GSS-ESER-187

A Review of Special Status Plant Species on the Idaho National Laboratory Site

Amy D. Forman

April 30, 2015

Gonzales-Stoller Surveillance, LLC.
120 Technology Drive
Idaho Falls, ID 83401

Prepared for:

U.S. Department of Energy-Idaho Operations Office
Environmental Surveillance, Education, and Research Program
Contract No. DE-NE0000300

Table of Contents

List of Tables

1.0 Background and Purpose

Rare and sensitive plant assessments are often used to support regulatory documentation, project planning, and land management decisions. At the Idaho National Laboratory (INL) Site, consideration of rare and sensitive plant species is an important component of the National Environmental Policy Act (NEPA) process, is often addressed in ecological risk assessments, and may be a factor in other land-management decisions. This document summarizes a recent review of the occurrence, or potential occurrence, of rare and sensitive plants on the INL Site. Its purpose is to provide the U.S. Department of Energy (DOE) and its contractors with a resource for environmental planning. The scope of this document is limited to compiling and summarizing work from rare and sensitive plant surveys previously performed on the INL Site and integrating applicable information generated by other agencies.

The first objective of this summary is to integrate and update three important sources of INL Site-specific information. Cholewa and Henderson (1982) completed the first and most comprehensive rare plant survey on the INL Site. They identified five species of regulatory concern and five additional rare species, which had not been previously documented in the region. Anderson et al. (1996) provided a summary of known occurrences of eight plant species which were considered rare and/or sensitive at the time of their report. Most recently, Rew et al. (2012) sampled approximately 125 km^2 in the center portion of the INL Site and did not detect any populations of rare or sensitive plant species in the areas they surveyed.

Two sources of information for rare and/or sensitive species on lands adjacent to the INL Site were also considered for this review. Both were survey reports for sensitive plants on Bureau of Land Management (BLM)-administered lands to the north and west of the INL Site. The first was completed in 1978 (Andersen and Henderson) on the Little Lost-Birch Creek planning unit, and the second was completed in 2009 (Colket et al.), also in the Little Lost River and Birch Creek Valleys.

Many of the species identified as rare and/or sensitive at the time of the evaluations described above, especially the 1978, 1984 and 1996 reports, are no longer considered to be species of concern by state or federal land management agencies. Conversely, many species which have not been considered sensitive in the past are now considered to be species of concern. Changes in the status of rarity and/or sensitivity often result from additional data and more comprehensive state or federal analyses.

The second objective of this summary is to merge INL Site-specific information with regional population data and standardized status ranks. There have been substantial, recent changes to the federal ranking system used to assign the conservation status of each species. In the past, each state and federal land management agency developed its own ranking system to assign species status and maintained its own list of special-status species. While most agencies still maintain individual ranking systems and rare/sensitive species lists, they also recognize and rely heavily on NatureServe (2015) for more up-to-date, standardized, and comprehensive information about species status. NatureServe was developed with the purpose of integrating numerous ecological datasets from state, federal, and private (e.g. The Nature Conservancy) groups. Many agencies, like the Idaho Department of Fish and Game (IDFG), are now transitioning to the standard

conservation ranks provided by NatureServe (2015) and several agencies use them almost exclusively.

2.0 Approach and Methodology

The general approach of this current review of rare and/or sensitive plants on the INL Site included generating a comprehensive list of species that could occur on the INL Site based on coarse county distribution lists, and then eliminating species that are unlikely to occur within INL Site boundaries based on the lack of suitable habitat therein. The remaining species were then compared to the local survey information discussed above. This resulted in two species lists, one containing sensitive species with documented populations on the INL Site, and one with species that have not been documented on the INL Site, but for which suitable habitat may be available. Both lists contain standardized conservation status ranks from NatureServe (2015), which are used and recognized by most land management agencies, and both lists can be used as a resource to guide environmental regulatory compliance and to address land management concerns at the INL Site. Though not specifically included in this document, the database generated by the sensitive species review described here also contains the rationale for eliminating several species from the INL rare and/or sensitive lists, should the need for such documentation arise.

