

September 2007 Volume 30 Number 5

## Exotic Plants of Utah

### ***The Limits of Restoration in an Age of Weeds***

By Douglas N. Reynolds

Weeds have afflicted humanity for hundreds of years as evidenced by the following quotations:

*Cursed is the ground for thy sake; in sorrow shalt thou eat of it all the days of thy life; thorns and thistles shall it bring forth to thee.*

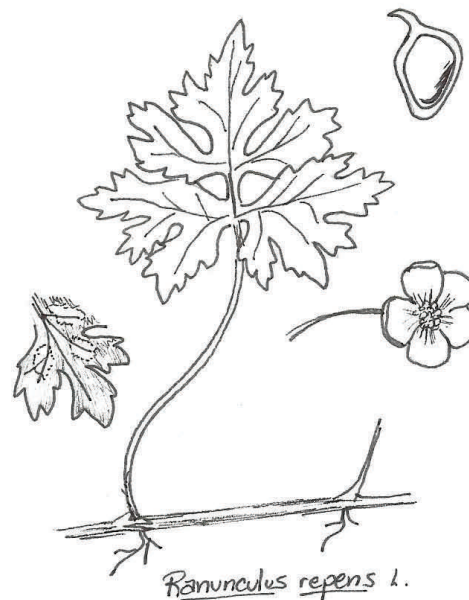
- Genesis 3:17-18

*I will go root away the noisome weeds, which without profit suck the soil's fertility from wholesome flowers.*

- W. Shakespeare, *Richard II*

While weeds have long had serious economic effects when they establish and compete with agricultural crops, what should concern members of a native plant society most are weeds' exponentially-increasing effects on natural communities. The Plant Conservation Alliance estimates that more than 1000 weed species are invading natural plant communities in the United States alone. As human impacts intensify through livestock grazing, off-road vehicle use, and other disturbances, it is estimated that 4600 acres of western Federal lands are invaded each day and that more than 40% of the species on the Endangered List are at risk from invasive species. Weeds impact native species not only through direct competition for light, water, and

*Continued on page 5*



Above: Creeping buttercup (*Ranunculus repens*) is a native of Eurasia that has become widely established across North America. This species can be recognized by its compound leaves and ability to root at the nodes. A many-petaled form (var. *pleniflorus*) is sometimes observed, but most individuals have 5 petals (var. *repens*). Illustration by W. Fertig.

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## Utah Native Plant Society



## Utah Native Plant Society

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Website: For late-breaking news, the UNPS store, the Sego Lily archives, Chapter events, links to other websites (including sources of native plants and the digital Utah Rare Plant Field Guide), and more, go to [unps.org](http://unps.org).  
**Many thanks to Xmission for sponsoring our website.**

For more information on UNPS: Contact Bill King (582-0432) or Susan Garvin (356-5108), or write to UNPS, PO Box 520041, Salt Lake City, UT, 84152-0041 or email [unps@unps.org](mailto:unps@unps.org)

*Sego Lily* Editor: Walter Fertig ([walt@kanab.net](mailto:walt@kanab.net)). News items, articles, photos, and illustrations from members are always welcome. The deadline for the November 2007 *Sego Lily* is 15 October 2007.

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## Chapter News

**Escalante (Garfield County):** After taking a couple months off to enjoy the summer, the Escalante Chapter met on August 14 to enjoy a program on local area tree and shrub identification. Cindy Calbaum and Amber Hughes presented the program using plant cuttings and an identification key prepared by Cindy.

The Escalante Chapter has decided to meet formally only every other month for a while to determine if this schedule works well. Future programming through the end of the year includes:

October 2 - Co-sponsoring with the Grand Staircase-Escalante National Monument Walks & Talks program - Jeff Sanders – “Rainwater Harvesting 101”.

October 5-6 - Hosting a table at the Escalante Canyons Arts Festival.

October 9 - Chapter Meeting & Program by Doug Reynolds – “Restoration Work and Native Plants”

December 11 - Holiday Party. – *Allysia Angus*

**Manzanita (Kane County):** Our September 4<sup>th</sup> meeting will be an evening hike to the ‘underground lake’ off Kanab Creek Canyon in the Best Friends Animal Sanctuary. The lake itself is too dark for plant life,

but the surrounding canyon has a rich flora and offers some great vistas. Plan to meet at the Best Friends Welcome Center parking lot at 6:30 PM to carpool or caravan a short distance to the John R Flat Road and Kanab Creek. The hike will continue until dusk. The area is very sandy, so appropriate footwear is recommended. – *W. Fertig*

**Salt Lake:** During the course of the summer, four hikes were held by the chapter. In May, several members visited the blooming Claret Cup cacti in the mouth of Parleys Canyon. During the hike, the members also enjoyed the native foothill wildflowers and several introduced Utah native penstemon species. In July, members hiked up to Twin Lakes in Big Cottonwood Canyon. The wildflowers were spectacular and the weather was very pleasant. Another hike took members up to the peak at Bald Mountain. Despite a late Spring, and dry conditions, many alpine plants were in full bloom, particularly the Sky Pilots. At the end of July, a hike was held in the Albion Basin in Little Cottonwood Canyon. The meadows were a carpet of color and contained paintbrushes, monkeyflowers, geraniums, delphiniums, bog orchids, eriogonums, erigerons, and penstemons. Participating members had a wonderful time!

Friday September 7th, 6:30 pm: Potluck Social at the Sugarhouse Garden Center, 1602 East 2100 South, SLC. After the Summer break, we will join the Wasatch Rock Garden Society for a potluck social and an opportunity to share photos of the plants you photographed this year. An old-fashioned slide projector will be available. For digital projection, please contact Bill Gray (532-3486) in advance so that he can facilitate that process with his equipment. Please bring a dish to share for the potluck. Any questions, call Cathy King 582-0432 or 867-3595.

Saturday September 8th , 8:00am-2:00pm: Garden Fair at the Jordan Valley Water Conservancy District Demonstration Garden, 8215 South 1300 West, West Jordan. The SL Chapter will have a booth with information on native plants. There will be food, music, plant vendors, and experts on hand to answer all your questions about water-wise landscaping. For more information visit the website: [www.ConservationGardenPark.org](http://www.ConservationGardenPark.org).

Wednesday October 3rd , 7:00pm-8:30pm: REI, topic to be announced.

Our meeting location is at REI on 3285 East 3300 South in the Wasatch Conference Room. This location is readily accessible from I-80 and I-215. Meetings will usually be the first Wednesday of the month, at 7:00 pm. The success of the Chapter is dependent upon its members. If you have any ideas for events or topics, or want to give a presentation, please contact Kipp at [kipp\\_lee@comcast.net](mailto:kipp_lee@comcast.net) or 759-6204. Any ideas or recommendations are welcome! - *Kipp Lee*

Utah Valley (Utah Co): Plants and Preschoolers – every Thursday at 10 AM we are having our ‘Plants and Preschoolers’ hikes. The hikes are short distances and everyone is welcome to explore as we go. This summer we returned to Cascade Springs, Rock Canyon, the Grotto in Payson Canyon, and the falls hike in Pleasant Grove, and we tried a new hike at Sundance and visited the UCWCD garden. We have plans to visit Coalville, and in the fall Hobble Creek. We will also venture up the South Fork of Provo Canyon, American Fork Canyon, and the Shoreline Trail as the temperatures become more pleasant. If you are interested in joining us, call Celeste Kennard at 801-377-5918 or email [celeste.p.kennard@gmail.com](mailto:celeste.p.kennard@gmail.com).

Garden work- Anyone interested in doing some garden work on existing Heritage Gardens can call Celeste Kennard (phone and email listed above). – *Celeste Kennard*

## Bulletin Board

Life Member Update: Paul and Catherine Thalmann of Escalante (summer) and Switzerland are the latest lifetime members of UNPS. – *Tony Frates*

Annual Members Meeting: As of press time we are expecting our Annual Members Meeting to be held in the Provo area on Saturday October 13, hosted by the Utah Valley chapter. This is the occasion when members statewide get together to enjoy good food (a traditional "New World" pot luck dinner), hear an expert speaking on some topic of Utah's native plants, and elect a new slate of members to our board of directors.

To receive more details, please contact Celeste (801-377-5918; [celeste.p.kennard@gmail.com](mailto:celeste.p.kennard@gmail.com)), Mindy (801-699-5459; [wheelermindy@yahoo.com](mailto:wheelermindy@yahoo.com)) or Bill (801-532-3486; [cyberflora@xmission.com](mailto:cyberflora@xmission.com)).

