



# Sego Lily

*Newsletter of the Utah Native Plant Society*

Fall 2019 Volume 42 Number 4



Utah Plantanthera .....	2	Five Needle Pines Conference	17
UNPS Annual Meeting .....	12	Moab's "Recycled Garden" .....	18
UNPS Rare Plant Ranking .....	12	Watch Out for White Bryony! .....	20
Native Plant gardens Hide .....	13	Ty's Garden .....	21
Man on a Mission .....	16	Big Tree .....	22

# Utah *Platanthera*

by Tony Frates

## Introduction:

As currently recognized, Utah has 24 species of native, terrestrial orchids in the Orchidaceae family. Orchid floral morphology is complex and consists of three sepals, three petals (the middle petal is a modified lip and does not look like the other two) with fused stamens forming in part a column (which consists of both male and female parts). The only spurred lip plants previously treated in Utah floras were all treated as falling into the genus *Habenaria*.

Species that previously fell in the genus *Habenaria* as treated in our floras (and in western North America generally) were moved to *Platanthera* for the *Flora of North America* (Sheviak, 2002) project (one of which was then moved to *Piperia* but which has since been moved back to *Platanthera* and another that was moved to *Coeloglossum* but is now treated as *Dactylorhiza*, also with spurred lips). Following that treatment, there are only four species of *Habenaria* that occur in North America and none in the western United States.

In preparing the *Flora of North America* (FNA) treatment, the authors decided to follow an earlier treatment by Luer (1975) who only treated *Habenaria* as mainly tropical plants that did not occur outside of the southeastern portion of the US. *Habenaria* as initially treated by Luer have free bifid petals and a deeply divided lip with stigmas that are fleshy near the opening of the spur, and have a mainly tropical and subtropical distribution. *Platanthera* (which means wide or broad anther) has entire petals (as in our species, or can be fringed to emarginate elsewhere) with lobed lips, less developed stigmas, and occurs mainly in temperate climates. Seed characteristics are also different.

Both *Habenaria* and *Platanthera* have exposed viscidia near an open hole or mouth of a spur (or orifice). Viscidia are sticky pads at the base of the anther sacs (*Platanthera* have a single anther which is split) containing masses of pollen grains (pollinia).

The spike-like *Platanthera* flowers typically have twisted pedicels (i.e. are resupinate) placing the lip (the modified petal) in the same position, usually at the bottom of the flower. Attached to the lip is a spur

containing nectar. Pollinators are attracted to the spur opening which is near the viscidia. Different spur lengths and the position of viscidia which are at the base of the anther sacs (placed strategically in different positions within the various species of *Platanthera*) are thought to attract a different mix of insects.

The two upper petals curve to form a loose or tight hood over the reproductive organs including the column. The inflorescence is racemose.

Treatment of *Habenaria* as *Platanthera* species that exist in Utah is not new. Our endemic *Habenaria zothecina* was moved to *Platanthera zothecina* as far back as 1990 (Kartesz and Gandhi), well-preceding the FNA treatment in 2002.

As part of the 2002 FNA treatment of *Platanthera*, the previously widely recognized *H. hyperborea*, thought to occur in numerous counties in the state, is now generally accepted as only occurring in Greenland and Iceland (as *Platanthera hyperborea*). Almost all of our species are diploids (two sets of chromosomes per cell). *P. hyperborea* is tetraploid (four sets per cell). Further, at least what occurs in Utah, there isn't just one species that these prior recognized plants can now in turn be simply transferred to, yet they should not any longer be treated as *P. hyperborea*.

And even worse for those of us primarily focusing on the native flora of Utah, in 2006 a new species with a type locality of Utah nonetheless was named, but has remained for the most part unrecognized as part of our flora and has instead been mixed in with probably at least three other taxa. So even if Utah botanists were to use the current FNA key for *Platanthera* to identify plants that occur in the state, a species that occurs here is missing.

Since the FNA treatment, floras surrounding us have migrated to the newer approach including California (Jepson, 2019), the Pacific Northwest (Hitchcock, 2018), and Colorado (Ackerfield, 2015). The more recently named species in 2006, *Platanthera tescamnis*, does occur along the California-Nevada border, hence its inclusion in the Jepson manual as well as eastward to Colorado and hence its inclusion in Colorado floras.

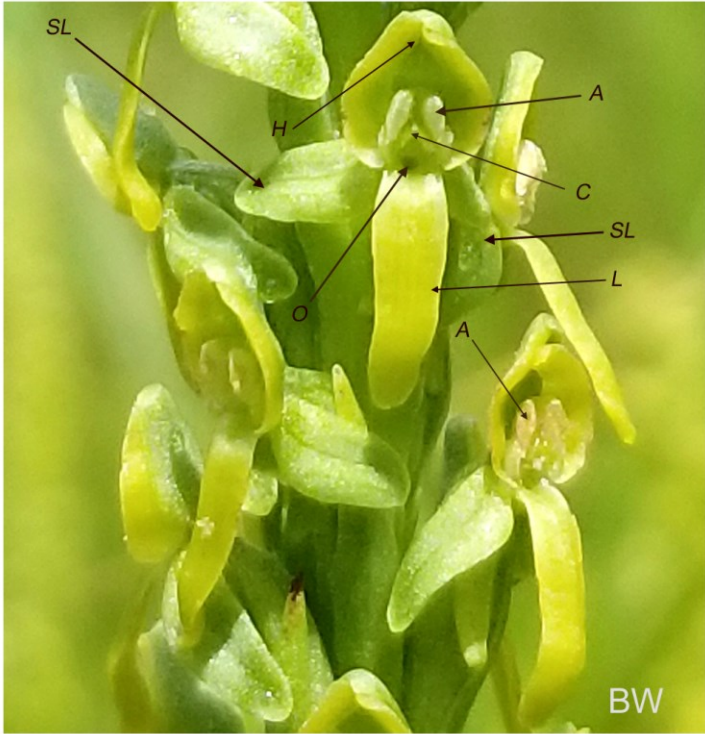
Utah floras have to date not yet been updated to embrace *Platanthera* and the general approach taken by FNA and prior as updated by more recent research and as treated now in other western floras, and this point there seems to be no reason not to do so.

Using the FNA treatment in part as a guide and

synthesizing treatments that now exist in some of the other floras for the western US as well as more recent publications and research, some nine species of *Platanthera* are currently known from Utah (with one species formerly treated in the genus having been

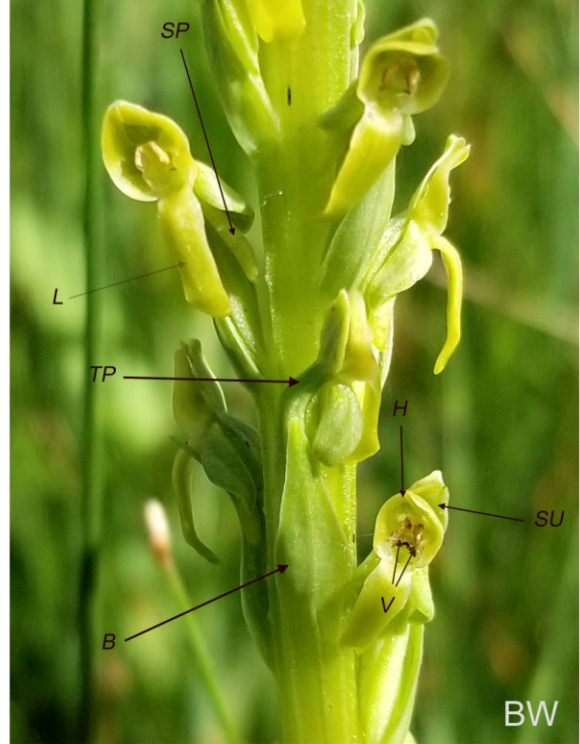
moved to a different genus as previously indicated). The purpose of this article is to bring to the attention of Utah field workers, and perhaps to some of our many herbaria, a newer treatment of the genus, standing on the shoulders of these other publications.

