

French Flat

Mark Mousseaux

Medford District BLM, 3040 Biddle Road, Medford, OR 97504

Thomas Jefferson Howell was likely the first botanist to cast his plant-hungry eye upon French Flat, an area just north of the 1850s mining town of Waldo, Oregon (Kruckeberg and Ornduff 2003). Starting in 1884, Howell collected over 50 species from this local area, some of them type specimens. One hundred and twenty years later, you can follow Howell's footsteps at French Flat and enjoy most of the same species. Although financially impoverished in his lifetime, Howell left a rich legacy of botanical exploration. In tribute, several species from French Flat bear his name, including *Erythronium howellii*, *Isoetes howellii*, *Microseris howellii*, *Montia howellii*, and *Triteleia howellii*. In contrast, the two gold-hungry French Canadians for whom French Flat is named, J. Carron and J. Baptiste Desselles, extracted gold worth thousands of dollars, and left heaps of mining spoils as their legacy.

French Flat, located about six miles south of Cave Junction in Josephine County, was designated an Area of Critical Environmental Concern (ACEC) in 1995 for its outstanding botanical, geological, and ecological characteristics. It is best known in botan-

ical circles for the largest population of Cook's desert parsley (*Lomatium cookii*) on federal lands. In 2002 the US Fish and Wildlife Service listed this species as federally endangered (USFWS 2002). The French Flat population is currently monitored by the Institute for Applied Ecology (Kaye 2003) under a Challenge Cost Share project with the BLM. Eleven rare plant species grow at French flat: Waldo rockcress (*Arabis aculeolata*), modest rockcress (*A. modesta*), Howell's fawnlily (*Erythronium howellii*), Siskiyou fritillary (*Fritillaria glauca*), opposite-leaved lewisia (*Lewisia oppositifolia*), slender meadowfoam (*Limnanthes gracilis* ssp. *gracilis*), Bolander's linanthus (*Linanthus bolanderi*), Howell's microseris (*Microseris howellii*), Douglas monkeyflower (*Mimulus douglasii*), Howell's spring beauty (*Montia howellii*), and Siskiyou butterweed (*Senecio hesperius*). Some of these species grow in large numbers at French Flat. [Ed. note: Descriptions of these species are found in *A Guide to Rare Plants of the Siskiyou National Forest*, Mullens 2000.]

Ranging between 1450 and 1525 feet elevation, the rolling hills and flats of this gentle landscape lie between the east and west



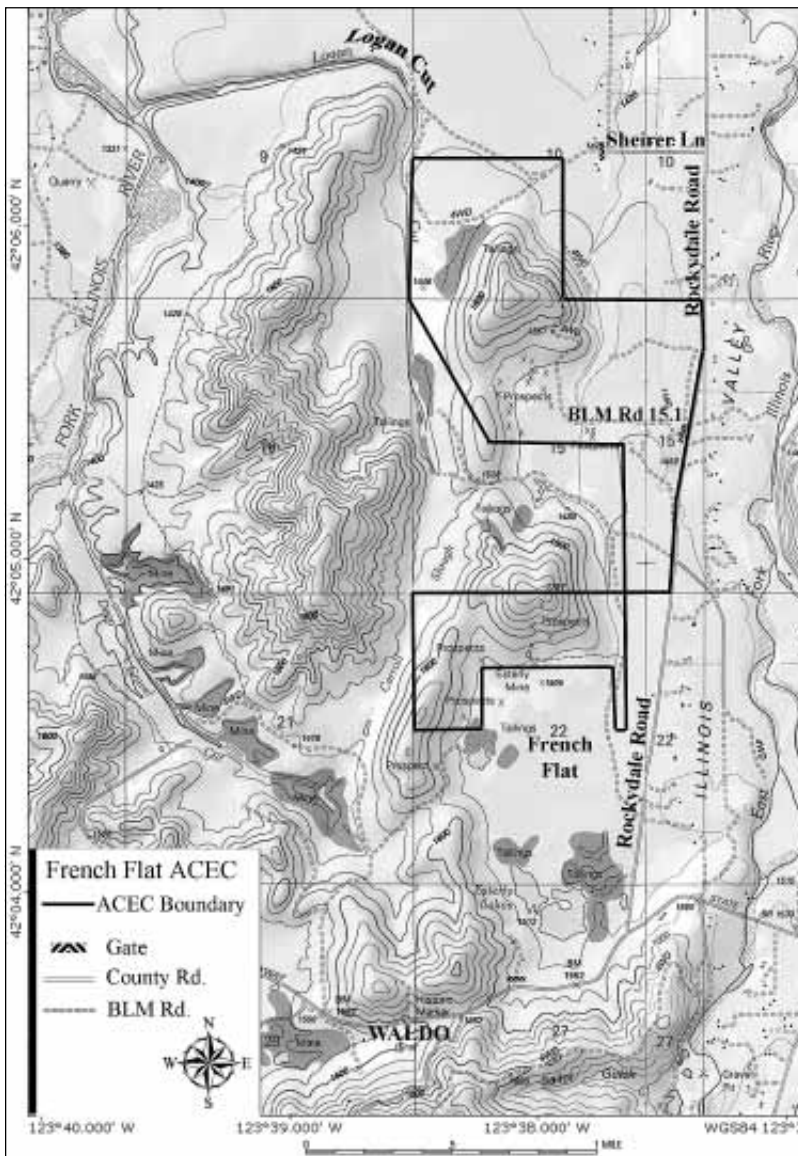
Hope Mountain rises in the background southeast of French Flat. In the foreground, the serpentine-influenced flatlands are dominated by *Deschampsia cespitosa* and *Danthonia californica*, the primary plant community that supports extensive populations of *Lomatium cookii*. Photo by Tom Kaye, Institute for Applied Ecology.

