parryi*

Synonym: *Artemisia parryi*

Family: Asteraceae or Compositae

Comments: Regional Endemic. Single report from La Sal Mountains, no threat, trend, or population size data

Scored By/Date: UNPS Rare Plant Comm./2008

Revisions: Scientific name changed

*Artemisia tridentata* ssp. *parishii*

Family: Asteraceae or Compositae

Comments: Sparse. Recently reported for UT, little information available [Fertig 2009].

The report for Utah in FNA is an earlier treatment of Shultz that has been published as a monograph in 2009 (Systematic Botany Monographs 89:81-83). In previous

treatments, ssp. *parishii* was restricted to coastal populations in California. Shultz broadly delimited ssp. *parishii* to include a portion of the xeric morphological variants from deserts that were previously within ssp. *tridentata*. The ssp. *parishii* has "capitula 2-4 mm high, 1-2 mm wide, nodding; leaves greater than 5 times as long as wide; cypselae pubescent; usually on loose, sandy soils; restricted to warm deserts" The ssp. *tridentata* has "capitula 1.5-2.5 mm high, 1-2 mm wide, erect; leaves 4 times as long as wide; cypselae glabrous; usually on deep, well-drained (usually sandy) soils...; widespread primarily in cold deserts..." Shultz reported this taxon in Utah on the basis of 6 specimens all at UTC: Garfield Co.: 5 mi W of Escalante *Shultz 20277* (UTC); 6.6 mi SW of Circleville along Hwy 89, *Suttkus 75-27-2* (UTC); San Juan Co.: McCracken Mesa, *Van Cott V-198* (UTC); Washington Co.: E side of the Pine Valley Mtns, *Shultz 17779* (UTC); Anderson Junction, *Turner & Turner 68-184* (UTC). The Utah Distribution was changed to "Sparse" based on Shultz's distribution data. Just based on these specimens, it is difficult to score number of individuals and number of populations. That ssp. *tridentata* is also found neighboring these populations also makes determining these values difficult without further data. The low elevation sandy desert habitat suggests that Threats are high and Trends are downward in at least Washington County, but it is not known if that holds true throughout its range in Utah. All of these categories have been left scored as "unknown."  
Scored By/Date: J. Alexander/2014

*Cirsium arizonicum* var. *chellyense*

Family: Asteraceae or Compositae

Comments: Peripheral. Although no specimens at BRY have been reported as this taxon, a single specimen from Navajo Mountain, San Juan County, Utah has been determined as this taxon (*Rink 10753*, 07 July 2011, Navajo Mountain, spring in upper Oak Canyon, ASC, DES). It is a regional endemic that is also found in similar habitats in Arizona and New Mexico. It was not reported for Utah in FNA. Threats may be primarily from grazing-related impacts, but it is scored as "unknown" due to uncertainty. Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys. Number of Individuals is scored as "unknown" since no one has relocated this taxon at the collection locality.

Scored By/Date: J. Alexander/2014

Revisions: New to Need Data list.

*Cirsium cymosum* var. *canovirens*

Synonym: *Cirsium canovirens*

Family: Asteraceae or Compositae

Comments: Peripheral. Only 1 specimen at BRY has been collected (*Welsh & Christensen 6596*, 10 Aug 1967 BRY). It has only been found in Carbon County in Utah. This taxon's primary range is in the Pacific Northwest and the Rocky Mountains. Sensu FNA, this taxon has

## UNPS Need Data List: Ranking Comments

been confused with *C. subniveum* and *C. inamoenum*. It is possible that this specimen is another example of a misidentification of one of these two species. Therefore, the number of individuals and number of populations have been scored as "unknown" and the status of this taxon ranked as "Need Data". Threats and trends are scored as "unknown".

Scored By/Date: J. Alexander/2015

Revisions: New to Need Data list

*Cirsium eatonii* var. *harrisonii*

Family: Asteraceae or Compositae

Comments: Local Endemic. This taxon is recognized as a synonym of *C. eatonii* var. *eatonii* in Flora of North America (2006). It is reported by Welsh to be an endemic to the Tushar mountain and found principally on alpine talus slopes and alpine meadows. The differentiating character is "commonly suffused with dark purple; involucre not obscured by outer spinose bracts [which I assume means that there are only a few pinnate spines]; while var. *eatonii* has phyllaries green or variously purplish; involucre with copious pinnate spines, mainly obscuring the surface of inner bractlets." The FNA treatment describes var. *eatonii* as having "Phyllaries sometimes suffused with dark purple; outer with few–many lateral spines" and the closely related var. *peckii* as having "phyllaries green; outer with few or no lateral spines." Without a specific quantification of the number of spines on the phyllaries it is difficult to separate var. *harrisonii* from var. *peckii* or var. *eatonii* just based on the relative terms "few" or "copious" or "obscuring". Var. *peckii* is a montane variant from similar, island-like, high elevation habitats in southern Oregon and central Nevada, all of which are distant from other var. *eatonii* populations as var. *harrisonii* is from var. *eatonii*. The primary difference is in the color of the phyllaries. Welsh admits that var. *eatonii* in Utah has purple phyllaries in some populations. Welsh's overlapping distinguishing characters between these two varieties makes the need for a consistent, distinguishing character imperative for the confirmation of this Tushar population as a distinct variety. This is primarily the reason that var. *harrisonii* is recognized as a synonym in FNA. Until such a consistent character has been found, the recognition of var. *harrisonii* is reliably made based on geography alone. It is not really known how many other alpine populations of var. *eatonii* share statistically similar morphology with this Tushar population in Utah and even in adjacent Nevada. Therefore, the number of individuals and number of populations have been changed herein to "unknown" and the status of this taxon changed to "Need Data". The type locality populations of this taxon are threatened by grazing-related impacts from cattle and naturalized mountain goats. Climate change is also a threat. Droughts and rapid snowmelt due to wind-blown sediments are melting snowpack earlier than normal in our region. These are the primary reasons for the upgrade of threats to "1". Trends are scored as "unknown" due to uncertainty of the magnitude of the

impacts of disturbance on extant populations and the lack of population-level surveys. It is a high priority to monitor these alpine endemics that may be impacted by naturalized animals introduced by the State of Utah. Threats are high in at least the Tushar Mountains, but it is not known if that holds true throughout this taxon's potential range in Utah.

Scored By/Date: J. Alexander/2014

Revisions: New to Need Data list

*Cirsium wheeleri* var. *salinense*

Family: Asteraceae or Compositae

Comments: Regional Endemic. Only 7 specimens at BRY have been collected. It has only been collected in Iron, Millard, Sanpete, Sevier, and Washington Counties in Utah. According to FNA, this taxon is "is a minor variant with subentire leaves that is scattered through much of the range of the species." Therefore it should continue to be recognized as a Regional Endemic. The status of this taxon as a distinct variety remains in doubt. One cannot determine if the specimens of this taxon are just an individual morphotype scattered amongst individuals of typical *C. wheeleri* or if it forms discrete populations based on the scant population data published in A Utah Flora. As a result, Number of individuals is re-scored as 'unknown'.

Scored By/Date: J. Alexander/2015

Revisions: Moved from Medium Priority to Need Data list

*Crepis runcinata* "var. *aculeolata*"

Synonym: *Crepis runcinata* ssp. *hispidulosa*

Family: Asteraceae or Compositae

Comments: Local Endemic. Resurrected taxon in 2008 Utah Flora. Taxonomic issues, range restricted?, sand seep habitat is unusual, area is grazed very hard [UNPS Rare Plant Comm. 2008].

This taxon is not listed in FNA in the brief synonymy under any species or infraspecific taxon in *Crepis*. Since FNA follows Babcock and Stebbins (1947) closely, it could be assumed that *C. aculeolata* is considered a synonym of ssp. *hispidulosa* in FNA like it was in their treatment. It is likely not a taxon that can be dependably differentiated from ssp. *hispidulosa*. In addition, the collectors notes from the Powell Expedition that Ward was a member should be searched at US in order to confirm exactly where this taxon was originally collected. This is the only way one could provide evidence corroborating Welsh's assertion that his and Ward's voucher were from the same County or even the same geographic region.

Scored By/Date: J. Alexander/2014

*Ericameria x uintahensis*

Synonym: *Chrysothamnus nauseosus* var. *uintahensis*

Family: Asteraceae or Compositae

Comments: Local Endemic. Edaphic endemic, few pops, abundance not known, hybrid derived (life history/breeding issues?)

UNPS Need Data List: Ranking Comments

Scored By/Date: UNPS Rare Plant Comm./2008

Revisions: Scientific name changed

*Erigeron katiae*

Family: Asteraceae or Compositae

Comments: Local Endemic. Newly described (2007) - little data available. Found on Green River shale. Studies needed to determine how this taxon differs from *E. ochroleucus* var. *scribneri* and *E. wilkenii* from Wyoming and Colorado. Only found on private land.

Scored By/Date: UNPS Rare Plant Comm./2008

*Lygodesmia juncea* var. *rostrata*

Synonym: *Shinnersoseris rostrata*

Family: Asteraceae or Compositae

Comments: Peripheral Although no specimens at BRY have been determined as this species yet, one collection (*Barnes 5438* UVSC, UTC) has been documented from Kane County, Utah. This taxon has been too frequently confused with *Lygodesmia* to know its definitive range in Arizona and Utah. At this time, the only known Utah collections of this taxon are from dune fields at Coral Pink Sand Dunes State Park. This taxon's primary range is in the Midwestern U.S. and Canada. Habitat Specificity scored as "1" since it is restricted to sand dune habitats sensu FNA ("sandy soils of stream banks, dunes, and sand hills in prairies"). Due to grazing-related impacts, the subsequent invasion of exotic weeds, and the increased ATV disturbance in quaternary dune fields and sandy areas across the Colorado Plateau, threats are scored as a "1". Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys.

Scored By/Date: J. Alexander/2014

Revisions: New to Need Data list, scientific name changed

*Senecio bairdii*

Family: Asteraceae or Compositae

Comments: Local Endemic. New species (2008), known only from holotype in Raft River Mountains, more data needed on abundance, threats.

Scored By/Date: Fertig/2009

*Vernonia marginata*

Family: Asteraceae or Compositae

Comments: Disjunct. A taxon not included in previous versions of the UNPS Rare Plant list, but its apparent rarity in Utah warrants inclusion. Only 1 specimen at has been collected (*Fleming 263* at the Capitol Reef Herbarium). This taxon's primary range is in the southern U.S. Welsh states "the plains ironweed is included on the basis of a single specimen from Capitol Reef National Park. The species is not cited for Utah in FNA 19: 211. 2006." There is a possibility that this record is a waif. Relocation of this plant at the collection locality is necessary for the determination if there is a self-sustaining population

of this species in Utah. As a result, number of individuals is scored as "unknown" Threats are unknown but it is likely minimal since the collection site was within a national park. It can be assumed this is a native species since FNA does not state that the U.S. populations are non-native.

Scored By/Date: J. Alexander/2014

Revisions: New to Need Data list

*Xanthisma spinuloum* var. *paradoxum*

Synonym: *Haplopappus spinulosus* var. *paradoxus*

Family: Asteraceae or Compositae

Comments: Regional Endemic. Only 13 specimens at BRY have been collected. It has been found in Emery and San Juan Counties in Utah. This taxon's primary range is in Colorado and New Mexico. Number of Individuals scored as "0" since Welsh describes this plant as being "relatively common in the New Mexican saltbush community on the Morrison Formation adjacent to the Colorado boundary". Habitat Specificity is "unknown". It may be a endemic restricted to the Morrison Formation according to A Utah Flora, however it is apparently not restricted to this habitat type in other parts of its range according to the description in FNA. Trends are unknown. Threats to this taxon may be primarily from grazing-related impacts and ATV recreation, but it is scored as "unknown" due to uncertainty.

Scored By/Date: J. Alexander/2014

Revisions: New to Need Data list

*Mahonia repens* var. *scopulatilis*

Synonym: *Berberis repens*

Family: Berberidaceae

Comments: Local Endemic. This taxon was described from a single type without any other specimens listed. Since *Mahonia repens* is common in Zion N.P., presumably Welsh asserts that all populations in the Zion Canyon should be considered this taxon. However, he provides no key and not concrete distinguishing characters for the canyon populations, therefore identifying this variant from the myriad of other forms throughout western North America is currently not possible, except by geography. He states only that "This plant [*Mahonia repens* var. *repens*] flowers profusely in cultivation, where it grows to large size and simulates the closely related *M. aquifolium*, as do thick-leaved tall plants from Zion Canyon Narrows. The Zion specimens have the proportionally short broad leaflets typical of *M. repens*. They represent a segregate worthy of taxonomic recognition, rather than mere shade forms of the species, and join a short list of other Zion Canyon endemics. They are here recognized as *M. repens* var. *scopulatilis* S.L. Welsh, var. nov... Type: Utah, USA. Washington Co., Zion National Park, along the Narrows Trail, riparian, T40S, R10W, S34, at ca. 4450 ft., S.L. Welsh 23327, 27 April 1985, holotype BRY"

Scored By/Date: J. Alexander/2015

Revisions: New to Need Data list

## UNPS Need Data List: Ranking Comments

*Boechera cobrensis*

Synonym: *Arabis cobrensis*

Family: Brassicaceae or Cruciferae

Comments: Peripheral. Although no specimens at BRY have been collected of this taxon, there is one voucher reported by Windham from Beaver County. This taxon's primary range is in California, the Pacific Northwest, Nevada, and Wyoming. The FNA treatment suggests that Habitat Specificity should be scored as "1" since the taxon is found in sandy habitats. However, since the voucher and habitat details of the Utah specimen have not been published, it is scored as "unknown". Intrinsic Rarity rescored as a "1" due to this taxon being a sexual diploid with a limited distribution. Sexual diploids are the reservoirs in which the varied hybrid taxa have formed and should be protected with a higher level of effort than most of the apomictic triploid taxa. Threats and Trends are scored as "unknown" due to uncertainty of the magnitude and types of disturbance on extant populations and the lack of population-level surveys. These data rank this taxon to the "Need Data" list, but it may be placed on the "High" list based on a future published treatment by Windham [Alexander Aug 2015]. In Utah, known from a single population in Beaver County, discovered in 2014; specimens being distributed to local herbaria [Windham Mar 2015].

Scored By/Date: J. Alexander & M. Windham/2015

Revisions: New to Need Data list.

*Boechera lignifera*

Synonym: *Arabis lignifera*, *Boechera exilis* x *B. thompsonii*

Family: Brassicaceae or Cruciferae

Comments: Sparse. This species was first reported to be a diploid (non-hybrid) by Al-Shehbaz & Windham (2010: 388). Windham & Al-Shehbaz (2007) state that *B. lignifera* is more similar to *B. formosa* and forms hybrids with *B. fendleri*, *B. formosa*, and *B. pallidifolia*. However, recent molecular research by Windham (see below) shows it to be a stable diploid hybrid between *B. exilis* and *B. thompsonii*. Al-Shehbaz & Windham state that *B. lignifera* is more similar to *B. cobrensis* and that their ranges overlap only in Idaho and Wyoming. Number of Populations scored as "0" sensu Windham's comments. Number of Individuals scored as "unknown" due to uncertainty. Other rankings may need to be re-evaluated when Windham's revised treatment is published. These changes re-rank this taxon from the "Medium" to the "Need Data" list. [Alexander Mar 2015]; Not rare. We're submitting a manuscript reporting it from five additional Utah counties (Beaver, Rich, Sanpete, Summit, Tooele) and expect to find it in several others this coming field season. Now known to be a stable (apomictic) diploid hybrid between *Boechera exilis* and *B. thompsonii* [Windham, Mar 2015].

Scored By/Date: J. Alexander & M. Windham/2015

Revisions: New to Need Data list

*Boechera "derensis"*

Synonym: *Arabis holboellii* var. *derensis*, *Boechera exilis* x *B. shockleyi*

Family: Brassicaceae or Cruciferae

Comments: Range unknown. Synonymized with *Arabis beckwithii* in IMF, making this a RegEn(1 pt) instead. Taxonomy confusing. On limestone gravels. Described in 2003, more info needed on threats, abundance

In FNA, this taxon was reported as an apomictic triploid hybrid between *B. shockleyi* and unidentified species of *Boechera* and synonymized within the similar *B. inyoensis*. Although this taxon has been confused with *Boechera gracilentia* (as a variety of *B. selbyi* in Holmgren, 2005), with *B. subpinnatifida* (as *B. beckwithii* in Holmgren, 2005), and with *B. holboellii* (as *Arabis holboellii* var. *derensis* in Welsh, 2003) it has no close relation to the sexual species, *B. holboellii* or *B. subpinnatifida*, nor does it share parents with the apomictic triploid, *B. gracilentia*. The types of both *A. holboellii* var. *derensis* and *A. inyoensis* were both found to be apomictic triploids that share one genome with *B. shockleyi* (Windham & Al-Shehbaz, 2007). Recent molecular studies by Windham have found that this taxon is a tri-genomic hybrid involving *Boechera exilis* x *B. shockleyi* x *B. thompsonii*, which is different than the parentage for *B. inyoensis* (which has been found not to have a parentage including *B. shockleyi*, contrary to FNA). Molecular studies by Windham (see below; his reports have been amended to this county distribution) have found populations of this taxon in Box Elder and Tooele County. It is not known what specimens these reports are based on. Welsh restricts this taxon to Millard County. However, the entire distribution and habitat range of this taxon in Utah remains uncertain. Welsh's populations from which he based his "var. *derensis*" may be found solely on limestone or dolomites, suggesting this taxon might be an edaphic endemic as originally scored. However, this taxon is reported from several, very different substrate types (limestone and volcanic rock outcrops and clay soils in desert scrub and pinyon-juniper woodlands) in the FNA treatment by Al-Shehbaz & Windham. Based on these data, Habitat Specificity has been rescored as "unknown". Number of Individuals rescored to "1" since this taxon has a limited range in Utah. Its status as a "Local Endemic" as originally scored is also uncertain due to the changes between the FNA treatment and new molecular results. This has been rescored as "unknown". Intrinsic Rarity rescored as a "1" due to it being an apomictic triploid hybrid. Polyploid taxa often have chromosomal or genetic anomalies that may limit reproduction. Scoring the unknown values will only be possible after a new revision is published by Windham and his colleagues. These changes re-rank this taxon to the "Need Data" list [Alexander Mar 2015]; New microsatellite studies reveal that the type specimen of var. *derensis* is an apomictic triploid hybrid containing genomes from *Boechera exilis*, *B. shockleyi* & *B. thompsonii*. This hybrid combination has no name at the species level since *Boechera beckwithii* (= *B.*



UNPS Need Data List: Ranking Comments

*puberula* as to type) and *B. inyoensis* (*B. dispar* x *B. lincolnensis* x *B. perennans*) do not apply.  
Scored By/Date: J. Alexander, M. Windham/2015

*Draba densifolia* "var. *decipiens*"

Synonym: *Draba globosa*  
Family: Brassicaceae or Cruciferae  
Comments: Local Endemic. Both IMF and FNA regard Welsh's var. *decipiens* to be a part of an expanded concept of *D. globosa* (or as var. *globosa* in IMF). It is difficult to separate the two for the purposes of ranking and scoring due to discrepancies between A Utah Flora and these two works. Both var. *globosa* and var. *decipiens* are relegated here to the "Need Data" list until more research on the taxonomic boundaries of these taxa is published.  
Scored By/Date: UNPS Rare Plant Comm./2008  
Revisions: New to Need Data List

*Draba globosa*

Synonym: *Draba densifolia* var. *globosa*  
Family: Brassicaceae or Cruciferae  
Comments: Regional Endemic. Both IMF and FNA regard Welsh's var. *decipiens* to be a part of an expanded concept of *D. globosa* (or as var. *globosa* in IMF). It is difficult to separate the two for the purposes of ranking and scoring due to discrepancies between A Utah Flora and these two works. Windham's comments (see below) suggest a "1" should be scored for Number of Populations. The specimens from which these reports are based are not known, however. Both var. *globosa* and var. *decipiens* are relegated here to the "Need Data" list until more research on the taxonomic boundaries of these taxa is published. If both are recognized within *D. globosa*, the rank would be "Medium" [Alexander Mar 2015]; Specimens known now from Duchesne and Summit County [Windham Mar 2015].  
Scored By/Date: J. Alexander & M. Windham/2015  
Revisions: Scientific name changed

*Physaria acutifolia* var. *repanda*

Synonym: Included in *Physaria grahamii* by some authors  
Family: Brassicaceae or Cruciferae  
Comments: Local Endemic. Sensu FNA, "*Physaria grahamii* is difficult to evaluate due to the paucity of collections. The tentative recognition by N. H. Holmgren (2005b) is followed here." It seems reasonable to keep each of the varieties of *P. acutifolia* recognized by Welsh as separate entities until a more conclusive study is performed.  
Scored By/Date: J. Alexander/2014

*Thelypodopsis aurea*

Family: Brassicaceae or Cruciferae  
Comments: Regional Endemic. Found on selenium-rich clay soils of the Morrison, Chinle, and Moenkopi formations. Abundance poorly known. Information also

needed on threats and trends.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Thelypodopsis vermicularis*

Synonym: *Thelypodium sagittatum* var. *vermicularis*  
Family: Brassicaceae or Cruciferae  
Comments: Regional Endemic. Found on saline or gypsum-rich soils in desert shrub communities in the Great Basin of western Utah. Abundance, threats, and trends unknown.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Thelypodium rollinsii*

Family: Brassicaceae or Cruciferae  
Comments: Local Endemic. Greasewood and saltbush communities on saline soils of western Utah. Data gaps for abundance, threats, and trends.  
Scored By/Date: J. Alexander/2014

*Wislizenia refracta*

Family: Capparaceae or Cleomaceae  
Comments: Peripheral. Only 1 specimen at BRY has been collected. It was been collected San Juan County (Piute Farms road, ca 0.5 mi n. of Lijeto Mesa, *Heil & Mietty 17763*, 7 Sep. 2001, BRY). Primary range is in the Southwestern U.S. and Mexico. Habitat Specificity was scored as "unknown" since the one specimen does not effectively describe the habitat of the species. The habitat in A Utah Flora is not specific enough for scoring ("Fine-textured, saline soils"). Threats may be primarily from grazing-related impacts, but it scored as unknown due to uncertainty. Number of Individuals and Threats are also unknown.  
Scored By/Date: J. Alexander/2015  
Revisions: New to Need Data list

*Atriplex powellii* var. *minuticarpa*

Family: Chenopodiaceae or Amaranthaceae  
Comments: Local Endemic. Mancos Shale endemic, known from about 20 occurrences in central Utah; abundance trends and threats poorly known.  
Scored By/Date: Fertig/2009

*Atriplex welshii*

Synonym: *Atriplex gardneri* var. *welshii*  
Family: Chenopodiaceae or Amaranthaceae  
Comments: Local Endemic. Found in sparse saltbush communities on clay soils in Grand County, UT. Taxonomic issues, information needed on population size, trends, and threats (grazing?).  
Scored By/Date: Fertig/2009  
Revisions: Scientific name changed

*Bergia texana*

Family: Elatinaceae  
Comments: Sparse. Only 7 specimens at BRY have been collected. It has been found in Millard and Uintah Counties. Primary range is in the Eastern U.S. Habitat Specificity scored as "1" due to its status as a riparian species