*Platanthera* floral morphology using *P. tescamnis* flowers to illustrate



Salt Lake County

- A - Anther sac (containing pollinia) - anther is split into 2 sacs
- B - Bract (not a part of the flower) attached to stem
- C - Connective tissue
- H - Hood (formed by the two upper petals)
- L - Lip (labellum), a highly modified petal
- O - Orifice leading to the nectary



Utah County

- SL - Sepal, lateral sepal (two per flower)
- SP - Spur (contains the nectary)
- SU - Sepal, upper (dorsal)
- TP - Twisted pedicel
- V - Viscidia (located at the base of the anther sacs just above and towards the back of the orifice)

### Some keys to the genus:

The keys included below represent a preliminary attempt to help identify plants in this genus that occur in Utah (no phylogenetic relationships should be inferred), followed by several tables with additional information.

- 1 Leaves mainly basal or restricted to the lower 1/2 to 1/3<sup>rd</sup> of the stem with few or no leafy bracts
- 2 Basal leaves only with green, greenish-white or yellowish green flowers, usually relatively short-statured plants (< 7dm or much less) usually lacking cauline leaves
- 3 3 Basal leaves 2-4(5), 5x long as wide, prostrate/drooping, and withering at the time of flowering, slender inflorescence with greenish well-spaced flowers, sepals 1-nerved . . .  
***P. unalascensis***

(note: treated as *Piperia unalascensis* in FNA but newer research suggests a realignment back to *Platanthera*)

- 3 ' Basal leaves 1 (2-3), 2x long as wide, semi-erect, not withered at the time of flowering,

stem stouter, plant shorter, loosely/few flowered with greenish-white flowers mainly at the terminal end of the stem, sepals 3+ nerved . . . ***P. obtusata***

2' Leaves clustered at base, with a few leafy bracts distally, tall/erect plants (typically > 7 dm (13dm)) with stout, erect stems, flowers greenish-yellow to yellow with tight hoods, spur about the same length as the lip, flowers subtended by upwardly curved leafy bracts. . . ***P. tescamnis***

1' Leaves scattered along the stem (reduced to bracts distally)

4 Lip with (2)-3 lobes and leafy bracts with green flowers, the petals and lip often suffused with red or brown . . . ***Dactylorhiza viridis*** (syn. *Platanthera viridis* and *Habenaria viridis* – included here because of its longstanding inclusion in our floras)

4' Plants with flowers having rounded lips not separated or lobed

5 Flowers pure-white (or sometimes cream), showy with narrow columns. . . ***P. dilatata***

(still with three varieties: *albiflora* (spur shorter than lip, clavate to capitate spur), *dilatata* (spur about the same length as lip, cylindric to slightly clavate spur), and *leucostachys* (spur greatly exceeding lip up to 1.5x, cylindric to filiform spur, lip 4-11x2-5 mm))

5' Flowers greenish, yellowish green, or whitish-green, not showy, columns narrow to broad

6 Spur scrotiform, lower leaves oblong-elliptic and much reduced above . . . ***P. stricta***

6' Spur linear to clavate, not scrotiform

7 Column broad, occupying ~ 2/3rds hood width, laterally compressed, greenish flowers, spur equal to or much longer than lip, often some linear leaves . . . ***P. sparsiflora***

7' Column narrow, occupying < ½ width of hood, flowers not laterally compressed, flowers yellowish-green or whitish-green, spurs shorter, equal to or longer than the lip, leaves not linear

8 Anther sacs forming an angle trailing downward into stigmas, greenish to yellow greenish flowers, vertically compressed (tight/flat hood), dark green sepals, spur shorter than lip, self-pollinating . . . ***P. aquilonis***

8' Anther sacs parallel and not trailing downward into stigmas, flowers whitish-green to yellowish-green, not vertically compressed, spurs about the same size as the lip or much longer, not self-pollinating . . .

9 Lip and flowers whitish-green, lip rounded-dilated and long, spur about the same length as the lip, leaves ascending, linear-lanceolate to oblanceolate, tall plants (to 10 dm or more) . . . ***P. huronensis***

9' Flowers greenish to yellow-green and not showy, tight hood, spur much longer than the lip, lower leaves wide-spreading, long, lax, often succulent, pale green, plants low-statured (< 2 - 4 (6) dm), distribution limited to the Colorado-Green river drainages . . . ***P. zothecina***

## Alternative key based primarily on comparison of spur to lip

(*Dactylorhiza viridis* has not been included in this alternative key)

- 1 Plants with spurs 3/4<sup>th</sup> or less the length of the lip
  - 2 Spur scrotiform (and clavate) and much smaller than the lip (1/3-2/3) with small greenish flowers not appearing to be closed, lip green to purplish . . . ***P. stricta***
  - 2' Spur not scrotiform roughly 3/4ths the length of the lip plants with greenish/yellowish flowers with flowers that appear somewhat closed, lip dull yellow . . . ***P. aquilonis***
- 1' Spur roughly the same length as the lip or much greater
  - 3 Spur roughly the same length or only somewhat longer or shorter
    - 4 Plants (typically tall up to 13 dm or more) with white flowers and ascending to recurved spreading leaves usually throughout the stem with moderate to pronounced basal lip dilation
    - 5 Spur about the same length as the lip (spur 4-12 mm, cylindric to clavate) . . . ***P. dilatata***  
**var. *dilatata***
      - 5' Spur less than the lip (spur 2-7 mm, clavate to capitate) . . . ***P. dilatata***  
**var. *albiflora***
    - 4' Flowers green, greenish-white or greenish-yellow
      - 6 Leaves 1-few, basal
        - 7 Leaves basal usually only 1 (rarely 2-3), flowers greenish-white to greenish-yellow (spur 3-10 mm) . . . ***P. obtusata***
        - 7' Prostrate basal leaves, very small mainly greenish flowers (spur 2-5.5 mm) . . . ***P. unalascensis***
      - 6' Leaves several, clustered at base or along stem with reduced distal leafy bracts, with leafy bracts subtending the inflorescence
        - 8 Leaves clustered at base, spur clavate . . . ***P. tescamnis***
        - 8' Leaves scattered along stem, spur cylindric to somewhat clavate
          - 9 Greenish-white flowers with narrow columns, rostellum lobes divergent and directing downward . . . ***P. huronensis***
          - 9' Greenish to greenish-yellow flowers with wide columns forward pointing rostellum lobes . . . ***P. sparsiflora***
  - 3' Plant with long spurs exceeding the lip by 1.5x or more (see ***P. tescamnis*** above however where the spur can be up to 1.4x )
    - 10 Plants with greenish to greenish yellowish and wide columns, spur up to 1.6x lip (in some plants may be +- equal to lip) . . . ***P. sparsiflora***
    - 10' Not as above
      - 11 White flowers, plants typically tall (to 13 dm or more) with ascending leaves (spur 8-20 mm, slenderly cylindric to filiform, lip dilation may be absent) . . . ***P. dilatata***  
**var. *leucostachys***
      - 11' Plants with greenish/yellowish green flowers growing in hanging garden communities, under 4 (6) dm tall, cylindric spur 1.5x-2x lip (spur 12-17 mm, lip 5-12 x 1-3mm)) small plants with pale green leaves with lower leaves that droop and that are wide-spreading . . . ***P. zothecina***

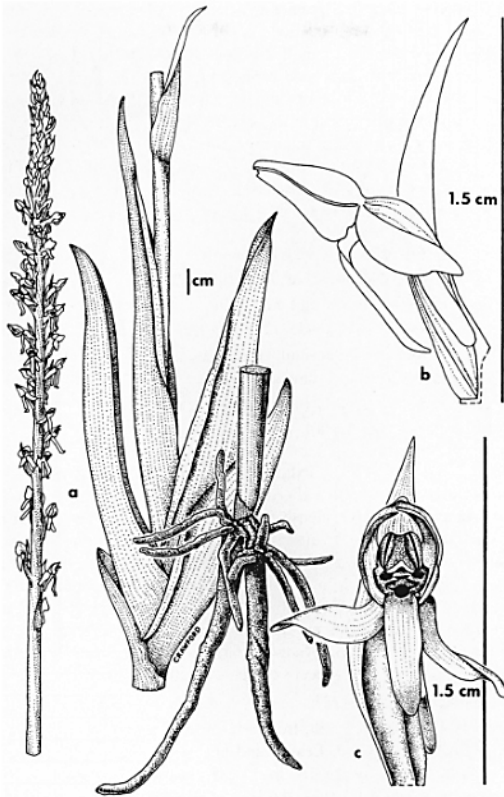
**Overall summary of changes compared to prior Utah taxonomic treatments**

