

## Leslie Gulch

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Main canyon of Leslie Gulch. Photo by Bob Alward, BLM Vale District.

With violent explosions, the Mahogany Mountain caldera spewed hot volcanic gases, volcanic ash, and large chunks of volcanic rock in a molten froth more than 1,000 feet thick over several thousand square miles. Thus began the formation of the rosy golden cliffs of Leslie Gulch 15 million years ago, with a rhyolite pyroclastic flow. As the deposit cooled and lithified into rock, trapped gases created pockets. These cavities and differential weathering of the Leslie Gulch Ash Flow Tuff created spectacular, almost eerie, landforms that include “honeycombs” and skyline windows.

Subsequent uplift, faulting and erosion further enhanced the striking geologic formations and canyon vistas. Multiple ash layers flaunt a variety of colors ranging from yellow to green and many shades of red, often streaked with blacks and browns. In some places the tuff, a part of the Succor Creek formation, is 2,000

feet deep (Kittleman 1973). From its immense thickness, uniformity, and relative resistance to weathering were wrought impressive cliffs, outcrops, and spires. Columnar rhyolite dikes, intrusions even more resistant to the ravages of wind and water than the tuff, contrast with the soft hues of the Great Basin vegetation.

“Gulch,” a quintessential Western term for the arid drainages in this harsh land, gives little indication of Leslie Gulch’s violent past or the botanical treasures hidden among the fantastic rock formations of this colorful canyon. Designated an Area of Critical Environmental Concern (ACEC) for its ash-dependent rare plant species, spectacular scenery, and habitat for California bighorn sheep, Leslie Gulch lies in extreme eastern Oregon. Its gulch drains into Owyhee Reservoir approximately 50 miles south of Ontario, Oregon, and 60 miles southwest of Boise, Idaho. The 11,673

## Climate

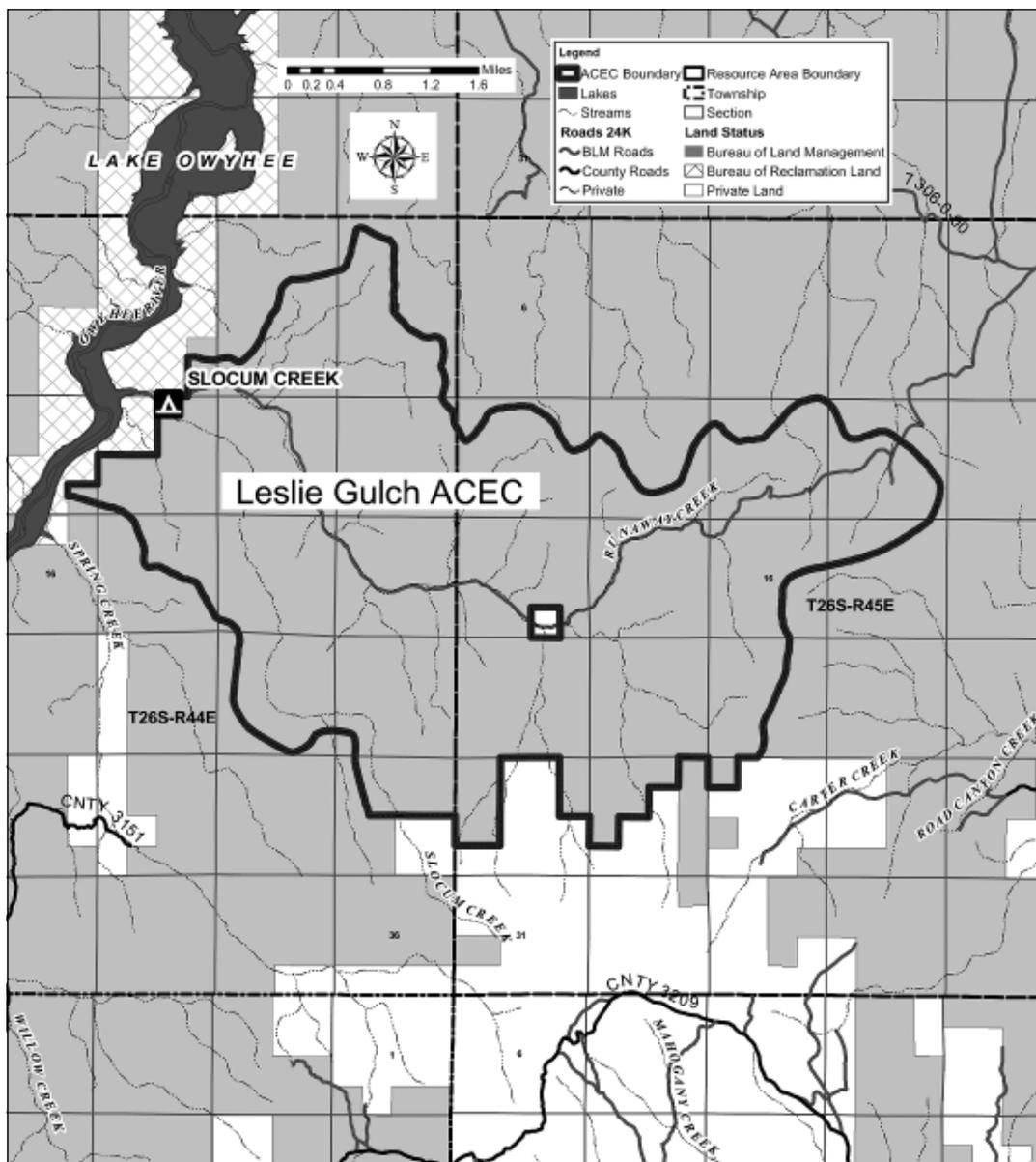
acre area was designated as a special management area in 1983 by the Bureau of Land Management (BLM), a designation carried forward into the agency's recent Southeastern Oregon Resource Management Plan (2002). The ACEC is managed under a comprehensive plan finalized in 1995 and governing a wide variety of activities. A 40-acre parcel of private land at Mud Spring lies in the heart of the ACEC, and the western fringe is bordered by land managed by the Bureau of Reclamation in conjunction with the Owyhee Reservoir. The ACEC may be reached by an all-weather road west of Highway 95 between Jordan Valley, Oregon, and Marsing, Idaho. Approximately 20 miles south of Marsing, look for small signs west and east of Highway 95 with "Leslie Gulch" in white lettering on a brown field. Turn right (west) onto this gravelled road, the McBride Creek Road. Go eight miles to the red school house at Rockville and turn right (west) to cross Succor Creek, then travel one mile to the signed Leslie Gulch Road junction and turn left (west). This road leads directly to the ACEC, a distance of approximately eight miles.