### Volunteers Needed for Clay Phacelia Restoration:

UNPS is a partner with the U. S. Fish and Wildlife Service, the Forest Service and other non-profits in restoring the federally endangered clay phacelia to more of its native habitat. To that end, the Uinta National Forest and the rest of the partnership are looking for volunteers to help plant phacelia seed on two steep shale sites near Highway 6 southeast of Spanish Fork Utah, on one or two Saturdays in the first half of September. If you are interested in volunteering, please contact Denise Van Keuren at 801-342-5179, or [dvankeuren@fs.fed.us](mailto:dvankeuren@fs.fed.us). – *Denise Van Keuren*

New Display Gardens at the Utah Central Water Conservancy District: The Utah Central Water Conservancy District (UCWCD) has undergone a dramatic change over the last year and the Utah County Chapter of UNPS is especially excited about the Native Utah Plant section that has been designed by our own Bitsy Schultz and will be installed this fall.

Like the Jordan Valley Water Conservancy District the new landscaping at UCWCD promotes water conservation and is designed to help the public become acquainted with water efficient plants and gardening practices. Classes have begun and will continue through September. Come attend a garden tour any Thursday evening at 6:30 pm or attend a class. A list of classes can be viewed at [www.centralutahgardens.org](http://www.centralutahgardens.org) or by calling 801-222-0123.

The UCWCD landscape differs from the Jordan Valley garden because many of the gardens have been designed on a slope rather than a flat surface. The site also has some great shady spots under the mature conifers in the Garden Gallery. Also our Plants and Preschoolers group visited the garden the day Bitsy Schultz was teaching. We found the classroom very inviting and the garden was a big hit with the little ones that had fun trying out the hand-on irrigation display and visiting the miniature houses that dot the Model Homes and Landscapes section.

UNPS will help install the Utah Native Plant Garden section in October and if you are interested in helping call Celeste Kennard at (801) 377-5918. – *Celeste Kennard*

## ***The Limits of Restoration in an Age of Weeds*** (continued from page 1)

nutrients but indirectly by altering ecosystem processes such as soil erosion, hydrologic regimes, and fire cycles.

What exactly constitutes a weed is often in the eye of the beholder; the simplest and broadest definition is a “plant growing where it is not wanted”. By this definition weed scientists, ranchers, and farmers often consider native species like sagebrush a weed when it invades agricultural lands or competes with desirable perennial grasses for grazing. From an ecological standpoint, a more limited and specific term is “exotic” or “alien”, denoting that the species is not from the local area and thus the native species are not adapted to its presence. Lacking native predators and diseases to control their population size, these are a danger to natural communities. Even worse are the aliens that are invasive, meaning that they have the ability to invade relatively intact native communities even little disturbed by humans. When these species alter ecosystem processes by increasing the frequency of fire or lowering the water table which further decreases native species, they set in motion a positive feedback cycle that destroys the original plant community and usually the animal community that depended upon it.

In 1974, Herbert Baker at UC Berkeley published a seminal article, *The Evolution of Weeds*, which enumerated the life-history strategies that allow weedy species to successfully invade and out-compete native species. Some of the most pertinent traits that we see in species invading Utah today are:

Seeds have adaptations for short and long-distance dispersal so that new areas are rapidly invaded.

Seeds remain viable in the soil and germinate under many conditions leading to rapid establishment and spread.

Plants can self-pollinate and/or are pollinated by wind or general pollinators so that seed production is frequent and copious.

Plants are tolerant and plastic and produce seeds as long as conditions permit; in a dry year they produce a few seeds and, under good conditions, many.

Plants compete interspecifically through rosettes, choking growth, or allelochemicals that decrease the growth and reproduction of natives.

Almost everyone knows the story of cheatgrass (*Bromus tectorum*), the poster child of invasive exotics, which has had such a devastating effect on ecosystems throughout the west. It exhibits almost every one of the characteristics on the list above. It



Above: Cheatgrass (*Bromus tectorum*) from Hitchcock (1950, revised by A. Chase) Manual of the Grasses of the United States. USDA Misc. Publ. 200., Washington DC.

is an annual which germinates with the fall rains, getting a jump on natives which don't germinate until spring. By then, the cheatgrass root system is already well-established to out-compete them for water and nutrients. Being very plastic, plants produce a few seeds under drought conditions, and in a wet year, a single plant can produce hundreds of seeds. As domestic livestock graze and weaken native grasses, their hooves disturb the ground, giving cheatgrass a good seedbed. Protected from grazing by sharp awns on the seeds and easily dispersed, cheatgrass rapidly spreads and fills the spaces between native perennials. When plants die in late spring they greatly increase the likelihood and spread of wildfires that further devastate native species that haven't finished their growth or reproduction. As a result, over ten million acres of Idaho and Utah are now monocultures of cheatgrass. The recent, huge Milford Flat fire in central Utah was enhanced by cheatgrass infestation resulting from livestock grazing and, now that the fire has destroyed or weakened the remaining native species, cheatgrass will come back even stronger. Many studies have shown that once cheatgrass invades, native species recover only slowly, if ever, even with the removal of further disturbance.

There are several other species that illustrate the invasive characteristics of weeds that I have been watching spread through healthy pinyon-juniper

and sagebrush communities outside of Cedar City. They are also rapidly spreading throughout other areas of Utah and the western states.

Tumble mustard (*Sisymbrium altissimum*) is a native of Europe and, like cheatgrass, is a winter annual and so gets a head start on most natives. It exhibits most of the characteristics listed above. It begins life as a rosette, often densely packed, which smothers other species. By late spring it bolts to produce a many-branched plant that can reach five feet tall and produce thousands of seeds. The plant dies in summer, breaks off at the base, and the delicate stem with its high surface area can roll with the wind, slowly releasing seeds, or even be lifted ten's of feet into the air to disperse seeds over large distances. The seeds can live for a long time in the soil and remain ready when conditions permit, successfully germinating and growing in a variety of soil types. In a single year I have watched tumble mustard fill a five foot wide strip along a 25 mile swath of Highway 56 between Cedar City and Newcastle where a new fiber optic cable was installed. This strip will now be easily ignited by a stray cigarette butt or spark and carry fire. It also provides a seed source for the invasion of the relatively healthy adjacent Pinyon-Juniper and Sagebrush communities of central and western Iron County.

Another rapidly spreading species is Bur Buttercup (formerly *Ranunculus testiculatus*, now *Ceratocephala testiculata*), a native of Eurasia. Another annual, it is one of the first to germinate and flower in spring. Very plastic, plants can produce from one to more than 100 sharp-tipped fruits, depending on conditions. These are spread by cattle and rapidly colonize the disturbed, open areas between shrubs in grazed communities. More frightening, I have watched it move into and establish in undisturbed soil crusts in healthy Pinyon-Juniper communities and worry that it may come to dominate these areas as well.

Weed invasions have been called "biological pollution" but unlike many kinds of pollution such as an oil spill, which happens and can be cleaned up, weed invasions are self-reproducing and evolving organisms that can adapt to new or changing conditions.

After the recent fires there has been a lot of talk about restoring the area by reseeding native species. Unfortunately, the chances of success are usually small and the process is very expensive. Seeds of native species have a limited availability and often cost many dollars per pound since they are not as easily grown and harvested as crop species. The source of the seed is also important; seeds produced by plants from a different state or habitat may not be well-adapted to the conditions in the areas where they are to be used. The semi-arid environment in Utah also makes restoration especially difficult because of low resource availability (water, nutrients, and topsoil). The environmental variation and harsh microenvironments of our climate limit periods of seedling



Above: Bur buttercup (*Ranunculus testiculatus* or *Ceratocephala testiculata*), an exotic from Eurasia that is spreading across Utah and the western United States at an alarming rate. Photo by Doug Reynolds.

recruitment. Many reseeds fail when a dry period or late frost follows germination and the new seedlings wither away. Even if new plants begin to establish, when the restored land is returned back to prior livestock use as the ranchers and politicians propose, the degradation of the native plant communities and weed invasion will resume again. In former times when reservoirs of exotic species weren't here, natural ecosystems could recover over time through natural processes. Now, the many exotic species, with all the adaptations listed above, are just waiting to invade. As more and more parcels of land are affected by human-caused fires, grazed by domestic livestock, or disturbed by off-road vehicles a ratcheting process begins in which more natural communities are lost each year to exotic monocultures, probably never to recover. Does it make economic sense in this age of weeds, given the few cents per acre received per year from grazing or ATV permits, to lose the native plant communities and the fauna they support?