Initially, a comprehensive list of all special status vascular and nonvascular plants in the state of Idaho was obtained from the Idaho Natural Heritage Program (INHP). The INHP is a group tasked with managing sensitive species information for the state, and is affiliated with both the IDFG and NatureServe. The state list of special status plants was used as a basis to develop a more targeted list of species with potential for occurrence on the INL Site. If a species had been documented in any of the counties with portions occupied by the INL Site, or in the East Central or Southeast regions of Idaho, they were retained for further evaluation.

Based on the coarse county and regional distribution information provided by the INHP, a total of 99 species were evaluated with respect to their potential to occur within the INL Site boundary (Appendix A). Habitat requirements and more specific population distribution maps were examined for each of the species in the targeted list. General species information sources included NatureServe (2015) and the U.S. Department of Agriculture (USDA) PLANTS National Database (2015). For many species, additional habitat and distribution information was also gathered from species-specific resources, such as primary literature and herbarium specimen documentation. The habitat and distribution information for each species was compared to the local survey reports, and each of the 99 species was assigned a category (i.e. documented, possible, or unlikely) designating the overall probability of occurrence on the INL Site (Appendix A).

Each species was cross walked back to NatureServe to ensure that it had been assigned the most current conservation status rank. NatureServe maintains an extensive database of species-specific information which is continually updated and it assigns each species an applicable global, or “G” rank, a state, or “S” rank, and occasionally a taxon, or “T” rank. A taxon rank is used only when one subspecies or variety of a species is considered to be sensitive. Each G, S, and T designation for individual species is ranked on a 1 to 5 scale denoting its current status (Table 1), ranging from secure to extinct. If a species were considered vulnerable at the global scale and imperiled

at the state scale, it would receive a G3 global ranking and an S2 state ranking. A rank of G4T2 would indicate that on the global scale, the species is apparently secure, but the subspecies or variety is imperiled. Occasionally a species will receive a range of ranks (e.g. G2G3) or a rank with a question mark (G4?) to indicate that not enough data are currently available to assign a definitive rank with confidence. A species may also receive a rank of "SNR" to indicate that not enough state-level information is available to assign that species an appropriate state rank.

Table 1. Standardized conservation status ranks summarized from NatureServe (2015).

Rank	Definition
X	**Presumed Extinct –** Species not located despite extensive searches.
H	**Possibly Extinct –** Known from only historical occurrences, but with the possibility of rediscovery.
1	**Critically Imperiled –** At very high risk of extinction due to extreme rarity and/or very steep population declines.
2	**Imperiled –** At high risk of extinction due to very restricted range, very few populations, or population declines.
3	**Vulnerable –** At moderate risk of extinction due to restricted range, relatively few populations, or recent and widespread population declines.
4	**Apparently Secure –** Uncommon but not rare; some cause for long-term concern due to population declines or other factors.
5	**Secure –** Common; widespread and abundant.

Finally, two INL Site-specific, special status species lists were generated by combining past INL surveys, the State list of special status species, and the standardized NatureServe (2015) conservation ranks. One list contains special status species that have been documented on the INL Site, and the other contains special status species that have not been documented on the INL Site, but for which suitable habitat may be available; these species were assigned to the "possible" category based on the evaluation of habitat requirements and known distributions. The conservation rank criteria for inclusion in each list was either a G rank or S rank of 3 or less. These criteria are fairly standard at the state (INHP) and federal (NatureServe) levels.

The list of special status plants with documented occurrences on the INL Site contains only those species which are of current conservation concern. The list of potentially occurring special status species contains plants with a range of probability of occurrence. Some species on that list are quite likely to occur on the INL Site as several populations have been documented adjacent to the INL Site boundary and their required habitat is contiguous onto the INL Site. Conversely, several other species on that list are very unlikely to occur on the INL Site, but couldn't be eliminated from further consideration based on habitat requirements alone. These species often have very limited known distributions, may be described from only a few populations non-adjacent to the INL Site, or may be thought to be previously extirpated.

