

# California Native Plant Society

Forest Issues Program  
P.O. Box 1067  
Arcata, CA 95518  
February 10, 2006

Brian Amme  
PEIS Project Manager  
Nevada State Office  
1340 Financial Boulevard  
P.O. Box 12000  
Reno, Nevada 89520-0006

Re: Comments of the California Native Plant Society on the Draft Programmatic Environmental Impact Statement for Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States

Dear Mr. Amme:

The California Native Plant Society (CNPS) is a nonprofit organization of nearly 10,000 amateurs and professionals dedicated to the preservation of California's diverse native flora. CNPS conducts a variety of conservation efforts focused on long-term protection and preservation of native flora in its natural habitat. The Society has been assessing the status of rare plant species for over 30 years, and is the foremost non-governmental organization working to protect rare, threatened, and endangered plants in California.

We have reviewed the Draft Programmatic Environmental Impact Statement ("Draft PEIS"), the Draft Programmatic Environmental Report (Draft "PER"), and the Draft Biological Assessment ("Draft BA"), prepared by the Bureau of Land Management ("BLM") pursuant to the National Environmental Policy Act ("NEPA") for its proposed use of herbicides to treat vegetation on BLM managed land in 17 western states, including California. Our concerns about the potential impacts and inadequate assessment of the proposed actions are described in detail below.

Please regard these comments as supplemental to our comments dated March 29, 2002 on the "Notice of Intent to Prepare an EIS," since many of these concerns have not been addressed in the document currently under review.



*Dedicated to the preservation of California native Flora*

## Herbicide Impacts to Rare, Threatened, and Endangered Plant Species

The best available science indicates that many registered pesticides are likely to cause negative impacts to endangered species even when used lawfully. There is evidence that long-term impacts of herbicides can have dire effects on rare plants. CNPS is particularly concerned with the known reproductive effects of sulfonylurea herbicides. Many of the current scientific publications addressing the reproductive effects of the sulfonylurea herbicides are not included in the literature review for the BLM's assessment. **Copes of these omitted references will be sent by U.S. mail** and are summarized and cited below. We hope that your staff will review these important sources and reevaluate the PEIS to address these well-known impacts that have been documented by peer-reviewed scientific studies funded by the U.S. EPA.

The sulfonylurea herbicides such as sulfometuron methyl (Oust©) and chlorsulfuron (Glean©) are known to cause significant reductions in fruit and seed production in a variety of plant species, even at 1000 times lower than the recommended application rate.<sup>1</sup> Current EPA registration requirements do not include testing for reproductive effects, yet more than 230 formulations containing these chemicals had been registered by 1987.<sup>2</sup> Reproductive damage to rare plant populations could severely threaten rare and endangered species' long-term survival. Although rare plant species have been directly impacted by this herbicide, no monitoring has been done to determine whether surviving individuals have been reproductively affected, even though these impacts could lead to severe impacts to the species as a whole.

In Idaho, Oust was sprayed aerially in 1999 and 2000, resulting in drift that allegedly damaged 100,000 acres of farmland.<sup>3</sup> Use of the chemical was subsequently suspended by the Idaho BLM, and the incident is the subject of an ongoing lawsuit involving over 100 farmers, BLM, and DuPont (manufacturer of the chemical).<sup>4</sup> While DuPont claims that BLM used the chemical improperly, BLM claims that it followed label instructions. This incident suggests that such damage cannot be predicted or avoided even if the chemical is used according to instructions approved by the U.S. Environmental Protection Agency's pesticide registration process. Soil tests conducted by the Montana State University have

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<sup>1</sup> Fletcher, J. S., T. G. Pfleeger, H. C. Ratsch, and R. Hayes. 1996. Potential impact of low levels of chlorsulfuron and other herbicides on growth and yield of nontarget plants. *Environmental Toxicology and Chemistry*. 15: 1189-1196.