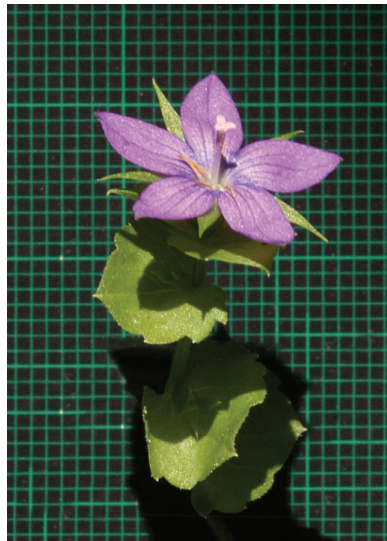
The scientific and economic answer to this question is simple: **Restoration is no substitute for conservation.** The costs in time, effort, and money are high and the chances of a successful restoration are low. And weed seeds are always waiting in the soil or in an adjacent area to begin their invasion again. One should always be suspicious when mitigation or future restoration is mentioned as an excuse to allow some new or continuing disturbance. We are limited by money, time, and knowledge in our ability to replicate natural communities and processes. It is far cheaper and smarter in the long run to prevent the introduction of new weeds or the disturbances that allow them to come in than to try and restore the invaded lands.

## How on Earth did *They* get *There*?

City Creek Canyon descends from around 9000 feet into the heart of Salt Lake City. A road ascends about 6 miles up the canyon, then trails go up another 5 or 6. The road section is heavily used by bikes, runners, and walkers, but the upper trails scarcely at all. Parts of the canyon are infested with various weeds, noxious and otherwise: Cheatgrass, Yellow star thistle, Myrtle spurge, Houndstongue and Dalmatian toadflax. However, these tend to fade rapidly as one moves away from the road itself.

This year I have been exploring the various branches of the creek in search of two rare water-loving endemics, Wheeler's angelica (*Angelica wheeleri*) and Wasatch fitweed (*Corydalis caseana* ssp. *brachycarpa*). On this particular occasion I was in North Fork and had left the road with its disturbed habitats behind me. After following a trail for some distance I had to really bushwhack to stay anywhere near the stream, which was heavily overgrown. In this out-of-the-way place, growing within a radius of a couple of feet, were several plants each of two non-native species. One of them was Dalmatian toadflax (*Linaria dalmatica*), separated by perhaps a mile from the nearest roadside population. The other was Venus' looking glass (*Triodanis perfoliata*), which was completely new to me. Apparently it is quite widely naturalized in the US, but in Utah it is rare and hitherto found only in Washington and Kane counties. It seems most likely that it came from somebody's garden - even so that's a minimum of six miles away. Neither plant has seeds fitted for wind dispersal, and I doubt that any person or domestic animal had been by that spot in years, but here were two weeds growing side by side far from their nearest kin.

How on earth did they get there, and so close to each other? All I can surmise is that they fell in a single splash from a passing bird. Any other ideas? - *Bill Gray*



Above: Venus' looking glass (*Triodanis perfoliata*, Campanulaceae). Small squares = 1 mm. Photo by Bill Gray.

### Number of Exotic Taxa in Selected Floras

State	# Exotic	# Exotic/log area
New York	1082	210.5
California	1025	182.6
Hawaii	861	203.8
Illinois	782	151.1
<b>Utah</b>	<b>503</b>	<b>94.2</b>
Colorado	492	90.6
Wyoming	348	64.4
North Dakota	171	32.5

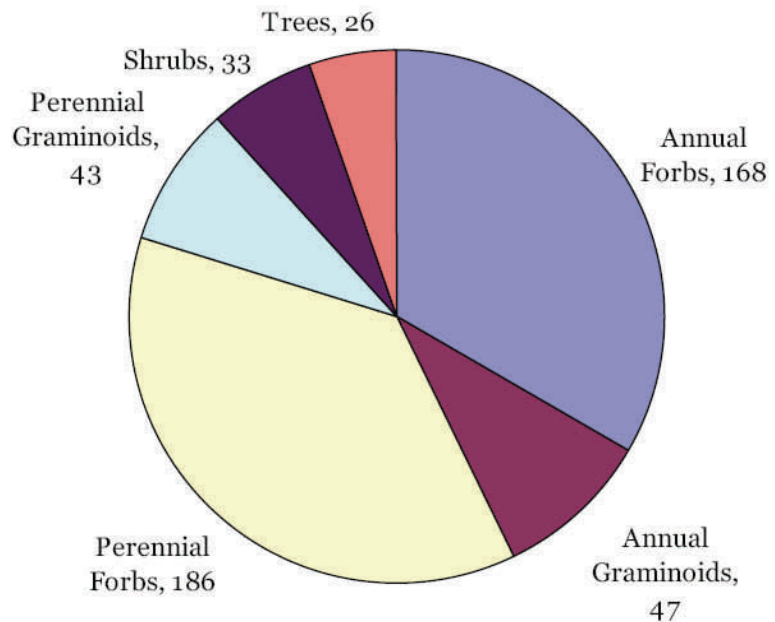
Source: Rejmanek & Randall (1994), Stuckey & Barkley (1993), & Fertig (unpublished data)

## Statistical Summary of the Exotic Flora of Utah

Based on species and varieties cited for Utah in *A Utah Flora*, third edition (Welsh et al. 2003), the *Intermountain Flora* (Cronquist et al., eds. 1972-2005), and *Flora of North America* (FNA editorial committee, 1993-2007), 4273 plant taxa have been documented for the state. Of these, 923 are not believed to be native to Utah (21.6%). Excluding 420 non-native species that are known only from cultivation, 503 exotic taxa have become naturalized in the Beehive State (13.1% of the native and naturalized flora). The number of exotic species in Utah is relatively high compared to our neighboring states (see table at left), but still considerably lower than California, Hawaii, and many eastern states, especially when differences in area are normalized by a log function.

Nearly 70% of the exotic flora of Utah consists of forbs, about 18% are grasses or grass-like species (graminoids), and 12% are woody trees and shrubs. Annual forbs and graminoids comprise about 43% of the state's exotic flora (below).—*W. Fertig*

### Exotics in the Utah Flora



## Introduced and Naturalized Plants of Utah

By Walter Fertig

The following annotated checklist is derived from *A Utah Flora, third edition* (Welsh et al. 2003), the *Intermountain Flora* (Cronquist et al., eds. 1972-2005), and *Flora of North America* (Flora of North America Editorial Committee, 1993-2007). Introduced species that are known only from cultivation in Utah are not included. Each species is listed alphabetically by family and scientific name (following the nomenclature of Welsh et al. 2003). Additional information includes synonyms (in parentheses), common name, growth form (AF= annual forb, AG = annual graminoid, PF = perennial forb, PG = perennial graminoid, S = shrub, T = tree), and geographic area of origin (Afr = Africa, Aust = Australia, CAM = Central America, CNAm = central North America, ENAm = eastern North America, Eura = Eurasia, Euro = Europe, Med = Mediterranean, Mex = Mexico, OW = Old World [Eurasia and Africa], Rus = Russia, SAm = South America, Trop = tropics, TropAm = American tropics, TropAs = tropical Asia, WNA = western North America). State and county noxious weed status is derived from the Utah Weed Control Association website ([www.utahweed.org](http://www.utahweed.org)). Counties include only those where a species is classified as noxious and not the plant's complete county distribution in Utah (county codes are based on the first four letters of the county name).