3.0 Rare and Sensitive Plant Species on the INL Site

3.1 Documented Species

There are currently no federally listed threatened or endangered plant species known to occur on the INL Site. The current list of documented special status plants on the INL Site contains five species (Table 2), four of which occur on or around the foothills in the north and northwest extent of the INL Site. This northern boundary encompasses the southern reaches of several Central Idaho mountain ranges including, the Lost River Range, Lemhi Range, and Beaverhead Mountains. These ranges, in conjunction with the Little Lost River and Birch Creek Valleys, are part of a complex geological formation with unique substrate that is known to support a large number of rare and/or endemic plant species (Colket et al. 2009). Populations of these four species have also been documented in similar substrates adjacent to the INL Site boundary on BLM-administered lands.

Table 2. Special status plant species with documented occurrences on the Idaho National Laboratory Site.

Scientific Name	Common Name	G Rank	S Rank	Documented Location
Astragalus aquilonius	Lemhi milkvetch	G3	S3	Western foothills (Anderson et al. 1996) and East Canyon (Colket 2009)
Camissonia pterosperma	wingfruit suncup	G4	S2	Northwestern foothills (Anderson et al. 1996) and East Canyon (Colket 2009)
Ipomopsis polycladon	manybranched ipomopsis	G4	S2	Western foothills, toe of Lemhi range (Anderson et al. 1996) and East Canyon (Colket 2009)
Phacelia incana	hoary phacelia	G3G4	SNR	Western foothills (Anderson et al. 1996) and East Canyon (Colket et al. 2009)
Lesquerella obdeltata	Middle Butte bladderpod	G1G3	SNR	Base of Middle Butte (Rollins 1993)

In terms of habitat requirements, all four of the species associated with the northern and western foothills prefer similar topography, but slightly different microsites. *Astragalus aquilonius* generally occupies shale and/or clay slopes and washes at the bottom of gullied bluffs or canyons. Preferred habitat for *Camissonia pterosperma* includes gravelly or silty soils on dry, open slopes, ridges, and washes in sagebrush and/or juniper communities. *Ipomopsis polycladon* is often associated with *Artemisia nova* and/or *Juniperus* spp. on rocky or loose scree slopes with volcanic substrates. *Phacelia incana* habitat includes desert hills and calcareous slopes in sagebrush and pinyon-juniper zones.

The final species on the list of documented special status plants appears to have been described solely from populations discovered around Middle Butte and it was first collected in in 1986.

Rollins (1993) collected samples of *Lesquerella obdeltata* from small playas around the base of the butte. Habitat at the collection site was described as sagebrush and juniper-dominated and individual occurrences were located in open areas with predominately clayey soils. Distribution and population size of this species are unknown. It is likely narrowly endemic because it hasn't been described in similar habitats elsewhere on the INL Site or in the region. Because so little is known about this species, and its current known distribution is so limited, it is considered a conservation concern.

3.2 Potentially Occurring Species

Of the 99 species evaluated, a total 29 could potentially occur within the boundaries of the INL Site based on their habitat requirements and general population distributions (Table 3). Within this group, the likelihood of occurrence of each species ranges from low to high. Some plants are less likely to be represented on the INL Site because available habitat has changed through time. Hydrological regimes, for example, have changed substantially over the past fifty to one hundred years. Therefore, the habitat available for sensitive species that require at least some seasonal surface water has declined, making populations of these plants less likely to persist on the INL Site. Other plants in this group of potentially occurring species with a low likelihood of occurrence include plants that have been documented in sagebrush steppe habitats, but known populations are not proximate to the INL Site.

Table 3. Special status plant species with the potential for occurrence on the Idaho National Laboratory Site. Assessment is based on known distributions and habitat requirements. Asterisk indicates species with higher likelihood of occurrence on the Idaho National Laboratory Site.

Scientific Name	Common Name	G Rank	S Rank	Habitat
*Agastache cusickii**	Cusick's giant hyssop	G3G4	SNR	Dry slopes, rocky substrate
Allenrolfea occidentalis	iodinebush	G4	S1	Alkali flats, saline playas
Allium anceps	twinleaf onion	G4	S2	Rocky, fine soils in sagebrush scrub
Artemisia campestris ssp. *borealis*	field sagewort	G5T5	S1	Big sagebrush communities on basalt or cobble
Astragalus adanus	Boise milkvetch	G3G4	SNR	Alluvial clays and gravels with sagebrush
Astragalus amblytropis	Challis milkvetch	G3	S3	Steep south-facing slopes on unstable shale with sagebrush
*Astragalus amnis-amissi**	Custer milkvetch	G3	S3	Limestone cliffs and associated talus
Astragalus atratus var. *inseptus*	Fairfield milkvetch	G4G5T3	S3	Stony flats with spring moisture
Astragalus bisulcatus var. *bisulcatus*	twogrooved milkvetch	G5T5	S2	Alluvial clay soils in gullies and bottomlands