<sup>2</sup> Pfleeger, T., J. Fletcher, and H. Ratsch. 1992. Effects of Glean, a sulfonylurea herbicide, on the reproductive biology and fruit set in cherry trees. Progress Report to the EPA Region X. EPA/600/R-92/020.

<sup>3</sup> Warbis, M. 2002. Landowners sue DuPont, alleging herbicide damage. Associated Press. <http://www.anomalous-images.com/news/news707.html>

<sup>4</sup> Hand, Guy. 2002. Exotic-killing herbicide is ousted from the range. High Country News: Vol. 34, No. 11.

determined that crop damage was caused by concentrations of Oust® ranging from 0.079-24 ppb.<sup>5</sup>

CNPS believes that the continued use of Oust®, Glean®, and related sulfonylurea herbicides is irresponsible due to its reproductive impacts to non-target plants.

### **Omissions from the Special Status Species List in Appendix H of the Draft PEIS**

The following at-risk taxa are also known or likely to occur on BLM lands in California, Nevada, or both, and should be included in the Special Status Species List in Appendix H of the Draft PEIS:

*Astragalus cimae* var. *cimae*  
*Astragalus inyoensis*  
*Astragalus johannis-howellii*  
*Atriplex argentea* var. *longitrichoma*  
*Eriogonum beatleyae*  
*Eriogonum microthecum* var. *schoolcraftii*  
*Lathyrus hitchcockianus*  
*Opuntia pulchella*  
*Pediomelum castoreum*  
*Salvia funerea*  
*Sclerocactus polyancistrus*

This does not include additional taxa in the Watch-list portion, which could number at least as many species that should be considered.

Please see the attached appendices for additional species that should also be considered under this and any subsequent plans that tier to the plan:

- Appendix A: CNPS List 1B plants of sagebrush scrub
- Appendix B: CNPS List 1B plants of pinyon-juniper woodlands
- Appendix C: Sensitive plants that occur in both California and Nevada.

### **Impacts to Pollinators**

In addition to direct and cumulative impacts to rare plant species, pesticide use constitutes a significant threat to pollinators of rare plants.<sup>6</sup> Research has shown

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<sup>5</sup> University of Idaho Pest Management Center Newsletter, Vol. I , no.3, June 2001. University of Idaho College of Agriculture.

<http://www.ag.uidaho.edu/ipm/Newletters/newsletter3.pdf>

<sup>6</sup> Spira, T. P. 2001. Plant-pollinator interactions: A threatened mutualism with implications for the ecology and management of rare plants. *Natural Areas Journal*. 21: 78-88.

that pesticide damage to native pollinators—either from direct exposure or from foraging on contaminated plants—can cause significant reductions in seed set.<sup>7</sup> Pesticide use in rangelands and agricultural regions also threatens rare plant survival by reducing pollinator populations.<sup>8</sup> In the case of butterflies and moths, detailed information on host (larval and nectar) food sources is crucial to assess impacts to plants that rely on these species for pollination services. Studies have found that herbicides negatively impact pollinators' eggs as well as their host plants.<sup>9</sup> Herbicide use can have adverse impacts to pollinators necessary for reproduction in native plant populations. Studies have also found that use of herbicides over large landscapes can deplete pollinators that may depend upon exotic species for nectar and pollen in order to survive during migrations.<sup>10, 11</sup>

### **Impacts to seed- and fruit-bearing plants important to wildlife for food**

CNPS is concerned about native plants that provide important food sources for birds, deer, and other wildlife. The impacts to rare plants described above, especially from chlorsulfuron and sulfometuron methyl, are of concern because reproductive damage to food-source plants is likely to have detrimental effects for animal species that rely on these plants for food. Of particular concern are threatened, endangered, and sensitive species, and we believe that these potential negative impacts must be considered in any proposed use of herbicides, but especially aerial and broadcast ground spray plans.

CNPS believes that the continued use of Oust®, Glean®, and related sulfonylurea herbicides is irresponsible due to its reproductive impacts to non-target plants.