Older name (alphabetical)	Newer name
Previously included within <i>Habenaria hyperborea</i> , now considered as misapplied to our plants	<i>Platanthera aquilonis</i>
<i>Habenaria dilatata</i>	<i>Platanthera dilatata</i> (with varieties treated the same way as in the past)
<i>Habenaria hyperborea</i>	No longer applies to plants in our flora – plant ID's will likely belong to <i>P. aquilonis</i> , <i>P. huronensis</i> , <i>P. tescamnis</i> or <i>P. sparsiflora</i>
<i>Habenaria hyperborea</i> var. <i>gracilis</i>	Hybrids of <i>P. stricta</i> and <i>P. dilatata</i>
<i>Habenaria hyperborea</i> var. <i>huronensis</i>	<i>Platanthera huronensis</i>
<i>Habenaria obtusata</i>	<i>Platanthera obtusata</i>
<i>Habenaria saccata</i> ( <i>Habenaria hyperborea</i> var. <i>viridiflora</i> )	<i>Platanthera stricta</i>
N/A Plants previously identified as <i>H. sparsiflora</i> var. <i>laxiflora</i> ( <i>Limnorchis ensifolia</i> ) and as var. <i>ensifolia</i> ( <i>L. laxiflora</i> ) may actually be this entity but are technically synonyms of <i>P. sparsiflora</i> .	<i>Platanthera tescamnis</i>
<i>Habenaria sparsiflora</i> (vars. <i>laxiflora</i> and <i>sparsiflora</i> )	<i>Platanthera sparsiflora</i> (varieties not recognized)
<i>Habenaria viridis</i>	<i>Dactylorhiza viridis</i> (treated as <i>Coeloglossum viride</i> in FNA)
<i>Habenaria unalascensis</i>	<i>Platanthera unalascensis</i> (treated under <i>Piperia</i> in FNA but newer research brings it back here)
<i>Habenaria zothecina</i>	<i>Platanthera zothecina</i>

**Distribution and elevation range of Utah *Platanthera***

Name (alphabetical)	Distribution in Utah	Elevation (Utah)	Comments ( <i>Platanthera</i> 2n=42)
<i>Dactylorhiza viridis</i>	Daggett, Duchesne, Summit	2300-2900 m	While mostly uncommon in Utah, said to have the widest global distribution of any orchid
<i>Platanthera aquilonis</i>	Preliminary list: See distribution Box Elder, Cache, Daggett, Duchesne, Garfield, Morgan, Salt Lake, Summit, Uintah, Weber	Unknown Likely range: 1725-3050 m	Diploid, often self-pollinating; large range over much of US and Canada

<i>Platanthera dilatata</i>	To be expected at high elevation in mountain ranges throughout the state stretching from the Pine Valley mountains in Washington County to the Tushar mountains, in the Wasatch range including up to the UT-ID border, in the Raft River Mtns in Box Elder, and throughout the Uinta Mountains; lesser known from southeastern Utah with few reports	(1560) 2500-3500m  Mostly at higher elevations	Diploid, hybridizes with <i>P. huronensis</i>  Mainly occurs in the western US and Canada Var. <i>dilatata</i> has a larger range that also includes the north-eastern US and central-eastern Canada
<i>Platanthera huronensis</i>	Likely similar to <i>P. dilatata</i>  See distribution discussion	Unknown, probably similar to <i>P. dilatata</i>	Tetraploid (like Greenland's <i>P. hyperborea</i> ). Can hybridize with <i>P. dilatata</i> ; occurs in western US and northeastern US and Canada (its range is very similar to <i>P. dilatata</i> var. <i>dilatata</i> )
<i>Platanthera obtusata</i>	Duchesne, San Juan, Summit	2600-3050m	Diploid to triploid; mainly in Canada and Alaska extending into the interior of the western US; related but genetically different compared to Eurasian plants but taxonomy is not settled
<i>Platanthera sparsiflora</i>	See distribution discussion - has been intermixed with other species but probably scattered at mainly higher elevation in scattered locations throughout the state	(1560) 2000-3050m	Diploid, variable in both vegetative and size flowers; western/southwestern US extending to Mexico (Baja California)
<i>Platanthera stricta</i>	Duchesne, Cache, Juab, Millard, Salt Lake, Summit, Wasatch	1650-3250m	Diploid; western US and Canada. Can hybridize with <i>P. dilatata</i>
<i>Platanthera tescamnis</i>	Preliminary list:  Beaver, Daggett, Emery, Garfield, Grand, Salt Lake, San Juan, Utah, Wasatch, Washington, Wayne  See distribution discussion	1370-2400 (3200)m	Diploid; extends into California, Nevada, Arizona, Colorado; vegetatively consistent with variable floral characteristics
<i>Platanthera unalascensis</i>	Cache, Carbon, Daggett, Davis, Duchesne, Juab, Millard, Rich, Salt Lake, Sanpete, Summit, Tooele, Uintah, Utah, Wasatch, Weber	1650-3050m	Diploid; mainly central-western US and Canada, also Michigan to Newfoundland
<i>Platanthera zothecina</i>	Emery, Garfield, Grand, San Juan, Uintah along Green/Colorado river drainages	1200-1900 m	Presumably diploid; has forward directing rostellum lobes like <i>P. sparsiflora</i> ; primary distribution is in Utah but peripherally in Colorado and Arizona



Drawings of *Platanthera tescamnis* by Carolyn Crawford as they appeared in Sheviak (2006).

**About *Platanthera tescamnis*:**

The type locality for this species was northeast of Bicknell, Utah in Wayne Co. at an elevation at about 7400 ft. (2260m) growing in a moist seep near the edge of a stream in a sandstone canyon. Its overall distribution was described as occurring "across the Great Basin and Colorado Plateau" in less dry soil and microhabitats compared to *P. sparsiflora* which grows in wetter soil/places (the two species can be found growing near one another). It was therefore given the specific epithet *tescamnis* to refer to its ecological tendencies, *tesca* meaning desert and *amnis* meaning swift-flowing river alluding to its typical habitat (Sheviak, 2006).

While it can grow at lower elevations and in drier habitats, it can also grow at high elevations as well. Its authors indicated its more expected elevation range as 1825–2950m. Recently identified occurrences in Salt Lake and Utah Cos. place it as low in Utah in the 1370-1550m range. At its higher elevations at which *P. sparsiflora* might also be found, the plant is known to seek out even drier places which the authors describe as providing "an ecological and spatial isolation from the very wet-growing *P. sparsiflora*."

The common name Great Basin Bog Orchid has started to be used for this species no doubt because of the first portion of its original distribution



Two plants of *Platanthera tescamnis* in flower and a suspected plant of the species, fruiting and showing the clustered leaves at the base of the stem.

description. Another name that has started to be used by some is Intermountain Bog (or Rein) Orchid. These are misnomers that add to the confusion around this species which is in no way limited to the Intermountain West nor to the Great Basin, as it is found in much of western Colorado (for example). Yellow Rein Orchid is another name that has been used. A name suggested here is Western Mesic Bog Orchid.

Fairly technical distinctions led the authors to circumscribe this plant as something new which includes a small column (smaller than *P. sparsiflora*), a dull greenish-yellow reflexed lip longer than the dorsal sepal, and a clavate to less often cylindrical spur that is roughly the same or exceeding the length of its oblong lip which has parallel sides and a blunt apex. The flower has a short connective (compared to the wide connective of *P. sparsiflora*) and short rostellum lobes that place the viscidia just above the orifice. The lobes are slightly angled back and inward toward each other. In *P. sparsiflora* they are instead angled forward. The column is flat or conduplicate (folded together lengthwise) whereas columns of *P. sparsiflora* are deeply arcuate-concave (Sheviak, 2006).