forks of the Illinois River. Overall, the vegetation is composed of coniferous forests, mixed conifer/hardwood woodlands, and open grasslands, with a variety of shrubs in the forest communities. Some of its diverse vegetation types are influenced by serpentine parent materials, and several are considered rare or vulnerable by the Oregon Natural Heritage Program (Kagan 1993). French Flat ACEC also has important cultural, mineral and recreational values.

French Flat ACEC occupies 656 acres in Township 40 South, Range 8 West, sections 10, 15, and 22. The ACEC is surrounded by private and BLM lands. There are three public access points, all of which are gated to prevent motorized vehicle use. One access point is opposite the historic town of Waldo on Waldo Road, and the other two are off Rockydale Road (Sheirer Lane and BLM road 15.1). To reach the French Flat ACEC, drive south on the Redwood Highway (99) from Grants Pass, turning east at Cave Junction about ½ mile south of the intersection to the Oregon Caves and follow the Rockydale Road about 4



Montia howellii is a diminutive plant in the vernal wet meadows and forest openings at French Flat. Watch your step! Photo by Tom Kaye.



Vicinity map of French Flat ACEC. Prepared by Mabel Jankovsky-Jones.

miles to Sheirer Lane. Alternatively, continue another mile south on Rockydale Road to BLM road 40-8-15.1 and turn right. To reach the ACEC from the south, continue south another 2.5 miles on Rockydale Road to Waldo Road. Turn right on Waldo Road; in one mile you reach the historic Waldo townsite; about a half mile later turn north on the primitive road. Park at any of the gates and walk in the short distance on old roads to explore the area on foot.

Plant Communities

Five plant associations have been mapped in French Flat ACEC (Kaye 2002). Where possible, the descriptions that follow use nomenclature developed by Atzet and others (1996) to describe vegetation in southwestern Oregon, or are compared to types described by them. In addition to the five communities described here, there are areas of mine tailings that represent severe disturbance to soils and vegetation in the ACEC.

Douglas fir/dry shrub forest

These forests are typically dominated by Douglas fir (*Pseudotsuga menziesii*), with small amounts of ponderosa pine (*Pinus ponderosa*) and sugar pine (*P. lambertiana*). Hardwoods in the canopy or sub-canopy include Oregon white oak (*Quercus garryana*), California black oak (*Q. kelloggii*), Pacific madrone (*Arbutus menziesii*), and occasional tree-form tanoak (*Lithocarpus densiflorus*) and Pacific dogwood (*Cornus nuttallii*). The shrub layer in this community lacks dominance by any species, and ranges in total cover from 0 to 50%. Typical shrubs include California hazelnut (*Corylus cornuta*), poison oak (*Toxicodendron diversilobum*), deer brush (*Ceanothus integerrimus*), creeping snowberry (*Symphoricarpos mollis*), and