Typical of the Great Basin, the climate at Leslie Gulch is one of extremes. Winter temperatures often plummet well below zero, and summer highs can exceed 100°F. While annual precipitation averages nearly eight inches, actual rainfall amounts are unpredictable. Storm events can bring several inches of rainfall within a few hours. During these times, the otherwise dry gulches turn into raging torrents which can block or wash out roads and trails. With the exception of a short section below Mud Spring, none of the drainages within the ACEC contain perennially flowing water. The ACEC is generally accessible year-round via all-weather roads, although snowfall in some years may preclude access for several weeks. Visitors are encouraged to check weather forecasts and eastern Oregon road conditions prior to departure. Vegetative growth and wildflower displays peak in late May and early June, with length and showiness dependent on temperatures and amount and timing of rainfall the previous winter and spring.

## Vegetation

At Leslie Gulch, the juxtaposition of northern and southern floras creates an unusual assemblage of species. Here, the northern mesic flora, represented by curlleaf mountain mahogany (*Cercocarpus ledifolius*), Rocky Mountain maple (*Acer glabrum*) and an isolated stand of ponderosa pine (*Pinus ponderosa*), meets a southern xeric flora of salt desert species, including greasewood (*Sarcobatus vermiculatus*), shadscale saltbush (*Atriplex confertifolia*), and spiny hopsage (*Grayia spinosa*) (Grimes 1979, 1984). Combined with the rare plant species discussed below, the vegetative elements of the ACEC give Leslie Gulch a floristic variety unexcelled in Malheur County in any area of comparable size.

The small disjunct population of ponderosa pine grows on the crest of a rhyolitic ridge near the southern boundary of the ACEC. The closest forests of ponderosa pine



Map of Leslie Gulch ACEC, prepared by Marissa Theall, BLM Vale District.

lie about 70 miles away to the northwest. Among the nearly 100 trees, two individuals are over 200 years old, with the remaining



Pinnacles in a side canyon of Leslie Gulch on May 15, 2003. Photo by Bob Alward, BLM Vale District.

trees ranging in age down to seedlings (McKee and Knutson 1987). There is no evidence indicating that this is a relict population, and speculations on origins from the west or northwest have been advanced. Because of its inaccessibility, the stand is rarely visited by livestock or humans and shows little to no sign of disturbance.