**Distribution of *P. aquilonis*, *P. huronensis*, *P. sparsiflora* and *P. tescamnis* in Utah:**

There over 130 specimen records of either *Habenaria* or *Platanthera hyperborea* with a Utah locality that are



*Platanthera aquilonis* flowers and leaves.





*Platanthera huronensis* flowers and leaves.

currently on-line (Consortium, 2019) and no doubt with more to come, and in counties scattered throughout the state over a very large elevational range, as low as 1300 m but tending to range in the (1500) 2500 to 3500m range. These specimens appear to be a mix of at least three or four different species.

**Taxonomy notes re: Utah plants previously labeled as *P. hyperborea*:**

As previously indicated, the name *P. hyperborea*, formerly *Habenaria hyperborea*, as now treated has been misapplied to plants in occurring Utah (and North America), but it is

*P. huronensis* the only two possibilities for these specimens. *P. hyperborea* has to some extent been a dumping ground for greenish-flowered "*Habenaria*" specimens that did not fit anywhere else. A given plant with a Utah locality labeled as such could easily instead be *P. huronensis*, *P. sparsiflora*,

*P. aquilonis* or *P. tescamnis*. Further because sometimes *P. huronensis* can sometimes have flowers appearing more or less all white or close to it, it has at times been confused with *P. dilatata* and since the two are known to hybridize and since their overall ranges overlap to a high degree,

the chance of some specimens having been misdiagnosed as *P. dilatata* is high. Each Utah specimen will have to be reviewed on its merits and analyzed using multiple keys including the FNA key (recognizing that it is missing *P. tescamnis*) and referencing other cited resources (including Sears, 2008 and of course the various Sheviak publications). In many cases, a determination may have to be made based on an informed guess when floral morphology cannot be easily seen and/or some features simply are not present.

The spur length in both *P. sparsiflora* and *P. tescamnis* is variable and either can exceed or be less than the lip length. Sometimes *P. huronensis* and *P. sparsiflora* may have leaves



*Platanthera sparsiflora*



Hanging garden community habitat of *Platanthera zothecina* (Alcove Bog Orchid), a relatively rare species restricted to the Colorado-Green River drainage systems and primarily found in Utah. Photo by Sarah Topp.



*Platanthera zothecina* flowers and leaves.

not in a strict sense a synonym for anything that occurs here. Varietal names also cannot be relied on as being related to specific taxa either. So, contrary to what is apparently the case in Colorado (Ackerfield, 2015), not all *P. hyperborea* here should by any means be assumed to be *P. aquilonis*, nor should any/all *P. sparsiflora* be referred to as *P. tescamnis*. We have both of those species in Utah; perhaps Utah is on the eastern end of *P. sparsiflora*'s range as presently understood. Nor are *P. aquilonis* and

that can appear to be more restricted to the base of the plant, like *P. tescamnis*, rather than scattered along the stem. So comparison of various plants that might be found in a population in the field needs to ideally be made to determine where they might fall and also because these same species co-occur, at least when making identifications in the field. Anther sac and viscidia positions as well as lip shapes are sometimes viewed as reliable characters that need to be considered when possible, but once again in a pressed specimen may be exceptionally difficult to



*Platanthera dilatata*. Closeup of flowers and a group of three, full plants. Despite the somewhat varying spur lengths, the several spurs that are quite significantly longer than the lip would indicate that this is var. *leucostachys*.

determine even if present.

*P. tescamnis* seems to be associated sometimes with another orchid species, *Epipactis gigantea*. At least two Salt Lake County locations with that association are known plus one in the Henry Mountains in southern Utah (noted by the authors of the species in its original publication). *Epipactis* leaves in general can often strongly resemble the broader leaves of some of the taller *Platanthera* species.

**Photographing *Platanthera* species:**

While the emphasis when taking pictures of plants (and not just *Platanthera*) is almost always on the flowers, at least one shot of the entire plant including inflorescence should be taken (applies to any plant species).

Pictures of *Platanthera* flowers for identification purposes should include exposures aimed directly at the open face of the flower, at the same level as the flower and as close as possible so that it includes all of the floral detail (including the upper petal, lateral sepals, lip and as much of the spur as possible. The spur may be hidden and also if it is exceptionally long, zoom out or take a step back and take another shot that includes the spur; you may in fact need to take a side view picture of the same flower to be able to see

the spur since it is attached to the lip and tends to hide under the flower. Getting a picture of the center of the flower aimed directly at the column however is the most important. Several more photos should be taken of nearby plants for comparison assuming they look about the same as the plant being photographed.

And please don't forget the leaves. A picture of the stem that shows all of the leaves on the stem up including the portion of the stem up to where the inflorescence starts is very important. And, again, take pictures of some neighboring plants showing where their leaves are positioned as well because there can be a high degree of variability in many of these species.

**Conclusion:**

Refinements to the keys and other information presented herein without question will need to be made as more information becomes available and as more plants are identified in those species that have been previously largely off the radar in Utah. Other consistent characteristics may be observed that will lead to easier identification. A key based on the fruits of these plants could ultimately be possible, at least in part.



*Platanthera unalascensis*: red arrow points to the withered basal leaves at the time this species starts to flower.

Whether we can precisely identify them or not, orchid species are fascinatingly complex and still hold many secrets. They are also generally of high conservation concern. Some of the orchid species in this genus may not be as prone to collection as others in the family but nonetheless should be left undisturbed in their habitats. Most species in this genus are found in wet habitats that are becoming increasingly scarce and have been subjected to human-caused impacts relating to loss of habitat despite their generally wide elevational range. They will not in most cases survive being transplanted. Areas where these plants are found are further typically indicative of places that should be protected and will include an array of other plants, many increasingly uncommon, existing in fragile ecosystems. Ongoing attempts to better understand our flora leads to increased awareness and appreciation of the amazing naturally occurring lifeforms that are still left for us to study and enjoy, and that other life is dependent upon, and for which we are custodians.

#### Acknowledgements and credits:

*Platanthera* plant identification assistance and valuable insight was provided by John G. ("arethusa" on iNaturalist ).

Dr. Walter Fertig, western North America botanical guru, made important suggestions and corrections along with general guidance and encouragement which is gratefully acknowledged.

Illustrations of *P. tescamnis* by Carolyn Crawford used with permission (thanks to Bill Jennings and Carolyn Crawford).

Photo credits, all photos taken in Utah:

BW=Blake Wellard

JC=John Crossley, <https://www.americansouthwest.net>

TF=Tony Frates

ST=Sarah Topp

WG=William Gray

#### References:

Ackerfield J. 2015. Flora of Colorado. Fort Worth, Texas: Botanical Research Institute of Texas Press. 818 pp.

Arnow L, Albee B, Wyckoff A. 1980. Flora of the Central Wasatch Front, Utah: a manual of the ferns, fern allies, conifers, and flowering plants growing without cultivation in Salt Lake and Davis counties. Salt Lake City, Utah: University of Utah. 663 pp.

Consortium of Intermountain Herbaria. 2019. [accessed Sept-Oct 2019]. <http://www.intermountainbiota.org/portal/index.php>

Cronquist A, Holmgren AH, Holmgren NH, Reveal JL, Holmgren PK. 1977. Intermountain flora: Vascular plants of the Intermountain West, U.S.A. Vol. 6, The Monocotyledons. New York, New York: Columbia University Press, published for The New York Botanical Garden. 584 pp.

Goodrich S, Huber A. 2014. Uinta flora. Ogden, Utah: USDA Forest Service-Intermountain Region. 314 pp.

Hitchcock CL, Cronquist A. 2018. Flora of the Pacific Northwest: an illustrated manual, second edition. Edited by DE Giblin, BS Legler, PF Zika, and RG Olmstead. Seattle, WA: University of Washington Press. 882 pp.

Jepson Flora Project (eds.) 2019, Jepson eFlora, <http://ucjeps.berkeley.edu/eflora/>, accessed on September 21, 2019.

Luer, C.A. 1975. Native Orchids of the United States and Canada, vol. 2. Bronx, New York: The New York Botanical Garden. 361 pp.