occasionally, tanoak, and whiteleaf manzanita (*Arctostaphylos viscida*). Understory herbs include Klamath arnica (*Arnica spathulata*), silver-crown (*Cacaliopsis nardosmia*), Siskiyou iris (*Iris bracteata*), western starflower (*Trientalis latifolia*), Henderson's shootingstar (*Dodecatheon hendersonii*), hairy and orange honeysuckle (*Lonicera hispidula*, *L. ciliosa*), Henderson's fawnlily, pipsissewa (*Chimaphila umbellata*), leafy peavine (*Lathyrus polyphyllus*), mountain sweet cicely (*Osmorhiza berteroi*), varied leaf collomia (*Collomia heterophylla*), golden pea (*Thermopsis rhombifolia* var. *montana*), blue wildrye (*Elymus glaucus*), false solomon's seal (*Maianthemum racemosum*), pathfinder (*Adenocaulon bicolor*), woodland tarweed (*Anisocarpus madioides*), and fairyslipper (*Calypso bulbosa*). Very similar to the Douglas fir/dry shrub community described by Atzet and others (1996), this community differs in



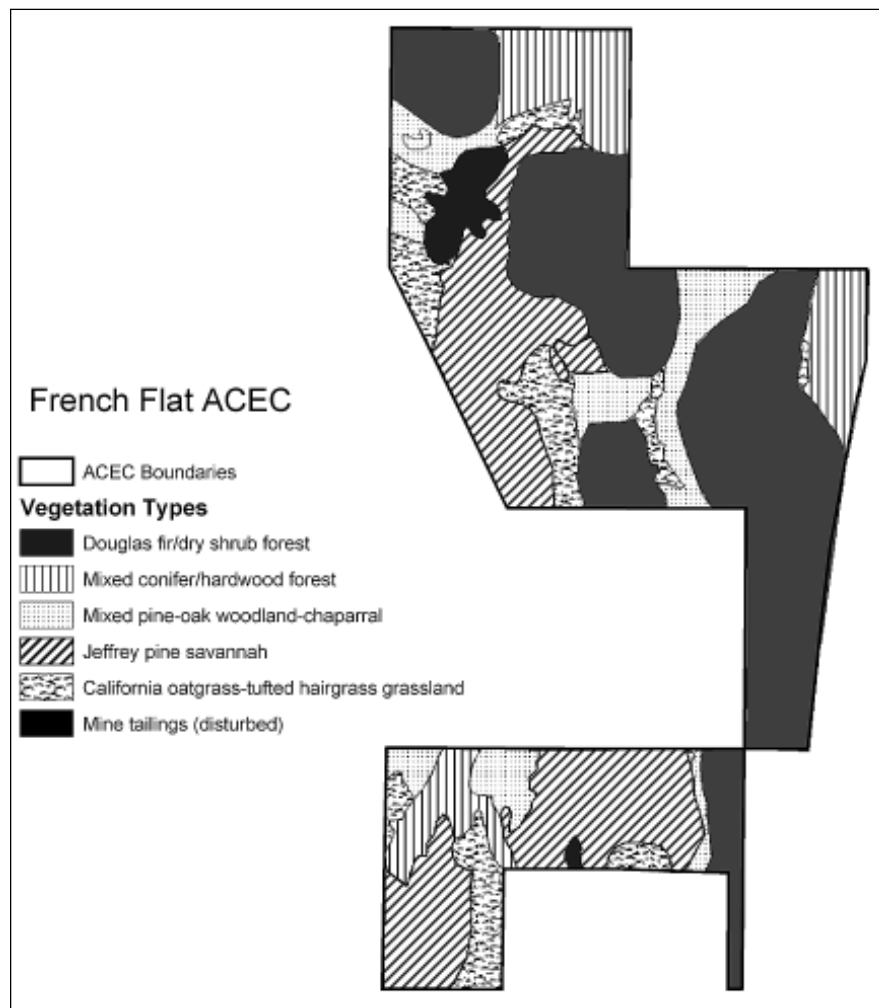
Lewisia oppositifolia, a beautiful white- to pink-flowered endemic to the Klamath Mountains, grows in the shallow soils of open rocky areas. Photo by Tom Kaye.

lacking canyon live oak and including a greater diversity of shrubs, with tanoak in both shrub and tree forms. Rare plants in this community include Howell's fawnlily and mountain lady slipper (*Cypripedium montanum*).