### Rare Plants

Five plant species found on the unusual ash formations within the canyon were formerly considered candidates for listing under the Federal Endangered Species Act. Two of these species, Ertter's groundsel (*Senecio ertterae*) and Packard's blazingstar (*Mentzelia packardiae*), grow predominantly on the greenish-yellow ash-tuff talus slopes. Grimy mousetail (*Ivesia rhypara* var. *rhypara*) and Owyhee clover (*Trifolium owyheense*) grow on a shallow, often apricot-colored ash substrate. Barren milkvetch (*Astragalus sterilis*), a rhizomatous form, grows as scattered individuals and colonies on less distinctive ash

deposits throughout the region. Three uncommon regional endemics, Packard's wormwood (*Artemisia packardiae*), Mackenzie's phacelia (*Phacelia lutea* var. *mackenzieorum*) and false naked buckwheat (*Eriogonum novonudum*), find habitat in the canyons and bluffs of the ACEC. Oregon lists Packard's blazingstar and barren milkvetch as threatened, and grimy mousetail



Ertter's groundsel (*Senecio ertterae*) is a Malheur County endemic. Photo by Bob Kindschy, BLM Vale District.

and Owyhee clover as endangered (Oregon Natural Heritage Program 1998).

Grimy mousetail and Packard's blazingstar are found at disjunct locations in Nevada. However, Ertter's groundsel is a Malheur County endemic, found only in the Leslie Gulch vicinity and at two restricted sites near Birch Creek, a tributary of the Owyhee River approximately six miles southwest of Leslie Gulch. Barren milkvetch and Owyhee clover are endemic to the larger Owyhee region, with the clover known only on sites east of the Owyhee River. Scattered, sparse populations of the clover and milkvetch are found in adjacent Idaho.

With heads of fluorescent pink flowers and three leaflets splashed with distinctive white chevrons, Owyhee clover is the most spectacular of the rare species. Barren milkvetch sports inflated pods mottled with red. Close inspection of the diminutive grimy mousetail's inconspicuous pale flowers is necessary to discern its membership in the rose family. To make their debuts, the two annuals, Packard's blazingstar and Ertter's groundsel, depend on timely rainfall, a commodity which has been in short supply the last few years. Of particular note, the groundsel emerges in late summer or fall and has roots protected by a gelatinous sheath, making it particularly adapted to the loose, cobbly tuffaceous ash.



Owyhee clover (*Trifolium owyheense*) is the most spectacular of the rare species. Photo by Jean Findley.

The discovery and naming of these rare species is relatively recent, beginning with Dr. Morton Peck in the early 1940s. Peck was the first to find and name false naked buck-

wheat. Although he found barren milkvetch at the same time, it was not described until the late 1940s when Dr. Rupert Barneby collected the species in nearby Idaho. Bessie Murphy, a technician at the Oregon State University seed laboratory, visited Malheur County in the late 1940s and took an unusual clover she found back to Helen Gilkey, who then described this new Owyhee species (Gilkey 1956). Dr. Patricia Packard from the College of Idaho and many of her former students, including Dr. Barbara Ertter, Dr. Jim Grimes, Judith Glad, and Dave Peters, combed the area in the late 1960s and early 1970s, finding all the other rare species in the ACEC. They worked with various other botanists to describe the newly discovered groundsel, blazingstar, phacelia, mousetail, and wormwood (Glad 1976, Ertter and Reveal 1977).

### Wildlife

Mule deer utilize the ACEC primarily from early winter through early spring. Rocky Mountain elk use varies with the severity of the winter. Upland game birds such as chukar partridge and California quail occupy much of the area. The rugged canyons

also provide habitat for coyote, bobcat, cougar, hawks, lizards, and a variety of non-game migratory birds. Raptors, northern flickers, and white-throated swifts nest in the numerous cliff crevices, which also provide habitat for bats.

California bighorn sheep were extirpated from Leslie Gulch in the early 1900s due to infection from domestic sheep diseases and unregulated hunting. Bighorns have thrived in the Gulch since reintroductions in 1965 and 1987. Steep cliffs and small natural shelters along the rock faces provide excellent habitat for bighorn sheep, and the remote, rugged areas extending beyond the ACEC limit human disturbance of the bighorns.

Bald eagles, listed as threatened under the Endangered Species Act, winter along the Owyhee River corridor. Mountain quail, rare in Malheur County for many years, were last observed in the county in 1981, in Leslie Gulch ACEC. Other rare animal species include Townsend's big-eared bat, Mojave black-collared lizard, western ground snake, and white-tailed antelope squirrel.