Kartesz, J.T. and K.N. Gandhi. 1990. Nomenclatural notes for The North American Flora III. Phytologia 69(3):129-137.

Sears CJ. 2008. Morphological discrimination of *Platanthera aquilonis*, *P. huronensis*, and *P. dilatata* (Orchidaceae) Herbarium Specimens. *Rhodora* 110(944): 389-405. <https://doi.org/10.3119/07-24.1>

Sheviak CJ, Bracht M. 1998. New chromosome number determinations in *Platanthera*. *Native North American Orchid Journal* vol. 4 (pg. 168-172)

Sheviak CJ. 1999. The identities of *Platanthera hyperborea* and *P. huronensis*, with the description of a new species from North America, *Lindleyana*, 1999, vol. 14 (pg. 193-203)

Sheviak CJ. 2002. *Platanthera* Richard, In: Flora of North America Editorial Committee, eds. *Flora of North America North of Mexico* 26. Oxford: Oxford University Press, pp. 551-571.

Sheviak CJ, Jennings WF. 2006. A new *Platanthera* (Orchidaceae) from the Intermountain west. *Rhodora* 108 (933): 19-31. <https://www.jstor.org/stable/23314142>

Utah Native Plant Society. 2003-2019. Utah rare plant guide. [Internet]. Frates AJ, editor/coordinator. Salt Lake City, UT: Utah Native Plant Society. <https://www.utahrareplants.org>

## Utah Native Plant Society Annual Meeting & New World Potluck

Saturday, November 23rd 1-4:00 pm

Red Butte Garden Visitor Center Classroom

New World Potluck dinner, bring a dish to share featuring something from the fall harvest, Salt Lake Chapter will provide the turkey, plates and silverware. Business meeting with election of board of directors for 2020. Speaker TBA.



## UNPS Rare Plant Ranking Meeting

Saturday, November 23 10:30 am - 12:30 pm

Red Butte Garden Visitor Center Classroom

Prior to the annual meeting, a Utah rare plant ranking meeting organized by the UNPS rare plant committee will be held in the same room from 10:30am-12:30pm. Anyone who is interested is invited to attend. If there is a specific taxon that you would like us to address (although any species can be brought up for discussion at the meeting), please let us know in advance to ensure that sufficient time is allotted to discuss it. The 2016-2019 Utah Rare Plant Master List can be found at:

[https://www.utahrareplants.org/rpg\\_species.html](https://www.utahrareplants.org/rpg_species.html).

For additional questions or to provide feedback even if you can't attend the meeting, e-mail Robert Fitts at [fitts\\_r\\_d@yahoo.com](mailto:fitts_r_d@yahoo.com) or contact us at [unps@unps.org](mailto:unps@unps.org).

# Native Plant Gardens Hide In Plain Sight

by Norman Anderson

Scattered throughout Utah are landscapes that inspire and landscapes that encourage naps, hillsides that invite exploration and mounds that monotonously blend with surrounding hills and nearly disappear. Such is the case with “Jerry’s Point,” an arid, poorly delineated, mancos shale covered hill, part of the rolling landscape on the perimeter of Price, Utah. It squats inconspicuously behind a largely abandoned industrial building, near a few Chinese elms that somehow took root and is adjacent to an out of place, parked, Chevy C-10 pickup truck. A mostly forlorn, hard to look at spot with few visitors, little traffic, little wildlife, an eyesore on the way to an abandoned coal mine. This mostly unvisited place is easy to get to and, after arrival, most botanical visitors would say “do you think this is it?” despite GPS validation. There is nothing compelling to even glance at this mound of homogeneity or even a good reason to get out of the vehicle that transported your curiosity there. It is just an exceedingly large lump of dirt along a quiet road, a place beyond bland, a place where locals could more conveniently dump their yard debris than at the not too far distant, county dump.

Suspending disbelief at the lack of botanical invitation you see rising from the parking area, you open the car door and walk towards this hill of uninviting oblivion, a hill that tried to get you to drive on by but failed.

All of this happened in Price late last May, on a day of few options and perfect weather. Late spring, moisture had been bountiful for months and with welcome warmth from the sun, low lying, hidden blooms were abundant and in full color.

The primary reason for finding this poorly described spot was to observe and document the continued presence of *Penstemon marcusii*, a previously described but exceedingly rare endemic penstemon found only on the mancos shale soils that are abundant in the area, on the northeast side of Price.

Two minutes of exploring and 15 yards later, healthy specimens of *P. marcusii* were abundant as soon as the makeshift, old industrial, somewhat barren area at the bottom of the hill was crossed.

Finding *P. marcusii* occurred so quickly with so little effort that it felt like it should have taken longer, that there should have been some delay of gratification. “Rarity in the wild should be harder, anybody could do this,” you mumble quietly. In this profound anticlimax



Jerry's Point outside Price, Utah



*Penstemon marcusii* growing on mancos shale derived soil.



*Thelesperma subnudum* and *Yucca harrimaniae*.



*Eriogonum bicolor*, *Astragalus musiniensis*, and *Cymopterus purpureus*.

of botanical sleuthing, your eyes look at the hill rising before you, maybe something else to explore since you just got there and the discovery phase, the main purpose of the outing is over. Since you are there, you might as well see what other hidden treasures are available.

Higher up the hillside are several subtle patches of color and, since you have time, you begin to climb. First upward and then sideward on a slope with moderate tilt. Pinpoints of yellow, white, cream, magenta, pink, red and orange color beckon and then guide our direction and movement. Steady movement quickly increases and is matched with surprise...an untouched garden of considerable biodiversity.

Satisfied, you get back into your vehicle, drive a few miles to nearby Deadman's Canyon, and just before the

coal mine gate, on a side hill, four feet from the road, nearly at eye level, as a bonus, a relatively rare white penstemon, *Penstemon carnosus*, almost hidden by other spring blooms, invites your inspection.

[White flowered *Penstemon carnosus* flower color is normally a pink-lavender to blue-violet but albino forms occasionally can occur in a number of penstemon species.]

An unexpected, satisfying day incubated within many surprises, a day developed by earlier spring showers that bathed the hills, a subtle beauty of spring blooms that thrive as well as they hide. There is undoubtedly magic in the exposed layer of mancos shale that you have tramped on, the soil that brings diversity of color, form and species. This place that is mostly there because



*Eriogonum ovalifolium* with pink flowers, *Sclerocactus parviflorus* and *Cryptantha flava*.

it is ignored, it's subtlety has allowed biodiversity to continue, a place so dull that it is almost as if it has been fenced off from all and has thrived.

You review your day of unexpected good fortune and the hours of beauty and wonder given to you on Jerry's Point, the knob of nothingness, the undisturbed and unnoticed mancos shale outside a city with no freeway to bring curious people...mostly.

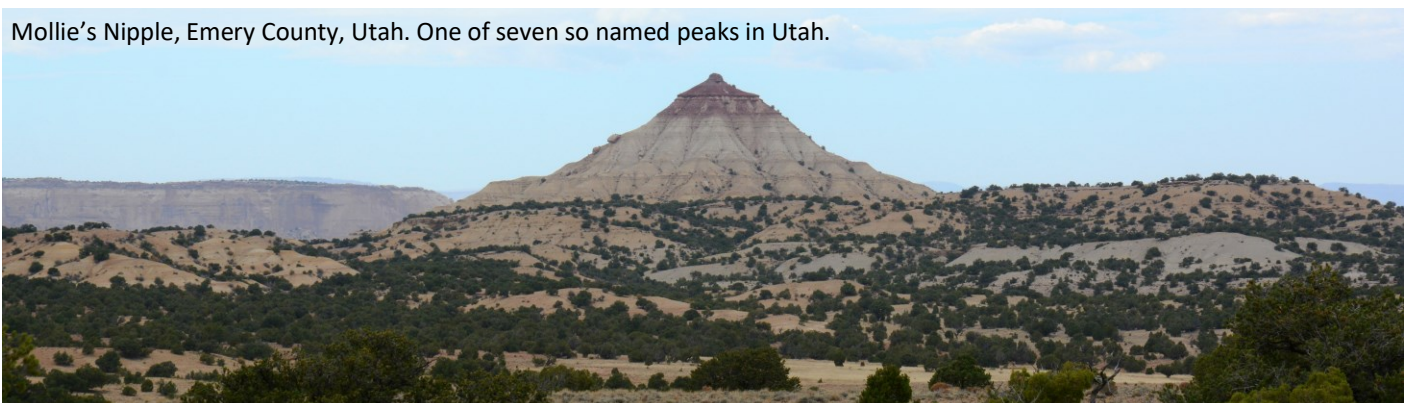
*Thank you to Andrey Zharkikh and Tony Frates for help identifying some of the plants in these photos.*

*Also see Ty Harrison's article "A Tale of Four Rare Utah Penstemons" (<https://www.unps.org/segolily/Sego2016AprJun.pdf>) where he discussed *Penstemon marcussi* on the hill at "Jerry's Point."*



*Eriogonum ovalifolium* with white flowers and *Erigeron pulcherrimus* in background, the ever-peculiar *Astragalus asclepiadoides*, and a white-flowered form of *Penstemon carnosus*.