Scientific Name	Common Name	G Rank	S Rank	Habitat
Astragalus diversifolius	meadow milkvetch	G2	S2	Moist alkaline meadows, closed drainage basins with sagebrush
*Astragalus gilviflorus**	plains milkvetch	G5	S2	Sagebrush communities on barren knolls and stony hilltops
Astragalus oniciformis	Picabo milkvetch	G3	S3	Sagebrush communities in sandy basins with exposed basalt
Bouteloua gracilis	blue grama	G5	S2	Not tightly constrained by topographic position or soil
Collomia debilis var. *camporum*	alpine collomia	G5T2	S2	Rocky slopes, low elevation scree and talus
*Cuscuta denticulata**	desert dodder	G4G5	S1	Grows on shrubs in dry sandy, gravelly, and rocky soils
*Eriogonum crosbyae**	Crosby's buckwheat	GNR	SNR	Dry, windswept sites associated with the Lost River watersheds
*Eriogonum hookeri**	Hooker's buckwheat	G5	S1	Sandy soils in sagebrush and juniper communities
Eutrochium maculatum var. *bruneri*	spotted joe pye weed	G5T4T5Q	SNR	Calcareous soils associated with wet meadows, bogs, and seeps
Hymenoxys cooperi	Cooper's rubberweed	G4G5	SNR	Dry, rocky slopes with juniper woodlands
*Oenothera psammophila**	St. Anthony Dunes evening primrose	G3	S3	Interface between lava reefs and sand dunes
Oxytropis besseyi var. *salmonensis*	Salmon River locoweed	G5T3	S3	Gully bottoms and lower slopes with desert scrub vegetation
*Pediocactus simpsonii**	mountain ball cactus	G5?	SNR	Juniper and/or sagebrush communities
Penstemon laxus	tufted penstemon	G2G3	SNR	Dry meadows, sagebrush slopes, sparse woodlands
Penstemon lemhiensis	Lemhi penstemon	G3	S3	East- to southwest-facing slopes, often with sagebrush
*Phacelia inconspicua**	hidden phacelia	G2	S1	North- facing slopes with sagebrush in sandy soils

Scientific Name	Common Name	G Rank	S Rank	Habitat
Primula alcalina	Bluedome primrose	G2	S2	Wet, alkaline meadows on low, level benches
Primula incana	silvery primrose	G4G5	S1	Herbaceous communities in alkaline soils
Silene scaposa	Blue Mountain catchfly	G4	S3	Gravelly or rocky slopes, often with sagebrush or juniper
Thelypodium repandum	wavyleaf thelypody	G3	S3	Moderately steep, rocky slopes, often in Challis volcanics

There are nine species in the list of potentially occurring special status plants with a higher likelihood of occurring within the boundaries of the INL Site. Populations of these plants have been documented adjacent to the INL Site and appropriate habitat is currently available onsite. Six species have been documented immediately north and northwest of the INL Site and are associated with the unique substrates of the Central Idaho mountain ranges. *Astragalus amnis-amissi*, *Eriogonum crosbyae*, *Eriogonum hookeri*, and *Pediocactus simpsonii* have been documented in East Canyon (Colket et al. 2009). *Pediocactus simpsonii* has also been observed, but not formally documented, on the tip of the Lemhi Range within the INL Site boundary. Populations of *Astragalus gilviflorus* and *Cuscuta denticulata* were recently reconfirmed near Reno Point and although surveys were only conducted up to the INL Site boundary, those populations likely extend onto the INL Site as the habitat is contiguous. Unconfirmed observations of *Cuscuta denticulata* have also been made elsewhere onsite.