### Management

Leslie Gulch has long attracted recreationists in search of a high quality outdoor experience. Elements of its attractiveness are its remote location with reasonable vehicular access and the opportunity to pursue outdoor recreation activities in a setting with relatively few human impacts. A single road through the canyon provides access to one of only five public boat launch sites on the 55 mile long Owyhee Reservoir. Most of the recreational use occurs



Look for Packard's blazingstar (*Mentzelia packardiae*) on greenish-yellow ash-tuff talus slopes. Photo by Jean Findley.



Barren milkvetch (*Astragalus cusickii* var. *sterilis*), a regional endemic, grows on ash deposits. Photo by Elaine Joyal, BLM Vale District.

before and after the hot summer season, specifically the river float season in spring and hunting activities in the fall.

Approximately 85% of the ACEC has been designated as Wilderness Study Area (WSA). The specific wilderness values identified include outstanding opportunities for solitude, primitive and unconfined recreation, a high degree of naturalness, spec-

tacular scenery, rare plants, bighorn sheep, winter habitat for northern bald eagles, Rocky Mountain elk, the disjunct stand of ponderosa pine, and outstanding populations of curleaf mountain mahogany.

The 1995 ACEC Management Plan strives to retain the area's naturalness through careful regulation of human activities. No off-road vehicle use is permitted, and rock-climbing with permanent anchors is prohibited. Use by livestock has been eliminated from the canyon except for seasonal trailing. Camping is authorized at only one site, the primitive campground at Slocum Creek near the reservoir; the rest of the ACEC is designated as day use only. The ACEC is closed to vegetation gathering, rock hounding, and horse use of any kind. The Leslie Gulch ACEC was officially withdrawn from mineral entry in 1999. Noxious weeds (*Cardaria draba* and *Onopordum acanthium*) have been aggressively treated when found using a variety of control measures, including hand-pulling and spot-spraying.



Grimy mousetail (*Ivesia rhypara* var. *rhypara*) grows over shallow, apricot-colored ash. Photo by Elaine Joyal, BLM Vale District.

### Conclusion

For fantastic rock formations and colorful canyons, Leslie Gulch ACEC is unexcelled in Oregon. The combination of this spectacular geology with an extraordinary variety of vegetative and wildlife resources makes Leslie Gulch a rare jewel of Oregon's natural heritage. Great things truly do come in small packages, especially in Leslie Gulch.

### References

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### Vascular Plant Species List

The following species list for Leslie Gulch ACEC is based on Grimes (1979), with additions by the author, Pat Packard, and Barbara Ertter. Nomenclature follows the Oregon Flora Project checklist. Names of taxa native to Oregon are printed in italic *Garamond*; alien taxa are in italic *Gill Sans*, a sans-serif type.

#### FERNS AND THEIR ALLIES

##### DRYOPTERIDACEAE (Wood Fern Family)

- Cystopteris fragilis* (L.) Bernh. (brittle bladderfern)  
*Polystichum scopulinum* (D.C. Eaton) Maxon (rock swordfern)

#### GYMNOSPERMS

##### CUPRESSACEAE (Cypress Family)

- Juniperus occidentalis* Hook. (western juniper)

##### PINACEAE (Pine Family)

- Pinus ponderosa* Douglas ex C. Lawson (ponderosa pine)

#### DICOTYLEDONS

##### AIZOACEAE (Fig-Marigold Family)

- Mollugo verticillata* L. (carpetweed)

##### ACERACEAE (Maple Family)

- Acer glabrum* Torr. (Rocky Mountain maple)

##### AMARANTHACEAE (Amaranth Family)

- Amaranthus albus* L. (prostrate pigweed)  
*Amaranthus californicus* (Moq.) S. Watson (California amaranth)

##### APIACEAE (Carrot Family)

- Lomatium dissectum* (Nutt.) Mathias & Constance (fernleaf biscuitroot)  
*Lomatium triternatum* (Pursh) J.M. Coult. & Rose (nineleaf biscuitroot)

- Osmorhiza occidentalis* (Nutt.) Torr. (western sweetroot)

- Physaria didymocarpa* (Hook.) A. Gray (common twinpod)

##### ASCLEPIADACEAE (Milkweed Family)

- Asclepias cryptoceras* S. Watson (pallid milkweed)

##### ASTERACEAE (Sunflower Family)

- Achillea millefolium* L. (common yarrow)