### **Inappropriate Definition of “Weed” in Draft PEIS**

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<sup>7</sup> Thomson, J.D., R.C. Plowright, and G.R. Thaler. 1985. Matacil insecticide spraying, pollinator mortality, and plant fecundity in New Brunswick forests. *Canadian Journal of Botany*. 63: 2056-2061.

<sup>8</sup> Sipes, S.D. and V.J. Tepedino. 1995. Reproductive biology of the rare orchid, *Spiranthes diluvialis*: Breeding system, pollination, and implications for conservation. *Conservation Biology*: 9: 929-938.

<sup>9</sup> Sucoff, E., T. Nichols and E. Lu. 2001. Herbicide Effects on Host Plants of Karner Blue Butterfly and on Butterfly Development from Egg to Adult. Department of Forest Resources Staff Paper Series Number 151, Department of Forest Resources, College of Natural Resources and Minnesota Agricultural Experiment Station, University of Minnesota, St. Paul, Minnesota.

<http://www.cnr.umn.edu/FR/publications/staffpapers/Staffpaper151.PDF>

<sup>10</sup> Buchmann, S.L. and G.P. Nabhan. 1997. *The Forgotten Pollinators*. Island Press, Washington D.C.

<sup>11</sup> Kearns, C.A., D.W. Inouye, and N.M. Waser. 1998. Endangered mutualisms: the conservation of plant-pollinator interactions. *Ann. Rev. Ecol. Syst.* 29:83-112.

The definition of a weed is inappropriate, since it could include many native plants that are important habitat and/or food sources for native pollinators, birds, mammals, amphibians, and reptiles, many of which are protected by state and federal laws. Herbicides should be used a last resort to manage invasive, non-native species that have been shown by scientific research to have negative impacts on native species. Prevention and non-chemical management should be the priority methods of managing invasive, non-native species.

### Impacts of Drift and Atmospheric Deposition of Herbicides

In a study on injury to nearby plants from localized atmospheric deposition of herbicides, researchers found these effects particularly with the use of sulfonyleurea compounds such as Oust. The results suggested a general atmospheric loading of herbicides with occasional deposition, rather than point source drift.<sup>12</sup>

### Non-Native Seed Planting by BLM

BLM introduces non-native seeds to a variety of habitats such as prairies. CNPS believes that BLM's seeding program should be assessed before or along with proposals to spray herbicides to manage non-native plants. Introductions include alfalfa, crested wheatgrass, sweetclover, white and subterranean clover, tall fescue, smooth brome, non-native pines, and Norway spruce. The BLM Seed Guidebook recommends many non-native grasses and forbs for "rehabilitation and conservation seeding," including many species considered to be moderately to highly invasive in natural ecosystems by the Exotic Pest Plant Councils, U.S. Fish and Wildlife Service, National Invasive Species Council and Executive Order No.13112 concerning Invasive Species.<sup>13</sup>

### Cumulative Impacts

Cumulative impacts are not adequately addressed, in part due to the inadequate assessment of direct impacts described above. When these impacts have been addressed and minimized, CNPS would be happy to have the opportunity for further review of the cumulative impacts analysis as required by the National Environmental Policy Act.

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<sup>12</sup> Allan S. F., M. A. Bhatti, G. I. Mink, and G. Reisenauer. 1995. Biomonitoring with Sentinel Plants to Assess Exposure of Nontarget Crops to Atmospheric Deposition of Herbicide Residues. *Environmental Toxicology and Chemistry*: No. 15, pp. 452–459.