- Aizoaceae  
*Mollugo cerviana*, Slender carpetweed, AF, Trop  
*Mollugo verticillata*, Green carpetweed, AF, TropAm
- Amaranthaceae  
*Amaranthus albus*, Tumble pigweed, AF, TropAm  
*Amaranthus deflexus*, Large-fruit amaranth, AF, OW  
*Amaranthus lividus* (*A. blitum*), Purple amaranth, AF, Euro  
*Amaranthus retroflexus*, Redroot pigweed, AF, CAM
- Anacardiaceae  
*Pistacia atlantica*, Atlas pistachio, T, Euro
- Apocynaceae  
*Nerium oleander*, Oleander, S, Med  
*Vinca major*, Grave-myrtle, PF, Euro  
*Vinca minor*, Periwinkle, PF, Euro
- Bignoniaceae  
*Campsis radicans*, Trumpet-vine, PF, ENAm  
*Catalpa bignonioides*, Common catalpa, T, ENAm  
*Catalpa speciosa*, Showy catalpa, T, ENAm
- Boraginaceae  
*Anchusa azurea*, Blue alkanet, PF, Med  
*Anchusa officinalis*, Bugloss alkanet, PF, Eura  
*Asperugo procumbens*, Catchweed, AF, Eura  
*Borago officinalis*, Common borage, AF, Euro  
*Cynoglossum officinale*, Common hound's tongue, PF, Eura, **Co-Nox** (SanP, Wasa)  
*Echium vulgare*, Common viper's-bugloss, PF, Euro  
*Lappula squarrosa* (*L. echinata*), European stickseed, AF, Eura  
*Lithospermum arvense* (*Buglossoides arvensis*), Gromwell, AF, Eura  
*Myosotis micrantha* (*M. stricta*), Small-flower forget-me-not, AF, Eura
- Myosotis scorpioides*, Forget-me-not, PF, Euro
- Cactaceae  
*Opuntia humifusa*, Eastern prickly pear, PF, CNAm
- Campanulaceae  
*Campanula persicifolia*, Long-flower bellflower, PF, Eura  
*Campanula rapunculoides*, Creeping bellflower, PF, Eura  
*Triodanis perfoliata*, Venus'-looking glass, AF, Euro
- Cannabaceae  
*Cannabis sativa*, Hemp, PF, Eura
- Caprifoliaceae  
*Lonicera japonica*, Japanese honeysuckle, S, Asia  
*Lonicera tatarica*, Tatarian honeysuckle, S, Eura  
*Symphoricarpos albus*, White snowberry, S, WNA  
*Symphoricarpos orbiculatus*, Coralberry, S, ENAm
- Caryophyllaceae  
*Arenaria serpyllifolia*, Thyme-leaf sandwort, AF, Eura  
*Cerastium fontanum* (*C. vulgatum*), Mouse-ear chickweed, PF, Eura  
*Dianthus armeria*, Deptford pink, AF, Euro  
*Dianthus barbatus*, Sweet William, PF, Eura  
*Dianthus deltoides*, Maiden pink, PF, Euro  
*Gypsophila elegans*, Showy babys-breath, AF, Euro  
*Gypsophila paniculata*, Tall babys-breath, PF, Euro  
*Gypsophila scorzonrifolia*, Glandular babys-breath, PF, Euro  
*Herniaria glabra*, Herniaria, AF, Euro  
*Holosteum umbellatum*, Holosteum, AF, Euro  
*Lychnis alba* (*Silene latifolia*, *Melandrium dioicum*), White campion, PF, Euro
- Sagina procumbens*, Creeping pearlwort, PF, Eura  
*Saponaria officinalis*, Bouncing-bet, PF, Euro  
*Silene armeria*, Sweet-William, AF, Euro  
*Silene noctiflora*, Night-flowering catchfly, AF, Asia  
*Spergularia marina* (*S. salina*), Salt sand-spurrey, AF, Euro  
*Spergularia media* (*S. maritima*), Greater sand-spurrey, AF, Euro  
*Spergularia rubra*, Red sand-spurrey, AF, Euro  
*Stellaria media* (*Alsine media*), Common chickweed, AF, Eura  
*Vaccaria pyramidiata* (*V. hispanica*), Cow cockle, AF, Euro
- Chenopodiaceae  
*Atriplex heterosperma* (*A. micrantha*), Two-seed orach, AF, Eura  
*Atriplex hortensis*, Garden orach, AF, Eura  
*Atriplex rosea*, Tumbling orach, AF, Eura  
*Atriplex semibaccata*, Australia saltbush, PF, Aust  
*Atriplex suberecta*, Sprawling saltbush, AF, Aust  
*Bassia hyssopifolia*, Five-horn smotherweed, AF, Eura  
*Bassia prostrata* (*Kochia prostrata*), Forage kochia, PF, Eura  
*Bassia scoparia* (*Kochia scoparia*), Summer-cypress, AF, Eura  
*Chenopodium album* var. *album*, Lambs-quarter, AF, Eura  
*Chenopodium ambrosioides*, Mexican-tea, AF, Mex  
*Chenopodium botrys*, Jerusalem-oak, AF, Eura  
*Chenopodium foliosum*, Leafy goosefoot, AF, Eura (Reported in FNA 2003)  
*Chenopodium murale*, Nettle-leaf goosefoot, AF, Eura  
*Chenopodium pumilio*, Ridged goosefoot, AF, Aust  
*Halogeton glomeratus*, Halogeton, AF, Eura