## UNPS Need Data List: Ranking Comments

according to A Utah Flora ("Drying mudflats along streams and on pond margins"). Riparian habitat modification and disturbance from farming and the grazing-related impacts of cattle may be a threat to this species, however it is scored as "unknown" due to uncertainty. Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys. This taxon is on the "Need Data" list primarily because the size of the populations of this taxon have not recently been observed. Number of Individuals is "unknown"  
Scored By/Date: J. Alexander/2014  
Revisions: New to Need Data list

*Elatine californica*

Family: Elatinaceae  
Comments: Peripheral. Only 1 specimen at BRY have been collected. It has been found in Cache County (*Thorne 12386*, 16 September 1982, Dry Lake, along Hwy 89 between Logan and Brigham City). This taxon's primary range is in California and the Pacific Northwest. Habitat Specificity scored as "1" due to its status as a riparian species according to A Utah Flora ("Mud or shallow water of ponds and lakes"). Riparian habitat modification and disturbance related to development, farming, and grazing-related impacts may be a threat to this species, however it is scored as "unknown" due to uncertainty. Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys. This taxon is on the "Need Data" list primarily because the size of the populations of this taxon have not recently been observed. Number of Individuals is "unknown".  
Scored By/Date: J. Alexander/2014  
Revisions: New to Need Data list

*Elatine rubella*

Family: Elatinaceae  
Comments: Sparse. Only 8 specimens at BRY have been collected. It is known from Utah by a single collection in 8 Counties. This taxon's primary range is in the Pacific Northwest, Southwestern U.S., Mexico and Canada. Populations have also been found in Eurasia. Habitat Specificity scored as "1" due to its status as a riparian species according to A Utah Flora ("Pond and lake margins"). Riparian habitat modification and disturbance related to residential-highway development, farming and grazing-related impacts may be a threat to this species, however it is scored as "unknown" due to uncertainty. Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys. This taxon is on the "Need Data" list primarily because the size of the populations of this taxon have not recently been observed. Number of Individuals is "unknown"  
Scored By/Date: J. Alexander/2014  
Revisions: New to Need Data list

*Astragalus brandegeei*

Family: Fabaceae or Leguminosae  
Comments: Regional Endemic. Found on volcanic gravels and alluvium in central Utah. Abundance, threats and trends poorly documented.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Astragalus callithrix*

Family: Fabaceae or Leguminosae  
Comments: Regional Endemic. Great Basin species with Utah populations somewhat disjunct from those in Nevada. Found in sand dunes. Abundance, threats and trends unknown.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Astragalus desperatus* var. *petrophilus*

Family: Fabaceae or Leguminosae  
Comments: Local Endemic. San Rafael Swell/Emery County endemic found in pinyon-juniper and desert shrub communities on sandstone. Better information needed on abundance, trends, and threats.  
Scored By/Date: UNPS Rare Plant Comm./2008

*Astragalus eastwoodiae*

Family: Fabaceae or Leguminosae  
Comments: Regional Endemic. Found on seleniferous soils in central Utah, information needed on population size, threats, and trends.  
Scored By/Date: Fertig/2009

*Astragalus laccoliticus*

Synonym: *Astragalus chamaeleuce* var. *laccoliticus*  
Family: Fabaceae or Leguminosae  
Comments: Local Endemic. Found on volcanic soils and Dakota and Morrison formation in Henry Mountains and Capitol Reef NP, information needed on population size, threats, and trends.  
Scored By/Date: Fertig/2009

*Astragalus lentiginosus* var. *negundo*

Family: Fabaceae or Leguminosae  
Comments: Local Endemic. Described in 2007, possibly endemic to Grouse Creek and House Ranges, but may be more widespread in adjacent NV, ID, and SE OR. Taxonomy needs to be resolved, as populations are in transition zone between vars. *araneosus* and *platyphyllidus* and morphologically intermediate. Taxonomic studies in progress by J. Alexander of UT Valley University.  
Scored By/Date: Fertig & Alexander/2014

*Astragalus lentiginosus* var. *stramineus*

Family: Fabaceae or Leguminosae  
Comments: Regional Endemic. Report for Utah may be based on an erroneous interpretation of the type locality of Palmer from 1870, which has been cited as "S. Utah" or "SE. Utah". This specimen was collected somewhere between the Beaver Dam Mountains of UT or AZ southwest towards Littlefield, AZ. It is only found on in sandy pockets of washes and on sandy to gravelly disturbed

UNPS Need Data List: Ranking Comments

roadsides. No populations were found in surveys from 2000 to 2005. Potential habitat present in Beaver Dam Wash.

Scored By/Date: UNPS Rare Plant Comm./2008

*Astragalus pardalinus*

Family: Fabaceae or Leguminosae

Comments: Local Endemic. Restricted to approximately 24 populations in desert shrub and pinyon-juniper communities in central Utah (habitat specificity low); abundance, threats, and trends poorly known.

Scored By/Date: UNPS Rare Plant Comm./2008

*Astragalus pattersonii*

Family: Fabaceae or Leguminosae

Comments: Regional Endemic. Found on fine-textured selenium rich soils in pinyon-juniper and desert shrub communities (habitat specificity needs further clarification, scored as unknown), threats and trends unknown.

Scored By/Date: UNPS Rare Plant Comm./2008

*Astragalus pinonis* var. *pinonis*

Family: Fabaceae or Leguminosae

Comments: Regional Endemic. Welsh et al. (2008) note 5 collections from Great Basin of western Utah. Populations few, small, mix of upland and moist habitats (habitat specificity not known); threats and trends unknown

Scored By/Date: UNPS Rare Plant Comm./2008

*Astragalus preussii* var. *laxiflorus*

Family: Fabaceae or Leguminosae

Comments: Regional Endemic. The report of this species for UT (*Palmer 105*, coll in 1877) may be from outside the state. It is possible that this taxon used to be found in the gypsum outcrops southwest of St. George in the foothills of the Beaver Dam Mountains, but due to construction, recreational, and grazing disturbance, it is now extirpated from Utah.

Scored By/Date: Fertig & Alexander/2009

*Astragalus pubentissimus* var. *peabodianus*

Family: Fabaceae or Leguminosae

Comments: Local Endemic. Taxonomic issues (not recognized by Barneby in 1964 *Astragalus* monograph), found in coal seams of Straight Cliffs Formation in NE Utah, probably threatened by mining activity, abundance, threats, and trends not known.

Scored By/Date: UNPS Rare Plant Comm./2008

*Astragalus rafaensis*

Family: Fabaceae or Leguminosae

Comments: Regional Endemic. Found on variety of selenium-rich clay formations, including Chinle, Moenkopi, Morrison, and Buckhorn. Restricted to central and eastern Utah, centered in the San Rafael Swell. Abundance, threats, and trends poorly known.

Scored By/Date: UNPS Rare Plant Comm./2008

*Astragalus woodruffii*

Family: Fabaceae or Leguminosae

Comments: Local Endemic. Mostly on Entrada Formation, often on selenium-rich soils. Restricted to central Utah. Information needed on abundance, threats and trends.

Scored By/Date: UNPS Rare Plant Comm./2008

*Dalea flavescens* var. *epica*

Synonym: *Dalea epica*

Family: Fabaceae or Leguminosae

Comments: Local Endemic. Taxonomic issues –var. *epica* not recognized by Barneby in Intermountain Flora. Unique characters of *epica* tend to intergrade with typical *flavescens*. Information needed on abundance, threats, and trends.

Scored By/Date: UNPS Rare Plant Comm./2008

*Lupinus flavoculatus*

Family: Fabaceae or Leguminosae

Comments: Regional Endemic. Found in warm desert shrub and pinyon-juniper communities in SW Utah. Abundance, intrinsic rarity, and trend poorly known.

Scored By/Date: UNPS Rare Plant Comm./2008

*Pediomelum aromaticum* var. *ambiguum*

Family: Fabaceae or Leguminosae

Comments: Local Endemic. A taxon recently described in the 5th ed of A Utah Flora, but its apparent rarity in Utah warrants further research. Only 1 specimen at BRY has been collected of this taxon. It has been found only at the type locality in Grand County in Utah. It is reported to be endemic to Utah. Habitat Specificity scored as "unk" since the habitat is not reported in the type description in A Utah Flora. Threats to this taxon may be primarily from grazing-related and ATV-related impacts, but it scored as "unknown" due to uncertainty. Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys.

Scored By/Date: J. Alexander/2015

Revisions: New to Need Data list.

*Trifolium andinum* var. *canone*

Family: Fabaceae or Leguminosae

Comments: Local Endemic. New variety recognized in 2008. Endemic to Canyon Range, Millard County. More information needed on abundance, threats, and trends. A study of the taxonomic importance of forms of *T. andinum* in isolated ranges in Utah is needed.

Scored By/Date: UNPS Rare Plant Comm./2008

*Trifolium andinum* var. *navajoense*

Family: Fabaceae or Leguminosae

Comments: Local Endemic. New variety recognized in 2008. Endemic to Navajo Mountain on sandstone boulders. Better information needed on habitat specialization, threats, and trends.

Scored By/Date: UNPS Rare Plant Comm./2008

## UNPS Need Data List: Ranking Comments

*Trifolium andinum* var. *wahwahense*

Family: Fabaceae or Leguminosae

Comments: Local Endemic. New variety recognized in 2008. Endemic to WahWah Mountains in western Utah on limestone and quartz gravel. Abundance, threats, and trends unknown.

Scored By/Date: UNPS Rare Plant Comm./2008

*Vicia americana* var. *lathyroides*

Family: Fabaceae or Leguminosae

Comments: Local Endemic. Newly described in 2008, known just from the type locality Millard County east of Fillmore, perhaps an odd growth form, more information needed on population size, habitat, threats

Scored By/Date: UNPS Rare Plant Comm./2008

*Jamesia americana* var. *rosea*

Family: Hydrangeaceae or Saxifragaceae

Comments: Disjunct. Known from Claron bedrock ledges and cliffs in Cedar Breaks NM and vicinity; populations small, similar to var. *zionis* but differ in pink flower color. Information needed on abundance, intrinsic rarity, threats, and trends.

Scored By/Date: UNPS Rare Plant Comm./2008

*Phacelia crenulata* var. *orbicularis*

Family: Hydrophyllaceae or Boraginaceae

Comments: Local Endemic. New taxon described in 2003, Mancos Shale endemic of the Henry Mountains. Abundance, threats, and trends poorly known.

Scored By/Date: UNPS Rare Plant Comm./2008

*Phacelia petrosa*

Family: Hydrophyllaceae or Boraginaceae

Comments: Regional Endemic. Found on calcareous and volcanic substrates in desert shrub communities (habitat specificity high), few populations. Information lacking on abundance, threats, and trend.

Scored By/Date: UNPS Rare Plant Comm./2008

*Mentzelia multicaulis* var. *librina*

Synonyms: *Mentzelia librina*

Family: Loasaceae

Comments: Local Endemic. Found on Mancos Shale and the Price River Formation in pinyon-juniper and sagebrush communities (habitat specialization high). Information needed on abundance, threats, and trends.

Scored By/Date: UNPS Rare Plant Comm./2008

*Mentzelia thompsonii*

Synonym: *Acrolasia humilis*

Family: Loasaceae

Comments: Regional Endemic. Found on Mancos Shale in eastern Utah and adjacent Colorado. Abundance, threats, and trends poorly known.

Scored By/Date: UNPS Rare Plant Comm./2008

*Petalonyx nitidus*

Family: Loasaceae

Comments: Peripheral. As with other 1877 collections by Palmer, it is possible that the UT reports of this species are actually from AZ, where it is known from gypsum clay knolls and gypsum derived wash alluvium. It is also possible that it used to be found in the gypsum outcrops southwest of St. George in the foothills of the Beaver Dam Mountains, but due to construction, recreational, and grazing disturbance, it is now extirpated from Utah. More information is needed on number of individuals, number of populations, and trends.

Scored By/Date: Fertig & Alexander/2009

*Camissonia bolanderi*

Family: Onagraceae

Comments: Local Endemic. Recently described (2007), known from Moenkopi Formation in San Rafael Desert, possibly in Capitol Reef NP, more information needed on abundance, threats, and trends.

Scored By/Date: UNPS Rare Plant Comm./2008

*Botrychium hesperium*

Family: Ophioglossaceae

Comments: Disjunct. Reported for UT in FNA 1993. Stone (1998) cites records from Summit and Juab counties. Information needed on number of populations and individual plants, threats, and trends.

Scored By/Date: UNPS Rare Plant Comm./2008

*Botrychium lanceolatum*

Family: Ophioglossaceae

Comments: Peripheral. Just one specimen noted in Utah Flora (2008). Habitat specialization, intrinsic rarity, threats, and trends unknown.

Scored By/Date: UNPS Rare Plant Comm./2008

*Botrychium paradoxum*

Family: Ophioglossaceae

Comments: Disjunct. Reported for UT in FNA (1993). Stone (1998) cites records from Garfield Co. Windham has questioned whether this is a good taxon or just an odd growth form. If recognized, it is disjunct in UT on the Aquarius Plateau and Duchesne Co, some taxonomic issues, populations small, threats need to be determined [UNPS Rare Plant Comm. 2008].

Number of Populations changed from "unknown" to "1" based on Windham's comments. These changes do not re-rank this taxon [Alexander, Aug 2015]; Specimens now known from Duchesne and Garfield County [Windham Mar 2015].

Scored By/Date: J. Alexander & M. Windham/2015

*Botrychium pinnatum*

Synonym: Includes reports of *Botrychium boreale*

Family: Ophioglossaceae

Comments: Peripheral. The name [used in A Utah Flora], *Botrychium boreale*, hasn't been applied to continental North American populations by anyone knowl-

UNPS Need Data List: Ranking Comments

edgeable in *Botrychium* for over 40 years! [Windham Mar 2015]; The name recommended by Windham, *B. pinnatum*, has been substituted herein [Alexander, Aug 2015]. Information needed on habitat specialization, intrinsic rarity, threats, and trend.

Scored By/Date: UNPS Rare Plant Comm./2008

Revisions: Scientific name changed

*Argemone parva*

Synonym: *Argemone corymbosa* var. *parva*

Family: Papaveraceae

Comments: Local Endemic. Described in 2003, Colorado River endemic found on Chinle, Moenkopi, Morrison, and Honaker Trail soils. Known from 9 collections (Utah Flora 2008). Information needed on abundance, threats, and trend.

Scored By/Date: Fertig/2009

Revisions: Scientific name changed

*Bouteloua uniflora*

Family: Poaceae or Gramineae

Comments: Disjunct. Reported for UT in Intermountain Flora (1977) & FNA (2003) from Zion NP, disjunct from Texas. Might be a short-term introduction. Better information needed on habitat specificity, abundance, number of extant populations, trends, and threats.

Scored By/Date: UNPS Rare Plant Comm./2008

*Leersia oryzoides*

Family: Poaceae or Gramineae

Comments: Sparse. Welsh et al. (2008) note 9 specimens in marshes and wetlands in northern Utah. Abundance, threats, and trends unknown.

Scored By/Date: UNPS Rare Plant Comm./2008

*Aliciella "karenae"*

Synonym: *Gilia karenae*

Family: Polemoniaceae

Comments: Local Endemic. This species is based on two collections collected days apart at the same locality in Emery County (*Kass & Kass 5458*, 21 May 2013, north end of San Rafael Swell, Chalk Hills, ca. 3 mi N of Wedge Overlook, on shaley outcrop in gypsiferous Jurassic Carmel Formation, T198, R10E, S27 BRY; *Welsh et al. 29173*, 28 May 2013, north end of San Rafael Swell, Chalk Hills, ca. 3 mi N of Wedge Overlook, BRY). Apparently, the type locality is threatened by Gypsum Mining activities: "The population of the plant is remote from the gypsum mine by several hundred yards, and there are other similar outcrops of the Carmel Formation trending southwest from the site" Threats scored as "1". Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys. The extent of this taxon in Utah and if the characters presented by the authors distinguish it enough to be segregated as a separate species is unresolved. The authors, Welsh & Kass refused to make a new combination for this taxon in *Aliciella*. We are left without a name for

this taxon in the recognized genus for this group for the near future. Until the taxonomic issues have been resolved regarding its placement within *Aliciella* and whether it will be placed as a synonym of *Aliciella tenuis* or given a separate species name, this taxon can only be placed on the "Need Data" list.

Scored By/Date: J. Alexander/2014

Revisions: New to Need Data list

*Ipomopsis congesta* var. *goodrichii*

Family: Polemoniaceae

Comments: Local Endemic. Green River Formation endemic in Uinta Basin. Abundance and trends poorly known. Threats unknown, though possibly impacted by mineral exploration and development in the basin.

Scored By/Date: UNPS Rare Plant Comm./2008

*Langloisia schottii*

Synonym: *Loeseliastrum schottii*

Family: Polemoniaceae

Comments: Peripheral. Welsh et al. (2008) note 14 specimens in Utah. Found in warm desert shrub communities on terrace gravels in Washington County. Abundance and trends not known. Might be threatened by competition with invasive annuals or increased fire frequency.

Scored By/Date: Fertig/2009

*Phlox albomarginata*

Family: Polemoniaceae

Comments: Regional Endemic. Type is from Montana - not just UT-WY, though it would be interesting to compare these with material from MT (ID too?). Quite rare in WY. Only 4 specimens noted for Utah by Welsh et al. (2008). More information needed on habitat specificity (might be a calceophile), abundance, threats, and trends.

Scored By/Date: UNPS Rare Plant Comm./2008

*Phlox austromontana* var. *jonesii*

Synonym: *Phlox jonesii*

Family: Polemoniaceae

Comments: Local Endemic. Taxonomic issues, information needed on abundance, threats, and trends. Can be difficult to distinguish from var. *prostrata* in Zion NP, where one or both of these taxa is locally abundant on sandstone ledges and slopes in Zion Canyon and the east side of the park.

Scored By/Date: UNPS Rare Plant Comm./2008

*Phlox austromontana* var. *prostrata*

Family: Polemoniaceae

Comments: Local Endemic. Can be difficult to distinguish from *P. austromontana* var. *jonesii* and perhaps not worthy of taxonomic recognition. One or both of these taxa is locally abundant on Navajo sandstone cliffs in Zion Canyon in Zion NP. Information needed on abundance, threats, and trends.

Scored By/Date: UNPS Rare Plant Comm./2008

## UNPS Need Data List: Ranking Comments

***Eriogonum arcuatum* “var. *higginsii*”**

Synonym: *Eriogonum jamesii* var. *higginsii*, *E. jamesii* var. *tectum*

Family: Polygonaceae

Comments: Local Endemic. Reveal in FNA suggests that var. *higginsii* is not the earliest name for this Welsh's variant. The "var. *tectum*" is the earliest name for Welsh's variant at the varietal level: "Plants with capitate inflorescences, sometimes recognized as var. *higginsii*, occur throughout the range of the variety. If such distinction is to be made, the earliest available epithet is *tectum*." Information needed on abundance, threats, and trend.

Scored By/Date: J. Alexander/2014

Revisions: Scientific name changed

***Eriogonum contortum***

Family: Polygonaceae

Comments: Regional Endemic. Found mostly on Mancos Shale in Grand County, UT and adjacent western Colorado. Abundance, threats, and trends unknown.

Scored By/Date: UNPS Rare Plant Comm./2008

***Eriogonum corymbosum* var. *revealianum***

Family: Polygonaceae

Comments: Local Endemic. Populations from Thousand Lake Mountain now split off as *Eriogonum corymbosum* var. *heilii*. Restricted to volcanic gravels and silts in sagebrush, pinyon-juniper, and bristlecone pine stands in low mountains of central Utah. Information needed on abundance, threats, and trends, especially with var. *heilii* removed.

Scored By/Date: UNPS Rare Plant Comm./2008

***Eriogonum howellianum***

Family: Polygonaceae

Comments: Regional Endemic. Found on gravelly volcanic substrates in desert shrub communities in western Utah. Information needed on abundance, threats, and trends.

Scored By/Date: UNPS Rare Plant Comm./2008

***Eriogonum hylophilum***

Synonym: *Eriogonum corymbosum* var. *hylophilum*

Family: Polygonaceae

Comments: Local Endemic. Found on the Green River Shale in West Tavaputs Plateau area. Number of individuals, threats, and trends unknown.

Scored By/Date: UNPS Rare Plant Comm./2008

Revisions: Scientific name changed

***Eriogonum lonchophyllum* var. *lonchophyllum***

Family: Polygonaceae

Comments: Regional Endemic. Known from calcareous substrates of the Green River Formation in central and eastern Utah. Additional information needed on abundance, threats, and trends.

Scored By/Date: UNPS Rare Plant Comm./2008

***Eriogonum microthecum* var. *lapidicola***

Synonym: *Eriogonum microthecum* var. *tegetiforme*

Family: Polygonaceae

Comments: Regional Endemic. Newly described in 2008. Information needed on number of individuals, threats, and trends.

Scored By/Date: UNPS Rare Plant Comm./2008

Revisions: New to Need Data list

***Eriogonum natum***

Synonym: *Eriogonum spathulatum* var. *natum*

Family: Polygonaceae

Comments: Local Endemic. Known from 16 collections in Utah (Welsh et al. 2008) in shadscale communities on calcareous playas in Millard County. Abundance, threats, and trends unknown.

Scored By/Date: UNPS Rare Plant Comm./2008

Revisions: Scientific name changed

***Eriogonum spathulatum* “var. *kayeeae*”**

Synonym: *Eriogonum spathulatum*

Family: Polygonaceae

Comments: Local Endemic. Found on limestone and dolomite gravels in the San Francisco Mountains area of western Utah. Nine collections noted by Welsh et al. (2008). Additional information needed on number of individuals, threats, and trends.

Scored By/Date: UNPS Rare Plant Comm./2008

***Eriogonum viridulum***

Synonym: *Eriogonum brevicaule* var. *viridulum*

Family: Polygonaceae

Comments: Local Endemic. Restricted to Uinta Basin area in pinyon-juniper and shrub communities (habitat specialization apparently low). Information needed on abundance, threats, and trends.

Scored By/Date: UNPS Rare Plant Comm./2008

Revisions: Scientific name changed

***Penstemon acaulis* var. *yampaensis***

Synonym: *Penstemon yampaensis*

Family: Scrophulariaceae or Plantaginaceae

Comments: Local Endemic. Found in semi-barren cushion plant communities on calcareous substrates in NE Utah and adjacent Colorado and Wyoming. Abundance, threats, and trends unknown.

Scored By/Date: UNPS Rare Plant Comm./2008

***Penstemon cyanathus* var. *judyae***

Family: Scrophulariaceae or Plantaginaceae

Comments: Local Endemic. New variety described in 2003 (and named by Duane Atwood for his wife). Only known from alpine areas of Mount Timpanogos and Provo Peak. Known from 24 collections (Welsh et al. 2008). Information needed on numbers of individuals, threats, and trends.

Scored By/Date: UNPS Rare Plant Comm./2008

UNPS Need Data List: Ranking Comments

*Penstemon moffatii*

Family: Scrophulariaceae or Plantaginaceae

Comments: Regional Endemic. Found on clay soils in blackbrush, shadscale, and pinyon-juniper communities in eastern Utah. Information needed on abundance, threats, and trends.

Scored By/Date: UNPS Rare Plant Comm./2008

*Penstemon nanus*

Family: Scrophulariaceae or Plantaginaceae

Comments: Local Endemic. Mostly on limestone or dolomite gravels in sagebrush and pinyon-juniper communities in western Utah. Abundance, threats, and trends not known.