<sup>13</sup>Lambert, S. 2005. Guidebook to the Seeds of Native and Non-Native Grasses, Forbs and Shrubs of the Great Basin. Idaho Technical Bulletin No. 2005-04. U. S. Department of the Interior, Bureau of Land Management, Idaho State Office.  
[http://www.id.blm.gov/techbuls/05\\_04/](http://www.id.blm.gov/techbuls/05_04/)

While CNPS is not opposed to the judicious use of herbicides when there are no other options, particularly when necessary to protect rare native species, we also know that there are many risks associated with their use. Herbicide use can result in unforeseen non-target effects and can have long-term effects upon ecosystem processes and composition. Some of these non-target, indirect, or cumulative effects include:

Herbicides can shift vegetation composition towards weedy grasses.

Use of herbicides such as 2,4-D, clopyralid, picloram, atrazine can have the effect of killing native and exotic species while allowing weedy, exotic grasses to thrive. The use of Transline (clopyralid) in many instances has the potential to cause explosive growth of medusa head, cheat grass, barbed goat grass, and other weedy exotic grasses.<sup>14</sup>

Herbicide resistance

Reliance on herbicides for vegetation management can result in rapid development of herbicide-resistant ecotypes. Herbicide use also leaves a vacuum that sets the stage for further invasion by a more aggressive ecotype of the targeted weed or by a new invading species.<sup>15</sup>

Therefore, it is necessary to include a full report and accounting in this EIS of the actual acreage, quantity, formulations of the herbicides used, and the number of years to date that herbicides have been used in order to kill sagebrush and other native vegetation on BLM lands in the western region. We ask that the EIS include direct, indirect, and cumulative effects analysis of these types of effects resulting from herbicide use listed above.

Sincerely,



Jennifer Kalt  
Forest Issues Coordinator

Ec: Nevada Native Plant Society  
California Oak Foundation

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<sup>14</sup> DiTomaso, J.M., G.B. Kyser, S.B. Orloff, and S.F. Enloe. 2000. Integrated strategies offer site-specific control of yellow starthistle. *Calif. Ag.* 54:6; 30-36.

<sup>15</sup> Groves, R.H. 1989. Ecological control of invasive terrestrial plants. Pp. 437-461 in: Drake, J.A., H.A. Mooney, F.D. Castri, R.H. Groves, F.J. Kruger, M. Rejmánek, and M. Williamson, eds., *Biological Invasions: A Global Perspective*. Wiley & Sons, Chichester.