- Agoseris glauca* (Pursh) Raf. (pale agoseris)  
*Antennaria dimorpha* (Nutt.) Torr. & A. Gray (low pussytoes)  
*Antennaria luzuloides* Torr. & A. Gray (woodrush pussytoes)  
*Artemisia arbuscula* Nutt. (low sagebrush)  
*Artemisia dracunculul* L. (dragon sagewort)  
*Artemisia ludoviciana* Nutt. (silver wormwood)  
*Artemisia packardiae* J.W. Grimes & Ertter (Packard's wormwood)  
*Artemisia spinescens* D.C. Eaton (bud sagebrush)  
*Artemisia tridentata* Nutt. (big sagebrush)  
*Aster frondosus* (Nutt.) Torr. & A. Gray (alkali aster)  
*Balsamorhiza sagittata* (Pursh) Nutt. (arrowleaf balsamroot)  
*Blepharipappus scaber* Hook. (blepharipappus)  
*Brickellia microphylla* (Nutt.) A. Gray (small leaved brickellia)  
*Chaenactis douglasii* (Hook.) Hook. & Arn. (dustymaidens)  
*Ericameria nana* Nutt. (dwarf heath goldenrod)  
*Ericameria nauseosa* (Pall. ex Pursh) G.L. Nesom & G.I. Baird (rubber rabbitbrush)  
*Ericameria viscidiflora* (Hook.) L.C. Anderson (yellow rabbitbrush)  
*Cirsium subniveum* Rydb. (intermountain thistle)  
*Crepis acuminata* Nutt. (tapertip hawkbeard)  
*Dimeresia howellii* A. Gray (dimeresia)  
*Erigeron bloomeri* A. Gray (scabland fleabane)  
*Erigeron corymbosus* Nutt. (foothill daisy)  
*Erigeron pumilus* Nutt. (shaggy fleabane)  
*Eriophyllum lanatum* (Pursh) J. Forbes (common eriophyllum)  
*Gutierrezia sarothrae* (Pursh) Britton & Rusby (broom snakeweed)  
*Hieracium scouleri* Hook. (woolly weed)  
*Lagophylla ramosissima* Nutt. (slender hareleaf)  
*Machaeranthera canescens* (Pursh) A. Gray (hoary aster)  
*Nothocalais troximoides* (A. Gray) Greene (false agoseris)  
*Onopordum acanthium* L. (Scots thistle)  
*Senecio canus* Hook. (woolly groundsel)  
*Senecio ertterae* T.M. Barkley (Ertter's groundsel)  
*Senecio serra* Hook. (butterweed groundsel)  
*Solidago missouriensis* Nutt. (Missouri goldenrod)  
*Stephanomeria tenuifolia* (Raf.) H.M. Hall (narrowleaf stephanomeria)  
*Tetradymia canescens* DC. (gray horsebrush)  
*Townsendia florifer* (Hook.) A. Gray (showy townsendia)
- ##### BETULACEAE (Birch Family)
- Betula occidentalis* Hook. (water birch)
- ##### BORAGINACEAE (Borage Family)
- Amsinckia lycopsoides* Lehm. (tarweed fiddleneck)  
*Amsinckia tessellata* A. Gray (bristly fiddleneck)  
*Cryptantha intermedia* (A. Gray) Greene (common cryptantha)  
*Lappula redowskii* (Hornem.) Greene (western tickweed)  
*Lithospermum ruderales* Douglas ex Lehm. (western gromwell)  
*Mertensia ciliata* (Torr.) G. Don (broad leaved bluebells)  
*Myosotis micrantha* Pall. (blue scorpion grass)  
*Plagiobothrys scouleri* (Hook. & Arn.) I.M. Johnst. (Scouler's popcornflower)
- ##### BRASSICACEAE (Mustard Family)
- Arabis holboellii* Hornem. (Holboell's rockcress)  
*Barbarea orthoceras* Ledeb. (American yellowrocket)