Scored By/Date: UNPS Rare Plant Comm./2008

*Typha x glauca*

Synonym: *Typha glauca*, *T. domingensis* x *T. latifolia*

Family: Typhaceae

Comments: Peripheral. Reported. Hybrid species that is an aggressive invader in the Midwestern US.

The only voucher for Utah was collected E of the Logan River, W of Logan, in Cache Co. (*Wolf s.n.*, 26 July 1951, UTC). Threat was scored a "0" in the previous list. It was rescored to "unknown" since this taxon has not been recollected since 1951. The population was in a wetland and may have been extirpated. Abundance not known. Cattail specimens are prone to misidentification and UT collections should be confirmed. For now, this species is best treated as need data.

Scored By/Date: J. Alexander/2015; W. Fertig/2016

Revisions: Moved from Medium Priority to Need Data.

## Appendix 6. UNPS Rare Plant List: Status Uncertain List

Family	Species	Common Name	County Dist. & Legal Status	Information Needed
Asteraceae (Compositae)	<i>Agoseris x agrestis</i>	Pale agoseris	Bvr, Dag, Grf, Irn, Slt, Snp, Sev, Web	Info needed on habitat specialization, # of individuals, intrinsic rarity, threats, and trends (Sparse)
	<i>Artemisia biennis</i> var. <i>diffusa</i>	Mystery worm-wood	Grf	Info needed on # of individuals, # of populations, intrinsic rarity, threats, and trends (Regional Endemic)
	<i>Cirsium ochrocentrum</i> var. <i>ochrocentrum</i>	Yellowspine thistle	Snj	Info needed on # of individuals, # of populations, threats, and trends (Peripheral)
	<i>Crepis bakeri</i> ssp. <i>cusickii</i>	Baker's hawk-beard	reported	Info needed on # of individuals, # of populations, intrinsic rarity, threats, and trends (Disjunct)
	<i>Erigeron lobatus</i>	Lobed fleabane	Snj	Info needed on habitat specialization, # of individuals, threats, and trend (Peripheral)
	<i>Erigeron watsonii</i>	Watson's fleabane	reported	Info needed on habitat specialization, # of individuals, threats, and trends (Peripheral)
	<i>Isocoma humilis</i>	Zion goldenbush	Wsh	Taxonomic questions, info needed on intrinsic rarity, threats, & trends; not seen since 1971
	<i>Packera strepthanifolia</i> "var. <i>platylobus</i> "	Wasatch groundsel	Dav?, Mor, Slt, Sum?, Uta, Was?, Web	Info needed on habitat specialization, # of individuals, threats, and trends (Local Endemic)
	<i>Packera wernerifolia</i> "var. <i>malmstenoides</i> "	Mt. Nebo groundsel	Jub, Uta	Info needed on # of individuals, threats, and trends (Local Endemic)
	<i>Pleurocoronis pleuriseta</i>	Bush arrowleaf	Wsh?	Info needed on # individuals, threats, and trends (Peripheral)
	<i>Psilostrophe bakeri</i>	Baker's paper-flower	Snj?	Info needed on # of individuals, # of populations, threats, and trends (Peripheral)
	<i>Pyrrocoma racemosa</i> "var. <i>prionophyllus</i> "	Racemose goldenweed	Cch, Dch?, Mil?, Uta	Info needed on # of individuals, # of populations, threats, and trends (Peripheral)
	<i>Symphyotrichum falcatum</i> var. <i>commutatum</i>	White prairie aster	Kan?, Uta?, Was?	Info needed on habitat specialization, # of individuals, # of populations, threats, and trends (Peripheral)
	<i>Symphyotrichum falcatum</i> var. <i>falcatum</i>	White prairie aster	Kan?, Uta?, Was?	Info needed on habitat specialization, # of individuals, # of populations, threats, and trends (Peripheral)
	<i>Townsendia beamanii</i>	Beaman's townsendia	Snj	Info needed on intrinsic rarity, threats, and trends (Local Endemic)
<i>Townsendia parryi</i>	Parry's townsendia	reported	Info needed on # of individuals, # of populations, threats, and trends (Peripheral)	
<i>Xanthisma spinulosum</i> var. <i>spinulosum</i>	Spiny goldenweed	Emr?	Info needed on # of individuals, # of populations, threats, and trends (Peripheral)	



## Appendix 6. UNPS Rare Plant List: Status Uncertain List

Family	Species	Common Name	County Dist. & Legal Status	Information Needed
Brassicaceae (Cruciferae)	<i>Boechera exilis</i>	Narrow rockcress	reported	Info needed on range, habitat specificity, # of individuals, # of populations, intrinsic rarity, threats, and trends
	<i>Boechera glareosa</i>	Dorn's rockcress	Crb, Dch, Emr, Jub, Sum, Un	Info needed on habitat specificity, # of individuals, # of populations, threats, and trends (Local Endemic)
	<i>Boechera selbyi</i> var. <i>selbyi</i>	Selby's rockcress	reported	Info needed on # of individuals, # of populations, threats, and trends (Peripheral)
	<i>Draba densifolia</i> var. <i>densifolia</i>	Rockcress draba	Slt	Info needed on # of individuals, # of populations, threats, and trends (Peripheral)
	<i>Lepidium flavum</i>	Yellow pepperplant	Wsh?	Info needed on # of individuals, # of populations, threats, and trends (Peripheral)
	<i>Lepidium moabense</i>	Moab pepperplant	Grf, Grn, Kan, Snj	Info needed on taxonomic status—may just be a recurring odd growth form found within otherwise normal populations of <i>L. alyssoides</i> , with which it typically co-occurs. Not considered a valid taxon in Intermountain Flora or FNA.
	<i>Physaria condensata</i>	Tufted twinpod	reported	Info needed on habitat specialization, # of individuals, # of populations, threats, and trends (Regional Endemic)
	<i>Physaria</i> "navajoensis"	Navajo bladderpod	Kan	Info needed on # of individuals, # of populations, threats, and trends (Local Endemic).
Cactaceae	<i>Cylindropuntia x multigeniculata</i>	Blue Diamond cholla	Kan?, Mil?	Info needed on # of individuals, # of populations, and trends (Peripheral)
	<i>Cylindropuntia ramosissima</i>	Branched pencil cholla	Wsh?	Info needed on habitat specialization, # of individuals, # of populations, threats, and trends (Peripheral)
	<i>Echinocactus polycephalus</i> var. <i>xeranthemoides</i>	Manyhead barrel cactus	Kan?	Info needed on # of individuals, # of populations, and trends (Regional Endemic)
Callitrichaceae (Plantaginaceae)	<i>Callitriche anceps</i>	Two-headed water-starwort	reported	Info needed on # of individuals, # of populations, and trends (Peripheral)
Caryophyllaceae	<i>Eremogone congesta</i> var. <i>lithophila</i>	Rock-loving sandwort	reported	Info needed on # of individuals, # of populations, threats, and trends (Peripheral)
	<i>Moehringia macrophylla</i>	Largeleaf sandwort	reported	Info needed on # of individuals, # of populations, threats, and trends (Peripheral)
	<i>Silene oregana</i>	Oregon campion	Box	Info needed on habitat specialization, # of individuals, # of populations, threats, and trends (Peripheral)
	<i>Silene rectiramea</i>	Grand Canyon campion	Kan?, Wsh?	Info needed on # of individuals, # of populations, threats, and trends (Regional Endemic)

## Appendix 6. UNPS Rare Plant List: Status Uncertain List

Family	Species	Common Name	County Dist. & Legal Status	Information Needed
Caryophyllaceae	<i>Silene uralensis</i> ssp. <i>uralensis</i>	Apetalous catchfly	reported	Info needed on habitat specialization, # of individuals, # of populations, threats, and trends (Peripheral)
Cyperaceae	<i>Carex vernacula</i>	Native sedge	Was	Info needed on # of individuals, # of populations, threats, & trends (Peripheral)
	<i>Fimbristylis castanea</i>	Marsh fimbry	Kan?, Mil?, Snj?, Uta?, Wsh?	Info needed on # of individuals, # of populations, threats, and trends (Disjunct)
	<i>Fimbristylis puberula</i> var. <i>interior</i>	Hairy fimbry	Kan?, Mil?, Snj?, Uta?, Wsh?	Info needed on # of individuals, # of populations, threats, and trends (Disjunct)
	<i>Fimbristylis puberula</i> var. <i>puberula</i>	Hairy fimbry	Kan?, Mil?, Snj?, Uta?, Wsh?	Info needed on # of individuals, # of populations, threats, and trends (Disjunct)
	<i>Fimbristylis thermalis</i>	Hot springs fimbry	Kan?, Mil?, Snj?, Uta?, Wsh?	Info needed on # of individuals, # of populations, threats, and trends (Peripheral)
Fabaceae (Leguminosae)	<i>Acmispon tomentellus</i>	Strigose bird's-foot trefoil	Wsh?	Info needed on # of individuals, # of populations, threats, and trends (Peripheral)
	<i>Astragalus hornii</i>	Horn's milkvetch	Wsh?	Info needed on # of individuals, # of populations, threats, and trends (Disjunct)
	<i>Trifolium cyathiferum</i>	Cup clover	Kan?	Info needed on # of individuals, # of populations, threats, and trends (Disjunct)
Juncaceae	<i>Juncus anthelatus</i>	Greater poverty rush	reported	Info needed on # of individuals, # of populations, threats, and trends (Sparse)
	<i>Juncus cooperi</i>	Cooper's rush	Kan?, Wsh?	Info needed on # of individuals, # of populations, threats, and trends (Peripheral)
	<i>Juncus hemiendytus</i> var. <i>hemiendytus</i>	Herman's dwarf rush	reported	Info needed on # of individuals, # of populations, threats, and trends (Disjunct)
	<i>Juncus interior</i>	Inland rush	reported	Info needed on # of individuals, # of populations, threats, and trends (Disjunct)
	<i>Juncus xiphioides</i>	Iris-leaf rush	Wsh?	Info needed on # of individuals, # of populations, threats, and trends (Peripheral)
Lemnaceae (Araceae)	<i>Lemna obscura</i>	Little duckweed	Bvr, Dag, Grf, Sev, Uin, Uta	Info needed on # of individuals, # of populations, and trends (Sparse)
	<i>Lemna turionifera</i>	Turion duckweed	reported	Info needed on # of individuals, # of populations, threats, and trends (Sparse)
Loasaceae	<i>Mentzelia polita</i>	Polished blazingstar	Wsh	Info needed on # of individuals, # of populations, threats, and trends (Regional Endemic)
Lythraceae	<i>Didiplis diandra</i>	Water-purslane	Sev	Info needed on # of individuals, # of populations, threats, and trends (Disjunct)
Nyctaginaceae	<i>Abronia fragrans</i> var. <i>harrisii</i>	Harris' fragrant sand-verbena	Emr, Grf, Uin	Taxonomic questions; info needed on # of populations, threats, & trends
	<i>Abronia mellifera</i> var. <i>mellifera</i>	White sand-verbena	Cch	Info needed on # of individuals, # of populations, threats, and trends (Peripheral)

## Appendix 6. UNPS Rare Plant List: Status Uncertain List

Family	Species	Common Name	County Dist. & Legal Status	Information Needed
Onagraceae	<i>Oenothera cavernae</i>	Cave-dwelling evening-primrose	Kan?, Snj?, Wsh?	Info needed on # of individuals, # of populations, threats, and trends (Regional Endemic)
Ophioglossaceae	<i>Botrychium crenulatum</i>	Scalloped moonwort	reported	Info needed on # of individuals, # of populations, threats, and trends (Disjunct)
Orchidaceae	<i>Platanthera aquilonis</i>	Northern green orchid	Dag, Dch	Info needed on # of individuals, # of populations, and trends (Peripheral)
Poaceae (Gramineae)	<i>Bromus lanatipes</i>	Woolly brome	Grf, Wsh	Info needed on # of individuals, # of populations, threats, and trends (Peripheral)
	<i>Bromus sitchensis</i>	Aleutian brome	Cch, Rch	Info needed on # of individuals, # of populations, threats, and trends (Disjunct)
	<i>Festuca arizonica</i>	Arizona fescue	Snj	Info needed on # of individuals, threats, and trends (Peripheral)
	<i>Festuca calligera</i>	Southwest fescue	Grf, Irn, Piu, Sev	Info needed on # of individuals, threats, and trends (Peripheral)
	<i>Leptochloa panicea</i> ssp. <i>brachiata</i>	Mucronate sprangletop	Wsh	Info needed on # of individuals, # of populations, threats, and trends (Peripheral)
	<i>Muhlenbergia fragilis</i>	Delicate muhly	Snj?	Info needed on # of individuals, # of populations, threats, and trends (Peripheral)
	<i>Muhlenbergia glomerata</i>	Spiked muhly	Slr, Uta?	Info needed on # of individuals, # of populations, threats, and trends (Peripheral)
	<i>Panicum flexile</i>	Wiry panicgrass	Snj, Uta?	Info needed on # of individuals, # of populations, threats, and trends (Disjunct)
	<i>Puccinellia simplex</i>	California alkali-grass	Box?, Cch?, Dch?, Mil?, Rch?, Snj?, Snp?, Web	Info needed on # of individuals, # of populations, and trends (Disjunct)
	<i>Scleropogon brevifolius</i>	Burrograss	Kan	Info needed on # of individuals, # of populations, threats, and trends (Peripheral)
Polygonaceae	<i>Eriogonum esmeraldense</i> "var. <i>tayei</i> "	Taye's wild buckwheat	Sev	Info needed on # of individuals, # of populations, threats, and trends (Local Endemic)
	<i>Eriogonum thompsoniae</i> "var. <i>matthewsiae</i> "	Matthews' wild buckwheat	Wsh	Info needed on # of individuals, # of populations, and trends (Local Endemic), Taxonomic questions
	<i>Persicaria punctata</i>	Dotted smartweed	Cch?, Uta?	Info needed on # of individuals, # of populations, and trends (Sparse)
	<i>Polygonum engelmannii</i>	Engelmann's knotweed	reported	Info needed on # of individuals, # of populations, threats, and trends (Peripheral)
	<i>Polygonum majus</i>	Large knotweed	reported	Info needed on # of individuals, # of populations, threats, and trends (Peripheral)
Portulacaceae (Montiaceae)	<i>Claytonia cordifolia</i>	Heartleaf spring-beauty	Cch?, Slr?, Toe?, Web?	Info needed on # of individuals, # of populations, and trends (Peripheral)

## Appendix 6. UNPS Rare Plant List: Status Uncertain List

Family	Species	Common Name	County Dist. & Legal Status	Information Needed
Portulacaceae (Montiaceae)	<i>Montia fontana</i>	Annual water miners-lettuce	Box?	Info needed on # of individuals, # of populations, and trends (Peripheral)
Potamogetonaceae	<i>Potamogeton strictifolius</i>	Narrowleaf pondweed	Sum?	Info needed on # of populations, threats, and trends (Disjunct)
Pteridaceae (Polypodiaceae)	<i>Myriopteris rufa</i> ( <i>Cheilanthes eatonii</i> )	Eaton's lipfern	Snj?	Info needed on # of individuals, # of populations, and trends (Peripheral)
Ranunculaceae	<i>Ranunculus andersonii</i> var. <i>tenellus</i>	Anderson's buttercup	Toe	Info needed on # of individuals, # of populations, threats, and trends (Regional Endemic)
	<i>Ranunculus uncinatus</i>	Woodland buttercup	Grn, Snj?	Info needed on # of individuals, # of populations, threats, and trends (Peripheral)
Rosaceae	<i>Crataegus castlegarensis</i>	Castlegar hawthorn	Slt	Info needed on # of individuals, # of populations, threats, and trends (Peripheral)
	<i>Drymocallis arizonica</i>	Arizona cinquefoil	Grf, Irn, Kan?, Piu?, Sev	Info needed on # of individuals, # of populations, threats, and trends (Regional Endemic)
	<i>Drymocallis deseretica</i>	Deseret cinquefoil	Dch, Jub, Slt, Snp, Sum, Toe, Uta, Was	Info needed on # of individuals and trends (Regional Endemic)
	<i>Drymocallis fissa</i>	Bigflower cinquefoil	Bvr, Piu, Sev, Way?	Info needed on # of individuals, # of populations, and trends (Peripheral)
	<i>Drymocallis glabrata</i>	Sticky cinquefoil	Cch, Web	Info needed on # of individuals and trends (Peripheral)
	<i>Ivesia arizonica</i> var. <i>arizonica</i>	Arizona ivesia	Wsh	Info needed on # of individuals, # of populations, threats, and trends (Regional Endemic)
	<i>Potentilla concinna</i> var. <i>proxima</i> x <i>P. ovina</i> var. <i>decurrens</i>	Near cinquefoil	Bvr, Jub, Piu	Info needed on taxonomic status of this hybrid. Additional info needed on # of individuals, # of populations, and trends (Peripheral)
	<i>Potentilla hookeriana</i>	Hooker's cinquefoil	Snj, Uta	Info needed on # of individuals, # of populations, and trends (Peripheral)
	<i>Potentilla saximontana</i>	Rocky Mountain cinquefoil	reported	Info needed on # of individuals, # of populations, and trends (Regional Endemic)
	<i>Potentilla subgorodkovii</i>	Gorodkov's cinquefoil	reported	Info needed on # of individuals, # of populations, and trends (Peripheral)
	<i>Poteridium annuum</i>	Prairie burnet	Wsh	Info needed on # of individuals, # of populations, threats, and trends (Peripheral)
	<i>Rosa nutkana</i> ssp. <i>melina</i>	Nootka rose	reported	Info needed on # of individuals, # of populations, threats, and trends (Regional Endemic)
<i>Rosa woodsii</i> ssp. <i>arizonica</i>	Woods' rose	reported	Info needed on # of individuals, # of populations, threats, and trends (Regional Endemic)	

## Appendix 6. UNPS Rare Plant List: Status Uncertain List

Family	Species	Common Name	County Dist. & Legal Status	Information Needed
Rosaceae	<i>Rosa woodsii</i> ssp. <i>manca</i>	Mancos rose	Reported	Info needed on # of individuals, # of populations, threats, and trends (Regional Endemic)
	<i>Rosa woodsii</i> ssp. <i>puberulenta</i>	Woods' rose	reported	Info needed on # of individuals, # of populations, threats, and trends (Regional Endemic)
Rutaceae	<i>Ptelea trifoliata</i> var. <i>lutescens</i>	Hoptree	Grf?, Kan?, Wsh?	Reports from southern Utah, including the holotype of <i>P. neglecta</i> ascribed to Kane County, were probably collected in northern Arizona.

## UNPS Status Uncertain List: Ranking Comments

*Agoseris x agrestis*

Synonym: *Agoseris glauca* var. *agrestis*

Family: Asteraceae or Compositae

Comments: Hybrid origin - may have intrinsic rarity if fecundity low. Threats not known. Habitat does not seem unusual according to A Utah Flora ("White sage, sagebrush, aspen, spruce-fir, alpine meadow communities"). Similar hybrids occur in Colorado, Idaho and Nevada (where the parent species come together). More research is needed due to taxonomic problems related to whether this taxon is a hybrid species or should be regarded as a variety of *A. glauca*.

Scored By/Date: J. Alexander/2014

Revisions: New to Status Uncertain list

*Artemisia biennis* var. *diffusa*

Family: Asteraceae or Compositae

Comments: Regional Endemic. Known from several sites on Boulder Mountain in Garfield County - disjunct from type locality in Sweetwater Co, WY. A distinctive phase that needs additional taxonomic research [Fertig, Feb 2009].

This taxon is not recognized in either the Flora of North America treatment or A Utah Flora 4th ed. Its status as a taxon in Utah is uncertain and needs further research, especially since only a few locations are known currently.

Scored By/Date: J. Alexander/2014

Revisions: Moved from Need Data to Status Uncertain

*Cirsium ochrocentrum* var. *ochrocentrum*

Family: Asteraceae or Compositae

Comments: Peripheral. No specimens at BRY have been collected, but it has been reported for Utah in IMF and FNA based on specimens from San Juan County. The primary range of this taxon is in the Great Plains states. Welsh and FNA suggest that the Utah specimens are introduced, just like they have been documented for California. Since it is equally possible that this is a native species at the edge of its range in our region, like many Great Plains species that are found in Utah, such a determination requires more extensive investigation. It is placed on the "Status Uncertain" list until specimens can be confirmed based on the FNA treatment.

Scored By/Date: J. Alexander/2015

Revisions: New to Status Uncertain list

*Crepis bakeri* ssp. *cusickii*

Family: Asteraceae or Compositae

Comments: Disjunct. This taxon was reported for Utah in FNA: "*Crepis bakeri* is generally recognized by the low stature, dense rosettes of pinnately lobed leaves with coarsely dentate lobes, tomentose stems and leaves, stipitate-glandular hairs distally on stems, relatively large involucre, and densely flowered heads. It is considered closely related to *C. occidentalis*." No vouchers are cited in FNA for Utah nor is any information noted about the notable disjunction in ssp. *cusickii*. It may be that the author has mistaken a depauperate *C. occidentalis* specimen for *C. bakeri*. This taxon has not been

included in revisions to A Utah Flora and there is no obvious taxon that Welsh recognizes within which it would fit nomenclaturally. This taxon is placed on the "Status Uncertain" list until specimens can be confirmed based on the FNA treatment.

Scored By/Date: J. Alexander/2014

Revisions: New to Status Uncertain list

*Erigeron lobatus*

Family: Asteraceae or Compositae

Comments: Peripheral. Only 1 specimen at BRY has been collected (*Ott et al.* 2679, Rainbow Bridge N.M., San Juan County). This taxon's primary range is in Arizona. Habitat Specificity scored as "unknown" since the habitat for the one specimen in Utah may not be indicative of the habitat throughout its range. Number of Individuals, Threats and Trends are unknown. The identification of this specimen is far from certain. FNA does not list this taxon for Utah and states: "*Erigeron lobatus* is characterized by persistent basal and proximal cauline leaves with rounded to acute lobes, vestiture of stipitate glands and sparse, spreading, hispid-pilose hairs, heads on relatively long, ebracteate peduncles, and broad, thin phyllaries. *Erigeron divergens* often is similar; its glandularity is not stipitate and its nonglandular hairs are shorter and denser." The specimen should be re-examined in light of FNA's treatment in order to confirm that it is *E. lobatus* and not a rare form of *E. divergens*. This taxon is placed on the "Status Uncertain" list until specimens can be confirmed to a species based on the FNA treatment.

Scored By/Date: J. Alexander/2014

Revisions: New to Status Uncertain list

*Erigeron watsonii*

Family: Asteraceae or Compositae

Comments: Peripheral. Reported for UT in FNA 2006, but without data on its distribution, abundance, or habitat in Utah.

Scored By/Date: UNPS Rare Plant Comm./2008

Revisions: Moved from Need Data to Status Uncertain

*Isocoma humilis*

Synonym: *Haplopappus leverichii*, *Isocome leverichii*

Family: Asteraceae or Compositae

Comments: Local Endemic. Two collections made in same day in 1971 - never seen since. [UNPS 2008]

The fact that it has never been re-collected since the original specimens were collected in 1971 does point to some unknown circumstance where this plant may never have been collected. The presence of the 3 voucher specimens (not 2 as reported in this list and A Utah Flora) does not necessarily provide evidence of actual populations of this taxon in Utah. Therefore, the number of individuals and number of populations have been rescored to "unknown" from "1". Until the mystery surrounding the actual location of populations of this taxon in Utah is solved, the categories marked now as "unknown" cannot be definitively scored.