Mollie's Nipple, Emery County, Utah. One of seven so named peaks in Utah.



# Man on a Mission

by Cathy King

David Wallace does not like weeds. You would expect that attitude in a chairman of the UNPS Invasive Species Committee. As an avid hiker, however, Dave especially detests trail weeds, those invasive plants that people and their animals spread along hiking trails. Burdock

For several years Dave had been manually controlling trail weeds along Logan Canyon's iconic Crimson Trail through the US Forest Service's "Adopt-A-Trail" program. Burdock and houndstongue are biennial plants, producing a leafy rosette the first year and bolting in the second year. By focusing on the first-year rosettes, Dave has greatly reduced those weeds along this trail while controlling the only known occurrence of myrtle spurge in Logan Ranger District. Along with others, he also did some manual weeding on the nearby



Dave in burdock-treating mode, with backpack sprayer and mattock (left) and "Before" treatment (right).

and houndstongue, invaders from Europe and Asia, are especially annoying because their seeds hook onto clothing, fur and hair (it's easy to see how the Swiss inventor of Velcro was inspired by the burdock burs that stuck to his dog's fur, <https://www.velcro.com/about-us/our-brand/>).

River Trail, but the problem has been overwhelming. Additionally, severely infested campgrounds there allow weeds to spread back onto the trails, further hindering any control effort.

Things turned around in summer 2019, when Patricia Winn, North Zone Botanist for the Forest Service got



"During" treatment, fruiting plants hacked out, old burs removed and rosettes chemically treated (left).

"After" treatment, most of the burdock rosettes have died (right).



involved. After hearing his concerns, Trish made arrangements to help Dave expand his weed-fighting efforts. This included a formal Volunteer Service Agreement, a description of duties, a Job Hazard Analysis, herbicide information, forms to record herbicide use, lists of weeds to control and lists of rare plants to avoid. Trish even provided 2,4-D herbicide, a selective and low hazard weed killer that is effective on burdock. After a day working with Trish and the Forest Service's weed crew, Dave was given the go-ahead to work on his own.

With a backpack sprayer and a mattock, his favorite manual weeding tool, Dave spent many days this summer fighting weeds on Forest Service lands in Logan Canyon. At first, weeds were treated with herbicide, but by mid-summer the burdock had matured enough to require manual control. He grubbed out flowering burdock plants using a mattock, clipped and bagged inflorescences if the fruits had already started to develop, and treated the remaining plants with herbicide. The Forest Service weed crew also spent a few greatly appreciated days helping out.

Now at summer's end, Dave is waiting for next year to

see the results and to resume his efforts, since it will take several years before the seeds in the soil are depleted and native vegetation returns. He hopes to expand his efforts to other infested areas in Logan Canyon, and as more areas come under control perhaps others will also be inspired to take action. He also hopes that successful weed control will allow him to take more "time off" for other summer activities!

Dave's totals for 2019 (not including the Crimson Trail):

- 156 hours, manually weeding and applying herbicides
- 30 acres, two campgrounds and 6 miles of trail
- 180 gallons of herbicide mix

Dave is impressed with the dispersal ability of these trail weeds. He says it's hard to get close enough to manually weed mature plants without getting burs on your clothing, in your hair or on your shoelaces. If you plan to go after these weeds, he recommends wearing a heavy canvas shirt and pants, a hat, and gaiters to protect your shoelaces. Do not wear any fleece or knit clothing!

---

## International Conference on the Research and Management of High Elevation Five Needle Pines

by Cathie Jean

The Whitebark Pine Ecosystem Foundation (WPEF) announces an upcoming international conference on the Research and Management of High Elevation Five Needle Pines in Western North America to be held on September 15-17, 2020 in Missoula MT.

Forest managers, researchers, advocates and the public are invited to attend this important event! Visit the conference website at [www.highfivepines.org](http://www.highfivepines.org) for details on presenting your paper or poster, becoming a sponsor, volunteering, or attending. Registration and presentation submissions will begin in February 2020.

Why an international conference? Many high-elevation, five-needle pine forests are rapidly declining throughout North America. In particular, the six species the conference will focus on are of great ecological and symbolic importance to both the U.S. and Canada.

- Whitebark pine (*Pinus albicaulis* Engelm.)
- Limber pine (*P. flexilis* James)
- Southwestern white pine (*P. strobiformis* Engelm.)
- Great Basin bristlecone pine (*P. longaeva* D.K. Bailey)
- Rocky Mountain bristlecone pine (*P. aristata* Engelm.)

With this conference the WPEF intends to: (1) bring together scientists, managers, and concerned citizens to exchange information on the ecology, threats, and management of these important pines; (2) learn about the threats and current status of pine populations; (3) describe efforts to mitigate threats through restoration techniques and action plans; and, (4) build a foundation for the synthesis of research efforts and management approaches.



# MOAB'S "RECYCLED GARDEN"

by Sarah Topp



The idea for Moab's "Recycled Garden" came about this spring as a result of someone having driven off the road and through the fence above the Moab Recycling Center. A new fence was installed to replace the old one and fill dirt bulldozed back into place below. Following concerns that the newly bulldozed soil would soon sport a field of Russian thistle and summer cypress, Sara Melnicoff (Moab Solutions), Evan Tyrell (Director, Solid Waste District) and I decided to plant in some native species.

Infrastructure for a new housing development was underway in Spanish Valley, just south of Moab, and I'd noticed lots of Indian ricegrass plants along the right-of-way where water and sewer lines would go in. I was interested in salvaging some of these for my own yard, and thought many of them could also be transplanted to the Recycling Center.



After obtaining permission from the construction contractor, I got the UNPS Canyonlands Chapter involved and plants were dug, planted across the slope and watered, as we kept our fingers crossed they would green up. Chapter members helped out, Moab Solutions contributed native grass and forb seed, our UNPS chapter contributed three shrubs purchased from Wildland Scapes (local plant nursery) who also contributed seedlings of several native grass and forb species. Additionally, we constructed and planted a permaculture-type rock drainage-way to slow runoff from the paved road above.

Eventually we felt a sign was needed to describe what was going on for folks dropping off their recyclables. Local artist, Katrina Lund, was contracted to design the logo and hand paint the sign. Bruce Condie had some re-purposed 4x4's, osb, and plywood, and he agreed to construct and set the sign. Moab Solutions and the Solid Waste District shared expenses for the artistry and construction. Much appreciation to Diane Ackerman for her help and motivational support on the garden project.

October 26<sup>th</sup>, the sign was erected, more mulch was spread with the help of volunteer UNPS members (pictured), more native seeds planted, and we now anticipate next spring's bloom. This is a work-in-progress, and we're all excited to see how it will look a few years down the road.

The species list we have so far in the Recycled Garden includes:

**PLANTED:** Indian ricegrass, alkali saccaton, galleta, woolly amsonia, basin daisy, Hopi blanketflower, Rocky Mountain beeplant, small-leaved globemallow, snakeweed, greenstem paperflower, Apache plume, fernbush, skunkbush, sand sage.