Two of the three additional species with a higher likelihood of occurrence, *Agastache cusickii* and *Phacelia inconspicua*, have been documented on Big Southern Butte (Anderson et al 1996). Appropriate habitat for both species may be found in the hilly topography within the southern boundary of the INL Site as well as on East and/or Middle Butte. The final "high likelihood" species for the INL Site is *Oenothera psammophila*. This species is endemic to central eastern Idaho and is well-documented at the St. Anthony sand dunes, about 40 km to the east-northeast of the INL Site. Appropriate habitat for this species has been described as drifting sand over lava rocks at the interface between lava reefs and sand dunes (NatureServe 2015). This type of habitat can also be found in the north-central and north-eastern part of the INL Site, though the extent of this habitat at the INL Site is much more limited than of that available at the St. Anthony sand dunes.

Overall, habitats for known or potentially occurring populations of special status species on the INL Site tend to be concentrated around the northern and north-western foothills, the buttes near the southern boundary, and unique substrate features like sand over basalt. In terms of future development at the INL Site, these areas tend to be very low priority due to logistical constraints. The probability of disturbing special status plants due to INL Site operations remains low because of the remoteness of their preferred habitats. The conservation status rankings summarized in this report should be periodically revisited as more information becomes available about the population stability and distribution of special status species throughout their

ranges. Although site-specific surveys will still be a necessary component of NEPA documentation at the INL Site, this summary facilitates targeting rare and sensitive plant surveys to relevant species and currently available habitat at project sites.

4.0 Literature Cited

Andersen, B. P. and D.M. Henderson. 1978. A survey of rare plants: Little Lost – Birch Creek planning units. Idaho Falls District, Bureau of Land Management and University of Idaho.

Anderson, J. E., K. T. Ruppel, J. E. Glennon, K. E. Holte, and R. C. Rope. 1996. Plant communities, ethnoecology, and flora of the Idaho National Engineering Laboratory. ESRF 005, Environmental Science and Research Foundation, Idaho Falls, ID.

Cholewa, A.F and D.M. Henderson. 1982. A survey and assessment of the rare vascular plants of the Idaho National Engineering Laboratory Site. University of Idaho Herbarium, Department of Biological Sciences, University of Idaho, Moscow.

Colket, B., L. Hahn, and C. Murphy. 2009. 2008 Field inventory for special status plant species on BLM lands in the Little Lost River and Birch Creek Valleys, Idaho. Idaho Department of Fish and Game, Boise, ID.

NatureServe. 2015. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available http://explorer.natureserve.org. (Accessed: 2015).

Rew, L., B. Maxwell, M. Lavin, T. Brummer, and K. Taylor. 2012. Survey, monitoring and predicting the occurrence and spread of native and non-native plant species at the Idaho National Laboratory. Bozeman, MT.

Rollins, R.C. 1993. The Cruciferae of Continental North America. Stanford University Press, Stanford.

USDA, NRCS. 2015. The PLANTS Database (http://plants.usda.gov, 2015). National Plant Data Team, Greensboro, NC 27401-4901 USA.

Appendix A. Special Status Plant Species Evaluated for INL Site Occurrence

Ninety-nine special status plant species were evaluated for potential occurrence on the INL Site. Data were compiled from the Idaho National Heritage Program, NatureServe (2015), and the USDA PLANTS National Database (2015).

Scientific Name	Common Name	G Rank	S Rank	Idaho Region	Counties Documented	INL Site Occurrence
Agastache cusickii	Cusick's giant hyssop	G3G4	SNR	East Central	Butte, Clark, Custer, Lemhi	Possible
Agoseris lackschewitzii	Mill Creek agoseris	G4	S2	East Central	Clark, Fremont, Lemhi	Unlikely
Allenrolfea occidentalis	iodinebush	G4	S1	Southeast	Bingham, Cassia, Oneida	Possible
Allium anceps	twinleaf onion	G4	S2	Southeast	Butte, Jerome, Owyhee, Twin Falls	Possible
Antennaria arcuata	box pussytoes	G3	S1	Southeast	Blaine	Unlikely
Artemisia campestris ssp. *borealis*	field sagewort	G5T5	S1	East Central	Custer	Possible
Asplenium septentrionale	forked spleenwort	G4G5	S1	Southeast	Unavailable	Unlikely
Asplenium trichomanes-ramosum	brightgreen spleenwort	G4	S1	Southeast	Bear Lake, Bonneville, Clearwater	Unlikely
Astragalus adanus	Boise milkvetch	G3G4	SNR	East Central, Southeast, Southwest, West Central	Ada, Blaine, Boise, Camas, Canyon, Cassia, Custer, Elmore, Gooding, Idaho, Twin Falls, Washington	Possible
Astragalus amblytropis	Challis milkvetch	G3	S3	East Central	Custer, Lemhi	Possible
Astragalus amnis-amissi	Custer milkvetch	G3	S3	East Central	Butte, Custer	Possible
Astragalus anserinus	Goose Creek milkvetch	G2	S1	Southeast	Cassia	Unlikely
Astragalus aquilonius	Lemhi milkvetch	G3	S3	East Central	Butte, Custer, Lemhi	Documented