Scored By/Date: J. Alexander/2014

UNPS Status Uncertain List: Ranking Comments

Revisions: Scientific name changed. Moved from Need Data to Status Uncertain.

***Packera streptanthifolia* “var. *platylobus*”**

Synonym: *Senecio streptanthifolius* var. *platylobus*

Family: Asteraceae or Compositae

Comments: Local Endemic. Recently described Wasatch Range endemic, taxonomic questions? More field data needed [UNPS Rare Plant Comm. 2008].

Welsh in A Utah Flora 4th ed. states that “var. *platylobus* is evidently local in the Wasatch Mts. from Utah north to Weber counties, at elevations from 1705 to 3300 m, in the aspen-conifer zone and upward.” The original scoring only had Utah and Weber Counties checked. This is not entirely correct based on Welsh's comments. In addition, the type of this taxon was stated by Welsh as “Utah, Salt Lake (?) Co., Wasatch Mts., *Watson 671*, holotype NY!” indicating that at least Salt Lake County should be checked. Weber and Utah remain checked herein, however, Davis, Morgan, Salt Lake, Summit and Wasatch Counties remain possible county reports for this taxon and a “?” have been added.

Scored By/Date: J. Alexander/2014

Revisions: Moved from Need Data to Status Uncertain.

***Packera wernerifolia* “var. *malmstenoides*”**

Synonym: *Senecio wernerifolius* var. *malmstenoides*

Family: Asteraceae or Compositae

Comments: Local Endemic. Described in 2003, Wasatch Range endemic, better field info needed, taxonomic issues?

The vouchers for Juab County in the Deep Creek Range were collected by Jim Harris (UVSC).

Scored By/Date: J. Alexander/2015

Revisions: Moved from Need Data to Status Uncertain.

***Pleurocoronis pluriseta***

Synonym: *Hofmeisteria pluriseta*

Family: Asteraceae or Compositae

Comments: Peripheral. This taxon is reported for Utah based on an erroneous interpretation of Palmer's 1877 collection locality, which has been cited as “St George” or “S. Utah”, but was collected somewhere between the Beaver Dam Mountains of UT or AZ southwest towards Littlefield, Arizona. This taxon may warrant inclusion on the Watch list, assuming that populations, if discovered, will be restricted to the Beaver Dam Mountains. It inhabits the same limestone cliff and crevice habitat as *Eucnide urens* as is sympatric with it in southern Nevada. If discovered, scores for threats and trends would probably change from unk to 1.

Scored By/Date: Fertig & Alexander/2009

Revisions: Moved from Need Data to Status Uncertain

***Psilostrophe bakeri***

Family: Asteraceae or Compositae

Comments: Peripheral. No specimens at BRY have been collected of this variety and it is not in A Utah Flora. It is reported for Utah in Flora of the Four Corner Region (2013). This report is mentioned in the comments of *P.*

*tagetina* in A Utah Flora 5th ed. This taxon's primary range is in Colorado. Habitat Specificity scored as “0” since the habitat does not seem unusual according to FNA (“Rocky, often alkaline, slopes, knolls”). Threats to this taxon may be primarily from grazing-related impacts, but it scored as “unknown” due to uncertainty. Finding specimens from Utah should be the first step in clearing up the ambiguity of the distribution and other ranking factors for this taxon in Utah. Previous editions of A Utah Flora cited a specimen at BRY (Trotter 101) as this taxon, but it has since been determined by Welsh to be misidentified. This taxon is placed on the “Status Uncertain” list until specimens can be confirmed to this species.

Scored By/Date: J. Alexander/2015

Revisions: New to Status Uncertain list

***Pyrrocoma racemosa* “var. *prionophyllus*”**

Synonym: *Haplopappus racemosus* var. *prionophyllus*, included in *Pyrrocoma racemosa* var. *paniculata*

Family: Asteraceae or Compositae

Comments: Peripheral. Although previous versions of this rare plant list included this taxon in *Haplopappus racemosus*, the var. *prionophyllus* does not have a valid name under the segregate genus *Pyrrocoma*. It is considered in FNA to be a negligible variant of var. *paniculata* and that treatment is accepted in this list. In addition, counties for this specific variety are not listed in Welsh, therefore the distribution is unknown. The previous version of this list indicated a distribution of this taxon in Cache, Duchesne and Utah counties, which is the same distribution as *H. racemosus* as a species in A Utah Flora, excluding Millard County. One cannot be certain of the distribution of this narrowly defined species in Utah based on Welsh's treatment. From this, one cannot discern accurate distribution of this variety in Utah and “?” are placed in the other counties this species is reported by Welsh.

Scored By/Date: J. Alexander/2014

Revisions: Scientific name changed. Moved from Need Data to Status Uncertain.

***Symphiotrichum falcatum* var. *commutatum***

Synonym: *Aster falcatus*

Family: Asteraceae or Compositae

Comments: Peripheral. Only 6 specimens at BRY have been collected and none were determined to infraspecific varieties. It has been found in Kane, Utah, and Washington Counties in Utah. The var. *commutatum* appears to be the more great plains and eastern U.S. variant of this species. Habitat Specificity scored as “0” since the habitat does not seem unusual according to A Utah Flora (“Oak, sagebrush, and ponderosa pine communities”) and is variable in FNA (“Dry soils, plains, hills, prairies, roadsides, along railroad rights-of-way, stream banks”) Threats may be primarily from grazing-related impacts, but it scored as “unknown” due to uncertainty. Number of Individuals, Threats and Intrinsic Rarity are also unknown. A closer look at the specimens from Utah

## UNPS Status Uncertain List: Ranking Comments

and a re-identification of the vouchers following the FNA treatment should be the first step in clearing up the ambiguity of the distribution and other ranking factors for this taxon in Utah.

Scored By/Date: J. Alexander/2014

Revisions: New to Status Uncertain list

*Symphyotrichum falcatum* var. *falcatum*

Synonym: *Aster falcatus*

Family: Asteraceae or Compositae

Comments: Peripheral. Only 6 specimens at BRY have been collected and none were determined to infraspecific varieties. It has been found in Kane, Utah, and Washington Counties in Utah. The var. *falcatum* appears to be the more Rocky Mountain and western Canadian variant of this species. Habitat Specificity is scored as "0" since the habitat is variable and not unusual in FNA ("Well-drained soils, stream banks and slopes, edges of alkali lakes and flats, prairies and plains, mesic montane habitats". Threats may be primarily from grazing-related impacts, but it scored as unknown due to uncertainty. Number of Individuals, Threats and Intrinsic Rarity are also unknown. A closer look at the specimens from Utah and a re-identification of the vouchers following the FNA treatment should be the first step in clearing up the ambiguity of the distribution and other ranking factors for this taxon in Utah.

Scored By/Date: J. Alexander/2014

Revisions: New to Status Uncertain list

*Townsendia beamanii*

Family: Asteraceae or Compositae

Comments: Local Endemic. Described in 2003, similar to *T. annua*, information needed on threats [UNPS 2008]

Previous scoring stated need more information on threats, yet Threats was scored as "0". Threats have been rescored as "unknown" until it can be further substantiated. FNA states that this may be a hybrid species "Taxonomic disposition of *Townsendia beamanii* S. L. Welsh is not clear; the type may have resulted from hybridization between *T. annua* and *T. incana*" This taxon is placed on the "Status Uncertain" list until specimens can be confirmed based on the FNA treatment.

Scored By/Date: J. Alexander/2014

Revisions: New to Status Uncertain list

*Townsendia parryi*

Family: Asteraceae or Compositae

Comments: Peripheral. Although no specimens at BRY have been determined as this species yet, this species was reported for Utah in FNA. This record cannot at this time be substantiated. This taxon's primary range is in the Rocky Mountains, Pacific Northwest and Canada. Until this report can be confirmed, the scoring of multiple categories can only be "unknown"

Scored By/Date: J. Alexander/2014

Revisions: New to Status Uncertain list

*Xanthisma spinulosum* var. *spinulosum*

Synonym: *Haplopappus spinulosus* var. *spinulosus*

Family: Asteraceae or Compositae

Comments: Peripheral. No specimens at BRY have been collected of this variety and it is not in A Utah Flora. It is reported for Utah in FNA. This taxon's primary range is in the Midwestern U.S., Canada and Mexico. Habitat Specificity scored as "0" since the habitat does not seem unusual according to FNA ("rocky to sandy plains and rolling hills, washes, roadsides"). Threats to this taxon may be primarily from grazing-related impacts, but it scored as "unknown" due to uncertainty. A closer look at the specimens from Utah and a re-identification of the vouchers following the FNA treatment should be the first step in clearing up the ambiguity of the distribution and other ranking factors for this taxon in Utah. This taxon is placed on the "Status Uncertain" list until specimens can be confirmed to a species based on the FNA treatment.

Scored By/Date: J. Alexander/2014

Revisions: New to Status Uncertain list

*Boechera exilis*

Family: Brassicaceae or Cruciferae

Comments: In comments by M. Windham and in abstracts for presentations given by him or his research group during conferences from 2010 to 2015, this taxon has been mentioned as being present in Utah. It is one of two parents that gave rise to the hybrid, *B. goodrichii*. *B. exilis* was treated as a synonym of *B. retrofracta* in FNA. Its distribution and abundance in Utah is unknown. Once a treatment with revised distribution and habitat data is published by Windham based on his molecular results, this taxon can be scored and re-ranked.

Scored By/Date: J. Alexander/2015

Revisions: New to Status Uncertain list

*Boechera glareosa*

Family: Brassicaceae or Cruciferae

Comments: Local Endemic. *Boechera glareosa* is similar to and has been confused with *B. microphylla*, *B. macounii*, and *B. gunnisoniana*. Some authors have consistently recognized this taxon as a synonym of *Arabis microphylla* var. *macounii* [= *Boechera macounii*] (Rollins, 1993; Welsh, 2003; 2008). Recently, *Boechera glareosa* was recognized as a separate species in Holmgren (2005) and Al-Shehbaz & Windham (2010: 380). Despite the greatly increased range of this taxon in Utah (see Windham's comments below), the revised treatment has not been published and its entire range is unknown. Windham's comments suggest that both "number of individuals" and "number of populations" should be scored a "0", but it is not scored herein due to uncertainty. Once a treatment with revised distribution and habitat data is published by Windham based on his molecular results, these changes can be made [Alexander Mar 2015]; This is an apomictic diploid hybrid between *Boechera pendulina* and *B. thompsonii*. Not rare (see confirmed county occurrences) [Windham



## UNPS Status Uncertain List: Ranking Comments

Mar 2015].

Scored By/Date: J. Alexander & M. Windham/2015

Revisions: Moved from Need Data to Status Uncertain

*Boecheera selbyi* var. *selbyi*

Synonym: *Arabis selbyi*

Family: Brassicaceae or Cruciferae

Comments: Peripheral. This taxon is a apomictic triploid hybrid between *Boecheera fendleri* and *B. pallidifolia*.

Windham & Al-Shehbaz (2007) examined the types extensively and found that both *A. selbyi* and *A. gracilentia* were apomictic hybrids and should not be placed within any of the previous sexual species within which they had been subsumed. Holmgren (2005) followed historical precedent and kept *B. selbyi* its own species and placed the types of *A. gracilentia* as a synonym of *B. perennans*.

Welsh in A Utah Flora chose a similar taxonomic arrangement. The condition of the type of *A. selbyi*, which is a poorly preserved, aberrant individual, has directly led to this confusion. Windham & Al-Shehbaz (2007) found that both types are hybrids of the same parentage and that the name *A. gracilentia* takes precedent over *A. selbyi* when both are recognized as a single species. Recent molecular results by Windham and colleagues have demonstrated that most of what was considered to be *A. selbyi* by Welsh and *B. selbyi* by Holmgren are *B. thompsonii* (see comments for that taxon). Therefore, the two taxa should be considered separate species, since *B. thompsonii* is a diploid non-hybrid. Holmgren's (2005) placement of *B. gracilentia* as a synonym of *B. perennans* and Welsh's (2008:301) continued assertion that *B. selbyi* "would be treated better at infraspecific level" within *B. perennans* are unsupportable. These changes re-rank this taxon to the "Excluded" list.

[Alexander Mar 2015]; The name used here (*Boecheera gracilentia*) does not apply in a strict sense to any taxon occurring in Utah [Windham Mar 2015].

Scored By/Date: J. Alexander & M. Windham/2015

Revisions: New to Status Uncertain

*Draba densifolia* var. *densifolia*

Family: Brassicaceae or Cruciferae

Comments: Peripheral. Sensus A Utah Flora 5th ed. (2015: 304): "Rollins keys this species from its near allies by the pods being typically pubescent, a condition noted by Hitchcock (1941: 69) as being of little significance... In the specimens examined for this treatment, only a solitary specimen (B. Franklin & J. Chandler 326, 30 Jul 1983, from the Lone Peak Wilderness Area, BRY!) had any pubescence at all, and that sparse on a few fruits and missing on others." Windham confirms (see below) this taxon from Salt Lake Co. based on recent molecular research, however, the number of specimens and the specific data are unknown. The categories marked as "unknown" cannot be scored until more specific data are published. Specimens now known from Salt Lake County [Windham Mar 2015].

Scored By/Date: J. Alexander/2014

Revisions: New to Status Uncertain list

*Lepidium flavum*

Family: Brassicaceae or Cruciferae

Comments: Peripheral. This taxon was reported for Utah in A Utah Flora and IMF "reported (Patricia Holmgren personal communication) from sw. Utah" This taxon is not reported for Utah in FNA. No vouchers are cited in A Utah Flora or IMF. The county distribution is presumed to be Washington. A "?" is placed in that county. Since this is based on a report and specific specimens have not been published or identified at previous meetings, Number of Individuals is rescored to "unknown" from 1. It is placed on the "Status Uncertain" list until specimens can be confirmed to a species based on the FNA treatment.

Scored By/Date: J. Alexander/2014

Revisions: New to Status Uncertain list

*Lepidium moabense*

Synonym: Included in *Lepidium eastwoodiae* by some authors

Family: Brassicaceae or Cruciferae

Comments: Local endemic. *L. moabense* may co-occur with *Lepidium alyssoides*, and appears to be just an unusual growth form- as cited by the Holmgrens in *Intermountain Flora* (2005); number of pops changed to low (1 pt) - raised to high priority, despite some doubts about its taxonomic distinctiveness [Fertig 2008].

Sensus FNA, "We have not examined the holotype of *Lepidium moabense* and follow N. H. Holmgren (2005b) in reducing it to synonymy of *L. eastwoodiae*." This taxon will remain on the status uncertain list until a more conclusive study of the types and populations of has been done.

Scored By/Date: Fertig/2008 & J. Alexander/2014

Revisions: Moved from Need Data to Status Uncertain

*Physaria condensata*

Family: Brassicaceae or Cruciferae

Comments: Regional Endemic. Although this taxon has a description in A Utah Flora, it has not been found in Utah at this time: This tiny plant was described from plants taken near Fort Bridger, Uinta Co., Wyoming, and is to be sought in Rich, Summit, or Daggett cos., Utah; the description is abstracted from Int. Fl. 2B: 304. 2005" This taxon is placed on the "Status Uncertain" list until specimens can be confirmed to a species based on the FNA treatment.

Scored By/Date: J. Alexander/2014

Revisions: New to Status Uncertain

*Physaria "navajoensis"*

Synonym: *Physaria tumulosa* x *Physaria intermedia*

Family: Brassicaceae or Cruciferae

Comments: Regional Endemic. Taxonomic questions- reported for White Cliffs in Kane Co, but populations may be *P. rubicundula* var. *tumulosa* or a hybrid [UNPS 2008]

Like many *Boecheera* hybrids, this taxon is only known by a hybrid formula, *Physaria tumulosa* x

## UNPS Status Uncertain List: Ranking Comments

*Physaria intermedia*. It is problematic whether or not to track every hybrid taxa in either genus, especially if it does not have a nothospecific name. Welsh cites the *Physaria navajoensis* specimen reported for Utah by Windham in FNA as being collected from Deer Spring Point in Kane County (Windham 2398) *P. navajoensis* has been misapplied to Utah Populations and that name is no longer recognized herein as being part of Utah's flora. Sensu FNA "A population of plants on Deer Spring Point, Kane County, Utah, appears to be this species, but molecular data indicate that it is probably a hybrid between *P. tumulosa* and, most likely, *P. intermedia*." This taxon has been reclassified as a hybrid species. As such it has only been found in Utah and as in the *Boechea* records, is reclassified as a Local Endemic. Intrinsic Rarity rescored as a "1" due to it being a hybrid. Polyploid taxa often have chromosomal or genetic anomalies that may limit reproduction. It is not known whether or not the parents of this hybrid are still sympatric, which means that this hybrid may not arise again under current climate conditions in Utah. Number of Individuals and Number of Populations rescored as unknown. The distribution of this taxon in Utah, and whether or not there are self-sustaining populations of this hybrid, is still unresolved. It is only known from 1 specimen and therefore it may only be a waif. This hybrid remains on the "Status Uncertain" list.

Scored By/Date: J. Alexander/2014

Revisions: Moved from Need Data to Status Uncertain

*Cylindropuntia x multigeniculata*

Synonym: *Opuntia whipplei* var. *multigeniculata*, *Cylindropuntia echinocarpa* x *C. whipplei*

Family: Cactaceae

Comments: Peripheral. Sensu FNA, "*C. whipplei* hybridizes with *C. echinocarpa*, particularly with the low, compact form of *C. echinocarpa*; the hybrids [= *C. x multigeniculata* (Clokey) Backeberg] have spineless to nearly spineless fruits, numerous intergrading spines per stem areole that are not dimorphic, and chromosome number of  $2n = 22$ ." It is not certain how large the populations are of this newly re-circumscribed taxon nor what specimens in Utah have been determined as it. It has traditionally been restricted to Clark County, Nevada, but molecular research has shown that *C. x multigeniculata* is widespread and found where the parents overlap in distribution in Utah, Arizona and Nevada. Since the two parents of *C. x multigeniculata* are named at the species level, the correct hybrid name for this taxon is at the same level. One cannot recognize this taxon at the varietal level. This taxon is not just simply "a graded series with *O. whipplei* in a strict sense" as described by Welsh. It is not known if the "dwarf" plants identified by Welsh from Kane and Millard Counties are this hybrid taxon.

Scored By/Date: J. Alexander/2014

Revisions: New to Status Uncertain list

*Cylindropuntia ramosissima*

Synonyms: *Opuntia ramosissima*

Family: Cactaceae

Comments: Peripheral. This taxon was reported for Washington County, Utah by IMF (2A: 644) and subsequently reported for Utah in A Utah Flora. No specimens at BRY have been collected. Until vouchers can be located for identification confirmation, the scoring of multiple categories can only be "unknown" This ranks this taxon to the "Status Uncertain" list.

Scored By/Date: J. Alexander/2014

Revisions: Scientific name changed. New to Status Uncertain

*Echinocactus polycephalus* var. *xeranthemoides*

Family: Cactaceae

Comments: Regional Endemic. Since this is based on a specimens with a ambiguous collection location, (A. L. Siler in "Kanab Mts." in 1881 and the other by Dr. E. Palmer in 1877 from southern Utah"), Number of Individuals is rescored to "unknown" from "1." The Palmer specimen from 1877 is at MO and was a duplicate sent to George Engelmann for determination. The one Welsh examined was likely at ISC-Parry Herbarium. It was not collected in Utah, however. At MO, it was labeled from Utah but it was collected "55 miles S of St. George." This plant was collected along the Grand Wash Cliffs in the vicinity of Grand Gulch, Mojave County, Arizona. The type was collected by A.L. Siler, but along Kanab Creek near the Colorado River in Arizona. There are multiple collections of this taxon at MO by Siler, from 1881-1883 and all are presumed to be from this location. Only the 1881 sheet is the type. The specimen cited by Welsh from "Kanab Mts" is not from MO, since he has not seen the types. It is likely a sheet at ISC-Parry Herbarium. Parry regularly sent duplicates of Cacti specimens to Engelmann at MO for determination. This sheet is likely a duplicate of the type and not one collected in Utah. This taxon, even if the Siler specimen was collected in Utah, has not been recollected in over 100 years. This species is placed on the "Status Uncertain" list until modern vouchers from Utah can be located for identification confirmation.

Scored By/Date: J. Alexander/2014

Revisions: Moved from Need Data to Status Uncertain

*Callitriche anceps*

Synonym: *Callitriche heterophylla* (a rare submersed morphotype)

Family: Callitrichaceae or Plantaginaceae

Comments: Peripheral. No specimens at BRY have been collected, however it has been reported for Utah in: Univ. Wash Publ. Biol 17(3):403. 1961. In the 2nd edition of Gleason & Cronquist's Manual of the vascular plants of the NE U.S. and adjacent Canada, *C. anceps* is treated as a rare, mainly boreal, wholly submersed form of *C. heterophylla*. It is not known how this will be treated in FNA. Habitat Specificity scored as "1" due to its status as a riparian species according to A Utah Flora.

UNPS Status Uncertain List: Ranking Comments

Riparian habitat modification and disturbance from the grazing-related impacts of cattle are a threat to this species. Trend is scored as "unknown" since the impacts of these modifications on the populations of this species have not been investigated. It is ranked as "Status Uncertain" until a voucher can be located for Utah

Scored By/Date: J. Alexander/2014

Revisions: New to Status Uncertain list

*Eremogone congesta* var. *lithophila*

Synonym: *Arenaria congesta* var. *lithophila*

Family: Caryophyllaceae

Comments: Peripheral. This taxon has an uncertain distribution in Utah. In A Utah Flora, Welsh adds this taxon, not as a synonym to var. *subcongesta*, but as a discussion afterwards, "Regarded as a distinct variety, differing in having obtuse sepals, and reported also from Utah is *Arenaria congesta* Nuttall var. *lithophylla* [sic]." He states no specimens from Utah nor a distribution. This taxon is also reported for Utah in FNA. Until vouchers can be located for identification confirmation, the scoring of multiple categories can only be "unknown".

Scored By/Date: J. Alexander/2014

Revisions: New to Status Uncertain list

*Moehringia macrophylla*

Synonym: *Arenaria macrophylla*

Family: Caryophyllaceae

Comments: Peripheral. Although no specimens at BRY have been determined as this species yet, this species was reported for Utah in FNA. This record cannot at this time be substantiated. This taxon's primary range is in the Pacific Northwest and Canada. Until vouchers can be located for identification confirmation, the scoring of multiple categories can only be "unknown" This ranks this taxon to the "Status Uncertain" list.

Scored By/Date: J. Alexander/2014

Revisions: New to Status Uncertain list

*Silene oregana*

Family: Caryophyllaceae

Comments: Peripheral. Although no specimens at BRY have been determined as this species yet, this species was reported for Box Elder County, Utah in FNA and Hitchcock & Maguire (1947). The Box Elder populations reported for Utah may be allied with Idaho populations that have been proposed to be a distinct, unnamed species. Sensu FNA "some forms of *Silene bernardina* can be difficult to distinguish from *S. verecunda*, *S. sargentii*, and *S. oregana*. *Silene verecunda* differs in its smaller, clavate calyx and in its petals being only shortly two-lobed. *Silene sargentii* is a small, densely caespitose, high-alpine species with very narrow, linear leaves (1-2 mm wide), shortly two-lobed petals, and seeds with much larger papillae around the margins. In *S. oregana* the petals are larger (two times the calyx) and deeply divided into many very narrow segments; the claw and the filaments are glabrous; the leaves, particularly the basal ones, are broader; and the inflorescences are

narrower, with the more numerous flowers arranged on short, ascending branches; also, the calyx lobes are ovate and obtuse instead of lanceolate and acute. The Idaho material tends to be intermediate with *S. oregana* but has open, dichotomously branched inflorescences, and the petals are nearer to those of *S. bernardina*.