**VOLUNTEERS:** four-wing saltbush, common sunflower, yarrow, blue grama, sand dropseed, pale evening-primrose, narrowleaf umbrellawort, Rocky Mountain beeplant.



# The Cactus Plot: Murder in the High Desert

A book by Vicky Ramakka

Review by Cathy King

There is something appealing about reading a story that revolves around a subject you know intimately, be it a location, person, or say, plants. Vicky Ramakka's first venture into writing fiction weaves both plants and location into a murder mystery.

In the style of Tony Hillerman and now his daughter Anne, or even Sue Grafton who wrote the Kinsey Milhone alphabet murder mysteries, Vicky Ramakka has given us the chance to get in on the ground floor of what could become a series of mysteries set in New Mexico and the Four Corners area. Millie Whitehall, new Bureau of Land Management botanist assigned the duty of surveying threatened and endangered plants, is the unwitting botanical detective and heroine.

With a fresh graduate degree in botany from Rutgers University, Millie is as green about the West as one might expect for someone living in an urban environment in New Jersey. She has a strong but rather naive character that encounters numerous people and situations that could easily get her into trouble. Luckily, she's smarter than she looks and catches on quickly, using her knowledge of ecology to solve the murder mysteries. I especially connected with her meticulous methodologies and habits in both her work and record keeping.

*The Cactus Plot* is a clever play on words, both because of the murder mystery and the cactus

plot of the rare and endangered cactus *Sclerocactus sanjuanensis* (a made up name by the author to protect the innocent, so to speak) that Millie is monitoring. The monitoring of such a plot appears to be accurate from what I have heard of such efforts.

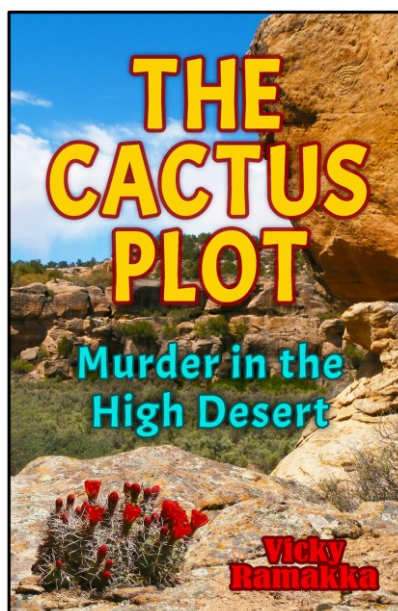
We meet a variety of characters that ring true, from her straight-arrow boss at the BLM and Mama Agnes, the office receptionist, to the garrulous, sandbagging Buddy Maddox, field hand for Dagun Petroleum to Fritz Müller, German photographer and tour guide. Yes, there is a cowboy and even a love interest. I could easily identify with Belva Banks, perhaps fondly referred to as Belva the Bulldozer who pops up all over the place representing the "Old Broads for Public Lands Protection."

Although there are familiar native plants mentioned, I could have used a few more. I marveled at the lack of mention of the non-native cheatgrass, the scourge of the West that poses such a threat to endangered plants and such an unavoidable aspect of our modern day landscape.

There are themes that we all recognize, the role of the BLM in the West, protection of rare and endangered plants, cactus theft, and appreciation of the beauty of the vast vistas of the West. For a

first novel, it's a pretty good read and holds promise for even more deeply and subtly developed stories in the future. I would recommend it.

*Author Vicky Ramakka lives south of Durango, Colorado in Aztec, New Mexico and is a member of both the Colorado and New Mexico Native Plant Societies. Her career was as an academic in higher education and her husband worked for the BLM as a wildlife biologist. The book is to be released on November 5, 2019 by Artemisia Publishing, Albuquerque in paperback edition \$15.95, Kindle edition \$3.99. 275 pp.*



# Watch out for White Bryony!

by David Wallace (Logan), UNPS Invasive Species Committee

White bryony, *Bryonia alba*, a perennial vine of the cucumber family, is originally from Eurasia and Northern Iran. It has been in Utah for several decades without raising much concern despite cries of alarm from nearby states. Now we are becoming aware of the harm it is doing in Utah and it is high time we take action here.



White bryony leaves and fruits.

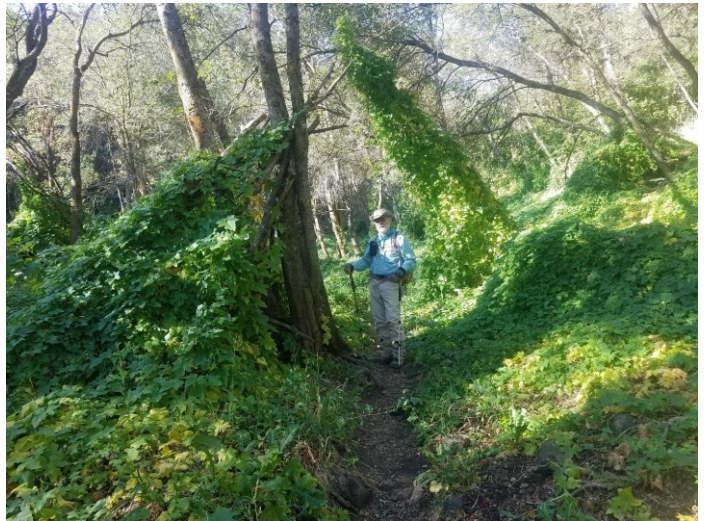


White bryony roots from vines on a single tree (Deep Canyon, Wellsville Mountains).

*Bryonia alba* is thought to have medicinal properties, which may explain why it was introduced into our country and perhaps why it has been tolerated. However, this plant is also known to be toxic, it is difficult to control, it is invasive, and it can completely overwhelm existing vegetation. Its common names of “Devils Turnip” and “Kudzu of the West” emphasize its negative qualities.

I was aware of white bryony in Cache Valley for a few years before I recognized the extent of the problem. Now it may have become too widespread to control in parts of northern Utah, but with diligence, we may be able to control it elsewhere. Here are some suggestions:

1. UNPS should use our influence to help get white bryony listed as State of Utah Noxious Weed, as the states of Washington, Oregon and Idaho have done.
2. White bryony should be eradicated where possible



White Bryony covers 40 acres at the mouth of Deep Canyon, Wellsville Mountains, Cache County.

and controlled everywhere. Birds can transport the seeds for miles so the vines must not be allowed to produce fruits.

3. Report white bryony occurrences to <https://www.eddmaps.org/>

White bryony can be killed by following the vines back to the ground and digging the root out or chopping the top four inches of the root off, preferably with an application of glyphosate (Roundup) to the cut surface. Vines can be killed by pulling them away from the host plant and spraying with herbicide to avoid harming the host. Controls efforts must continue because the seeds remain viable for several years. Be sure to wear gloves to protect your skin from its toxic properties.

# Ty's Garden

by Cathy King

A Utah native plant garden was formally dedicated to Ty Harrison, former Utah Native Plant Society board member who passed away in June of 2017. Officially designated by the Salt Lake City Council in January of this year, "Ty's Garden" was graced with a beautiful sandstone monument and ceremony to mark his garden on the eastern edge of the Hidden Hollow Nature Preserve in Sugar House on October 11. City officials,



family members and friends attended the event.

Dr. Ty Harrison was a professor of biology at Westminster College. After retirement, he continued to teach and mentor young and old in the community. He was especially committed to the restoration of riparian areas in the Salt Lake Valley. His impact on the community will be felt for many years to come through those he taught that will carry on his work.

More information about Ty:

<https://www.unps.org/segolily/Sego2017Fall.pdf>

<https://utahstories.com/2019/10/tys-garden-dedication-in-memory-of-dr-ty-harrison/>

<https://www.deseret.com/2019/1/23/20664019/salt-lake-city-renames-portion-of-hidden-hollow-in-honor-of-conservationist>



Left to right, Lynne Olson who was a mentor for the KOPE Kids, her daughter Cassie who was one of the original KOPE Kids, Juan Arce-Laretta who is Ty's step-son, the Mayor Jackie Biskupski, Wendy Fisher from Utah Open Lands which holds the easement, Lewis Kogan from the City's Trails and Natural Lands, and Nancy Starks who is Ty's sister.