Scientific Name	Common Name	G Rank	S Rank	Idaho Region	Counties Documented	INL Site Occurrence
Astragalus atratus var. *inseptus*	Fairfield milkvetch	G4G5T3	S3	Southeast	Blaine, Camas, Cassia, Clark, Elmore, Gooding, Lincoln, Twin Falls	Possible
Astragalus bisulcatus var. *bisulcatus*	twogrooved milkvetch	G5T5	S2	East Central	Clark, Fremont, Lemhi	Possible
Astragalus diversifolius	meadow milkvetch	G2	S2	East Central	Bannock, Bingham, Butte, Clark, Custer, Lemhi, Oneida	Possible
Astragalus gilviflorus	plains milkvetch	G5	S2	East Central	Butte, Clark, Fremont, Lemhi	Possible
Astragalus jejunus var. *jejunus*	starveling milkvetch	G3T3	S2	Southeast	Bear Lake	Unlikely
Astragalus leptaleus	park milkvetch	G4	S3	East Central	Custer, Lemhi	Unlikely
Astragalus oniciformis	Picabo milkvetch	G3	S3	Southeast	Blaine, Lincoln, Minidoka	Possible
Astragalus vexilliflexus var. *nubilus*	White Clouds milkvetch	G4T2	S2	East Central	Custer, Valley	Unlikely
Bouteloua gracilis	blue grama	G5	S2	East Central	Clark, Lemhi	Possible
Camissonia pterosperma	wingfruit suncup	G4	S2	East Central	Butte, Clark, Owyhee	Documented
Carex engelmannii	Engelmann's sedge	G4G5	S2	East Central	Custer	Unlikely
Carex idahoa	Idaho sedge	G2G3	S2	East Central	Caribou, Clark, Lemhi	Unlikely
Carex incurviformis	coastal sand sedge	G4G5	S1	East Central	Custer	Unlikely
Carex sychnocephala	manyhead sedge	G4	S1	North Central, Southeast	Unavailable	Unlikely
Castilleja christii	Christ's Indian paintbrush	G1	S1	Southeast	Cassia	Unlikely

Scientific Name	Common Name	G Rank	S Rank	Idaho Region	Counties Documented	INL Site Occurrence
Castilleja pulchella	beautiful Indian paintbrush	G3G4	S2	East Central	Blaine, Custer, Fremont, Lemhi	Unlikely
Cercocarpus montanus	alderleaf mountain mahogany	G5	S2	Southeast	Unavailable	Unlikely
Chrysosplenium tetrandrum	northern golden saxifrage	G5	S1	East Central	Lemhi	Unlikely
Claytonia multiscapa	lanceleaf springbeauty	G4?	S1	East Central	Fremont	Unlikely
Collomia debilis var. *camporum*	alpine collomia	G5T2	S2	East Central	Lemhi	Possible
Cuscuta denticulata	desert dodder	G4G5	S1	West Central	Clark, Idaho, Lemhi	Possible
Cryptantha caespitosa	tufted cryptantha	G4	S1	Unavailable	Bear Lake	Unlikely
Cymopterus davisii	Davis' springparsley	G3	S3	Southeast	Cassia	Unlikely
Cymopterus douglassii	Douglass' springparsley	G3	S3	East Central	Custer, Lemhi	Unlikely
Draba fladnizensis	Austrian draba	G4	S1	East Central	Custer	Unlikely
Draba globosa	beavertip draba	G3	S2	East Central	Custer, Lemhi, Owyhee	Unlikely
Draba incerta	Yellowstone draba	G5	S2	East Central	Boundary, Clark, Custer, Elmore, Fremont, Idaho, Lemhi	Unlikely
Ericameria discoidea var. *winwardii*	Winward's whitestem goldenbush	G4G5T1	S1	Southeast	Bear Lake	Unlikely
Ericameria parryi var. *montana*	Parry's rabbitbrush	G5T2	S1	East Central	Clark	Unlikely
Erigeron humilis	arctic alpine fleabane	G5	S2	East Central	Butte, Custer, Lemhi	Unlikely