*Camelina microcarpa* Andr. ex DC. (littlepod falseflax)  
*Cardaria draba* (L.) Desv. (heart podded hoarycress)  
*Chorispora tenella* (Pall.) DC. (purple field mustard)  
*Descurainia pinnata* (Walter) Britton (western tansymustard)  
*Draba verna* L. (spring whitlow grass)  
*Erysimum capitatum* (Douglas ex Hook.) Greene var. *capitatum*  
 (rough wallflower)  
*Thelypodium laciniatum* (Hook.) Endl. (cutleaf thelypody)  
**CAPRIFOLIACEAE (Honeysuckle Family)**  
*Sambucus mexicana* C. Presl ex DC. (blue elderberry)  
*Symphoricarpos oreophilus* A. Gray (mountain snowberry)  
**CARYOPHYLLACEAE (Pink Family)**  
*Holosteum umbellatum* L. (jagged chickweed)  
*Minuartia nuttallii* (Pax) Briq. ssp. *fragilis* (Maguire & A.H.  
 Holmgren) McNeill (recurved sandwort)  
*Silene douglasii* Hook. (seabluff catchfly)  
*Silene scaposa* B.L. Rob. (Blue Mountain catchfly)  
*Stellaria calycantha* (Ledeb.) Bong. (northern starwort)  
*Stellaria longipes* Goldie (longstalk starwort)  
**CHENOPODIACEAE (Goosefoot Family)**  
*Atriplex confertifolia* (Torr. & Frém.) S. Watson (shadscale  
 saltbush)  
*Chenopodium leptophyllum* (Moq.) S. Watson (narrowleaf  
 goosefoot)  
*Grayia spinosa* (Hook.) Moq. (spiny hopsage)  
*Sarcobatus vermiculatus* (Hook.) Torr. (greasewood)  
**CORNACEAE (Dogwood Family)**  
*Cornus sericea* L. (redosier dogwood)  
**CROSSOSOMATAACEAE (Crossosoma Family)**  
*Glossopetalon spinescens* A. Gray var. *aridum* M.E. Jones (spiny  
 green bush)  
**DIPSACACEAE (Teasel Family)**  
*Dipsacus fullonum* L. (common teasel)  
**FABACEAE (Legume Family)**  
*Astragalus cusickii* A. Gray var. *sterilis* (Barneby) Barneby (barren  
 milkvetch)  
*Astragalus filipes* Torr. ex A. Gray (threadstalk milkvetch)  
*Astragalus lentiginosus* Douglas ex Hook. var. *chartaceus* M.E.  
 Jones (freckled milkvetch)  
*Astragalus purshii* Douglas ex Hook. (woollypod milkvetch)  
*Lathyrus pauciflorus* Fernald var. *pauciflorus* (fewflower peavine)  
*Lupinus arbustus* Douglas ex Lindl. (spur lupine)  
*Lupinus argenteus* Pursh var. *heteranthus* (S. Watson) Barneby  
 (tailcup lupine)  
*Lupinus lepidus* Douglas ex Lindl. (dwarf lupine)  
*Lupinus polyphyllus* Lindl. (bigleaf lupine)  
*Trifolium cyathiferum* Lindl. (cup clover)  
*Trifolium owyheense* Gilkey (Owyhee clover)  
**GENTIANACEAE (Gentian Family)**  
*Frasera albicaulis* Douglas ex Griseb. (whitestem fraseria)  
**GERANIACEAE (Geranium family)**  
*Geranium viscosissimum* Fisch. & C.A. Mey. ex C.A. Mey. (sticky  
 geranium)  
**GROSSULARIACEAE (Gooseberry Family)**  
*Ribes aureum* Pursh (golden current)  
*Ribes cereum* Douglas (wax current)