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- Salsola collina*, Slender Russian-thistle, AF, Asia  
*Salsola paulsenii*, Barbwire Russian-thistle, AF, Eura  
*Salsola tragus* (*S. kali*, *S. iberica*, *S. pes tifer*, *S. australis*), Russian-thistle, AF, Asia
- Compositae (Asteraceae)
- Ambrosia trifida*, Giant ragweed, AF, CNAm  
*Anthemis cotula*, Mayweed, AF, Eura  
*Anthemis tinctoria* (*Cota tinctoria*), Yellow chamomile, PF, Eura  
*Arctium minus*, Burdock, PF, Eura, **Co-Nox** (Morg)  
*Artemisia abrotanum*, Garden sagebrush, S, Eura  
*Artemisia absinthium*, Absinthe, PF, Euro  
*Artemisia annua*, Annual wormwood, AF, Eura  
*Aster exilis* (*Symphotrichum divaricatum*), Saltmarsh aster, AF, WNAm  
*Aster novae-angliae* (*Symphotrichum novae-angliae*), New England aster, PF, ENAm  
*Bellis perennis*, English daisy, PF, Euro  
*Berlandiera lyrata*, Green-eyes, PF, WNAm  
*Carduus nutans*, Musk thistle, PF, Eura, **UT-Nox**  
*Carthamus tinctorius*, Safflower, AF, Euro  
*Centaurea calcitrapa*, Star-thistle, PF, Eura  
*Centaurea cyanus* (*Leucantha cyanus*), Bachelor's button, AF, Euro  
*Centaurea diffusa* (*Acosta diffusa*), Diffuse knapweed, PF, Med, **UT-Nox**  
*Centaurea jacea* (*Jacea pratensis*), Broom knapweed, PF, Euro  
*Centaurea maculosa* (*Acosta maculosa*, *C. biebersteinii*, *C. stoebe*), Spotted knapweed, PF, Euro, **UT-Nox**  
*Centaurea melitensis*, Maltese star-thistle, AF, Euro  
*Centaurea montana*, Mountain knapweed, PF, Euro  
*Centaurea moschata* (*Amberboa moschata*), Sweet sultan, AF, Asia  
*Centaurea repens* (*Acroptilon repens*), Russian knapweed, PF, Eura, **UT-Nox**  
*Centaurea scabiosa*, Hardheads, PF, Euro  
*Centaurea solstitialis* (*Leucantha solstitialis*), Yellow star-thistle, PF, Euro, **UT-Nox**  
*Centaurea virgata* var. *squarrosa* (*C. triumfettii*), Squarrose knapweed, PF, Eura, **UT-Nox**  
*Chrysanthemum leucanthemum* (*Leucanthemum vulgare*), Ox-eye daisy, PF, Eura  
*Cichorium intybus*, Cichory, PF, Eura  
*Cirsium arvense* (*Breea arvensis*), Canada thistle, PF, Eura, **UT-Nox**  
*Cirsium ochrocentrum*, Yellow-spine thistle, PF, WNAm  
*Cirsium vulgare*, Bull thistle, PF, Euro, **Co-Nox** (Beav)  
*Cnicus benedictus* (*Centaurea benedicta*), Blessed thistle, PF, Med  
*Conyza bonariensis*, Bonar horseweed, AF, SAM  
*Coreopsis tinctoria*, Golden tickseed, AF, CNAm
- Cosmos bipinnatus*, Garden cosmos, AF, Mex  
*Crepis capillaris*, Thread hawksbeard, AF, Euro  
*Dyssodia papposa*, Pappose gland-weed, AF, CNAm  
*Emilia sonchifolia*, Flora's paintbrush, AF, OW  
*Erigeron annuus*, Annual fleabane, AF, Euro  
*Gaillardia pulchella*, Firewheel blanket-flower, AF, CNAm  
*Gnaphalium luteo-album* (*Pseudognaphalium luteoalbum*), Yellow-white cudweed, AF, Euro  
*Gnaphalium uliginosum*, European cudweed, AF, Euro, Reported in FNA (2006)  
*Helianthus maximiliani*, Maximilian sunflower, PF, CNAm, Reported in FNA (2006)  
*Helianthus pumilus*, Little sunflower, PF, WNAm  
*Helianthus tuberosus*, Jerusalem artichoke, PF, ENAm  
*Hypochaeris radicata*, Cat's-ears, PF, Euro  
*Inula helenium*, Elecampane, PF, Euro  
*Lactuca serriola*, Prickly lettuce, AF, Euro  
*Lapsana communis*, Nipplewort, AF, Eura  
*Matricaria maritima* (*Tripleurospermum perforata*, *T. inodorum*, *T. maritima*, *M. perforata*), Scentless chamomile, PF, Euro  
*Matricaria parthenium* (*Tanacetum parthenium*, *Chrysanthemum parthenium*), Feverfew, PF, Euro  
*Matricaria recutita* (*M. chamomila*), Chamomile, AF, Euro  
*Onopordum acanthium*, Scotch-thistle, PF, Eura, **UT-Nox**  
*Rudbeckia hirta*, Black-eyed susan, PF, ENAm  
*Rudbeckia triloba*, Brown-eyed susan, PF, ENAm  
*Senecio vulgaris*, Common groundsel, AF, Euro  
*Solidago altissima* ssp. *altissima*, Late goldenrod, PF, ENAm, Reported in FNA (2006)  
*Sonchus arvensis*, Field sow-thistle, PF, Euro  
*Sonchus asper*, Spiny-leaf sow-thistle, AF, Euro  
*Sonchus oleraceus*, Common sow-thistle, AF, Euro  
*Sonchus uliginosus*, Marsh sow-thistle, PF, Euro  
*Tanacetum balsamita* (*Balsamita major*, *Chrysanthemum balsamita*), Costmary, PF, Eura  
*Tanacetum vulgare*, Common tansy, PF, Euro  
*Taraxacum laevigatum* (*T. erythrospermum*), Red-seed dandelion, PF, Eura  
*Taraxacum officinale*, Common dandelion, PF, Eura  
*Tragopogon dubius*, Yellow salsify, PF, Euro  
*Tragopogon porrifolius*, Salsify, PF, Euro  
*Tragopogon pratensis* (*T. lamottei*), Meadow salsify, PF, Euro  
*Vernonia marginata*, Plains ironweed, PF, CNAm  
*Xanthium spinosum* (*Acanthoxanthium spinosum*), Spiny cocklebur, AF, SAM  
*Zinnia acerosa*, Shrubby zinnia, S, WNAm
- Convolvulaceae
- Convolvulus arvensis*, Field bindweed, PF, Eura, **UT-Nox**  
*Ipomoea purpurea*, Morning glory, AF, TropAm
- Crassulaceae
- Sedum album*, White stonecrop, PF, Eura
- Cruciferae (Brassicaceae)
- Alliaria petiolata*, Garlic mustard, AF, Eura, **Co-Nox** (Salt)  
*Alyssum alyssoides*, Pale madwort, AF, Euro  
*Alyssum desertorum*, Desert madwort, AF, Euro  
*Alyssum minus* var. *micranthum* (*A. parviflorum*, *A. simplex*), European madwort, AF, Eura  
*Alyssum murale*, Yellow tuft, PF, Euro, Rep in Intermountain Flora (2005)  
*Alyssum szowitsianum*, Szowits' madwort, AF, Euro  
*Arabidopsis thaliana*, Mouse-ear cress, AF, Euro  
*Armoracia rusticiana*, Horse-radish, PF, Eura  
*Barbarea vulgaris*, European wintercress, PF, Eura  
*Berteroa incana*, Hoary alyssum, AF, Euro  
*Brassica campestris* (*B. napus*, *B. rapa*), Field mustard, AF, Euro  
*Brassica juncea*, Indian mustard, AF, Asia  
*Brassica kaber* (*Sinapis arvensis*), Charlock, AF, Euro  
*Brassica nigra* (*Sinapis nigra*), Black-mustard, AF, Euro  
*Brassica tournefortii*, Sahara mustard, AF, Med  
*Camelina microcarpa*, Little-pod false flax, AF, Asia  
*Capsella bursa-pastoris*, Shepherd's-purse, AF, Euro  
*Cardaria chalapensis* (*C. draba* var. *Repens*), Orbicular whitetop, PF, Euro  
*Cardaria draba* (*Lepidium draba*), Whitetop, PF, Euro, **UT-Nox**  
*Cardaria pubescens*, Hairy whitetop, PF, Euro  
*Chorispora tenella*, Blue mustard, AF, Asia  
*Conringia orientalis*, Hare's-ear mustard, AF, Euro  
*Descurainia sophia*, Flixweed, AF, Euro  
*Diptloxis muralis*, Sand rocket, AF, Euro  
*Draba nemorosa*, Woodland whitlow-grass, AF, Eura  
*Draba verna*, Spring whitlow-grass, AF, Asia  
*Eruca vesicaria*, Garden rocket, AF, Euro  
*Erucastrum gallicum*, Dog mustard, AF, Eura  
*Erysimum repandum*, Spreading wall-flower, AF, Euro  
*Euclidium syriacum*, Syrian mustard, AF, Euro  
*Hesperis matronalis*, Dame's rocket, PF, Euro  
*Isatis tinctoria*, Dyer's-woad, PF, Euro, **UT-Nox**  
*Lepidium campestre* (*Neolepia campestre*), Field pepperwort, AF, Asia  
*Lepidium latifolium* (*Cardaria latifolia*), Broad-leaf pepperwort, PF, Eura, **UT-Nox**  
*Lepidium perfoliatum*, Clasping pepperwort, AF, Euro  
*Lepidium strictum*, Upright pepperwort, AF, SAM



*Lobularia maritima*, Sweet alyssum, AF, Med  
*Malcolmia africana*, African mustard, AF, Afr  
*Nasturtium officinale* (*Rorippa nasturtium-aquaticum*), Watercress, PF, Euro  
*Rorippa austriaca*, Austrian fieldcress, PF, Euro  
*Rorippa sylvestris*, Shore yellowcress, PF, Euro  
*Sisymbrium altissimum*, Tumble mustard, AF, Euro  
*Sisymbrium irio*, London mustard, AF, Euro  
*Sisymbrium loeselii*, False London rocket, AF, Euro  
*Thlaspi arvense*, Field pennycress, AF, Euro

Cucurbitaceae

*Bryonia alba*, White bryony, PF, Euro  
*Citrullus lanatus*, Watermelon, AF, Afr  
*Cucumis sativus*, Cucumber, AF, Asia  
*Cucurbita palmate*, Coyote gourd, PF, WNAm  
*Echinocystis lobata*, Wild cucumber, AF, ENAm

Cuscutaceae

*Cuscuta approximata* var. *urceolata* (*C. epithimum* ssp. *approximata*), Slender dodder, PF, Med

Dipsacaceae

*Dipsacus sylvestris* (*D. fullonum* var. *sylvestris*), Teasel, PF, Euro  
*Knautia arvensis*, Bluebuttons, PF, Euro

Ebenaceae

*Diospyros virginiana*, Common persimmon, T, ENAm

Elaeagnaceae

*Elaeagnus angustifolia*, Russian-olive, T, Euro, **Co-Nox** (Carb, Duch, Sevi, Uint, Wayn)

Euphorbiaceae

*Chamaesyce hyssopifolia* (*Euphorbia hyssopifolia*), Hyssop spurge, AF, ENAm  
*Chamaesyce maculata* (*C. nutans*, *Euphorbia maculata*), Spotted spurge, AF, ENAm  
*Chamaesyce prostrata* (*Euphorbia prostrata*, *E. chamaesyce*), Prostrate spurge, AF, ENAm  
*Euphorbia cyathophora*, Fire-on-the-mountain, AF, ENAm  
*Euphorbia cyparissias* (*Tithymalus cyparissias*), Cypress spurge, PF, Euro  
*Euphorbia dentata* (*E. davidii*, *Poinsettia dentata*), Toothed spurge, AF, CNAm  
*Euphorbia esula* (*Tithymalus esula*), Leafy spurge, PF, Euro, **UT-Nox**  
*Euphorbia marginata* (*Agaloma marginata*), Snow-on-the-mountain, AF, CNAm  
*Euphorbia myrsinites* (*Tithymalus myrsinites*), Myrtle spurge, PF, Euro, **Co-Nox** (Salt)  
*Euphorbia peplus* (*Tithymalus peplus*), Petty spurge, AF, Euro