Scientific Name	Common Name	G Rank	S Rank	Idaho Region	Counties Documented	INL Site Occurrence
Erigeron salmonensis	Salmon River fleabane	G3	S3	East Central, West Central	Idaho, Lemhi, Valley	Unlikely
Eriogonum crosbyae	Crosby's buckwheat	GNR	SNR	East Central	Custer	Possible
Eriogonum hookeri	Hooker's buckwheat	G5	S1	Southeast	Bannock	Possible
Eriogonum soliceps	Railroad Canyon wild buckwheat	G2	S1	East Central	Lemhi	Unlikely
Eutrochium maculatum var. *bruneri*	spotted joe pye weed	G5T4T5Q	SNR	East Central	Bannock, Bingham	Possible
Gentianella propinqua	fourpart dwarf gentian	G5	S2	East Central	Custer, Fremont	Unlikely
Gentianella tenella	Dane's dwarf gentian	G4G5	S2	East Central	Custer	Unlikely
Hackelia davisii	Davis' stickseed	G3	S3	East Central	Custer, Idaho, Lemhi, Valley	Unlikely
Hymenoxys cooperi	Cooper's rubberweed	G4G5	SNR	Southeast	Bannock	Possible
Ipomopsis polycladon	manybranched ipomopsis	G4	S2	Southwest	Ada, Butte, Elmore, Owyhee, Power	Documented
Kobresia simpliciuscula	simple bog sedge	G5	S2	East Central	Custer, Lemhi, Teton	Unlikely
Lepidium integrifolium	thickleaf pepperweed	G2G3	SNR	Southeast	Bear Lake	Unlikely
Lewisia sacajaweana	Sacajawea bitter root	G1	S1	Unavailable	Boise, Custer, Elmore, Valley	Unlikely
Lomatogonium rotatum	marsh felwort	G5	S1	East Central	Custer, Lemhi	Unlikely
Musineon lineare	narrowleaf wildparsley	G2	S1	Southeast	Bear Lake	Unlikely
Oenothera psammophila	St. Anthony Dunes evening primrose	G3	S3	Southeast	Fremont, Jefferson	Possible

Scientific Name	Common Name	G Rank	S Rank	Idaho Region	Counties Documented	INL Site Occurrence
Oxytropis besseyi var. *salmonensis*	Salmon River locoweed	G5T3	S3	East Central	Custer	Possible
Papaver radicatum ssp. *kluanense*	rooted poppy	G5T4	SX	East Central	Lemhi	Unlikely
Parnassia kotzebuei	Kotzebue's grass of parnassus	G5	S2	East Central	Custer	Unlikely
Pediocactus simpsonii	mountain ball cactus	G5?	SNR	Southwest	Caribou, Cassia, Clark, Custer, Idaho, Jefferson, Lemhi, Nez Perce, Oneida, Owyhee, Twin Falls, Valley	Possible
Penstemon compactus	compact penstemon	G2	S2	Southeast	Franklin, Valley	Unlikely
Penstemon idahoensis	Idaho beardtongue	G2	S2	Southeast	Cassia	Unlikely
Penstemon laxus	tufted penstemon	G2G3	SNR	Unavailable	Blaine, Boise, Bonneville, Camas, Cassia, Custer, Elmore, Idaho, Lincoln, Owyhee	Possible
Penstemon lemhiensis	Lemhi penstemon	G3	S3	East Central	Lemhi	Possible
Phacelia incana	hoary phacelia	G3G4	SNR	Unavailable	Butte, Clark, Custer	Documented
Phacelia inconspicua	hidden phacelia	G2	S1	East Central	Blaine, Butte	Possible
Phacelia lyallii	alpine phacelia	G3	S2	East Central	Idaho, Lemhi	Unlikely
Lesquerella paysonii	Payson's bladderpod	G3	S2	Southeast	Bonneville, Caribou	Unlikely
Physaria didymocarpa var. *lyrata*	Idaho twinpod	G5T1	S1	East Central	Lemhi	Unlikely
Lesquerella obdeltata	Middle Butte bladderpod	G1G3	SNR	Unavailable	Bingham	Documented