**HYDROPHLLACEAE (Waterleaf Family)**  
*Hydrophyllum capitatum* Douglas ex Benth. (ballhead waterleaf)  
*Phacelia hastata* Douglas ex Lehm. (silverleaf phacelia)  
*Phacelia linearis* (Pursh) Holz. (threadleaf phacelia)  
*Phacelia lutea* (Hook. & Arn.) J.T. Howell var. *mackenzieorum*  
 J.W. Grimes & P.L. Packard (Mackenzie's phacelia)  
**LAMIACEAE (Mint Family)**  
*Agastache urticifolia* (Benth.) Kuntze (nettleleaf giant hyssop)  
*Mentha canadensis* L. var. *canadensis* (L.) Kuntze (wild mint)  
*Monardella odoratissima* Benth. (mountain monardella)  
*Salvia dorrii* (Kellogg) Abrams (purple sage)  
**LINACEAE (Flax Family)**  
*Linum lewisii* Pursh var. *lewisii* (wild blue flax)  
**LOASACEAE (Loasa Family)**  
*Mentzelia albicaulis* (Douglas ex Hook.) Douglas ex Torr. & A.  
 Gray (whitestem blazingstar)  
*Mentzelia packardiae* Glad (Packard's blazingstar)  
**MALVACEAE (Mallow Family)**  
*Sphaeralcea munroana* (Douglas ex Lindl.) Spach ex A. Gray  
 (whitestem globemallow)  
**ONAGRACEAE (Evening Primrose Family)**  
*Clarkia pulchella* Pursh (ragged robin)  
*Epilobium brachycarpum* C. Presl (tall annual willowherb)  
*Oenothera caespitosa* Nutt. (tufted evening-primrose)  
**PAEONIACEAE (Peony Family)**  
*Paeonia brownii* Douglas ex Hook. (western peony)  
**POLEMONIACEAE (Phlox Family)**  
*Collomia grandiflora* Douglas ex Lindl. (grand collomia)  
*Gilia sinuata* Douglas ex Benth. (rosy gilia)  
*Ipomopsis aggregata* (Pursh) V.E. Grant ssp. *aggregata* (skyrocket  
 gilia)  
*Leptodactylon pungens* (Torr.) Nutt. (granite prickly phlox)  
*Phlox gracilis* (Hook.) Greene ssp. *gracilis* (slender phlox)  
*Phlox hoodii* Richardson (woolly phlox)  
**POLYGONACEAE (Buckwheat Family)**  
*Eriogonum microthecum* Nutt. (slender buckwheat)  
*Eriogonum novonudum* M. Peck (false naked buckwheat)  
*Eriogonum strictum* Benth. (Blue Mountain buckwheat)  
*Eriogonum umbellatum* Torr. (sulphur-flower buckwheat)  
*Eriogonum vimineum* Douglas ex Benth. (wickerstem  
 buckwheat)  
*Polygonum douglasii* Greene (Douglas knotweed)  
**PORTULACACEAE (Purslane Family)**  
*Claytonia perfoliata* Donn ex Willd. (miner's lettuce)  
*Lewisia rediviva* Pursh (bitterroot)  
**RANUNCULACEAE (Buttercup Family)**  
*Aconitum columbianum* Nutt. (Columbian monkshood)  
*Aquilegia formosa* Fisch. ex DC. (western columbine)  
*Clematis ligusticifolia* Nutt. (western white clematis)  
*Delphinium nuttallianum* Pritz. ex Walp. (upland larkspur)  
*Ranunculus glaberrimus* Hook. (sagebrush buttercup)  
*Ranunculus sceleratus* L. (blister buttercup)  
*Ranunculus testiculatus* Crantz (hornseed buttercup)  
**ROSACEAE (Rose Family)**  
*Cercocarpus ledifolius* Nutt. ex Torr. & A. Gray (curlleaf  
 mountain mahogany)

*Geum triflorum* Pursh (old man's whiskers)  
*Holodiscus dumosus* (Nutt. ex Hook.) A. Heller (glandular oceanspray)  
*Ivesia rhyppara* Ertter & Reveal var. *rhyppara* (grimy mousetail)  
*Potentilla biennis* Greene (biennial cinquefoil)  
*Potentilla glandulosa* Lindl. (sticky cinquefoil)  
*Potentilla gracilis* Douglas ex Hook. (slender cinquefoil)  
*Prunus virginiana* L. (western chokecherry)  
*Purshia tridentata* (Pursh) DC. (antelope bitterbrush)  
*Rosa woodsii* Lindl. (pearhip rose)

#### **RUBIACEAE (Madder Family)**

*Galium aparine* L. (stickywilly)  
*Galium multiflorum* Kellogg (shrubby bedstraw)

#### **SALICACEAE (Willow Family)**

*Populus tremuloides* Michx. (quaking aspen)  
*Populus trichocarpa* Torr. & A. Gray ex Hook. (black cottonwood)  
*Salix lasiolepis* Benth. (arroyo willow)  
*Salix lucida* Muhl. ssp. *lasiandra* (Benth.) E. Murray (Pacific willow)

#### **SAXIFRAGACEAE (Saxifrage Family)**

*Heuchera cylindrica* Douglas ex Hook. (roundleaf alumroot)  
*Lithophragma parviflorum* (Hook.) Nutt. ex Torr. & A. Gray (small flowered fringe cup)