## Appendix A: CNPS List 1B plants of sagebrush scrub<sup>16,17</sup>

<i>Allium howellii</i> var. <i>clokeyi</i>	Mt. Pinos onion, Clokey's onion
<i>Arabis bodiensis</i>	Bodie Hills rockcress, Bodie Hills rock cress
<i>Astragalus anxius</i>	troubled milk-vetch, troubled milkvetch
<i>Astragalus atratus</i> var. <i>mensanus</i>	Darwin Mesa milkvetch, Darwin Mesa milk-vetch
<i>Astragalus cimae</i> var. <i>cimae</i>	cima milkvetch, Cima milk-vetch
<i>Astragalus gilmanii</i>	Gilman's milkvetch, Gilman's milk-vetch
<i>Astragalus johannis-howellii</i>	Long Valley milk-vetch
<i>Astragalus lemmonii</i>	Lemmon's milk-vetch
<i>Astragalus lentiformis</i>	lens-pod milk-vetch
<i>Astragalus monoensis</i>	Mono milkvetch, Mono milk-vetch
<i>Astragalus oophorus</i> var. <i>lavinii</i>	Lavin's milk-vetch
<i>Astragalus pseudiodanthus</i>	Tonopah milk-vetch
<i>Astragalus pulsiferae</i> var. <i>pulsiferae</i>	Ames' milk-vetch, Pulsifer's milk-vetch
<i>Astragalus pulsiferae</i> var. <i>suksdorfii</i>	Suksdorf's milk-vetch
<i>Cusickiella quadricostata</i>	Bodie Hills cusickiella
<i>Erigeron calvus</i>	bald fleabane, bald daisy
<i>Eriogonum prociduum</i>	prostrate buckwheat
<i>Galium glabrescens</i> ssp. <i>modocense</i>	Modoc bedstraw
<i>Horkelia hispidula</i>	White Mountain horkelia
<i>Ivesia aperta</i> var. <i>aperta</i>	Sierra Valley mousetail, Sierra Valley ivesia
<i>Ivesia kingii</i> var. <i>kingii</i>	alkali ivesia
<i>Ivesia paniculata</i>	Ash Creek ivesia, Ash Creek mousetail
<i>Ivesia sericoleuca</i>	Plumas mousetail, Plumas ivesia
<i>Ivesia webberi</i>	Webber's ivesia, wire mousetail
<i>Lupinus duranii</i>	Duran's Lupine, Mono Lake lupine
<i>Lupinus magnificus</i> var. <i>hesperius</i>	McGee Meadows lupine, Panamint Mountain lupine
<i>Lupinus magnificus</i> var. <i>magnificus</i>	Panamint Mtns. lupine, Panamint Mountain lupine
<i>Lupinus padre-crowleyi</i>	Dedecker lupine, Father Crowley's lupine
<i>Orthocarpus pachystachyus</i>	Shasta orthocarpus, Shasta owl's-clover
<i>Phacelia cookei</i>	Cooke's phacelia
<i>Phacelia inundata</i>	playa yellow phacelia, playa phacelia
<i>Phacelia monoensis</i>	Mono phacelia, Mono County phacelia
<i>Polyctenium fremontii</i> var. <i>confertum</i>	desert combleaf, flat-pod polyctenium
<i>Polygonum polygaloides</i> ssp. <i>esotericum</i>	whitemargin knot weed
<i>Pyrrocoma uniflora</i> var. <i>gossypina</i>	Bear Valley pyrrocoma, plantain goldenweed
<i>Sidalcea covillei</i>	Owens Valley checkerbloom ENDANGERED
<i>Thelypodium howellii</i> ssp. <i>howellii</i>	Howell's thelypody, Howell's thelypodium

<sup>16</sup> California Department of Fish and Game, Natural Diversity Database. Nov. 2002. Special Vascular Plants, Bryophytes, and Lichens. Biannual publication, Mimeo. 150 pp. Electronic version queried in Dec. 2005.

<sup>17</sup> CNPS. 2001. *Inventory of Rare and Endangered Plants of California* (sixth edition). Rare Plant Scientific Advisory Committee, David P. Tibor, Convening Editor. California Native Plant Society. Sacramento, CA.