These plants from Valley County in the Payette National Forest need further study, preferably in the field. They may represent a distinct taxon." Until vouchers can be located for identification confirmation, the scoring of multiple categories can only be "unknown"

Scored By/Date: J. Alexander/2014

Revisions: New to Status Uncertain list

*Silene rectiramea*

Family: Caryophyllaceae

Comments: Regional Endemic. Although no specimens at BRY have been determined as this species yet, its similarity (morphologically and ecologically) to populations of *S. verecunda* in Kane County, Utah suggests there may be misidentified populations of this taxon in Utah. Sensu FNA, this taxon has been found in "pinyon pine woodland, dry slopes. [at an elevation of ] 1800-2100 m. *Silene rectiramea* has been found in the Grand Canyon in Arizona. It is very similar to forms of *S. verecunda* and to *S. thurberi*..." The habitat is similar to the habitat reported for *S. verecunda* in Utah in A Utah Flora. All populations of *S. verecunda* in Washington and Kane County should be re-examined to determine if this Grand Canyon endemic also occurs in southern Utah.

Scored By/Date: J. Alexander/2014

Revisions: New to Status Uncertain list

*Silene uralensis* ssp. *uralensis*

Synonym: *Lychnis apetala* ssp. *attenuata*

Family: Caryophyllaceae

Comments: Peripheral. Although *Silene uralensis* was placed in synonymy with *Lychnis apetala* in A Utah Flora, Welsh did not include the subspecies of *L. apetala* that has been synonymized within *S. uralensis* in FNA (ssp./var. *attenuata*). He equated *S. uralensis* as a synonym to the species as a whole, enveloping both varieties he recognized in Utah, var. *kingii* and var. *montana*. *Lychnis apetala* var. *montana* is recognized in this list at the species level as *Silene hitchguirei*; *Lychnis apetala* var. *kingii* is recognized as *Silene kingii* and is ranked as "Low" priority with a score of 2-3. Thus, Welsh did not apply the name to Utah material in a fashion sufficient to determine whether or not he considers this taxon to occur in Utah. No specimens cited in A Utah Flora can currently be assigned as being Utah material of *Lychnis apetala* ssp. *attenuata* or *S. uralensis* ssp. *uralensis*. Sensu FNA: "Subspecies *uralensis* is an arctic-alpine taxon. The populations that extend through the Rocky Mountains from Alaska to Utah are often referred to [*L. apetala*] subsp. *attenuata*. They tend to have a less-inflated calyx, slightly longer purple petals, flowers that are angled at less than 45° rather than nodding, and less well-developed cauline leaves.

## UNPS Status Uncertain List: Ranking Comments

These differences are minor, however, and populations of subsp. *attenuata* often contain plants referable to subsp. *uralensis*, while plants resembling subsp. *attenuata* are scattered across the range of subsp. *uralensis*. Some collections from the southern Rocky Mountains (Colorado and Utah) appear to intergrade with *S. kingii* in having a narrow wing to the seeds." Until vouchers can be located for identification confirmation, the scoring of multiple categories can only be "unknown"

Scored By/Date: J. Alexander/2014

Revisions: New to Status Uncertain list

*Carex vernacula*

Synonym: *Carex foetida* var. *vernacula*

Family: Cyperaceae

Comments: Peripheral. *Carex vernacula* was not reported for Utah in FNA. According to FNA, the name *C. foetida* applied only to European populations. Sensus A Utah Flora, "The one specimen (Hayward 9948 BRY) seen is rather young and tentatively identified." Number of individuals and Number of Populations rescored as "unknown" from "1" due to this taxon's uncertain status in Utah. Based on the FNA treatment and the statement that the one voucher for Utah is immature, this taxon is placed on the "Status Uncertain" list.

Scored By/Date: J. Alexander/2014

Revisions: New to Status Uncertain list

*Fimbristylis castanea*

Synonym: *Fimbristylis spadicea*

Family: Cyperaceae

Comments: Disjunct. Only 9 specimens at BRY have been collected. It has been found in Kane, Millard, San Juan, Utah, and Washington Counties. Neither *Fimbristylis spadicea* nor *Fimbristylis castanea* are reported for Utah in FNA. This species has been found only in the southeastern U.S. and the closest populations are in Texas. If the Utah populations are this species, it is an extremely long-distance disjunct from the main populations. Sensus FNA, "*Fimbristylis castanea*, commonly placed in synonymy of *F. spadicea*..., a widespread salt marsh perennial of tropical America, is distinguishable by its relatively shorter spikelets, usually lower habit, and by its proportionately shorter involucral bracts. *Fimbristylis spadicea* is hardy with us only as a greenhouse plant." Apparently, *F. spadicea* is a misapplied to plants in Utah. The name appears only to be applied to a weedy species, not native populations. All of the vouchers at BRY are another species, but not *Fimbristylis castanea*. This taxon is placed on the "Status Uncertain" list until these specimens can be confirmed to a species based on the FNA treatment.

Scored By/Date: J. Alexander/2014

Revisions: New to Status Uncertain list

*Fimbristylis puberula* var. *interior*

Synonyms: *Fimbristylis interior*

Family: Cyperaceae

Comments: Disjunct. This taxon was not reported for Utah in A Utah Flora but it is reported in FNA. Of the 9

specimens of *Fimbristylis spadicea* at BRY, it is doubtful any are this taxon. Apparently, *F. spadicea* is a misapplied to plants in Utah. The name appears only to be applied to a weedy species, not native populations. Var. *interior* has been found only in the Southeastern U.S. A specimen cited in FNA as being collected in Arizona (A. Fendler 876, from 1847) was collected along the Arkansas River in Kansas. As a result, the closest populations are in eastern New Mexico or Texas. If the Utah populations are this species, it is an extremely long-distance disjunct from the main populations. All of the vouchers at BRY are another species, but not *Fimbristylis castanea* or *F. spadicea*. This taxon is placed on the "Status Uncertain" list until these specimens can be confirmed to a species based on the FNA treatment.

Scored By/Date: J. Alexander/2014

Revisions: New to Status Uncertain list

*Fimbristylis puberula* var. *puberula*

Synonyms: *Fimbristylis spadicea* var. *puberula*

Family: Cyperaceae

Comments: Disjunct. This taxon was not reported for Utah in A Utah Flora but it is reported in FNA. Of the 9 specimens of *Fimbristylis spadicea* at BRY, it is doubtful any are this taxon. Apparently, *F. spadicea* is misapplied to plants in Utah. The name appears only to be applied to a weedy species, not native populations. Var. *puberula* has been found only in the Eastern U.S. and the closest populations are in Texas. If the Utah populations are this species, it is an extremely long-distance disjunct from the main populations. All of the vouchers at BRY are another species, but not *Fimbristylis castanea* or *F. spadicea*. This taxon is placed on the "Status Uncertain" list until these specimens can be confirmed to a species based on the FNA treatment.

Scored By/Date: J. Alexander/2014

Revisions: New to Status Uncertain list

*Fimbristylis thermalis*

Family: Cyperaceae

Comments: Peripheral. This taxon was not reported for Utah in A Utah Flora but it is reported in FNA. The distribution for *F. spadicea* in A Utah Flora includes Kane, Millard, San Juan, Utah, and Washington Counties. Of the 9 specimens from these counties at BRY, most if not all may be *F. thermalis*. This species has been found only in the Southwestern U.S. and Mexico. The closest populations are across the border in Nevada and Arizona. If the Utah populations are this species, it is peripheral to the main populations. Apparently, *F. spadicea* is a misapplied to plants in Utah. The name appears only to be applied to a weedy species, not native populations. All of the vouchers at BRY are another species, but not *Fimbristylis castanea* or *F. spadicea*. This taxon is placed on the "Status Uncertain" list until these specimens can be confirmed to a species based on the FNA treatment.

Scored By/Date: J. Alexander/2014

Revisions: New to Status Uncertain list

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*Acmispon strigosus*

Synonym: *Lotus tomentellus*, *L. strigosus* var. *tomentellus*

Family: Fabaceae or Leguminosae

Comments: Peripheral. In the generic transfer of most of the North American species of *Lotus* by Brouillet (2008:J. Bot. Res. Inst. Texas 2:387-394), *Lotus tomentellus* was synonymized with *Lotus strigosus* and placed within an expanded concept of *Acmispon strigosus*. The 2nd Ed of the Jepson Manual is using this generic change and it is likely that this change will be used in FNA. *Lotus* s.s. is native to Eurasia and our only members of it are weedy species. This change does not effect the ranking of this taxon in Utah. *Lotus strigosus* is not reported for the state in A Utah Flora. However, the inclusion of this taxon in Utah is based on a putative misidentification. First, Welsh states that the voucher for Utah of *L. tomentellus* was "was taken on 13 Apr 1983 by Elizabeth Neese (12992, BRY!)" However, he also lists this exact voucher as specimen of *L. humistratus*: "Elizabeth Neese 12992 (13 Apr 1983, BRY!) from near Beaver Dam Well has peduncles 4–11 mm long and 4–7 leaflets. Otherwise it fits the concept of *L. humistratus*." In addition, the Intermountain Flora does not report *L. strigosus* or *L. tomentellus* for Utah. As a result of these data, Number of Individuals and Number of Populations is changed from "1" to "unknown". Since the voucher's determination is in dispute, this taxon is re-ranked to the "Status Uncertain" list.

Scored By/Date: J. Alexander/2015

Revisions: New to Status Uncertain list

*Astragalus hornii*

Family: Fabaceae or Leguminosae

Comments: Disjunct. Sandy playa-edge endemic from S CA and reported from disjunct pops in adjacent states. Arnold Tiehm in 2008 hypothesized that this plant was transported by birds along flyways in the western U.S. up until the early 20th century. The diversion of water and the draining of wetlands in the Great Basin and changed the flyways and no longer do the large flocks of birds migrate over the Great Basin from Mexico and Southern California as they once did. The UT report needs to be confirmed and might be historical.

Scored By/Date: J. Alexander/2009

Revisions: Moved from Need Data to Status Uncertain

*Trifolium cyathiferum*

Family: Fabaceae or Leguminosae

Comments: Disjunct. Welsh sites, without collector information, that a specimen from NY from Jack Creek, Kane County, Utah is the voucher for A Utah Flora. The Intermountain Flora reports *T. cyathiferum* for Utah with the same locality as Welsh. In SEINet and in the NY Virtual Herbarium, no *T. cyathiferum* specimens can be found for Utah. I found no *Trifolium* specimen at NY from the "Jack Creek" locality, other than the ones from Nevada. Apparently, the specimen Welsh observed at NY has either been re-identified as another taxon,

annotated as being from another state, or a combination of both. His proposal that this specimen may be from Nevada has merit. *T. cyathiferum* is found in eastern NV only in the Independence Range of Elko County. It has been collected several times along Jack Creek. Therefore, it is likely that the specimen was collected in Elko Co., Nevada. The specimen as it stands is now effectively undocumented. As a result of these data, Number of Individuals and Number of Populations is changed from "1" to "unknown". Since the single voucher was without specific collector data in A Utah Flora and IMF (and the determination and locality is in dispute), this taxon is re-ranked to the "Status Uncertain" list.

Scored By/Date: J. Alexander/2015

Revisions: New to Status Uncertain list

*Juncus antheletus*

Synonym: *Juncus tenuis* var. *antheletus*

Family: Juncaceae

Comments: Sparse. This taxon was not reported for Utah in A Utah Flora but it is reported in FNA. The distribution for *Juncus tenuis* in A Utah Flora (which is not split into varieties) is spread across 16 Counties. Of the 45 specimens from these counties at BRY, some may be this taxon. This species has been found throughout the U.S. and Canada. Habitat Specificity rescored a "1" due to its status as a riparian species according to FNA ("Exposed or partially shaded sites in moist or seasonally wet, sandy or clay soils"). This taxon is placed on the "Status Uncertain" list until specimens can be confirmed based on the FNA treatment.

Scored By/Date: J. Alexander/2014

Revisions: New to Status Uncertain list

*Juncus cooperi*

Family: Juncaceae

Comments: Peripheral. Although no specimens at BRY have been determined as this species, it was reported for Utah in FNA. This record cannot at this time be substantiated. This taxon's primary range is in the southwestern U.S. and Mexico. The closest populations to Utah are along the lower Virgin River drainage between Littlefield, Mesquite, and Moapa in Clark County Nevada. It should be looked for in Utah along the Virgin River. Habitat Specificity scored as "1" due to its status as a saline soil riparian species according to FNA ("Saline flats and meadows or edges of salt marshes"). Until this report can be confirmed, the scoring of multiple categories can only be "unknown"

Scored By/Date: J. Alexander/2014

Revisions: New to Status Uncertain list

*Juncus hemiendytus* var. *hemiendytus*

Family: Juncaceae

Comments: Disjunct. This taxon was not reported for Utah in A Utah Flora but it is reported in FNA. This species has been found in California, Nevada and the Pacific Northwest with disjunct populations in Idaho and

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Utah. Habitat Specificity rescored a "1" due to its status as a vernal depression or meadow species according to FNA ("various damp open habitats including vernal depressions, streambeds, swales in sagebrush flats, forest clearing and alpine meadows"). This taxon is placed on the "Status Uncertain" list until specimens can be confirmed to a species based on the FNA treatment.

Scored By/Date: J. Alexander/2014

Revisions: New to Status Uncertain list

*Juncus interior*

Family: Juncaceae

Comments: Disjunct. This taxon was not reported for Utah in A Utah Flora but it is reported in FNA in the text. However, it is not in Utah according to the distribution map. Arizona is also in the distribution text but not on the map. This species has been found in Midwestern and Southeastern U.S. with disjunct populations in Ohio and Colorado (map distribution). Habitat Specificity scored as "0" since the habitat does not seem unusual according to FNA ("Dry, often upland sites in prairies, exposed disturbed sites, and ditches in sandy or clayey soils"). This taxon is placed on the "Status Uncertain" list until specimens can be confirmed to a species based on the FNA treatment.

Scored By/Date: J. Alexander/2014

Revisions: New to Status Uncertain list

*Juncus xiphioides*

Family: Juncaceae

Comments: Peripheral. This taxon was not reported for Utah in A Utah Flora but it is reported in FNA. This taxon's primary range is in the southwestern U.S. It is likely that the specimens reported by Welsh of *J. ensifolius* from Washington County are at least, in part, this species. Sensus FNA, both "are closely related and have been treated as members of a single species (*J. xiphioides*) by Engelmann... we are hesitant to use a varietal name (*J. xiphioides* var. *triandrus*) for the widespread western taxon *J. ensifolius*." Welsh did not consider this varietal name a synonym of any Utah *Juncus*, however it is likely that specimens of Welsh's var. *brunnescens* and var. *montanus* are this species. Habitat Specificity scored as "1" due to its status as a saline riparian species according to FNA ("Salt marshes, moist areas, ditches, springs, lake and stream shores"). Threats to this taxon include riparian habitat modification and disturbance from residential development, farming, and the grazing-related impacts of cattle. These are the primary reasons for the upgrade of the threats to this species to a "1". Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys. This taxon is placed on the "Status Uncertain" list until specimens can be confirmed to a species based on the FNA treatment.

Scored By/Date: J. Alexander/2014

Revisions: New to Status Uncertain list

*Lemna obscura*

Family: Lemnaceae or Araceae

Comments: Sparse. Although there are 17 specimens at BRY determined as *L. obscura*, this taxon was not reported for Utah in FNA. This species has been found in eastern U.S. but unlike other *Lemna*, there are no reported disjunct populations in the western U.S. If the specimens are *L. obscura*, then this represent a very-long distance disjunct record with several widely dispersed populations in Utah. The closest populations to Utah are in Texas. It is likely that *L. obscura* has been misapplied to Utah populations and that the Utah populations are forms of *L. minor* or *L. turionifera*. Number of Individuals scored as "unknown" since population sizes are not known for this small plant in Utah. Habitat Specificity rescored a "1" due to its status as a riparian species according to FNA ("Mesotrophic to eutrophic, quiet waters"). This taxon is placed on the "Status Uncertain" list until specimens can be confirmed to a species based on the FNA treatment.

Scored By/Date: J. Alexander/2014

Revisions: New to Status Uncertain list

*Lemna turionifera*

Family: Lemnaceae or Araceae

Comments: Sparse. Although no specimens at BRY have been determined as this species yet, this species was reported for Utah in FNA. This record cannot at this time be substantiated. This taxon's primary range is in the western U.S., northern U.S., and Canada. Habitat Specificity rescored a "1" due to its status as a riparian species according to FNA ("Mesotrophic to eutrophic, quiet waters"). This taxon is placed on the "Status Uncertain" list until specimens can be confirmed to a species based on the FNA treatment.

Scored By/Date: J. Alexander/2014

Revisions: New to Status Uncertain list

*Mentzelia polita*

Family: Loasaceae

Comments: Regional Endemic. Reported for Utah. Vouchers for this taxon are not reported in A Utah Flora or IMF. As a result of these data, Number of Individuals and Number of Populations is changed from "1" to "unknown". Since the vouchers were without specific collector data in A Utah Flora and IMF (and the determination and locality is in dispute), this taxon is re-ranked to the "Status Uncertain" list.

Scored By/Date: J. Alexander/2015

Revisions: New to Status Uncertain list

*Didiplis diandra*

Synonym: *Peplis diandra*

Family: Lythraceae

Comments: Disjunct. Habitat Specificity rescored a "1" due to its status as a riparian species according to A Utah Flora ("pods and lakes"). It is not known why the Habitat was originally scored as a "0". Specific vouchers for this taxon are not reported in A Utah Flora. As a

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result of these data, Number of Individuals and Number of Populations is changed from "1" to "unknown". The populations in Fish Lake may be threatened by yet unknown sources, possibly recreation and development disturbances and riparian modifications along the lake shores. Several riparian species have not been relocated in this area for over 40 years (see *Potamogeton* spp.). These are the primary reasons for the upgrade of threats to a "1". Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys, but it is likely downward. Since the vouchers were without specific collector data in A Utah Flora and IMF (and the determination and locality is in dispute), this taxon is re-ranked to the "Status Uncertain" list.

Scored By/Date: J. Alexander/2014  
Revisions: New to Status Uncertain list

*Abronia fragrans* var. *harrisii*

Synonym: *Abronia nana* var. *harrisii*

Family: Nyctaginaceae

Comments: Local Endemic. Taxonomic issues - forms with well developed caudices - distribution and abundance unclear from Welsh et al. (2008) [UNPS 2008].

This taxon is placed on the "Status Uncertain" list until specimens can be confirmed to a species based on the FNA treatment. This variety is not really recognized in A Utah Flora, although it continues to be mentioned. It does not have a separate section in the text, only a short discussion paragraph under *A. fragrans*.

Scored By/Date: J. Alexander/2014  
Revisions: Moved from Need Data to Status Uncertain

*Abronia mellifera* var. *mellifera*

Family: Nyctaginaceae

Comments: Peripheral. Vouchers for this taxon are not reported in A Utah Flora. As a result of these data, Number of Individuals and Number of Populations is changed from "1" to "unknown". Since the vouchers were without specific collector data in A Utah Flora (and the determination and locality are in dispute), this taxon is re-ranked to the "Status Uncertain" list.

Scored By/Date: J. Alexander/2015  
Revisions: New to Status Uncertain list

*Oenothera cavernae*

Family: Onagraceae

Comments: Regional Endemic. Reports from Kane Co may be *Oenothera murdockii*. Threats poorly known. May be under-sampled [Fertig 2008].

Vouchers for this taxon are not reported in A Utah Flora. There are no vouchers of this taxon in SEINet at NY for Utah. The vouchers are all from Nevada. The voucher from UVSC of *Oenothera cavernae* in SEINet (*Barnes 5467*) is a misidentified specimen of *Oe. albicaulis* from a sandy site near Bluff in San Juan Co. The other voucher (*Gaines 9566*, MNA) is from San Juan County also, but the collection information is redacted. It should be re-verified. It is not known what specimens

Cronquist cited from Utah for this taxon. None were reported or examined by Welsh for A Utah Flora. As a result of these data, Number of Individuals and Number of Populations is changed from "1" to "unknown". Since the vouchers were without specific collector data in A Utah Flora (and the determination and locality are in dispute), this taxon is re-ranked to the "Status Uncertain" list.

Scored By/Date: J. Alexander/2015  
Revisions: New to Status Uncertain list

*Botrychium crenulatum*

Synonym: included in *Botrychium lunaria* by some authors

Family: Ophioglossaceae

Comments: Disjunct. Apparently included within the expanded species concept of *Botrychium lunaria* in Utah Flora (2008). Reported for UT in FNA 1993. Stone (1998) cites collections from the Uinta Range. Better information needed on abundance, number of populations, threats, and trends.

Scored By/Date: UNPS Rare Plant Comm./2008  
Revisions: Moved from Need Data to Status Uncertain

*Platanthera aquilonis*

Synonym: included in *Habenaria hyperborea* in Utah Flora (2008)

Family: Orchidaceae

Comments: Peripheral. Only 5 specimens at BRY have been collected. It has been found in Daggett and Duchesne Counties in Utah. This taxon's primary range is in the Rocky Mountains and Canada. Sensus FNA, "*Platanthera aquilonis* is a North American diploid species long confused with the tetraploid Icelandic *P. hyperborea* (Linnaeus) Lindley. Flowers of both species autopollinate, although the details of the mechanisms may differ. The two species differ in column structure and lip and viscidium shape. True *P. hyperborea* is similar to *P. huronensis*" Apparently, some of the 83 specimens at BRY are this diploid species. Habitat does not seem unusual according to FNA ("Wet meadows, tundra, marshes, fens, stream banks, shores, ditches, seeping slopes, roadsides, borrow pits, mesic deciduous forest slopes"). This taxon is placed on the "Status Uncertain" list until specimens can be confirmed based on the FNA treatment.

Scored By/Date: J. Alexander/2014  
Revisions: New to Status Uncertain list

*Bromus lanatipes*

Synonym: included in *Bromus anomalus* by some authors

Family: Poaceae or Gramineae

Comments: Peripheral. Although no specimens at BRY have been collected of this taxon and no specific vouchers were listed in FNA. It is reported for Garfield and Washington Counties in FNA. This taxon's primary range is in the Southwestern U.S. Trends are scored as "unknown" due to uncertainty of the magnitude and

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types of disturbance on extant populations and the lack of population-level surveys. This taxon is placed on the "Status Uncertain" list until specimens can be confirmed based on the FNA treatment.

Scored By/Date: UNPS Rare Plant Comm./2008

Revisions: New to Status Uncertain list

*Bromus sitchensis*

Family: Poaceae or Gramineae

Comments: Disjunct. Although no specimens at BRY have been collected of this taxon and no specific vouchers were listed in FNA. It is reported for Rich County Utah in FNA. Primary range is in California and the Pacific Northwest. Trends are scored as "unknown" due to uncertainty of the magnitude and types of disturbance on extant populations and the lack of population-level surveys. This taxon is placed on the "Status Uncertain" list until specimens can be confirmed based on the FNA treatment.