Frankeniaceae

*Frankenia pulverulenta*, Wisp-weed, AF, Euro

Fumariaceae

*Fumaria officinalis*, Drug fumitory, AF, Euro

Geraniaceae

*Erodium cicutarium*, Stork's-bill, AF, Euro  
*Geranium pusillum*, Slender crane's-bill, AF, Euro

Gramineae (Poaceae)

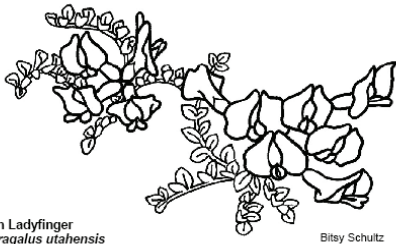
*Aegilops cylindrica* (*Cylindropyrum cylindricum*), Jointed goatgrass, AG, Euro, **Co-Nox** (SanJ)  
*Agropyron cristatum* (*A. pectinatum*, *A. sibiricum*, *A. fragile*, *A. mongolicum*, *A. desertorum*), Crested wheatgrass, PG, Euro  
*Agrostis capillaris* (*A. tenuis*), Colonial bentgrass, PG, Euro  
*Agrostis stolonifera* (*A. alba*, *A. gigantea*), Redtop, PG, Euro  
*Alopecurus geniculatus*, Marsh foxtail, PG, Euro  
*Alopecurus pratensis*, Meadow foxtail, PG, Euro  
*Alopecurus ventricosus* (*A. arundinaceus*), Creeping foxtail, PG, Euro  
*Apera interrupta*, Italian sandgrass, AG, Euro  
*Arrhenatherum elatius*, Tall oat-grass, PG, Euro  
*Arundo donax*, Giant reed, PG, Euro  
*Avena fatua* var. *fatua*, Wild oats, AG, Euro  
*Avena fatua* var. *sativa* (*A. sativa*), Oats, AG, Euro  
*Bothriochloa ischaemum*, Yellow bluestem, PG, Euro  
*Bromus briziformis*, Rattlesnake chess, AG, Euro  
*Bromus catharticus* (*B. willdenowii*), Rescue grass, AG, Euro  
*Bromus diandrus* (*B. rigidus*, *Anisantha diandra*), Ripgut brome, AG, Euro  
*Bromus hordeaceus* (*B. mollis*, *B. racemosus*), Soft chess, AG, Euro  
*Bromus inermis* var. *inermis* (*Bromopsis inermis*), Smooth brome, PG, Euro  
*Bromus japonicus* (*B. arvensis*), Japanese brome, AG, Euro  
*Bromus rubens*, Red brome, AG, Euro  
*Bromus secalinus*, Rye chess, AG, Euro  
*Bromus sterilis* (*Anisantha sterilis*), Poverty brome, AG, Euro  
*Bromus tectorum* (*Anisantha tectorum*), Cheatgrass, AG, Euro  
*Bromus trinii* (*B. berterouanus*), Chilean chess, AG, SAm  
*Buchloe dactyloides*, Buffalo grass, PG, CNAm  
*Chloris verticillata*, Tumble windmillgrass, PG, WNAm  
*Crypsis alopecuroides*, Prickle-grass, AG, Euro  
*Crypsis schoenoides*, Common prickle-grass, AG, Euro  
*Cynodon dactylon*, Bermuda grass, PG, Afr, **UT-Nox** (except Wash Co)  
*Dactylis glomerata*, Orchard grass, PG, Euro  
*Digitaria ischaemum*, Smooth crabgrass, AG, Euro  
*Digitaria sanguinalis*, Hairy crabgrass, AG, Euro  
*Echinochloa colona*, Awnless barnyard-grass, AG, W  
*Echinochloa crus-galli*, Barnyard-grass, AG, Euro  
*Eleusine indica*, Goosegrass, AG, TropAs

*Elymus elongatus* (*Agropyron elongatum*, *Thinopyrum ponticum*), Tall wheatgrass, PG, Euro  
*Elymus hispidus* (*Agropyron intermedium*, *Elytrigia intermedia*, *Thinopyrum intermedium*), Intermediate wheatgrass, PG, Euro  
*Elymus junceus* (*Psathyrostachys juncea*), Russian wildrye, PG, Rus  
*Elymus repens* (*Agropyron repens*, *Elytrigia repens*), Quackgrass, PG, Euro, **UT-Nox**  
*Eragrostis barrelieri*, Mediterranean lovegrass, AG, Med  
*Eragrostis cilianensis*, Stinkgrass, AG, Euro  
*Eragrostis curvula*, Weeping lovegrass, PG, Afr  
*Eragrostis lehmanniana*, Lehmann's lovegrass, PG, Afr  
*Eragrostis mexicana* (*E. orcuttiana*), Mexican lovegrass, AG, WNAm  
*Eragrostis minor*, Little lovegrass, AG, Euro  
*Eremopyrum triticeum* (*Agropyron triticeum*), Annual wheatgrass, AG, Asia  
*Eriochloa contracta*, Prairie cup-grass, AG, CNAm  
*Festuca arundinacea* (*Schedonorus phoenix*, *S. arundinaceus*, *Lolium arundinaceum*), Tall fescue, PG, Euro  
*Festuca bromoides* (*Vulpia bromoides*), Brome six-weeks fescue, AG, Euro  
*Festuca myuros* (*Vulpia myuros*), Foxtail fescue, AG, Euro  
*Festuca pratensis* (*Schedonorus pratensis*, *Lolium pretense*), Meadow fescue, PG, Euro  
*Festuca rubra*, Red fescue, PG, ENAm  
*Holcus lanatus*, Common velvet-grass, PG, Euro  
*Hordeum marinum* (*H. geniculatum*), Mediterranean barley, AG, Euro  
*Hordeum murinum* (*H. leporinum*, *Critiesion glaucum*), Rabbit barley, AG, Euro  
*Lolium perenne*, Perennial ryegrass, PG, Euro  
*Muhlenbergia schreberi*, Nimblewill muhly, PG, ENAm  
*Oryzopsis miliacea* (*Piptatherium miliaceum*), Smilo grass, PG, Med, Rep in In termountain Flora (1977)  
*Panicum antidotale*, Blue panicgrass, PG, Asia  
*Panicum dichotomiflorum*, Spreading panicgrass, AG, ENAm  
*Panicum flexile*, Wiry panicgrass, AG, ENAm  
*Panicum miliaceum*, Broomcorn panic-grass, AG, Asia  
*Phalaris canariensis*, Canary grass, AG, Afr  
*Phleum pretense*, Timothy, PG, Euro  
*Piptochaetium lasianthum*, Speargrass, PG, SAm  
*Poa annua*, Annual bluegrass, AG, Euro & WNAm  
*Poa bulbosa*, Bulbous bluegrass, PG, Euro  
*Poa compressa*, Canada bluegrass, PG, Euro  
*Poa trivialis*, Roughstalked bluegrass, PG, Euro  
*Polypogon interruptus*, Ditch polypogon, PG, OW  
*Polypogon monspeliensis*, Rabbit-foot-grass, AG, Euro