## Appendix B: CNPS List 1B plants of pinyon-juniper woodlands<sup>18,19</sup>

<i>Allium munzii</i>	Munz's onion	ENDANGERED SPECIES
<i>Arabis bodiensis</i>	Bodie Hills rockcress, Bodie Hills rock cress	
<i>Arabis parishii</i>	Parish's rock cress	
<i>Arenaria ursina</i>	Bear Valley sandwort	THREATENED SPECIES
<i>Astragalus albens</i>	Cushenbury milk-vetch	ENDANGERED SPECIES
<i>Astragalus atratus</i> var. <i>mensanus</i>	Darwin Mesa milkvetch	
<i>Astragalus cimae</i> var. <i>cimae</i>	cima milkvetch, Cima milk-vetch	
<i>Astragalus ertterae</i>	Walker Pass milk-vetch	
<i>Astragalus gilmanii</i>	Gilman's milkvetch	
<i>Astragalus lentiginosus</i> var. <i>sierrae</i>	Big Bear Valley milk-vetch	
<i>Astragalus leucolobus</i>	Bear Valley woollypod	
<i>Castilleja cinerea</i>	ash-gray Indian paintbrush	THREATENED
<i>Caulanthus californicus</i>	California jewelflower	ENDANGERED SPECIES
<i>Caulostramina jaegeri</i>	Jaeger's caulostramina, cliffdweller	
<i>Chorizanthe xanti</i> var. <i>leucotheca</i>	white-bracted spineflower, Riverside spineflower	
<i>Cupressus arizonica</i> ssp. <i>nevadensis</i>	Piute cypress	
<i>Cusickiella quadricostata</i>	Bodie Hills cusickiella	
<i>Delphinium purpusii</i>	Kern County larkspur	
<i>Dudleya abramsii</i> ssp. <i>affinis</i>	San Bernardino Mountains liveforever	
<i>Dudleya saxosa</i> ssp. <i>saxosa</i>	Panamint liveforever	
<i>Erigeron aquifolius</i>	Hall's fleabane, Hall's daisy	
<i>Erigeron parishii</i>	Parish's daisy, Parish fleabane	THREATENED
<i>Eriogonum breedlovei</i> var. <i>breedlovei</i>	Piute buckwheat, Breedlove's	
<i>Eriogonum eremicola</i>	Telescope Peak buckwheat, Wildrose Canyon buckwheat	
<i>Eriogonum ericifolium</i> var. <i>thornei</i>	Thorne's buckwheat	ENDANGERED SPECIES
<i>Eriogonum foliosum</i>	leafy buckwheat, Baja buckwheat	
<i>Eriogonum hoffmannii</i> var. <i>robustus</i>	robust Hoffmann's buckwheat	
<i>Eriogonum kennedyi</i> var. <i>pinicola</i>	Kern buckwheat	
<i>Eriogonum microthecum</i> var. <i>panamintense</i>	Panamint buckwheat	
<i>Eriogonum ovalifolium</i> var. <i>vineum</i>	Cushenbury buckwheat	ENDANGERED SPECIES
<i>Galium hilendiae</i> ssp. <i>carneum</i>	Panamint Mountains bedstraw	
<i>Galium hilendiae</i> ssp. <i>kingstonense</i>	Kingston Mountains bedstraw	
<i>Glossopetalon pungens</i>	Smooth greasewood, pungent glossopetalon	
<i>Ivesia jaegeri</i>	Jaeger's ivesia, Jaeger's mousetail	
<i>Ivesia patellifera</i>	Kingston Mtns. ivesia, Kingston Mountain mousetail	
<i>Layia heterotricha</i>	paleyellow tidytips, pale-yellow layia	
<i>Lepidium flavum</i> var. <i>felipense</i>	yellow pepperweed, Borrego Valley pepper-grass	
<i>Lesquerella kingii</i> ssp. <i>bernardina</i>	San Bernardino Mtns. bladderpod	ENDANGERED
<i>Lewisia disepala</i>	Yosemite lewisia	
<i>Linanthus killipii</i>	Baldwin Lake linanthus	

<sup>18</sup> California Department of Fish and Game, Natural Diversity Database. Nov. 2002. Special Vascular Plants, Bryophytes, and Lichens. Biannual publication, Mimeo. 150 pp. Electronic version queried in Dec. 2005.

<sup>19</sup> California Department of Fish and Game, Natural Diversity Database. Nov. 2002. Special Vascular Plants, Bryophytes, and Lichens. Biannual publication, Mimeo. 150 pp. Electronic version queried in Dec. 2005.