Scored By/Date: J. Alexander/2014

Revisions: New to Status Uncertain list

*Festuca arizonica*

Synonym: *Festuca ovina* var. *arizonica*

Family: Poaceae or Gramineae

Comments: Peripheral. This taxon was lumped with *Festuca ovina* in A Utah Flora. An unknown number of the 265 specimens of *F. ovina* at BRY are this taxon. Although Welsh provides a key to varieties of *F. ovina*, he does not state the distribution nor the number of specimens he found for each variety. He does state that the taxon was reported for Navajo Mountain in San Juan County which was the distribution also reported in FNA. Habitat Specificity scored as "0" since the habitat does not seem unusual according to FNA ("dry meadows and openings of montane forests"). Threats were scored as "1" without justification in the 2009 list, but that is hard to justify when the distribution of this taxon and the number of specimens in Utah are not known.

Threats to this taxon include grazing-related impacts from cattle, but it is scored as "unknown" due to uncertainty. Climate change is also a threat. Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys. This taxon is placed on the "Status Uncertain" list until specimens can be confirmed based on the FNA treatment.

Scored By/Date: J. Alexander/2014

Revisions: Moved from Medium Priority to Status Uncertain

*Festuca calligera*

Synonym: *Festuca ovina*, in part

Family: Poaceae or Gramineae

Comments: Peripheral. Although no specimens at BRY have been collected, it has been reported for Garfield, Iron, Piute, and Sevier Counties. This taxon's primary range is in Arizona and New Mexico. This taxon was lumped with *Festuca ovina* in A Utah Flora. An un-

known number of the 265 specimens of *F. ovina* at BRY are this taxon. Habitat Specificity scored as "0" since the habitat does not seem unusual according to FNA ("grasslands and open montane forests"). Threats to this taxon include grazing-related impacts from cattle, but it is scored as "unknown" due to uncertainty. Climate change is also a threat. Droughts and rapid snowmelt due to wind-blown sediments are melting snowpack earlier than normal in our region. Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys. This taxon is placed on the "Status Uncertain" list until specimens can be confirmed based on the FNA treatment.

Scored By/Date: J. Alexander/2014

Revisions: New to Status Uncertain list

*Leptochloa panacea* ssp. *brachiata*

Family: Poaceae or Gramineae

Comments: Peripheral. The two vouchers of this taxon for Utah were collected in Washington Co. (*Higgins 823*, 19 Aug 1966 BRY; *Higgins 27906*, 5 Sep 2007, BRY; *Higgins 27538*, 14 Sep 2006, BRY). This taxon is not reported for Utah in Barkworth et al. 2007 (Manual of Grasses for North America); therefore these vouchers are likely misidentified. It may also be non-native in Utah and invasive, since Barkworth states that ssp. *brachiata* is considered a noxious weed by the USDA. As a result of these data, Number of Individuals and Number of Populations is changed from "1" to "unknown". Since the vouchers determinations are in dispute and it is not known whether or not this taxon should be considered a native in Utah, this taxon is re-ranked to the "Status Uncertain" list.

Scored By/Date: J. Alexander/2015

Revisions: New to Status Uncertain list

*Muhlenbergia fragilis*

Family: Poaceae or Gramineae

Comments: Peripheral. Although no specimens at BRY have been collected, it is reported for San Juan County in Barkworth et al. 2007 (Manual of Grasses for North America). Specimen records for this taxon in Utah have not been relocated. A Utah Flora excludes this taxon from Utah. Habitat Specificity scored as "0" since the habitat does not seem unusual according to FNA ("on rocky talus slopes, cliffs, canyon walls, road cuts, sandy slopes, often over calcareous parent materials"). Threats to this taxon include grazing-related impacts from cattle, but it is scored as "unknown" due to uncertainty. Trends are scored as "unknown" due to uncertainty of the magnitude and types of disturbance on extant populations and the lack of population-level surveys. This taxon is placed on the "Status Uncertain" list until specimens can be confirmed based on the FNA treatment.

Scored By/Date: J. Alexander/2014

Revisions: New to Status Uncertain list



## UNPS Status Uncertain List: Ranking Comments

*Muhlenbergia glomerata*

Family: Poaceae or Gramineae

Comments: Peripheral. Although no specimens at BRY have been collected, multiple reports of this taxon for Utah are based on misidentifications of other species, including *M. minutissima*! At UTC, there is only one record from Utah of *M. glomerata* from Salt Lake County (Jones s.n. August 1882, "Wasatch"). This is the record for Utah in Barkworth et al. 2007 (Manual of Grasses for North America). This taxon is placed on the "Status Uncertain" list until specimens can be confirmed to a species based on the FNA treatment.

Scored By/Date: J. Alexander/2014

Revisions: New to Status Uncertain list

*Panicum flexile*

Family: Poaceae or Gramineae

Comments: Disjunct. Only 1 specimen at BRY has been collected. It was found in Utah County (*Cottam 206*, 28 Jul 1925, BRY). It was reported only for San Juan County in Barkworth et al. 2007 (Manual of Grasses for North America). In either case, Utah populations are a long-distance disjunct from the remainder of the species. This taxon's primary range is in the Eastern U.S. and Canada. The other disjunct populations in Oklahoma and Texas are the closest to Utah. Habitat Specificity scored as "1" due to its status as mostly a riparian species on calcareous substrates according to FNA ("fens and other calcareous wetlands, in dry, calcareous or mafic rock barrens, and in open woodlands, especially on limestone derived soils"). Threats to this taxon include grazing-related impacts from cattle, but it is scored as "unknown" due to uncertainty. Trends are scored as "unknown" due to uncertainty of the magnitude and types of disturbance on extant populations and the lack of population-level surveys. This taxon is placed on the "Status Uncertain" list until specimens can be confirmed based on the FNA treatment.

Scored By/Date: J. Alexander/2014

Revisions: New to Status Uncertain list

*Puccinellia simplex*

Family: Poaceae or Gramineae

Comments: Disjunct. The two vouchers for Utah were collected in Weber Co. (*Arnow 3986*, 21 May 1974, UTC; *Arnow 4411*, 8 June 1975, UTC). This taxon is reported for Box Elder, Cache, Grand, Duchesne, Millard, San Juan, Sanpete, and Weber Counties in Barkworth et al. 2007 (Manual of Grasses for North America). It is only reported for Weber Co. in A Utah Flora. This taxon may be non-native in Utah, since Barkworth states that the populations in Utah are likely introductions. It's main range is in California only. At least in the Weber County location, it has not been collected in Utah since 1975. As a result of these data, Number of Individuals and Number of Populations is changed from "1" to "unknown". Since the vouchers determinations are in dispute and it is not known whether or not this taxon should be considered a native in Utah, this taxon is re-ranked to the

**"Status Uncertain" list.**

Scored By/Date: J. Alexander/2015

Revisions: New to Status Uncertain list

*Scleropogon brevifolius*

Family: Poaceae or Gramineae

Comments: Peripheral. The one voucher for Utah was collected in Warm Creek Canyon in Kane Co. (*Atwood 17272*, 24 Sep 1991, BRY). Although it was reported by Welsh to be "locally plentiful" in the vicinity, it has only been collected once. This taxon is not reported for Utah in Barkworth et al. 2007 (Manual of Grasses for North America). As a result, Number of Individuals and Number of Populations is changed from "1" to "unknown". Since the determination of this voucher is in dispute, this taxon is re-ranked to the "Status Uncertain" list.

Scored By/Date: J. Alexander/2015

Revisions: New to Status Uncertain list

*Eriogonum esmeraldense* var. "*tayei*"

Synonym: Included in *Eriogonum esmeraldense* var. *esmeraldense* by some authors

Family: Polygonaceae

Comments: Local Endemic. Reveal in FNA suggests that this taxon is a recent introduction to the Tushar Range via livestock shipments between Nevada and Utah: "The isolated population in the Tushar Mountains of Sevier County, Utah, recently named var. *tayei*, is likely a recent introduction, probably via shipments of livestock". The nativity of this taxon should be investigated further. As a result, Number of Individuals and Number of Populations are rescored from "1" or "unknown". These changes re-rank this species from the "High" to the "Status Uncertain" list until further studies establish the Tushar Population and an unequivocally native population and not a recent introduction.

Scored By/Date: J. Alexander/2015

Revisions: New to Status Uncertain list

*Eriogonum thompsoniae* "var. *matthewsiae*"

Synonym: Included in *Eriogonum thompsoniae* var. *albiflorum* by some authors

Family: Polygonaceae

Comments: Local Endemic. The populations of this taxon have been documented as being of potential hybrid origin. Material east of the Hurricane cliffs is introgressed with *Eriogonum thompsoniae* and not definitively var. *glutinosum* according to Mark Ellis. The genetic results indicate that this taxon is misplaced within *E. corymbosum* if it is recognizable as a separate taxon at all. A published treatment of his molecular results from 2014 is needed to score the status of this taxon (see also *E. corymbosum* var. *nilesii* discussion). Number of Individuals and Number of Populations re-scored from "1" to "unknown" as a result. This taxon is re-ranked from the "High" to the "Status Uncertain" list.

Most recent treatments lump this variety with *E. thompsoniae* var. *albiflorum* which occurs in the same general range (including Zion NP) and differs in subtle

## UNPS Status Uncertain List: Ranking Comments

and overlapping characters of the inflorescence. Var. *matthewsiae* is questionable distinct from *albiflorum* [W. Fertig 2016]

Scored By/Date: J. Alexander/2015; W. Fertig/2016

Revisions: New to Status Uncertain list

*Persicaria punctata*

Synonym: *Polygonum punctatum*

Family: Polygonaceae

Comments: Sparse. Although no specimens at BRY have been reported as this taxon, one specimen from Powell Slough, Utah County, Utah has been determined as this taxon (*Thorne 94* 15 August 1976, DES; from SEINet). The duplicate at BRY has not been databased so its current determination is unknown. However, it is not listed as a voucher by Welsh. It has been reported for the "Logan marshes" in Cache Counties in Utah by A Utah Flora and IMF, without reference to a specific specimen. FNA states that "*Persicaria punctata* is confused most frequently with *P. hydropiper*; the achenes are diagnostic." Therefore, it is likely that the specimen from IMF and A Utah Flora from Cache County has been misidentified as *P. punctata*. There are no vouchers of this species at NY for Utah online. In SEINet, *Polygonum hydropiper* has also been collected in the marshes W of Logan (*Holmgren 8260* 13 August 1951, NY; *Maguire 3378* 14 September 1933 UTC). The Utah and Cache County reports may be *P. hydropiper*. This taxon is widespread throughout the eastern U.S. and Canada. Habitat Specificity scored as "1" due to its status as a riparian species according to A Utah Flora ("marshes") and FNA ("Shallow water, shores, marshes, floodplain forests"). Threats scored as a "1" due to increasing riparian habitat modification and disturbance from residential development, the grazing-related impacts of cattle, farming-related disturbance, and municipal water pumping. These are the primary reasons for the upgrade of the threats to this species to a "1". Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys. This taxon is placed on the "Status Uncertain" list until specimens can be confirmed based on the FNA treatment.

Scored By/Date: J. Alexander/2015

Revisions: New to Status Uncertain list

*Polygonum engelmannii*

Synonym: *Polygonum douglasii* ssp. *engelmannii*

Family: Polygonaceae

Comments: Peripheral. It has yet to be reported for any specific county in Utah. Since A Utah Flora recognizes this taxon as a synonym, it is difficult to determine how many specimens at BRY have been collected. This taxon's primary range is in California, the Pacific Northwest and Canada. Habitat Specificity scored as "0" since the habitat is variable and does not seem unusual according to FNA ("Dry to moist sandy or well-drained soils, sagebrush desert to lower mountains"). Threats and Trends are scored as "unknown" due to uncertainty

of the type and magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys. This taxon is placed on the "Status Uncertain" list until specimens can be confirmed based on the FNA treatment.

Scored By/Date: J. Alexander/2015

Revisions: New to Status Uncertain list

*Polygonum majus*

Synonym: *Polygonum douglasii* ssp. *majus*

Family: Polygonaceae

Comments: Peripheral. It has yet to be reported for any specific county in Utah. Since A Utah Flora recognizes this taxon as a synonym, it is difficult to determine how many specimens at BRY have been collected. Primary range is in California, the Pacific Northwest and Canada. Habitat Specificity scored as "0" since the habitat is variable and does not seem unusual according to FNA ("Dry plains, meadows, sometimes on serpentine"). Threats and Trends are scored as "unknown" due to uncertainty of the type and magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys. This taxon is placed on the "Status Uncertain" list until specimens can be confirmed based on the FNA treatment.

Scored By/Date: J. Alexander/2015

Revisions: New to Status Uncertain list

*Claytonia cordifolia*

Synonym: *Montia cordifolia*

Family: Portulacaceae or Montiaceae

Comments: Peripheral. No specimens at BRY have been collected. It has been reported for Cache, Salt Lake, Tooele, and Weber Counties in Utah by IMF and FNA. This taxon's primary range in California, the Pacific Northwest and Canada. Habitat Specificity scored as "1" due to its status as a riparian species according to A Utah Flora ("moist sites with willow, birch, aspen, and fir") and FNA ("Meadows, seeps"). Threats to this taxon include grazing-related impacts from cattle. Climate change is also a threat. Droughts and rapid snowmelt due to wind-blown sediments are melting snowpack earlier than normal in our region. These are the primary reasons for the upgrade of threats to a "1". Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys. Number of Individuals and Number of Populations scored as "unknown" due to the lack of reported voucher data. This taxon is placed on the "Status Uncertain" list until specimens can be confirmed based on the FNA treatment.

Scored By/Date: J. Alexander/2015

Revisions: New to Status Uncertain list

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*Montia fontana*

Family: Portulacaceae or Montiaceae

Comments: Peripheral. No specimens at BRY have been collected. It has been reported for Box Elder County in Utah by IMF and FNA. This is a circumboreal species with a primary range in North America in the Pacific Northwest and Canada. Habitat Specificity scored as "1" due to its status as a riparian species according to A Utah Flora ("wet or moist sites, in meadows, seeps, along streams and around ponds") and FNA ("Pools, springs, meadows, other wet or moist places"). Threats to this taxon include grazing-related impacts from cattle. Climate change is also a threat. These are the primary reasons for the upgrade of threats to a "1". Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys. Number of Individuals and Number of Populations scored as "unknown" due to the lack of reported voucher data. This taxon is placed on the "Status Uncertain" list until specimens can be confirmed based on the FNA treatment.

Scored By/Date: J. Alexander/2015

Revisions: New to Status Uncertain list

*Potamogeton strictifolius*

Family: Potamogetonaceae

Comments: Disjunct. Sensus A Utah Flora, "known in Utah from a single collection (taken in 1869) along the Bear River (Summit Co.?)." Welsh did not see this specimen and reported that Cronquist in IMF was the first to report this specimen as this species. Habitat Specificity scored as "1" due to its status as a riparian species according to FNA ("Alkaline waters of lakes and slow-moving streams"). Threats may be primarily from disturbance related to farming and grazing-related impacts but it is scored as unknown due to uncertainty. Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys. This taxon is placed on the "Status Uncertain" list until this report can be confirmed.

Scored By/Date: J. Alexander/2014

Revisions: New to Status Uncertain list

*Myriopteris rufa*

Synonym: *Cheilanthes eatonii*

Family: Polypodiaceae or Pteridaceae

Comments: Peripheral. This taxon was reported for Utah in IMF, but no specimens were seen by Welsh for A Utah Flora. As a result, Number of Individuals and Number of Populations are changed from "1" to "unknown". Since this is a report based on unspecified vouchers, this taxon is re-ranked to the "Status Uncertain" list.

Scored By/Date: J. Alexander/2015

Revisions: New to Status Uncertain list

*Ranunculus andersonii* var. *tenellus*

Synonym: *Ranunculus andersonii* var. *juniperinus*

Family: Ranunculaceae

Comments: Regional Endemic. A taxon not included in previous versions of the UNPS Rare Plant List, but its apparent rarity in Utah warrants further research. No specimens at BRY have been collected. According to A Utah Flora, var. *tenellus* has been found only at the type locality in Tooele County. No specimens are determined by him to be this variety in A Utah Flora (other than the type, which is not specifically stated by can be assumed). However, the var. *tenellus* in IMF includes specimens considered to be var. *juniperinus* in A Utah Flora (Kane, Iron, Millard and Washington Counties). FNA places all varieties of *R. andersonii* into synonymy. The more narrow delimitation in A Utah Flora would warrant inclusion on this list as a Medium or Watch species; however, the broader interpretation in IMF would rank this taxon with 3 or less scores of a "1" and place it on the excluded list. Threats and Trends are scored as "unknown" due to uncertainty of the type and magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys. This taxon is placed on the "Status Uncertain" list until further research can confirm that var. *tenellus* is a taxon restricted to Utah.

Scored By/Date: J. Alexander/2015

Revisions: New to Status Uncertain list

*Ranunculus uncinatus*

Family: Ranunculaceae

Comments: Peripheral. No specimens at BRY have been collected. It was reported from the La Sal Mountains in Grand County in IMF. This taxon's primary range is in California, the Pacific Northwest and Canada. The IMF report is presumably based on a specimen collected in the Don's Lake area (*Franklin 3548* 10 June 1986 NY; from SEINet). It was originally determined as *R. macounii*. FNA does not report this taxon from Utah. It states that some specimens that were reports from Canada of *R. uncinatus* "have hairy receptacles and straight, broad achene beaks; they apparently represent small individuals of *R. macounii*." It is possible that the report from IMF is also a small individual of *R. macounii*. Habitat Specificity scored as "1" since it is montane riparian species according to A Utah Flora ("moist soils, in woods, thickets, or meadows, and along streams") and FNA ("Moist meadows or woods, often along streams"). Threats and Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys. This taxon is placed on the "Status Uncertain" list until this species can be confirmed as being present in Utah.

Scored By/Date: J. Alexander/2015

Revisions: New to Status Uncertain list

## UNPS Status Uncertain List: Ranking Comments

*Crataegus castlegarensis*

Family: Rosaceae

Comments: Peripheral. Since A Utah Flora 5th ed. recognizes this taxon as a synonym, it is difficult to determine how many specimens at BRY have been collected. It has an uncertain range in Utah due to the lack of published voucher lists in FNA. Sensu FNA, it is found in Utah only "northeast of Salt Lake City" Primary range is in the northern Rocky Mountains and the Pacific Northwest. Habitat Specificity scored as "0" since this taxon does not appear to be an montane riparian species according to FNA ("mesic brush"). Disturbance related to wetland development and grazing activities may be a threat to this species, however it is scored as "unknown" due to uncertainty. Threats and Trends are scored as "unknown" due to uncertainty of the magnitude and types of disturbance on extant populations and the lack of population-level surveys. This taxon is ranked on the "Status Uncertain" list until its distribution in Utah is known more definitively.

Scored By/Date: J. Alexander/2015

Revisions: New to Status Uncertain list

*Drymocallis arizonica*

Synonym: *Potentilla glandulosa* var. *pseudorupestris*

Family: Rosaceae

Comments: Regional Endemic. Since A Utah Flora 5th ed. does not recognize this taxon, it is difficult to determine how many specimens at BRY have been collected. The 5th edition treatment of *P. glandulosa* is an agglomeration of forms that are considered at least 7 different species in FNA (*D. fissa*, *D. arizonica*, *D. micropetala*, *D. glabrata*, *D. deseretica*, *D. glandulosa*, *D. pseudorupestris*). At least some of the specimens determined as *P. glandulosa* var. *pseudorupestris* in A Utah Flora are this species. In FNA, *D. arizonica* is restricted to Arizona and Utah, but due to the lack of published voucher lists in FNA, its county distribution is unknown.

**[Select specimens are cited in Ertter's 2007 revision of *Drymocallis* published in the Journal of the Botanical Research Institute of Texas, vol 1:31-46—W. Fertig]** Sensu FNA, it is a "encompasses populations in Arizona north of the Mogollon Rim and in Utah as far north as Garfield and Sevier counties, including the Henry Mountains. It is most distinctive in northern Arizona..." Habitat Specificity scored as "0" since the habitat is variable and does not seem unusual according to FNA ("Streamsides, rocky sites, open forest floors, pine and aspen forests"). The grazing-related impacts of cattle may be a threat to this species, however it is scored as "unknown" due to uncertainty. Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys. This taxon is ranked on the "Status Uncertain" list until its distribution in Utah is known more definitively.

Scored By/Date: J. Alexander/2015

Revisions: New to Status Uncertain list

*Drymocallis deseretica*

Synonym: *Potentilla glandulosa* var. *pseudorupestris*, *P. glandulosa* var. *intermedia*

Family: Rosaceae

Comments: Regional Endemic. Since A Utah Flora 5th ed. does not recognize this taxon, it is difficult to determine how many specimens at BRY have been collected. The 5th edition treatment of *P. glandulosa* is an agglomeration of forms that are considered at least 7 different species in FNA (*D. fissa*, *D. arizonica*, *D. micropetala*, *D. glabrata*, *D. deseretica*, *D. glandulosa*, *D. pseudorupestris*). At least some of the specimens determined as *P. glandulosa* var. *pseudorupestris* in A Utah Flora are this species, and it has been confused with *P. glandulosa* var. *intermedia*. *D. glabrata* is found in northern Utah, but due to the lack of published voucher lists in FNA, its county distribution is unknown. It is also found in Wyoming. Sensu FNA, it "is common in the Wasatch and western Uintah mountains of northern and central Utah, where it has usually been treated as... *P. glandulosa* var. *pseudorupestris*... most other Utah populations placed by S. L. Welsh et al. (1993)... as *Potentilla glandulosa* var. *intermedia* are treated here as *D. deseretica*." Habitat Specificity scored as "0" since the habitat does not seem unusual according to FNA ("Montane meadows, open forests"). The grazing-related impacts of cattle may be a threat to this species, however it is scored as "unknown" due to uncertainty. Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys. This taxon is ranked on the "Status Uncertain" list until its distribution in Utah is known more definitively.

Scored By/Date: J. Alexander/2015

Revisions: New to Status Uncertain list

*Drymocallis fissa*

Synonym: *Potentilla arguta*, misapplied

Family: Rosaceae

Comments: Peripheral. Since A Utah Flora 5th ed. does not recognize this taxon, it is difficult to determine how many specimens at BRY have been collected. The 5th edition treatment of *P. arguta* is an agglomeration of forms that are considered at least 2 different taxa in FNA (*D. fissa*, *D. glandulosa*). In FNA, *P. arguta* is restricted to Canada and the eastern U.S. and does not occur in the western U.S. *D. fissa* is restricted to eastern Uinta Mountains in Utah, but due to the lack of published voucher lists in FNA, its county distribution is unknown. Sensu FNA, it is a "Tentatively included here are large-anthered populations from the eastern Uintah Mountains of Utah, though these often have fewer leaflets and smaller flowers of unknown color." Habitat Specificity scored as "0" since the habitat is variable and does not seem unusual according to FNA ("Sagebrush slopes, open forests, stream banks, often in rocky or moderately disturbed sites"). Threats to this taxon include grazing-related impacts from cattle, sheep, and naturalized mountain goats. Climate change is also a threat.

## UNPS Status Uncertain List: Ranking Comments

Droughts and rapid snowmelt due to wind-blown sediments are melting snowpack earlier than normal in our region. These are the primary reasons for the upgrade of the threats to a "1". Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys. This taxon is ranked on the "Status Uncertain" list until its distribution in Utah is known more definitively.