Mixed conifer/ hardwood forest

Here, the forest canopy dominants include ponderosa pine, Douglas fir, California black and Oregon white oak and Pacific madrone, with scattered sugar pine. Total forest canopy ranges from 60 to 90% cover. The shrub layer is also represented by a diversity of species in patches or mixed groups, including wedgeleaf ceanothus (*Ceanothus cuneatus*), whiteleaf manzanita, poison oak, serviceberry (*Amelanchier alnifolia*), and scattered California hazelnut. Common herbs on the forest floor include Siskiyou iris, Henderson's shooting star, Pacific sanicle (*Sanicula crassicaulis*), woodland tarweed, Oregon mariposa lily (*Calochortus tolmiei*), Klamath arnica, soap plant (*Chlorogalum pomeridianum*), and Bolander's catchfly (*Silene hookeri* ssp. *bolanderi*). This community appears to be transitional between denser conifer forests and more open hardwood-dominated woodland chaparral. It is related to Atzet's Douglas fir/ponderosa pine/poison oak association, but contains more pines and hardwoods, and more dry-site shrubs such as wedgeleaf ceanothus and whiteleaf manzanita. Soils in this community appear to be little influenced by serpentine parent materials.

forest canopy ranges from 60 to 90% cover. The shrub layer is also represented by a diversity of species in patches or mixed groups, including wedgeleaf ceanothus (*Ceanothus cuneatus*), whiteleaf manzanita, poison oak, serviceberry (*Amelanchier alnifolia*), and scattered California hazelnut. Common herbs on the forest floor include Siskiyou iris, Henderson's shooting star, Pacific sanicle (*Sanicula crassicaulis*), woodland tarweed, Oregon mariposa lily (*Calochortus tolmiei*), Klamath arnica, soap plant (*Chlorogalum pomeridianum*), and Bolander's catchfly (*Silene hookeri* ssp. *bolanderi*). This community appears to be transitional between denser conifer forests and more open hardwood-dominated woodland chaparral. It is related to Atzet's Douglas fir/ponderosa pine/poison oak association, but contains more pines and hardwoods, and more dry-site shrubs such as wedgeleaf ceanothus and whiteleaf manzanita. Soils in this community appear to be little influenced by serpentine parent materials.



Vegetation map of the French Flat ACEC. Prepared by Mabel Jankovsky-Jones.

Mixed pine/oak woodland chaparral

Hardwoods and conifers mix in a variable canopy with abundant shrubs in this community type. Its open forest canopy (10 to 60% cover) distinguishes this from the previous community, and allows a greater shrub layer, ranging from 5 to 80% cover. The prominent woodland trees include ponderosa and Jeffrey pine, as well as black and Oregon white oak. Oregon ash (*Fraxinus latifolia*) and Douglas fir are also present, but at less than 5% each. The abundant shrubs are wedgeleaf ceanothus (average 30%), serviceberry, poison oak, and whiteleaf ceanothus, but arroyo willow (*Salix lasiolepis*), little wild rose (*Rosa gymnocarpa*), and small Oregon ash are also common. Herbaceous species include California oatgrass (*Danthonia californica*),

naked desert parsley (*Lomatium nudicaule*), mallow sidalcea (*Sidalcea malviflora*), California fescue (*Festuca californica*), Sandberg bluegrass (*Poa secunda*), and soap plant. Serpentine parent materials evidently influence the soils under this community type, but apparently as mixed alluvium so the influence varies from weak to medium. This community type keys to a ponderosa pine-California black oak association in Atzet and others (1996), but has a different shrub component and occurs at lower elevations than those authors describe (1400 to 1600 vs. 3820 feet). Borgias (1991) referred to this community type at French Flat as *Pinus ponderosa-Quercus garryana-Q. kelloggii/Arctostaphylos viscida* woodland chaparral.



Calystegia californica grows on the serpentine-influenced soils of Jeffrey pine savannas. Photo by Tom Kaye.



Erythronium howellii, an elegant lily with white to cream flowers, is endemic to open woods and forest edges on serpentine soils in southwestern Oregon and adjacent northern California. Photo by Tom Kaye.