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- Polypogon semiverticillatus* (*P. viridis*, *Agrostis semiverticillata*), Water polypogon, PG, Eura
- Puccinellia distans*, Weeping alkaligrass, PG, Eura
- Puccinellia fasciculata*, Torrey's alkaligrass, PG, Euro
- Saccharum ravennae* (*Erianthus ravennae*), Ravenna grass, PG, Eura
- Schismus arabicus*, Arabian grass, AG, Med
- Schismus barbatus*, Mediterranean grass, AG, Med
- Sclerochloa dura*, Hardgrass, AG, Eura
- Secale cereale*, Cultivated rye, AG, Eura
- Setaria glauca* (*S. pumila*, *Pennisetum glaucum*), Yellow bristlegrass, AG, Eura
- Setaria verticillata*, Bur bristlegrass, AG, Eura
- Setaria viridis*, Green bristlegrass, AG, Eura
- Sorghum bicolor*, Grain sorghum, PG, Eura
- Sorghum halepense*, Johnson-grass, PG, Eura, **UT-Nox**
- Taeniatherum caput-medusae*, Medusa-head, AG, Asia, **UT-Nox**
- Triticum aestivum*, Wheat, AG, Eura
- Ventenata dubia*, Ventenata, AG, Euro
- Guttiferae (Clusiaceae, Hypericaceae)
- Hypericum perforatum*, Klamath weed, PF, Euro, **Co-Nox** (BoxE)
- Haloragaceae
- Myriophyllum spicatum* (*M. exalbescens*), European milfoil, PF, Euro
- Hydrophyllaceae
- Nemophila maculata*, Fivespot, AF, WNAm
- Iridaceae
- Iris germanica*, Fleur-de-lis, PF, Euro
- Iris pseudacorus*, Yellow flag, PF, Euro
- Juglandaceae
- Juglans nigra*, Black walnut, T, ENAm
- Juncaceae
- Juncus compressus*, Compressed rush, PG, Euro
- Juncus gerardii*, Black grass, PG, Eura & ENAm
- Labiatae (Lamiaceae)
- Ajuga reptans*, Carpet-bugle, PF, Euro
- Dracocephalum thymiflorum* (*Moldavica thymiflora*), Thyme-leaf dragonhead, AF, Eura
- Glecoma hederacea*, Ground ivy, PF, Eura
- Lamium amplexicaule*, Dead-nettle, AF, Euro
- Lamium purpureum*, Purple dead-nettle, AF, Euro
- Leonurus cardiaca*, Motherwort, PF, Asia
- Marrubium vulgare*, Common horehound, PF, Eura
- Melissa officinalis*, Lemon balm, PF, Euro
- Mentha citrata*, Bergamot mint, PF, Euro
- Mentha piperita*, Peppermint, PF, Euro
- Molucella laevis*, Shellflower, AF, Asia
- Nepeta cataria*, Catnip, PF, Euro
- Salvia azurea*, Blue sage, PF, ENAm
- Salvia greggii*, Gregg sage, S, WNAm
- Salvia sclarea*, Clary sage, PF, Euro
- Salvia sylvestris* (*S. nemorosa*), Forest salvia, PF, Euro
- Satureja vulgaris* (*Clinopodium vulgare*), Savory, PF, Eura & ENAm
- Stachys byzantina*, Woolly betony, PF, Asia
- Teucrium chamaedrys*, Wall germander, PF, Euro
- Leguminosae (Fabaceae)
- Albizia julibrissin*, Silk-tree, T, Asia
- Alhagi maurorum*, Camel-thorn, PF, Asia, **Co-Nox** (SanJ)
- Amorpha fruticosa* var. *occidentalis*, False indigo, S, WNAm
- Anthyllis vulneraria*, Kidney vetch, PF, Eura
- Astragalus cicer*, Chickpea milkvetch, PF, Euro
- Astragalus falcatus*, Russian sickle milk vetch, PF, Euro
- Caesalpinia gilliesii*, Poinciana, S, SAM
- Caragana arborescens*, Siberian pea-tree, S, Rus
- Colutea arborescens*, Bladder-senna, S, Euro
- Coronilla varia* (*Securigera varia*), Crown-vetch, PF, Euro
- Cytisus scoparius*, Scots broom, S, Euro
- Desmanthus illinoensis*, Illinois mimosa, PF, ENAm
- Galega officinalis*, Goatsrue, PF, Euro, **Co-Nox** (Cach)
- Gleditsia triacanthos*, Honey locust, T, ENAm
- Glycyrrhiza glabra*, Licorice, PF, Euro
- Halimodendron halodendron*, Salt-tree, S, Asia
- Lathyrus latifolius*, Perennial sweetpea, PF, Euro
- Lathyrus sylvestris*, Scots' sweetpea, PF, Euro
- Lotus corniculatus*, Bird's-foot-trefoil, PF, Euro
- Lotus tenuis* (*L. glaber*), Slender bird's-foot trefoil, PF, Euro
- Medicago falcata* (*M. sativa* var. *falcata*), Yellow alfalfa, PF, Eura
- Medicago lupulina*, Black medick, AF, Euro
- Medicago sativa*, Alfalfa, PF, Euro
- Melilotus alba*, White sweet-clover, AF, Euro
- Melilotus indica*, Indian sour-clover, AF, Eura
- Melilotus officinalis*, Yellow sweet-clover, PF, Euro
- Onobrychis vicifolia*, Sainfoin, PF, Euro
- Oxytropis riparia*, Riparian locoweed, PF, Asia
- Parkinsonia aculeata*, Jerusalem-thorn, T, WNAm
- Robinia pseudoacacia*, Black locust, T, ENAm
- Senna artemisioides*, Sage cassia, S, Aust
- Sphaerophysa salsula* (*Swainsonia salsula*), Red bladder-vetch, PF, Asia
- Trifolium fragiferum*, Strawberry clover, PF, Euro
- Trifolium hybridum*, Alsike clover, PF, Euro
- Trifolium pratense*, Red clover, PF, Euro
- Trifolium repens*, White clover, PF, Euro
- Trigonella corniculata*, Horned trigonella, AF, Euro
- Vicia villosa* var. *villosa*, Hairy vetch, AF, Euro
- Liliaceae
- Asparagus officinalis*, Asparagus, PF, Eura
- Hemerocallis fulva*, Orange day-lily, PF, Eura
- Hyacinthus orientalis*, Common hyacinth, PF, Asia
- Muscari botryoides*, Grape hyacinth, PF, Euro
- Ornithogalum umbellatum*, Star of Bethlehem, PF, Euro
- Linaceae
- Linum grandiflorum*, Flowering flax, AF, Afr
- Lythraceae
- Lythrum salicaria*, Purple loosestrife, PF, Euro, **UT-Nox**
- Lythrum tribracteatum*, Three-bract loosestrife, AF, Eura
- Malvaceae
- Abutilon theophrasti*, Velvetleaf, AF, Euro, **Co-Nox** (SanP)
- Althaea rosea* (*Alcea rosea*), Hollyhock, PF, Asia
- Hibiscus trionum*, Flower-of-an-hour, AF, Afr
- Malva neglecta*, Common mallow, AF, Eura
- Malva parviflora*, Small-flower mallow, AF, Euro
- Malva sylvestris*, High mallow, PF, Euro
- Malva verticillata* (*M. crispa*), Curled mallow, AF, Eura
- Meliaceae
- Melia azedarach*, Chinaberry, T, Asia
- Moraceae
- Fatoua villosa*, Hairy crabweed, AF, Asia
- Morus alba*, White mulberry, T, Asia
- Nyctaginaceae
- Mirabilis nyctaginea* (*Oxybaphus nyctagineus*, *O. comatus*), Heart-leaf four-o'clock, PF, CNAm
- Nymphaeaceae
- Nymphaea odorata*, Fragrant water-lily, PF, ENAm
- Oleaceae
- Fraxinus pensylvanica*, Green ash, T, ENAm
- Onagraceae
- Oenothera speciosa*, Nuttall's evening-primrose, PF, CNAm
- Oxalidaceae
- Oxalis corniculata*, Creeping yellow wood-sorrel, PF, Euro
- Oxalis dillenii*, Southern yellow wood-sorrel, PF, ENAm
- Papaveraceae
- Argemone polyanthemus*, White prickly-poppy, PF, CNAm, Rep in FNA (1997)
- Eschscholzia californica*, California poppy, AF, WNAm
- Papaver glaucum*, Tulip poppy, AF, Asia
- Papaver rhoeas*, Corn poppy, AF, Eura
- Roemeria refracta*, Asian poppy, AF, Eura
- Pinaceae
- Larix occidentalis*, Western larch, T, WNAm
- Plantaginaceae
- Plantago lanceolata*, English plantain, PF, Eura
- Plantago major*, Common plantain, PF, Euro (some strains may be native)