Photo by Laurie Bray

## A Letter from Donald C. Cole

Utah Native Plant Society, Salt Lake City, Utah  
8/2/2019

Dear Sirs,

We have suffered the loss of the largest, and perhaps 2000+ year old, White Fir West of the Mississippi River. Years ago a study by the Forest Service determined there was a similar tree slightly larger East of the Mississippi, but I cannot find the report.

The "BIG TREE", as it is known was burned in the Loafer Mountain (Forest Service Uncontrolled Burn) last year. I have enclosed a few photo's for your observation. Ms. Susan Meyer of your organization wrote an article about the Big Tree September 16, 2000, Utah Native Plant Society (UNPS) field trip. I found it online, it's called: "Big Tree Hike". Her Article had photo's of the Big Tree taken by Ann Wagstaff.

Please inform those in your organization of this outstanding and disappointing loss. I have a close friend who is a Fireman in the Payson City Fire Department. He told me they had two Fire Suppressant Brush Trucks there and he was the driver of the 8,000+ gallon water truck that was on hand at the fire to put it out, but the US Forest Ranger on site told the Payson Fire Department to go back home. The Forester told them they wanted to get the dead brush and trees in that area burned out, anyway. The Fire was lite by lightning and the Forest Service and no Plan or Preparations for a controlled burn. As a result it burned across Payson Canyon, Loafer Mountain to Diamond Fork Canyon in Spanish for Canyon, some 15 to 20 miles across Forest Lands, Range and Private Lands.

The Big Tree in Loafer Canyon was a casualty. As you can see by the photo, the limbs are burned, broken off and perhaps 100% assurance, the tree will never grow again.

The Big Tree is located a short 30 minute hike from Fore Bay in Payson Canyon across East from the Boy Scout Camp or (By Permission) through Loafer Recreation Association Property up the Right Fork of Loafer Canyon leading just past the well used Bear Wallows.

I am sorry to report this to you, but it is important to manage the Forest Fires in such a way as to promote better Forest Lands for vegetation and water supplies from the water

shed. Our Loafer Recreation Association, Elk Ridge and Woodland Hills Towns are already experiencing flooded streets, homes and yards from recent rain storm runoff from the fire burned area. So far, to my knowledge, the US Forest Service has not acknowledged their error for not allowing Payson City to put the fire out, nor has the Forest Service offered any assistance to the ones now suffering flood damage.

Obviously, personnel training in Fire Control, and Management are needed at the US Forest Service Spanish Fork, Utah Field Office.

Sincerely yours,  
Donald C. Cole

Member, Loafer Recreation Association



Before and after photos of the 'Big Tree'. Photos by Jeran Farley, Urban, and Community Forestry Coordinator, Utah Urban Forestry Program. Jeran has written an article with measurement details of the tree and information about the fire:

[https://www.unps.org/miscpdf/Farley\\_White\\_Fir\\_2018.pdf](https://www.unps.org/miscpdf/Farley_White_Fir_2018.pdf) .

### Your Membership

Your membership is vital to the Utah Native Plant Society. It is important that your information is correct and up to date for notifications and the delivery of The Sego Lily newsletter.

Any questions about your membership, Contact Bill Gray, cyberflora80@gmail.com.

#### WANTED: Membership Person

UNPS is looking for a **volunteer membership person** to keep membership records. Some data-base entry helpful, but will train. Contact Bill Gray, cyberflora80@gmail.com



## Utah Native Plant Society

Utah Native Plant Society  
PO Box 520041  
Salt Lake City, UT, 84152-0041.

To contact an officer or committee chair write to

**Webmaster:** [unps@unps.org](mailto:unps@unps.org)

#### Officers

- President:** Kipp Lee (Salt Lake Co.)
- Vice President:** Robert Fitts (Utah Co.)
- Secretary:** Cathy King (Salt Lake Co.)
- Treasurer:** Bill Stockdale (Salt Lake Co.)
- Board Chair:** Bill King (Salt Lake Co.)

#### UNPS Board:

- David Wallace (Cache Co.)
- Tony Frates (Salt Lake Co.)
- Susan Fitts (Utah Co.)
- Wayne Padgett (Salt Lake Co.)
- Raven Reitstetter (Tooele Co.)
- Jonathan Barth (Salt Lake Co.)
- Adrienne Pilmanis (Salt Lake Co.)
- Marc Coles-Ritchie (Salt Lake Co.)

#### Committees

- Conservation:** Tony Frates, Bill King & Susan Sims
- Education:** Robert Fitts

#### Horticulture:

Kipp Lee

#### Invasive Species:

David Wallace & Jonathan Barth

#### Publications:

Cathy King

#### Website/Internet:

Tony Frates

#### Rare Plant List/Rare Plants:

Robert Fitts

#### Small UNPS Grants:

Raven Reitstetter & Adrienne Pilmanis

#### Communications and Publicity:

Cathy King

#### Membership Committee:

Open

#### Chapters and Chapter Presidents

**Cache:** Michael Piep

**Canyonlands:**

Diane Ackerman & Sarah Topp

**Cedar City:** Matt Ogburn

**Escalante:**

**Fremont:** Nancy Holve

**Manzanita:**

**Mountain:**

**Salt Lake:** Cathy King

**Southwestern/Bearclaw Poppy:**

**Utah Valley:** Susan Sims

**Website:** For late-breaking news, the UNPS store (posters, etc.), the *Sego Lily* archives, Chapter events, sources of native plants, the digital Utah Rare Plant Field Guide at [unps.org](http://unps.org).

Webmaster inquiries at [unps@unps.org](mailto:unps@unps.org)

Many thanks to [Xmission.com](http://Xmission.com) for sponsoring our web-site.

**Sego Lily Editors:** John Stireman  
[jstireman@outlook.com](mailto:jstireman@outlook.com)  
Cathy King: [cathy.king@gmail.com](mailto:cathy.king@gmail.com)

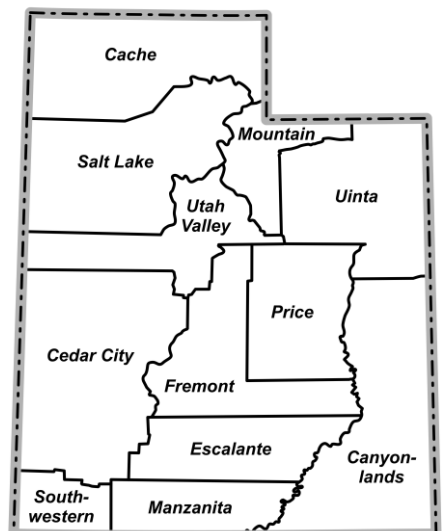
This publication Copyright: Utah Native Plant Society. All Rights Reserved.

Submit articles to Cathy King:  
[cathy.king@gmail.com](mailto:cathy.king@gmail.com)

Unauthorized reproduction prohibited.

The *Sego Lily* is a quarterly publication of the Utah Native Plant Society, a 501 (c)(3) not-for-profit organization dedicated to conserving and promoting stewardship of our native plants.

#### UNPS Chapter Map



Utah Native Plant Society



Utah Native Plant Society  
PO Box 520041  
Salt Lake City, UT 84152-0041

**Return Service Requested**

## Utah Native Plant Society Membership

- New Member
- Renewal
- Gift Membership
- Membership Category
- Student \$9.00 (free digital membership 2019)
- Senior \$12.00
- Individual \$15.00
- Household \$25.00
- Sustaining \$40.00
- Supporting Organization \$55.00
- Lifetime \$250.00

Choose Mailing

- US Mail (B&W Hardcopy newsletter)
- Digital (Please save UNPS printing costs and trees)

Name \_\_\_\_\_

Street \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_

Zip \_\_\_\_\_

Email \_\_\_\_\_

Chapter \_\_\_\_\_

Please enclose a check, payable to Utah Native Plant Society  
and send to: Utah Native Plant Society  
PO Box 520041  
Salt Lake City, UT 84152-0041

Or easily pay membership with PayPal at  
<http://www.unps.org/index.html>