Jeffrey pine savannah: Jeffrey pine/buckbrush/Roemer's fescue

This plant association covers most of the serpentine slopes and is analogous to the Jeffrey pine/buckbrush/Idaho fescue community described by Atzet and others (1996). The widely scattered to locally clustered tree canopy ranges from 0 to 40% cover, and consists mainly of Jeffrey pine with an occasional incense cedar and Douglas fir. Pacific madrone, California black oak, and California white oak occur sporadically. The shrub layer is dominated by wedgeleaf ceanothus (0 to 70% cover) and Pacific madrone (0 to 50% cover), poison oak and serviceberry. The herbaceous layer is a rich assemblage of native grasses and forbs. The mixture and dominance of grasses is highly variable and diverse, including Oregon fescue (*Festuca roemerii*), Geyer's oniongrass (*Melica geyeri*), California oatgrass, California fescue, Lemmon's needlegrass (*Achnatherum lemmonii*), prairie junegrass (*Koeleria macrantha*) and Sandberg bluegrass. Oregon fescue tends to be more abundant on north facing slopes, Lemmon's needlegrass dominates drier south slopes, and Geyer's oniongrass tends to be most common on west-facing slopes. Total grass cover ranges from 10 to 75%. A diversity of forbs thrive in this community, including Oregon mariposa lily, Oregon sunshine (*Eriophyllum lanatum*), western buttercup (*Ranunculus occidentalis*), large fruited lomatium (*Lomatium macrocarpum*), naked desert parsley, sticky chickweed (*Cerastium glomeratum*), Indian's dream (*Aspidotis densa*), capitate gilia (*Gilia capitata*), variable leaf phacelia (*Phacelia heterophylla*), woolly-headed clover (*Trifolium eriocephalum*), large flowered blue eyed Mary (*Collinsia grandiflora*), Bolander's catchfly, pale morning glory (*Calystegia californica*), carrot-leaved horkelia (*Horkelia daucifolia*), sickle leaved onion (*Allium falcifolium*), and sensitive species such as Siskiyou butterweed, Howell's microseris, Douglas monkeyflower, opposite-leaved lewisia, and Waldo rockcress. This assemblage also includes some small patches (1 acre or less) of species mixes that could be

recognized as Jeffrey pine-incense cedar/whiteleaf ceanothus, because of the localized absence of Oregon fescue and presence of sugar pine.

California oatgrass-tufted hairgrass grassland

This plant association occupies areas of serpentine alluvium at French Flat. The soils tend to be fine silts to clays, with cobbles and gravels mixed in on gentle slopes. Moisture levels in the soil appear to range from mesic to hydric. As indicated by the name,



Lomatium cookii, a Federally endangered species, is distinguished by its simple, linear (or narrowly lanceolate) involucre bractlets. Photos courtesy of The Nature Conservancy, plant by Darren Borgias and insert showing bracts by Jim Post.

the dominant grasses are California oatgrass and tufted hairgrass, with the oatgrass dominating the mesic sites, and the hairgrass on the seasonally hydric soils. These grasslands are dotted by a few individuals of Jeffrey and ponderosa pine. The drier sites also host additional grass species, such as Geyer's oniongrass and Oregon fescue, which are also found in the Jeffrey pine savannah. The diverse assemblage of forbs includes shortstem mariposa (*Calochortus uniflorus*), Hall's violet (*Viola hallii*), common camas (*Camassia quamash*), California hesperochiron (*Hesperochiron californica*), Nuttall's quillwort (*Isoetes nuttallii*), common yarrow (*Achillea millefolium*), silver hairgrass (*Aira caryophyllea*), slender cottonweed (*Micropus californicus*), self-heal (*Prunella vulgaris*), and carrot-leaf horkelia. Rare species in this community include Cook's desert parsley and slender meadowfoam.

The Institute for Applied Ecology has monitored two sub-populations of Cook's desert parsley at French Flat since 1993. The total number of individuals increased from 1993 to 1998, but declined in 1999 and 2000, while the number of flowering plants has remained relatively stable. In 2002 the population remained stable in one of the sub-populations, but increased slightly in the other. Analysis of the 2003 monitoring data is forthcoming (<http://www.appliedeco.org>).

Noxious Weeds

Fortunately, only a few noxious weeds (e.g., *Centaurea pratensis* and *Hypericum perforatum*) as well as a few "obnoxious" ones (*Cirsium vulgare* and *Rubus armeniacus*) have invaded the French Flat ACEC, and they are limited to small scattered occurrences. The low numbers are partly due to the serpentine influence on the environment. However, several non-native grasses (*Bromus tectorum* and *Taeniatherum caput-medusae*) play a significant role, especially in meadows where there is less serpentine influence.

Human History

The vegetation of French Flat was likely shaped by the practices of the native Takilma Indians, primarily through their use of fire to manage food plants and vegetation for hunting and other resources. Although repeated burning of grasslands and woodlands for hunting and seed/acorn gathering were believed to be a common practice (Boyd 1999), no direct evidence of these practices has been documented for French Flat.