- Polemoniaceae  
*Gilia capitata*, Ornamental gilia, AF, WNAm
- Polygonaceae  
*Polygonum argyrocolen* (included in *P. ramosissimum* in Utah Flora 2003), Persian knotweed, AF, Asia, Rep in FNA (2005)  
*Polygonum aubertii* (*Fallopia aubertii*, *F. baldschuanica*), Silver lace-vine, PF, Asia  
*Polygonum aviculare* (*P. arenastrum*), Yard knotweed, AF, Eura  
*Polygonum convolvulus* (*Fallopia convolvulus*), Black-bindweed, AF, Euro  
*Polygonum cuspidatus* (*Reynoutria japonica*, *Fallopia japonica*), Fleece knotweed, PF, Asia  
*Polygonum hydropiper* (*Persicaria hydropiper*), Water-pepper, AF, Euro  
*Polygonum lapathifolium* (*Persicaria lapathifolia*), Willow-weed, AF, Eura  
*Polygonum persicaria* (*Persicaria maculosa*), Lady's-thumb, AF, Eura  
*Rumex acetosella* (*Acetosella vulgaris*), Sheep sorrel, PF, Eura  
*Rumex crispus*, Curly dock, PF, Eura  
*Rumex dentatus*, Dentate dock, PF, Asia  
*Rumex obtusifolius*, Bitter dock, PF, Eura  
*Rumex patientia*, Patience dock, PF, Eura  
*Rumex stenophyllus*, Narrow-leaved dock, PF, Eura
- Portulacaceae  
*Portulaca oleracea*, Common purslane, AF, ENAm
- Potamogetonaceae  
*Potamogeton crispus*, Crisped pondweed, PF, Euro
- Primulaceae  
*Anagallis arvensis*, Scarlet pimpernel, AF, Euro
- Punicaceae  
*Punica granatum*, Pomegranate, T, Asia
- Ranunculaceae  
*Adonis aestivalis*, Pheasant-eye, AF, Eura  
*Clematis orientalis* (*Viticella orientalis*), Oriental clematis, PF, Asia  
*Delphinium ajacis* (*Consoldia ajacis*), Rocket larkspur, AF, Euro  
*Ranunculus acris* var. *acris*, Tall buttercup, PF, Eura  
*Ranunculus arvensis*, Field buttercup, AF, Euro  
*Ranunculus repens* var. *pleniflorus* Creeping buttercup, PF, Eura  
*Ranunculus repens* var. *repens*, Creeping buttercup, PF, Eura  
*Ranunculus testiculatus* (*Ceratocephala orthoceras*, *C. testiculata*), Bur buttercup, AF, Eura
- Rhamnaceae  
*Rhamnus cathartica*, Common buckthorn, S, Eura  
*Ziziphus jujuba*, Jujube, S, Eura
- Rosaceae  
*Crataegus chrysoarpa* (*C. columbiana* var. *chrysoarpa*, *C. rotundifolia*), Yellow hawthorn, S, CNAm  
*Geum urbanum*, City avens, PF, Eura  
*Malus pumila* (*Pyrus malus*), Common apple, T, Eura  
*Potentilla norvegica*, Norwegian cinquefoil, AF, Euro
- Prunus americana*, American plum, S, CNAm  
*Prunus besseyi*, Western sand cherry, S, CNAm  
*Prunus persica*, Peach, T, Asia  
*Prunus serotina*, Wild black cherry, T, ENAm  
*Prunus tomentosa*, Bush cherry, S, Asia  
*Pyracantha coccinea*, Fire-thorn, S, Eura  
*Pyrus calleryana*, Callery's pear, T, Asia  
*Pyrus communis*, Common pear, T, Eura  
*Rosa canina*, Dog rose, S, Euro  
*Rosa egalanteria* (*R. rubiginosa*), Sweet-briar, S, Euro  
*Rosa multiflora*, Multiflora rose, S, Asia  
*Rubus discolor* (*R. armeniacus*), Himalayan blackberry, S, Eura  
*Sanguisorba minor*, Garden burnet, PF, Euro  
*Sorbus aucuparia*, European mountain-ash, T, Euro
- Rubiaceae  
*Galium mollugo*, Great hedge bedstraw, PF, Med, Rep in Intermountain Flora (1984)  
*Rubia tinctorum*, Madder, PF, Euro
- Salicaceae  
*Populus alba*, White poplar, T, Eura  
*Salix fragilis*, Crack willow, T, Eura
- Sapindaceae  
*Koelreuteria paniculata*, Golden rain-tree, T, Asia
- Saxifragaceae  
*Darmera peltata*, Umbrella plant, PF, WNAm
- Scrophulariaceae  
*Leucophyllum frutescens*, Leucophyllum, S, WNAm  
*Linaria canadensis* (*Nuttallanthus texanus*), Blue toadflax, AF, ENAm  
*Linaria dalmatica* (*L. genistifolia* ssp. *dalmatica*), Dalmatian toadflax, PF, Euro, **Co-Nox** (Salt, Wasa)  
*Linaria vulgaris*, Butter-and-eggs, PF, Eura, **Co-Nox** (Wasa)  
*Penstemon venustus*, Shrubby penstemon, PF, WNAm  
*Verbascum blattaria*, Moth mullein, PF, Euro  
*Verbascum thapsus*, Woolly mullein, PF, Eura  
*Verbascum virgatum*, Wand mullein, PF, Euro  
*Veronica anagallis-aquatica*, Water speedwell, PF, Euro  
*Veronica arvensis*, Corn speedwell, AF, Eura  
*Veronica biloba* (*Pocilla biloba*), Two-lobed speedwell, AF, Asia  
*Veronica hederifolia*, Ivy-leaved Speedwell, AF, Euro  
*Veronica persica* (*Pocilla polita*), Bird-eye speedwell, AF, Eura
- Simaroubaceae  
*Ailanthus altissima*, Tree-of-heaven, T, Asia
- Solanaceae  
*Datura stramonium*, Jimson weed, AF, TropAm  
*Hyoscyamus niger*, Black henbane, AF, Euro, **Co-Nox** (Rich, SanP)  
*Lycium barbarum*, Matrimony-vine, S, Eura
- Physalis heterophylla*, Clammy ground-cherry, PF, ENAm  
*Physalis hispida*, Hispid ground-cherry, PF, CNAm, Rep in Intermtn Flora (1984)  
*Physalis pubescens*, Pubescent ground-cherry, AF, ENAm  
*Physalis virginiana*, Virginia ground-cherry, PF, ENAm, Rep in Intermountain Flora (1984)  
*Solanum carolinense*, Carolina nightshade, PF, ENAm  
*Solanum dulcamara*, European Bittersweet, PF, Eura  
*Solanum elaeagnifolium*, Silverleaf nightshade, PF, CNAm, **CoNox** (SanJ)  
*Solanum nigrum*, Black nightshade, AF, Euro  
*Solanum rostratum*, Buffalobur, AF, CNAm, **Co-Nox** (Mill, SanJ)  
*Solanum sarrachoides* (*S. villosum*, *S. physalifolium* var. *nitidibaccatum*), Ground-cherry nightshade, AF, SAM
- Tamaricaceae  
*Tamarix chinensis* (*T. pentandra*, *T. ramosissima*), Five-stamen tamarisk, S, Eura, **Co-Nox** (Uint)  
*Tamarix parviflora* (*T. tetrandra*), Small-flowered tamarisk, S, Euro
- Ulmaceae  
*Ulmus pumila*, Siberian elm, T, Asia
- Umbelliferae (Apiaceae)  
*Apium graveolens*, Celery, PF, Eura, Rep in Intermtn Flora (1997)  
*Carum carvi*, Caraway, PF, Eura  
*Conium maculatum*, Poison-hemlock, PF, Eura, **Co-Nox** (Cach, Davi, Kane)  
*Daucus carota*, Queen Anne's lace, PF, Eura  
*Foeniculum vulgare*, Sweet fennel, PF, Euro  
*Pastinaca sativa*, Common parsnip, PF, Euro  
*Torilis arvensis*, Field hedge-parsley, AF, Euro
- Valerianaceae  
*Centranthus ruber*, Centranthus, AF, Euro  
*Valerianaella locusta*, Valerianella, AF, Euro
- Verbenaceae  
*Lantana camara*, Lantana, S, SAM  
*Lantana montevidensis*, Trailing lantana, S, SAM  
*Phyla nodiflora*, Matted fog-fruit, PF, WNAm  
*Verbena rigida*, Tuber vervain, PF, SAM  
*Verbena tenuisecta*, South American vervain, PF, SAM
- Violaceae  
*Viola arvensis*, Field pansy, AF, Euro  
*Viola odorata*, English violet, PF, Euro  
*Viola papilionacea* (*V. sororia*), Meadow violet, PF, ENAm  
*Viola tricolor*, Pansy, AF, Eura
- Vitaceae  
*Parthenocissus quinquefolia*, Virginia creeper, S., ENAm
- Zygophyllaceae  
*Tribulus terrestris*, Puncture vine, AF, Eura, **Co-Nox** (Cach, Webe)



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