Scientific Name	Common Name	G Rank	S Rank	Idaho Region	Counties Documented	INL Site Occurrence
Picea glauca	white spruce	G5	S1	East Central	Bannock, Boundary, Fremont	Unlikely
Piptatheropsis micrantha	littleseed ricegrass	G5	S1	East Central	Clark	Unlikely
Poa abbreviata ssp. *marshii*	Marsh's bluegrass	G5T2	S1	East Central	Blaine, Butte, Custer	Unlikely
Primula alcalina	Bluedome primrose	G2	S2	East Central	Butte, Clark, Custer, Lemhi	Possible
Primula incana	Silvery primrose	G4G5	S1	East Central	Custer, Lemhi, Teton	Possible
Pyrrocoma insecticruris	wholeleaf goldenweed	G3	S3	Southeast	Blaine, Camas, Elmore, Gooding, Lincoln	Unlikely
Pyrrocoma integrifolia	many-stemmed goldenweed	G3G4	S2	Unavailable	Clark, Fremont, Lemhi	Unlikely
Ranunculus karelinii	ice cold buttercup	G4G5	SNR	East Central	Blaine, Custer, Idaho, Lemhi	Unlikely
Ranunculus pygmaeus	pygmy buttercup	G5	S1	East Central	Custer	Unlikely
Salicornia rubra	red swampfire	G5	S2	Southeast	Bannock, Bear Lake, Bingham, Caribou, Cassia, Franklin, Oneida	Unlikely
Salix farriae	Farr's willow	G4	S1	East Central	Custer	Unlikely
Salix glauca	grayleaf willow	G5	S2	East Central	Adams, Bear Lake, Blaine, Bonneville, Custer, Fremont, Idaho	Unlikely
Salix pseudomonticola	false mountain willow	G4G5	S1	East Central	Blaine, Clark, Custer, Fremont, Lemhi	Unlikely
Saxifraga adscendens ssp. *oregonensis*	small saxifrage	G5T4T5	S2	East Central	Blaine, Custer	Unlikely
Saxifraga cernua	nodding saxifrage	G5	S2	East Central	Blaine, Butte, Custer, Fremont, Lemhi	Unlikely

Scientific Name	Common Name	G Rank	S Rank	Idaho Region	Counties Documented	INL Site Occurrence
Silene scaposa	Blue Mountain catchfly	G4	S3	East Central, Southeast	Blaine, Butte, Clark, Twin Falls	Possible
Vesicarpa potentilloides	false chicken-sage	G5	S1	Southeast	Camas, Elmore	Unlikely
Spiranthes diluvialis	Ute lady's tresses	G2G3	S1	Southeast	Bonneville, Jefferson, Madison	Unlikely
Sporobolus compositus var. *compositus*	composite dropseed	G5T5	S1	Southeast	Jerome, Lincoln	Unlikely
Telesonix heucheriformis	alumroot brookfoam	G4	S1	Unavailable	Fremont	Unlikely
Thamnolia subuliformis	whiteworm lichen	G4G5	S1	East Central	Unavailable	Unlikely
Thelypodium paniculatum	northwestern thelypody	G2	S1	East Central	Unavailable	Unlikely
Thelypodium repandum	wavyleaf thelypody	G3	S3	East Central	Butte, Canyon, Custer, Idaho, Lemhi	Possible
Townsendia scapigera	tufted Townsend daisy	G4G5	S1	Southeast	Twin Falls	Unlikely
Trichophorum pumilum	Rolland's bulrush	G5	S1	East Central	Clark, Custer	Unlikely
Xanthoparmelia idahoensis	Idaho xanthoparmelia lichen	G1	S1	East Central	Lemhi	Unlikely