Scored By/Date: J. Alexander/2015

Revisions: New to Status Uncertain list

*Drymocallis glabrata*

Synonym: *Potentilla glandulosa* var. *intermedia*, in part

Family: Rosaceae

Comments: Peripheral. Since A Utah Flora 5th ed. does not recognize this taxon, it is difficult to determine how many specimens at BRY have been collected. The 5th edition treatment of *P. glandulosa* is an agglomeration of forms that are considered at least 7 different species in FNA (*D. fissa*, *D. arizonica*, *D. micropetala*, *D. glabrata*, *D. deseretica*, *D. glandulosa*, *D. pseudorupestris*). At least some of the specimens determined as *P. glandulosa* var. *pseudorupestris* in A Utah Flora are this species, and it has been confused with *P. glandulosa* var. *intermedia*. *D. glabrata* is found in Utah in Cache and Weber Counties, but due to the lack of published voucher lists in FNA, the size of populations in Utah cannot be estimated. Its primary range is in the Pacific Northwest and the Rocky Mountains. Sensu FNA, it is a "common member of the genus in central Idaho and adjacent parts of neighboring states... enters Utah in Cache and Weber counties" Habitat Specificity scored as "0" since the habitat does not seem unusual according to FNA ("Montane meadows, open forests"). The grazing-related impacts of cattle may be a threat to this species, however it is scored as "unknown" due to uncertainty. Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys. This taxon is ranked on the "Status Uncertain" list until its distribution in Utah is better known.

Scored By/Date: J. Alexander/2015

Revisions: New to Status Uncertain list

*Ivesia arizonica* var. *arizonica*

Synonym: *Purpusia saxosa*

Family: Rosaceae

Comments: Regional Endemic. No voucher was seen by Welsh for A Utah Flora, but the inclusion of this taxon for Utah is based on Susan Meyers 1976 thesis for the Flora of Washington County. The voucher details are not published in A Utah Flora. At UNLV there is a single Rosaceae specimen collected at Kolob Reservoir. It is not known what the original determination of this specimen is at this time, however, it is now determined as *Potentilla gracilis*. The voucher is: Meyer 1415, 21 Aug 1970, Kolob Reservoir, dry, mesic disturbed area on levee, UNLV21149. This taxon is reported for Washing-

ton County, Utah based on a specimen from the Kolob Plateau, which is likely Meyer 1415. As a result of these data, Number of Individuals and Number of Populations is changed from "1" to "unknown". Since the single voucher was without specific collector data in A Utah Flora and FNA (and the determination is in dispute), this taxon is re-ranked to the "Status Uncertain" list.

Scored By/Date: J. Alexander/2015

Revisions: New to Status Uncertain list

*Potentilla concinna* var. *proxima* x *P. ovina* var. *decurrens*

Synonym: *Potentilla drummondii* var. *breweri*

Family: Rosaceae

Comments: Peripheral?. Taxonomic information needed on the appropriate name of this hybrid, or if a name should be provided. Until taxonomy is resolved, this **taxon should be on "status uncertain" list. But might warrant Watch list status with more information.** Only 1 specimen at BRY has been collected. It is known only from Juab and Piute County in Utah. This taxon can be found in similar habitats in Nevada and California. The voucher for the Tushar Range, Piute County is Holmgren et al 10890, 20 June 1985 (NY, UTC). The voucher for the Deep Creek Range was collected by Holmgren & Holmgren along divide between Toms Creek and Basin Creek drainages, Juab County (11184, NY). The names, *P. drummondii*, *P. breweri* and *P. drummondii* var. *breweri*, are misapplied to populations in Colorado, Utah, and Wyoming according to FNA. Reports from Utah are based on collections of *P. concinna* var. *proxima* or possible hybrids between *P. concinna* var. *proxima* and *P. ovina* var. *decurrens*. Number of **populations and individuals scores as "unknown"**. Habitat Specificity re-scored as a "1" due to its status as an alpine meadow species and rock crevice species according to A Utah Flora ("Montane meadow communities, and on rock outcrops"). At least in the Deep Creek Range, this is one of several taxa that may be threatened by the proposed introduction of naturalized mountain goats by the State of Utah. Climate change is also a threat. These are the primary reasons for upgrading threats to "1". Trends are scored as "unknown"

Scored By/Date: J. Alexander/2016

Revisions: New to Status Uncertain List

*Potentilla hookeriana*

Synonym: *Potentilla rubricaulis*, in part

Family: Rosaceae

Comments: Regional Endemic. Since A Utah Flora 5th ed. recognizes this taxon as a synonym, it is difficult to determine how many specimens at BRY have been collected. The 5th edition treatment of *P. rubricaulis* is an agglomeration of high elevation forms that are considered 4 different taxa in FNA (*P. saximontana*, *P. hookeriana*, *P. paucijuga*, *P. rubricaulis*). In the first edition of A Utah Flora, these forms were split into 2 different taxa, much closer to the FNA treatment. Of all of these, *P. hookeriana* has not been recognized as a separate

## UNPS Status Uncertain List: Ranking Comments

species from *P. rubricaulis* in Utah. In FNA, *P. rubricaulis* is restricted to northern Canada and Alaska and does not occur in the western U.S; and *P. saximontana* is recognized as a separate species in an entirely different section of the genus than *P. hookeriana* and relatives. The bulk of the material called *P. rubricaulis* in A Utah Flora is *P. hookeriana* in FNA. Due to the lack of published voucher lists in FNA, the county distribution in Utah of *P. hookeriana* is unknown. Sensu FNA, it is a "primarily alpine plants from the Rocky Mountains and adjacent desert mountains that share many of the same characters with *P. rubricaulis* but are smaller overall." This taxon's primary range is in the Rocky Mountains and Canada. Habitat Specificity scored as "1" since it is alpine rock crevice and talus species according to FNA ("Alpine ridges, fellfields, scree slopes, rocky canyons"). Threats to this taxon include grazing-related impacts from naturalized mountain goats. Climate change is also a threat. These are the primary reasons for the upgrade of threats to a "1". Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys. This taxon is ranked on the "Status Uncertain" list until its distribution in Utah can be verified.

Scored By/Date: J. Alexander/2015

Revisions: New to Status Uncertain list

*Potentilla saximontana*

Synonym: *Potentilla rubricaulis*, in part

Family: Rosaceae

Comments: Regional Endemic. See comments under *Potentilla hookeriana* above. *P. saximontana* is restricted to the La Sal and Uinta Mountains in Utah, but due to the lack of published voucher lists in FNA, its county distribution is unknown. Sensu FNA, it is a "small plant of very high elevations in the mountains of Colorado, the La Sal and Uinta mountains of Utah, and the Absaroka and Beartooth mountains of Wyoming and Montana" This taxon's primary range is in the Rocky Mountains. Habitat Specificity scored as "1" since it is alpine tundra species according to FNA ("Alpine tundra and meadows, rocky slopes"). Threats include grazing-related impacts from sheep, and naturalized mountain goats. Climate change is also a threat. These are the primary reasons for the upgrade of threats to a "1". Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys. This taxon is ranked on the "Status Uncertain" list until its distribution in Utah is known more definitively.

Scored By/Date: J. Alexander/2015

Revisions: New to Status Uncertain list

*Potentilla subgorodovikii*

Synonym: *Potentilla nivea*, in part

Family: Rosaceae

Comments: Peripheral. Since A Utah Flora 5th ed. does not recognize this taxon, it is difficult to determine how many specimens at BRY have been collected. Presumably, the 5th edition treatment of *P. nivea* includes specimens that could be verified as this taxon based on the FNA treatment. In FNA, *P. subgorodkovii* ranges from northern Canada to Alaska and the Rocky Mountains. Due to the lack of published voucher lists in FNA, the county distribution in Utah of *P. subgorodkovii* is unknown. Sensu FNA, it "applied in a collective meaning for plants combining characteristics from multiple species of the *P. uniflora/villosa* and *P. nivea* groups. Morphologically, this collective entity is much closer to the *P. uniflora/villosa* group than to the *P. nivea* group and is clearly different from primary hybrids and clones, which are often observed." Habitat Specificity scored as "1" since it is alpine rock crevice and talus species according to FNA ("Dry alpine heaths, exposed ridges and summits, rock outcrops, scree and talus, dry tundra, acidic and calcareous bedrock"). Threats to this taxon include grazing-related impacts from naturalized mountain goats. Climate change is also a threat. These are the primary reasons for the upgrade of threats to a "1". Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys. This taxon is ranked on the "Status Uncertain" list until its distribution in Utah is better known.

Scored By/Date: J. Alexander/2015

Revisions: New to Status Uncertain list

*Poteridium annuum*

Synonym: *Sanguisorba annua*, *Poteridium occidentale*

Family: Rosaceae

Comments: Peripheral. No voucher was seen by Welsh for A Utah Flora, but the inclusion of this taxon for Utah is based on a specimen report without collector information from W of St. George in Washington County. No specimen of this taxon for Utah can be found on SEINet or NY Virtual Herbarium. In FNA, *P. annuum* is restricted to the eastern U.S. and if this specimen were this taxon may be an introduced waif. However, it could also be *P. occidentale*, which is found in neighboring Nevada and Arizona. It has been included in past treatments in an expanded *P. annuum*. As a result of these data, Number of Individuals and Number of Populations is changed from "1" to "unknown". Since the single voucher was without specific collector data in A Utah Flora and IMF, this taxon is re-ranked to the "Status Uncertain" list.

Scored By/Date: J. Alexander/2015

Revisions: New to Status Uncertain list

UNPS Status Uncertain List: Ranking Comments

*Rosa nutkana* ssp. *melina*

Family: Rosaceae

Comments: Regional Endemic. Since A Utah Flora does not recognize this taxon, it is difficult to determine how many specimens at BRY have been collected. It has uncertain range in Utah due to the lack of published voucher lists in FNA. Sensus FNA, "Subspecies *melina* [6x (DNA)] is endemic to high elevations of the Rocky Mountains Biogeographic Province, where it is often associated with *Populus tremuloides*" This taxon's primary range is in the Rocky Mountains. Habitat Specificity scored as "0" since the habitat is variable and does not seem unusual according to FNA ("Aspen, fir, spruce, and pine forest edges and clearings, stream edges and banks, brushy hillsides, peaks, ridges, grassy rocky slopes, meadows, canyon slopes"). Disturbance related to wetland development, ATV recreation, and grazing activities may be a threat to this species, however it is scored as "unknown" due to uncertainty. Trends are scored as "unknown" due to uncertainty of the magnitude and types of disturbance on extant populations and the lack of population-level surveys. This taxon is ranked on the "Status Uncertain" list until its distribution in Utah is known more definitively.

Scored By/Date: J. Alexander/2015

Revisions: New to Status Uncertain list

*Rosa woodsii* ssp. *arizonica*

Family: Rosaceae

Comments: Regional Endemic. Since A Utah Flora does not recognize this taxon, it is difficult to determine how many specimens at BRY have been collected. It has uncertain range in Utah due to the lack of published voucher lists in FNA. Sensus FNA, "Subspecies *arizonica* occurs primarily along streams in forested areas of Arizona, southern Nevada (Spring Mountains), northwestern New Mexico, and southern Utah with extensions into mountainous regions" This taxon's primary range is in the southern Rocky Mountains and Colorado Plateau. Habitat Specificity scored as "0" since the habitat is variable and does not seem unusual according to FNA, although it can be found in sandier habitats than the other two subspecies, ("Sandy soil of oak, juniper, and pine forests, alluvial flats, brushy hillsides, sandstone cliff bases, sunny road banks"). Disturbance related to wetland development, ATV recreation, and grazing activities may be a threat to this species, however it is scored as "unknown" due to uncertainty. Trends are scored as "unknown" due to uncertainty of the magnitude and types of disturbance on extant populations and the lack of population-level surveys. This taxon is ranked on the "Status Uncertain" list until its distribution in Utah is known more definitively.

Scored By/Date: J. Alexander/2015

Revisions: New to Status Uncertain list

*Rosa woodsii* ssp. *manca*

Synonym: *Rosa woodsii* var. *ultramontana*, in part, *Rosa manca*

Family: Rosaceae

Comments: Regional Endemic. Since A Utah Flora recognizes this taxon as a synonym, it is difficult to determine how many specimens at BRY have been collected. It has uncertain range in Utah due to the lack of published voucher lists in FNA. This taxon's primary range is in the Rocky Mountains. Habitat Specificity scored as "1" since this taxon appears to be an montane riparian species according to FNA ("Rocky meadows, high mountain forests to aspen and scrub oak woodlands, along streams, moist ditch banks"). Disturbance related to wetland development and grazing activities may be a threat to this species, however it is scored as "unknown" due to uncertainty. Trends are scored as "unknown" due to uncertainty of the magnitude and types of disturbance on extant populations and the lack of population-level surveys. This taxon is ranked on the "Status Uncertain" list until its distribution in Utah is known more definitively.

Scored By/Date: J. Alexander/2015

Revisions: New to Status Uncertain list

*Rosa woodsii* ssp. *puberulenta*

Synonym: *Rosa woodsii* var. *ultramontana*, in part,

Family: Rosaceae

Comments: Regional Endemic. Since A Utah Flora recognizes this taxon as a synonym, it is difficult to determine how many specimens at BRY have been collected. It has uncertain range in Utah due to the lack of published voucher lists in FNA. Sensus FNA, "Subspecies *puberulenta* is the predominant *Rosa* occurring on bottomlands throughout the Colorado Plateau, extending at least as far as Lincoln and White counties, Nevada." This taxon's primary range is in the southern Rocky Mountains and Colorado Plateau. Habitat Specificity scored as "1" since this taxon appears to be an montane riparian species according to FNA ("Edges of streams, flats, riparian woodlands dominated by cottonwood and pine"). Disturbance related to wetland development and grazing activities may be a threat to this species, however it is scored as "unknown" due to uncertainty. Trends are scored as "unknown" due to uncertainty of the magnitude and types of disturbance on extant populations and the lack of population-level surveys. This taxon is ranked on the "Status Uncertain" list until its distribution in Utah is known more definitively.

Scored By/Date: J. Alexander/2015

Revisions: New to Status Uncertain list

*Ptelea trifoliata* var. *lutescens*

Family: Rutaceae

Comments: Regional Endemic. Known reliably in UT only from the type, which may actually be from northern Arizona. Might be better relocated to Status Uncertain list.

Scored By/Date: Fertig/2015

Revisions: Moved from Watch list to Status Uncertain

## Appendix 7. UNPS Rare Plant List: Excluded List

Family	Species	Common Name	County Dist.	Problems
Asteraceae (Compositae)	<i>Cirsium rothrockii</i>	Rothrock's thistle	Snj	Reports from Utah are probably misidentified <i>Cirsium arizonicum</i>
	<i>Ericameria nauseosa</i> var. <i>glareosa</i>	Marysvale rabbitbrush	Piu	Taxonomic issues, probably a synonym. Holotype not lost, (as has been reported) needs to be examined by experts
	<i>Lygodesmia grandiflora</i> var. <i>doloresensis</i>	Dolores skeletonweed	Grn?	Colorado endemic; Utah populations apparently misidentified
	<i>Solidago simplex</i> var. <i>nana</i>	Coast goldenrod	Dag, Grn, Snj, Sum	Utah specimens probably misidentified, true var. <i>nana</i> is from the Pacific Northwest
	<i>Stenotus acaulis</i> "var. <i>atwoodii</i> "	Atwood's goldenweed	Jub	Treated as var. <i>glabratus</i> by Welsh et al. (2008), also not recognized in FNA
Brassicaceae (Cruciferae)	<i>Boechera beckwithii</i>	Beckwith's rockcress	Reported	Windham suggests this species is synonymous with <i>Boechera puberula</i>
	<i>Boechera gracilentia</i>	Graceful rockcress	Reported	Reports for Utah are probably misidentified
	<i>Boechera inyoensis</i>	Inyo rockcress	Reported	Reports for Utah are probably misidentified
	<i>Boechera kelseyana</i>	Kelsey's rockcress	Reported	Name published in 2015, but species is apparently not found in Utah (endemic to Arizona and New Mexico)
	<i>Boechera subpinnatifida</i>	Subpinnate rockcress	Box	Report from Utah is now thought to be misidentified <i>Boechera puberula</i>
	<i>Cardamine cordifolia</i> var. <i>incana</i>	Heartleaf bittercress	Irn, Sev, Way	Varieties no longer recognized as taxonomically significant
	<i>Descurainia incana</i> "var. <i>viscosa</i> "	Viscid tansymustard	Dch, Was	Utah specimens now considered to be <i>Descurainia incisa</i> ssp. <i>incisa</i> a more common taxon.
Cactaceae	<i>Coryphantha missouriensis</i> "var. <i>marstonii</i> "	Missouri pincushion cactus	Grf, Kan	Utah records based on holotype and neotype that are now considered synonymous with <i>Coryphantha vivipara</i>
	<i>Echinocactus polycephalus</i> var. <i>polycephalus</i>	Many-head barrelcactus	Wsh	Utah report based on a misidentification or mislabeled specimen of <i>E. polycephalus</i> var. <i>xeranthemoides</i>
	<i>Echinocereus engelmannii</i> "var. <i>variegatus</i> "	Glen Canyon hedgehog cactus	Grf, Kan, Snj	Taxon no longer recognized; full species is widespread and relatively common in Utah
	<i>Echinocereus mohavensis</i>	Mohave claretcup	Bvr, Mil, Wsh	Formerly on the Watch list. Taxonomic concept of this species has changed in recent treatments (FNA, Intermountain Flora) and the species is now more common and widespread than originally thought



## Appendix 7. UNPS Rare Plant List: Excluded List

Family	Species	Common Name	County Dist.	Problems
Caryophyllaceae	<i>Eremogone loisiae</i>	Lois' sandwort	Box, Cch, Dav, Jub, Rch, Slt, Snp, Toe, Uta, Web	New species named after publication of FNA treatment, more information needed on conservation status
	<i>Silene petersonii</i> var. <i>minor</i>	Maguire's campion	Grf, Irn	Variety no longer recognized, full species is more wide ranging
Cyperaceae	<i>Eleocharis erythropoda</i>	Bald spikerush	Cch, Dch, Grf, Grn, Kan, Mil, Sev, Uin, Uta, Way, Wsh	Treated as a synonym of <i>Eleocharis palustris</i> in Utah Flora (2008), recognized as a distinct species in FNA. Over 60 Utah collections according to SEINet—may not be a species of concern in Utah, but specimens need to be evaluated
	<i>Eleocharis ovata</i>	Ovate spikerush	Kan?	Utah County record is misidentified ( <i>E. erythropoda</i> ), Kane County specimen needs confirmation ( <i>Fertig 22850</i> BRY, UTC)
Poaceae (Gramineae)	<i>Muhlenbergia frondosa</i>	Wirestem muhly	Uta	Reported for Utah in Barkworth (2007) Manual of Grasses for North America, but is apparently based on an introduced specimen from the BYU grounds
Polygonaceae	<i>Eriogonum corymbosum</i> var. <i>nilesii</i>	Las Vegas wild buckwheat	Kan?, Wsh?	Utah reports apparently based on misidentifications, genetic research indicates this var is only found in Nevada
	<i>Eriogonum mortonianum</i>	Morton's wild buckwheat	Kan?	Utah population is apparently a hybrid between <i>Eriogonum thompsoniae</i> and <i>E. microthecum</i> or <i>E. corymbosum</i> . Native only to Fredonia area in N Arizona
	<i>Persicaria pensylvanica</i>	Pennsylvania smartweed	Dav, Kan, Uta, Wsh	Probably non-native in Utah
Rosaceae	<i>Potentilla breweri</i>	Brewer's cinquefoil	Jub, Piu	Utah reports probably misidentified (may be hybrids of <i>Potentilla concinna</i> var. <i>proxima</i> and <i>P. ovina</i> var. <i>decurrens</i> )
Solanaceae	<i>Chamaesaracha coronopus</i>	False nightshade	Kan, Snj, Wsh	More common and less threatened than originally thought, moved from Medium Priority to "Low" (but included on Excluded list)

## UNPS Excluded List: Ranking Comments

*Cirsium rothrockii*

Synonym: Included in *Cirsium arizonicum* by some authors

Family: Asteraceae or Compositae

Comments: Peripheral. The 4 specimens determined at BRY as *C. rothrockii* from San Juan County, Utah, have been placed within other varieties of *C. arizonicum* in FNA. FNA states that *C. arizonicum* var. *rothrockii* is endemic to Arizona and all other reports of this taxon outside of this state are misapplied.

Scored By/Date: J. Alexander/2014

*Ericameria nauseosa* var. *glareosa*

Synonym: *Chrysothamnus nauseosus* var. *glareosus*

Family: Asteraceae or Compositae

Comments: Local Endemic. Welsh has repeatedly mis-copied his Utah type publication regarding this taxon in A Utah Flora. The type was collected in 1890 by Jones. *Bigelowia glareosa* was published in 1891 and his published type locality is "Marysvale, Southern Utah. October 1890. It grows on the gravelly mesas of the Sevier River at 6,000 feet altitude." Although Welsh could not find the type for his 1982 Utah types paper (and Cronquist apparently did not see the type for his volume of Asteraceae for IMF), Lee Lenz located the type at POM for his biography of Marcus Jones published in 1986. Whether or not Welsh has attempted relocating the type since his 1982 paper is not known. The RSA-POM types database is currently offline and contacting RSA directly is the next step in determining of this type is extant. Despite this, this taxon has not recently been accepted at the varietal level in the same narrow delimitation as Welsh. Cronquist states that var. *glareosus* is "mainly on and just E of the Utah Plateaus, NE to Wasatch Co. and SW Duchesne Co." According to FNA, "L. C. Anderson (1986b) excluded the name *Ericameria nauseosa* var. *glareosa*. [as *Chrysothamnus nauseosus* subsp. *glareosus*], because he had seen no herbarium or field material. Cronquist (1994) recognized *C. nauseosus* var. *glareosus*. and placed *C. nauseosus* var. *psilocarpus* in synonymy, noting that it was equal to *E. nauseosa* var. *glareosa*. Without more substantial documentation, use of var. *psilocarpa* is preferred over var. *glareosa*, which we take to be of uncertain application." Even though Lenz found the type in the early 1980's, all other specialists have not seen the type. Until a specialist relocates and examines the type, this taxon should be treated as a synonym of var. *psilocarpus* and placed on the "Excluded" list for it has neither any certain taxonomic affinity nor detailed morphologic description.

Scored By/Date: J. Alexander/2014

*Lygodesmia grandiflora* var. *doloresensis*

Synonym: *Lygodesmia doloresensis*

Family: Asteraceae or Compositae

Comments: Local Endemic. Proposed for listing under Endangered Species Act. Previously reported for Utah, but recently synonymized with *L. grandiflora* var. *dianthopsis* in A Utah Flora. Status in Utah not known -

previous reports misidentified, or should this taxon (otherwise restricted to Colorado) be recognized? [Fertig 2009]

This taxon is no longer recognized in A Utah Flora. The variety is synonymized within var. *dianthopsis*. However, the synonym list in A Utah Flora suggests that this variety in Utah and Colorado is synonymous. This is disputed by the treatment in FNA. The var. *doloresensis* is recognized to be an endemic to Colorado and the name was misapplied to Utah populations. Based on this, this taxon is placed on the Excluded list.