#### **SCROPHULARIACEAE (Figwort Family)**

*Castilleja angustifolia* (Nutt.) G. Don (violet desert paintbrush)  
*Castilleja applegatei* Fernald ssp. *martini* (wavyleaf Indian paintbrush)  
*Castilleja linariifolia* Benth. (Wyoming Indian paintbrush)  
*Castilleja pallescens* (A. Gray) Greenm. var. *inverta* (A. Nelson & J.F. Macbr.) Edwin (pale Indian paintbrush)  
*Castilleja tenuis* (A. Heller) T.I. Chuang & Heckard (hairy Indian paintbrush)  
*Collinsia parviflora* Douglas ex Lindl. (small flowered blue eyed Mary)  
*Mimulus cusickii* (Greene) Rattan (Cusick's monkeyflower)  
*Mimulus nanus* Hook. & Arn. (dwarf monkeyflower)  
*Penstemon deustus* Douglas ex Lindl. (hotrock beardtongue)  
*Penstemon speciosus* Douglas ex Lindl. (royal penstemon)  
*Scrophularia lanceolata* Pursh (lanceleaf figwort)  
*Verbascum thapsus* L. (flannel mullein)  
*Veronica americana* Schwein. ex Benth. (American speedwell)  
*Veronica peregrina* L. (purslane speedwell)

#### **SOLANACEAE (Nightshade Family)**

*Nicotiana attenuata* Torr. ex S. Watson (coyote tobacco)

#### **ULMACEAE (Elm Family)**

*Celtis reticulata* Torr. (netleaf hackberry)

#### **URTICACEAE (Nettle Family)**

*Urtica dioica* L. (stinging nettle)

#### **VALERIANACEAE (Valerian Family)**

*Plectritis macrocera* Torr. & A. Gray (longhorn plectritis)

#### **VIOLACEAE (Violet Family)**

*Viola bakeri* Greene (yellow prairie violet)  
*Viola beckwithii* Torr. & A. Gray (Beckwith's violet)

### **MONOCOTYLEDONS**

#### **CYPERACEAE (Sedge Family)**

*Carex microptera* Mack. (smallwing sedge)  
*Eleocharis palustris* (L.) Roem. & Schult. (common spikerush)

#### **JUNCACEAE (Rush Family)**

*Juncus bufonius* L. (toad rush)  
*Juncus ensifolius* Wickstr. (swordleaf rush)

#### **LEMNACEAE (Duckweed Family)**

*Spirodela polyrrhiza* (L.) Schleid. (greater duckweed, duckmeat)

#### **LILIACEAE (Lily Family)**

*Allium acuminatum* Hook. (tapertip onion)  
*Allium parvum* Kellogg (small onion)  
*Calochortus macrocarpus* Douglas (sagebrush mariposa lily)  
*Fritillaria pudica* (Pursh) Spreng. (yellow bells)  
*Maianthemum racemosum* (L.) Link (western Solomon plume)  
*Maianthemum stellatum* (L.) Link (starry false lily of the valley)  
*Zigadenus paniculatus* (Nutt.) S. Watson (foothill deathcamas)

#### **POACEAE (Grass Family)**

*Achnatherum hymenoides* (Roem. & Schult.) Barkworth (Indian ricegrass)  
*Achnatherum occidentale* (Thurb.) Barkworth spp. *occidentale* (western needlegrass)  
*Agrostis exarata* Trin. (spike bentgrass)  
*Bromus briziformis* Fisch. & C.A. Mey. (rattlesnake brome)  
*Bromus tectorum* L. (cheatgrass)  
*Deschampsia danthonioides* (Trin.) Munro (annual hairgrass)  
*Deschampsia elongata* (Hook.) Munro (slender hairgrass)  
*Elymus glaucus* Buckley (blue wildrye)  
*Elymus trachycaulus* (Link) Gould ex Shinners ssp. *trachycaulus* (slender wheatgrass)  
*Festuca idahoensis* Elmer (Idaho fescue)  
*Hordeum brachyantherum* Nevski (meadow barley)  
*Hordeum jubatum* L. (foxtail barley)  
*Leymus cinereus* (Scribn. & Merr.) A. Löve (basin wildrye)  
*Melica spectabilis* Scribn. (purple oniongrass)  
*Poa secunda* J. Presl (Sandberg bluegrass)  
*Pseudoroegneria spicata* (Pursh) A. Löve (bluebunch wheatgrass)  
*Sporobolus cryptandrus* (Torr.) A. Gray (sand dropseed)  
*Vulpia octoflora* (Walter) Rydb. (sixweeks fescue)

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Jean Findley has been a botanist on the Vale District BLM, Oregon, for 16 years, following 11 years as a range conservationist on the same district. She obtained an MS degree in Rangeland Resources from Oregon State University with a thesis having a botany focus. She furthered her botanical training with Dr. Patricia Packard at Albertson College of Idaho.

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