<i>Lotus argyraeus</i> var. <i>multicaulis</i>	scrub lotus, canyon bird's-foot trefoil
<i>Lotus argyraeus</i> var. <i>notitius</i>	Providence Mtns. lotus, canyon bird's-foot trefoil
<i>Lotus haydonii</i>	pygmy lotus, rock bird's-foot trefoil
<i>Lupinus excubitus</i> var. <i>medius</i>	Mountain Springs bush lupine
<i>Lupinus peirsonii</i>	Peirson's lupine, long lupine
<i>Marina orcuttii</i> var. <i>orcuttii</i>	California marina
<i>Mimulus shevockii</i>	Kelso Creek monkeyflower
<i>Monardella robisonii</i>	Rock Pennyroyal, Robison's monardella
<i>Navarretia setiloba</i>	Paiute Mountain pincushion plant
<i>Opuntia basilaris</i> var. <i>brachyclada</i>	short-joint beavertail, beavertail pricklypear
<i>Orobanche valida</i> ssp. <i>valida</i>	Rock Creek broomrape
<i>Oxytheca emarginata</i>	whitemargin oxytheca, white-margined oxytheca
<i>Oxytheca parishii</i> var. <i>goodmaniana</i>	Cushenbury oxytheca <b>ENDANGERED SPECIES</b>
<i>Penstemon californicus</i>	California beardtongue, California penstemon
<i>Penstemon stephensii</i>	Stephens's beardtongue
<i>Perityle inyoensis</i>	Inyo rock-daisy, Inyo rockdaisy
<i>Perityle villosa</i>	Hanaupah rockdaisy, Hanaupah rock daisy
<i>Phacelia monoensis</i>	Mono phacelia, Mono County phacelia
<i>Phacelia mustelina</i>	weasel phacelia
<i>Phacelia nashiana</i>	Charlotte's phacelia
<i>Phacelia novemmillensis</i>	Nine Mile Canyon phacelia
<i>Streptanthus campestris</i>	southern jewelflower, southern jewel-flower
<i>Streptanthus cordatus</i> var. <i>piutensis</i>	heartleaf twistflower, Piute Mtns. jewel-flower
<i>Streptanthus oliganthus</i>	Masonic Mtn. jewel-flower
<i>Stylocline masonii</i>	Mason neststraw, Mason's neststraw
<i>Trifolium macilentum</i> var. <i>dedeckerae</i>	DeDecker's clover



T3QG3G4 S3	xC2	nc		Cymopterus ripleyi var. saniculoides (sanicle biscuitroot)	W	
G2 S2	xC2	nc		Eriogonum bifurcatum (Pahrump Valley buckwheat)	T	
G3 S1	xC2	nc	c	Eriogonum prociduum (prostrate buckwheat)	W	
T2G4 S1	xC2	nc		Galium hilendiae ssp. kingstonense (Kingston Mountains bedstraw)	T	
T1QG2G3 S1	xC2	nc	s	Glossopetalon pungens var. glabrum (smooth dwarf greasebush)	W	
T2G2 S1	xC2	nc	sc	Ivesia aperta var. aperta (Sierra Valley mousetails)	T	w
G2G3 S2S3	xC2	nc	s	Ivesia jaegeri (Jaeger ivesia)	W	
G2 S1	C	sc	sc	Ivesia webberi (Webber ivesia)	CE	T
T1G4? S1?			n	Lotus argyraeus var. multicaulis (scrub lotus)	W	
G3?Q S2			n	Lupinus holmgrenianus (Holmgren lupine)	D	
G2G3 S2S3	xC2	n		Oryctes nevadensis (oryctes)	W	S
G2 S2	xC2	nc		Penstemon albomarginatus (white-margined beardtongue)	T	S
T2QG3 S2	xC2	n	s	Penstemon bicolor ssp. bicolor (yellow twotone beardtongue)	W	
T3QG3 S3	xC2	n	s	Penstemon bicolor ssp. roseus (rosy twotone beardtongue)	W	
T3G4 S2	xC2	nc	s	Penstemon fruticiformis ssp. amargosae (Death Valley beardtongue)	T	
G3 S3	xC2	n		Penstemon pahutensis (Pahute Mesa beardtongue)	W	
G2 S2?		nc	c	Phacelia inundata (playa phacelia)	W	W
G3Q S3	xC2	nc	si	Phacelia monoensis (Mono County phacelia)	T	
G2G3 S2			c	w Phacelia mustelina (weasel phacelia)	W	
G2Q S2			sc	i Polycytenium williamsiae (Williams combleaf)	CE	T W
G1 S1	C	sc		Potentilla basaltica (Soldier Meadow cinquefoil)	T	W