Scored By/Date: Fertig/2009; J. Alexander/2014

Revisions: Moved from Need Data to Excluded

*Solidago simplex* var. *nana*

Family: Asteraceae or Compositae

Comments: Disjunct. A Utah Flora recognized var. *nana* from alpine populations in the Uinta and La Sal Mountains. However, this name is misapplied to Utah populations. FNA states that "variety *nana* is mainly confined to peaks of the Cascade Mountains in Oregon and Washington, and very rarely on central Vancouver Island, British Columbia." It does not occur in Utah and the dwarf alpine phase segregated by Welsh as var. *nana* is without taxonomic status at the varietal level. These data rank this taxon on the "Excluded" list.

Scored By/Date: J. Alexander/2014

*Stenotus acaulis* var. "*atwoodii*"

Synonym: *Haplopappus acaulis* var. *glabratus*, *H. acaulis* var. *atwoodii*

Family: Asteraceae or Compositae

Comments: Local Endemic. The Great Basin forms of this plant seem to have, in the more isolated western Utah populations, consistently greater than one head per flowering stalk. This is the primary attribute of var. *atwoodii*. These isolated forms have leaves intermediate between the extreme narrow leaves of var. *acaulis* and the extreme broad leaves of typical *glabratus*. The type of *Stenotus falcatus* collected in 1877 by E. Palmer in Iron Co., Utah is the same form as var. *atwoodii*. More population-level investigation may find that this is a separate variety from var. *glabratus* [Fertig & Alexander 2009].

The varieties formerly recognized within *Haplopappus acaulis* are not recognized in FNA and therefore there is no infraspecific name combination for var. *atwoodii* or var. *glabratus* within *Stenotus acaulis*. Welsh in A Utah Flora 4th ed., treats var. *atwoodii* as a synonym of var. *glabratus*. This taxon has been placed on the "Excluded" list since no recent floristic treatments recognize it as a variety.

Scored By/Date: J. Alexander/2014

*Boechera beckwithii*

Synonym: *Boechera puberula*

Family: Brassicaceae or Cruciferae

Comments: In comments by M. Windham and in abstracts for presentations given by him or his research

## UNPS Excluded List: Ranking Comments

group during conferences, this taxon has an uncertain status as a species separate from *B. puberula*. Recent molecular results (See comments for the unnamed hybrid called *Arabis holboellii* var. *derensis* by Welsh in A Utah Flora), show that this name has been misapplied to populations in Utah. It is likely not part of the Utah flora. Its distribution and abundance outside of Utah is not known, however. Once a treatment with revised distribution and habitat data is published by Windham based on his molecular results, this taxon can be re-ranked, if necessary.

Scored By/Date: J. Alexander & M. Windham/2015

*Boechea gracilentia*

Family: Brassicaceae or Cruciferae

Comments: Peripheral. This taxon is a apomictic triploid hybrid between *Boechea fendleri* and *B. pallidifolia*. Windham & Al-Shehbaz (2007) examined the types extensively and found that both *A. selbyi* and *A. gracilentia* were apomictic hybrids and should not be placed within any of the previous sexual species within which they had been subsumed. Holmgren (2005) followed historical precedent and kept *B. selbyi* its own species and placed the types of *A. gracilentia* as a synonym of *B. perennans*. Welsh in A Utah Flora chose a similar taxonomic arrangement. The condition of the type of *A. selbyi*, which is a poorly preserved, aberrant individual, has directly led to this confusion. Windham & Al-Shehbaz (2007) found that both types are hybrids of the same parentage and that the name *A. gracilentia* takes precedent over *A. selbyi* when both are recognized as a single species. Recent molecular results by Windham and colleagues have demonstrated that most of what was considered to be *A. selbyi* by Welsh and *B. selbyi* by Holmgren are *B. thompsonii* (see comments for that taxon). Therefore, the two taxa should be considered separate species, since *B. thompsonii* is a diploid non-hybrid. Holmgren's (2005) placement of *B. gracilentia* as a synonym of *B. perennans* and Welsh's (2008:301) continued assertion that *B. selbyi* "would be treated better at infraspecific level" within *B. perennans* are unsupportable. These changes re-rank this taxon to the "Excluded" list.

[Alexander Mar 2015]; The name used here (*Boechea gracilentia*) does not apply in a strict sense to any taxon occurring in Utah [Windham Mar 2015].

Scored By/Date: J. Alexander & M. Windham/2015

*Boechea inyoensis*

Synonym: *Boechea dispar*

Family: Brassicaceae or Cruciferae

Comments: . Regional Endemic. In comments by M. Windham and in abstracts for presentations given by him or his research group during conferences, this taxon has an uncertain range in Utah. Recent molecular results (See comments for the unnamed hybrid called *Arabis holboellii* var. *derensis* by Welsh in A Utah Flora), show that this name has been misapplied to populations in Utah. It is likely not part of the Utah flora. Its distribution and abundance outside of Utah is

not known, however. Once a treatment with revised distribution and habitat data is published by Windham based on his molecular results, this taxon can be re-ranked, if necessary.

Scored By/Date: J. Alexander/2015

*Boechea kelseyana*

Family: Brassicaceae or Cruciferae

Comments: . Regional Endemic. In comments by M. Windham and in abstracts for presentations given by him or his research group during conferences from 2010 to 2015, this taxon was mentioned as being present in Utah. It is one of three parents that gave rise to the trigonometric hybrid, *B. falcatoria*. The name was published in late 2015 in Systematic Botany, but Utah specimens are now assigned to other taxa and *B. kelseyana* is considered endemic to NE Arizona and NW New Mexico.

Scored By/Date: J. Alexander/2015; Fertig/2016

*Boechea subpinnatifida*

Family: Brassicaceae or Cruciferae

Comments: Peripheral. Reconciling the divergent interpretations of *B. beckwithii*, *B. puberula*, *B. subpinnatifida* in major treatments is difficult. Holmgren's (2005) description of *B. beckwithii* seems to be at odds, morphologically, with the interpretation of Windham & Al-Shehbaz (2006a) & Al-Shehbaz & Windham (2010). Holmgren described *B. beckwithii* as having widely spreading or descending pods where Al-Shehbaz & Windham described it as having descending or deflexed pods (and not appressed to the rachis). Since Holmgren's descriptions are muddled with the morphology from the types of *A. holboellii* var. *derensis* (which is described as having ascending, spreading, or slightly declined pods by Al-Shehbaz & Windham), one cannot tease the two taxa apart in Holmgren's treatment. Furthermore, the boundaries between *B. puberula* and *B. subpinnatifida*, as described by Al-Shehbaz & Windham, are not as substantial as their other species. Al-Shehbaz & Windham separate the two based primarily on the tendency of *B. puberula* to have white or pale lavender flowers and *B. subpinnatifida* to have pale or dark lavender flowers. Secondarily, Al-Shehbaz & Windham differentiate them by the width of the pods. *Boechea puberula* has a tendency for narrower pods (1.9-2.2 mm) than in *B. subpinnatifida* (1.5-3 mm). However, all of these morphological characters are overlapping. Windham & Al-Shehbaz (2006a) were the first to report vouchers of this taxon from Idaho, Nevada, and Utah. The only record for Utah reported is from Box Elder County (Windham and L. Allphin 336004 May 2005, NNE of Etna on isolated peak south of Dry Creek Basin, MO, NMC, UTC), which was recently reported by Windham to be *B. puberula* based on recent molecular research. Habitat Specificity has been scored as "0" since the habitat does not seem unusual according to FNA ("rock outcrops, talus, gravelly soil, often in sagebrush-grassland communities"). Intrinsic Rarity rescored as a "1" due to this taxon being a sexual diploid

## UNPS Excluded List: Ranking Comments

with a limited distribution. Sexual diploids are the reservoirs in which the varied hybrid taxa have formed and should be protected with a higher level of effort than most of the apomictic triploid taxa. Since the single voucher reported for Utah in FNA is not considered to be this species (see below), this taxon has been re-ranked to the "Excluded" list. [Alexander Mar 2015]; The only reported Utah population is now classified as *B. puberula* s.s. [Windham Mar 2015].

Scored By/Date: J. Alexander/2015

*Cardamine cordifolia* var. *incana*

Family: Brassicaceae or Cruciferae

Comments: Sparse. This taxon was considered for the Medium list in 2014. It was removed from the list based on the FNA treatment and Holmgren (2005). Varieties in this complex were not recognized in these two works and it is recommended that this taxon not be treated as var. *incana* as in A Utah Flora. The information provided by Welsh also did not elaborate much on the habitat or distributional differences between this and the typical variety in Utah.

Scored By/Date: J. Alexander/2014

Revisions: Moved from Medium Priority to Status Uncertain

*Descurainia incana* "var. *viscosa*"

Synonym: *Descurainia incisa* var. *incisa*

Family: Brassicaceae or Cruciferae

Comments: Sparse. This taxon, *D. incana* var. *viscosa*, was considered for the Medium list in 2014. Only 5 specimens at BRY have been collected. It was removed from the list based on the FNA treatment. Taxa in this complex did not match well with the taxa in A Utah Flora, however, this taxon was synonymized within *Descurainia incisa* ssp. *incisa* (the synonym *D. incana* var. *incisa* used in A Utah Flora has 37 specimens from Utah at BRY). It is recommended that this taxon not be treated as var. *viscosa* as in A Utah Flora. The information provided by Welsh also did not elaborate much on the habitat or distributional differences between this and the typical variety in Utah.

Scored By/Date: J. Alexander/2014

Revisions: Moved from Medium Priority to Status Uncertain

*Coryphantha missouriensis* "var. *marstonii*"

Synonym: Included in *Coryphantha vivipara*

Family: Cactaceae

Comments: Regional Endemic. The one specimen of this taxon, the neotype, has been identified as *C. vivipara* by Welsh (Utah, Garfield Co., Hell's Backbone, *E. Clover 1909*, 1937, holotype not preserved; Neotype: Kane Co., e. side of Buckskin Mts., 5200 ft., *L. & R. L. Benson 15205*, 8 Aug 1953, POM).

Scored By/Date: J. Alexander/2014

*Echinocactus polycephalus* var. *polycephalus*

Synonym:

Family: Cactaceae

Comments: Peripheral. Reported for Utah by Meyer in Washington County Flora thesis from UNLV, possibly based on a collection by Palmer from 1870 or 1877 somewhere between the Beaver Dam Mountains of Utah or Arizona southwest towards St. Thomas, Nevada.

Since this is based on a report and specific specimens have not been published or identified at previous meetings, Number of Individuals is rescored to "unknown" from "1." Meyer's report is likely an error based on a misinterpretation of the specimens cited for var. *xeranthemoides*. According to FNA, which is based on a comprehensive study by M. Chamberland, this taxon is not found in Utah. The nearest populations are in southern Clark County, Nevada and southern Mojave County, Arizona. This species is placed on the "Excluded" list until vouchers can be located that established this taxon as being present, currently or historically, in Utah.

Scored By/Date: J. Alexander/2014

*Echinocereus engelmannii* "var. *variegatus*"

Synonym: varieties no longer recognized in recent floras

Family: Cactaceae

Comments: Regional Endemic. Welsh et al. (2008) note just 6 collections in Utah. FNA questions the significance of the var. *variegatus* form and lumps most of **Benson's segregate varieties under *E. engelmannii*** as a full species. Rank perhaps should be changed to Status Uncertain, as *E. engelmannii* at the species level is secure in Utah.

Scored By/Date: Fertig/2010

Revisions: Moved from Medium Priority to Excluded

*Echinocereus mohavensis*

Synonym: *Echinocereus triglochidiatus* var. *mohavensis*

Family: Cactaceae

Comments: "Peripheral". Like other species restricted to Washington Co., Utah, this species probably has a downward trend and is threatened by habitat loss and over-collection. [Alexander 2009].

Species concept has changed with publication of treatment in Intermountain Flora in 2012; *mohavensis* is now recognized as more common and widespread in the Great Basin and western Utah. New key focuses on pubescence of the spines rather than their being wavy-curved. Species needs to be re-evaluated—probably of low conservation priority [Fertig 2016].

Scored By/Date: J. Alexander/2009, W. Fertig/2016

Revisions: Scientific name changed, moved from Watch list to Excluded

*Eremogone loisiae*

Synonym: *Arenaria fendleri* var. *loisiae*

Family: Caryophyllaceae

Comments: Regional Endemic. This name is a replacement name for all populations in northern Utah determined as *Arenaria kingii* var. *glabrescens* or *Arenaria kingii* ssp. *uintahensis*. A. Utah Flora 5th ed. continues

## UNPS Excluded List: Ranking Comments

to recognize most of the Utah material as var. *glabrescens* with a small, unstated, number as Welsh's new combination "var. *loisae*". This taxon was named after the FNA volume for Caryophyllaceae and it would be considered a synonym of *E. kingii* var. *glabrescens* in that treatment. It has been found in the Wasatch Range, Bear River Range, and Uinta Mountains. The number of populations of this taxon in Utah are widespread across these regions and the plant is common, according to the type revision publication. A full list of vouchers was published in Holmgren's paper and a list of counties needs to be extracted from that publication for this list. A Utah Flora reports this taxon for Box Elder, Cache, Davis, Juab, Rich, Salt Lake, Sanpete, Tooele, Utah, and Weber Counties.

Scored By/Date: J. Alexander/2014

Revisions: Moved from Need Data to Status Excluded

*Silene petersonii* var. *minor*

Family: Caryophyllaceae

Comments: Regional Endemic. Populations numerous, may reflect high rate of collection - very showy- threats from collectors, Claron & Flagstaff limestone endemic

Classified now as a regional endemic because specimens from the Spring Mountains in Clark County, Nevada of *S. clokeyi* are now considered this species in FNA (the type: Charleston Peak, among rocks at timberline, I. W. Clokey 7511, 23 Jul 1937). This taxon is now one of several with a primary distribution in Utah with small, satellite populations in the Spring Mountains. Varieties not recognized in FNA nor in A Utah Flora. Sensu Welsh: "specimens from Garfield Co. have been segregated as var. *minor*. [and] were said to differ in lower stature..., shorter petals..., and degree of lobing of the petal blade. The characteristics fail singly and in combination. There is a complete transition with the typical material. Although longer petals are present in plants from the Wasatch Plateau more consistently, the degree of lobing of petals varies on a single sheet of specimens collected at the same locality. Recognition of infraspecific taxa seems moot." Based on these treatments, var. *minor* and var. *petersonii* (which have both been on past lists in one form or another) are placed on the "Excluded" list.

Scored By/Date: Fertig/2009; J. Alexander/2014

*Eleocharis erythropoda*

Synonym: Included in *Eleocharis palustris* by some authors

Family: Cyperaceae

Comments: . Peripheral. This taxon was not reported for Utah in A Utah Flora, however it was in FNA. The single record of *Eleocharis ovata* cited for Utah by A Utah Flora is now determined as *Eleocharis erythropoda* at BRY according to SEINet (*Brotherson 2756*, 07 June 1978, along the west shore of Utah Lake just south of Pelican point). *Eleocharis erythropoda* appears to be common and widespread in Utah with 57 specimens

determined as this taxon at BRY in SEINet with specimens from Cache, Duchesne, Garfield, Grand, Sevier, Utah, Washington and Wayne Counties. Number of Populations and Number of individuals rescored as "0". Habitat Specificity rescored a "1" due to its status as a riparian species according to FNA ("Non-calcareous or calcareous fresh or brackish shores, marshes, meadows, fens, disturbed places"). Riparian habitat modification and disturbance from the grazing-related impacts of cattle may be a threat to this species, but it is scored as "unknown" due to uncertainty. Trends are scored as "unknown" since the impacts of these modifications on the populations of this species have not been investigated and this species has not been treated fully in A Utah Flora.

Scored By/Date: J. Alexander/2015

*Eleocharis ovata*

Family: Cyperaceae

Comments: . Peripheral. *Eleocharis ovata* was not reported for Utah in FNA and neither were the similar taxa, *E. obtusa* or *E. engelmannii*. The status of the determination of this voucher at BRY sensu A Utah Flora is in doubt. This voucher is now determined as *Eleocharis erythropoda* at BRY according to SEINet, a species reported for Utah in FNA. Another record of *E. ovata* in Kane County (*Fertig 22850*, 26 July 2006, Colorado Plateau: Coral Pink Sand Dunes, Sand Springs, BRY UTC) is likely incorrectly identified also. It is not known if it is *E. erythropoda* also. The record for this taxon has been transferred to *Eleocharis erythropoda*. These changes re-rank this taxon to the "Excluded" list.

Scored By/Date: J. Alexander/2015

*Muhlenbergia frondosa*

Family: Poaceae or Gramineae

Comments: Disjunct. A taxon not included in previous versions of the UNPS Rare Plant List, but its apparent rarity in Utah warrants further research. Although no specimens at BRY have been collected, it is reported for Utah County in Barkworth et al. 2007 (Manual of Grasses for North America). A specimen at UTC from Utah County is likely the basis for this record (*Harrison 11354*, 11 November 1948, B.Y.U. Botanical garden Provo, UTC). These plants were likely introduced into the garden as a weed from nursery stock. It should be considered an introduced waif. Another record in the manual for this taxon was from cranberry bogs in Oregon. It was speculated that this was an introduced weed in that locality also. A Utah Flora excludes this taxon from Utah and states that specimens determined as this taxon are most likely *M. mexicana*. This taxon is ranked on the "Excluded" list until specimens from native habitats can be confirmed to a species based on the FNA treatment.

Scored By/Date: J. Alexander/2014

## UNPS Excluded List: Ranking Comments

*Eriogonum corymbosum* var. *nilesii*Family: Polygonaceae

Comments: Local Endemic. Genetically, there are no true var. *nilesii* in Arizona or Utah according to the most recent results by Mark Ellis et al., data which is going to be used in listing recommendations coming out later this year by Sarah Kulpa at the Nevada USFWS Office. As a result of the Rare Plant Meeting in Salt Lake City in March 2014, this taxon has now been officially excluded from Utah, based on these results. Reports of var. *nilesii* being widespread in Washington and Kane Counties are misidentifications. Gary Reese (a consultant for the Lake Powell pipeline) really did spend an extensive and genuine effort in trying to determine if the plants in Kane County and the populations in Washington County he flew over were var. *nilesii*, instead of var. *glutinosum*. He collected vouchers of every population he found and sent them to Reveal for identification. Reveal stated to him he would not make any further IDs on vouchers until genetic data came back. He brought duplicates of those vouchers to BRY to consult Welsh's opinion and examine his specimens from that area. This led to the helicopter flight over Washington County to see how abundant it was. He really could not distinguish between these two varieties using Reveal's morphology and his conclusion was that everything was var. *nilesii*, which was a bit of an arbitrary leap-determination on his part. The genetic results show otherwise, however, there are still no specific morphological features identified that can distinguish all populations of these taxa apart. Since Reveal has passed away, this has been left to other taxonomists to determine.

Scored By/Date: J. Alexander/2014Revisions: Moved from Need Data to Excluded*Eriogonum mortonianum*Family: Polygonaceae

Comments: Local Endemic. Utah record based on 2 plants discovered in the foothills of the Vermilion Cliffs outside Kanab (and less than 5 miles from the type locality near Fredonia, AZ) by Fertig in 2009. Specimens sent to James Reveal were determined as *E. mortonianum*. Welsh later annotated a duplicate at BYU as *E. thompsoniae* var. *atwoodii*, another narrow endemic of the Fredonia area that is otherwise not known from Utah. Fertig and Glenn Rink revisited the Kanab site in the Fall of 2015 and relocated one surviving plant while conducting a Section 6 survey for the US Fish and Wildlife Service. This plant is more likely to be a hybrid between *E. thompsoniae* and *E. microthecum* or *E. corymbosum* than *E. mortonianum*, which differs in several consistent floral and leaf characteristics. *E. mortonianum* is probably not present in Utah.

Scored By/Date: W. Fertig/2016Revisions: Moved from Watch list to Excluded.*Persicaria pensylvanica*Synonym: *Polygonum pensylvanicum*Family: Polygonaceae

Comments: A taxon not included in previous versions of the UNPS Rare Plant list, but its apparent rarity in Utah warrants further research. Only 5 specimens at BRY have been collected. It has been found in Kane, Utah, and Wasington Counties in Utah. This taxon is widespread throughout the eastern U.S. and Canada. Sensu FNA, "*Persicaria pensylvanica* is a morphologically variable allotetraploid, with *P. lapathifolia* probably one of the parents", which is the reason it is often confused with *P. lapathifolium*. Habitat Specificity scored as "1" due to its status as a riparian species according to A Utah Flora ("Stream and pond margins and other wet sites") and FNA ("Moist, disturbed places, ditches, riverbanks, cultivated fields, shorelines of ponds and reservoirs"). Threats scored as a "1" due to increasing riparian habitat modification and disturbance from residential development, the grazing-related impacts of cattle, farming-related disturbance, and municipal water pumping. These are the primary reasons for the upgrade of the threats to this species to a "1". Trends are scored as "unknown" due to uncertainty of the magnitude of the impacts of disturbance on extant populations and the lack of population-level surveys. This taxon is ranked on the "Watch" list. [Alexander, Aug 2015]; Previous rankings above are not valid since this taxon may be introduced in our area. This taxon is re-ranked to the "Excluded" list until evidence of its native status in Utah is confirmed.

Scored By/Date: J. Alexander/2015*Potentilla breweri*Synonym: *Potentilla drummondii* var. *breweri*Family: Rosaceae

Comments: Peripheral. Only 1 specimen at BRY has been collected. It is known only from Juab and Piute County in Utah. This taxon can be found in similar habitats in Nevada and California. The voucher for the Tushar Range, Piute County is *Holmgren et al 10890*, 20 June 1985 (NY, UTC). The voucher for the Deep Creek Range was collected by Holmgren & Holmgren along divide between Toms Creek and Basin Creek drainages, Juab County (11184, NY). The names, *P. drummondii*, *P. breweri* and *P. drummondii* var. *breweri*, are misapplied to populations in Colorado, Utah, and Wyoming according to FNA. Reports from Utah are based on collections of *P. concinna* var. *proxima* or possible hybrids between *P. concinna* var. *proxima* and *P. ovina* var. *decurrens*. Based on the FNA treatment, *P. breweri* and *P. drummondii* are no longer considered to be in Utah and this taxon is placed on the "Excluded" list.

Scored By/Date: J. Alexander/2014

UNPS Excluded List: Ranking Comments

*Chamaesaracha coronopus*

Family: Solanaceae

Comments: Peripheral. Only 9 specimens at BRY have been collected. It has been found only in Kane, San Juan and Washington Counties in Utah. Primary range is in Arizona, New Mexico, Texas, and Mexico. Habitat Specificity scored as "0" since the habitat is variable and does not seem unusual according to A Utah Flora ("Creosote bush, blackbrush, Joshua tree, bursage ephedra, and rabbitbrush communities"). Threats may include grazing-related impacts from cattle, but it is scored as "0". Trends are scored as "unknown".

Scored By/Date: J. Alexander/2015; Fertig/2016

Revisions: Moved from Medium Priority to Excluded



**Utah Native  
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The Utah Native Plant Society was founded in 1978 with a mission to promote the conservation, appreciation, and stewardship of native plants in the wild and in home cultivation. Through its publications, annual member meeting/dinner, field trips, and chapter meetings, UNPS is active in connecting citizens of Utah and the west with the native flora that makes the Beehive State so special. UNPS also funds an annual scholarship and small grants program using proceeds from its on-line store and generous contributions from members.

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