Euro-American activities during the past 150 years, such as land clearing, mining, fire suppression, and timber management, have changed the landscape of French Flat, allowing the invasion of annual grasses in perennial grasslands, pine trees in the meadows, Douglas fir in the pine-oak savannas, and an increase in tree and shrub densities in general. Historic and recent mining activities created rock tailing piles and other disturbed areas in the active mining claims. Areas within the ACEC were placer mined in the late 1800's and the National Register of Historic Places documents that \$80,000 in gold was removed by the Frenchmen from the French

Flat area. The Logan cut, a channel dug in 1886, was used until 1940 to provide water for hydraulic mining operations. The cut is 40 to 70 feet deep and runs along the western boundary of the north portion of the ACEC then west to the West Fork of the Illinois River a mile away. The significance of this cultural and hydrological feature has been recognized by its inclusion in the National Register of Historic Places, along with other sites representing the full range of historic mining activity in the Illinois Valley.

Minerals

French Flat ACEC has been prospected since 1852, and still has several mining claims, which are administered by the BLM. Minerals of interest in the ACEC include gold, platinum, and chromium. In contrast to historic disturbance, any future mining operations conducted within the ACEC must be in compliance with the 3809 Surface Management Regulations. These regulations require the miner to submit a Plan of Operations for any operations causing surface disturbance greater than casual use. In addition, all activities above casual use require a bond. The regulations require the miner to work with the BLM, providing the opportunity to institute mitigating measures that minimize disturbances to the resources for which the ACEC was established.

Recreation

Recreational opportunities include observation of the distinctive plant communities, spectacular and diverse wildflower viewing, bird watching, and hiking. The entire ACEC was closed to off-highway vehicles (OHVs) in June of 1992 (Federal register, Volume 57, No. 118). Unfortunately, some unauthorized OHV use continues, especially in open meadows in the spring. Non-destructive botanical forays into the ACEC are encouraged (bring your camera, not your plant press). The peak season for viewing wildflowers at French Flat is April through May.

References

- Atzet T, White DE, McCrimmon LA, Martinez PA, Fong PR, Randall VD. 1996. Field Guide to the Forested Plant Associations of Southwestern Oregon. Portland (OR): USDA Forest Service Tech Paper R6-NR-ECOL-TP-17-96.
- Boyd R. 1999. Indians, Fire, and the Land in the Pacific Northwest. Corvallis (OR): Oregon State University Press.
- Borgias D. 1991. French Flat Natural Area Design. Unpublished report on file with The Nature Conservancy, Medford, Oregon.
- Kagan J. 1993. Oregon Comprehensive Terrestrial Plant Community Classification. Unpublished document on file at the Oregon Natural Heritage Program, Portland, Oregon.
- Kagan J. 1994. Habitat Management Plan for *Lomatium cookii* (Cook's desert-parsley) in the Illinois Valley, Josephine County, Oregon. Portland (OR): Oregon Natural Heritage Program.
- Kaye TN. 2002. Vegetation Survey of French Flat ACEC. Unpublished report on file BLM Medford District office.
- Kaye TN. 2003. *Lomatium cookii* population monitoring in the Illinois Valley, Josephine County, Oregon. Unpublished report on file BLM Medford District office.
- Kruckeberg A. and Ornduff R. 2003. Thomas Jefferson Howell (1842-1912): the untutored, impoverished botanist. Oregon Flora Newsletter 9(2):9,12.
- Mullens L. 2000. A Guide to Rare Plants of the Siskiyou National Forest. Grants Pass (OR): USDA Forest Service R6-11-084-00.
- [USFWS] Fish and Wildlife Service. 2002. Final rule listing Cook's desert parsley as an Endangered Species. Federal Register 2002 Nov 7. 67 FR p 68003-68015.

Vascular Plant Species List

The list was compiled from site visits to the ACEC in 2001 and 2002 by Tom Kaye of the Institute for Applied Ecology, as well as various surveys by BLM staff, Darren Borgias of The Nature Conservancy, Jimmy Kagan of the Oregon Natural Heritage Program, and other individuals. [Ed. note: In this part of Oregon, identification of *Arctostaphylos* species can be difficult. Refer to Ken Chambers's article "Manzanitas—a study in speciation" in the Oregon Flora Newsletter 9(3):15-17.] Species that have special Federal or State status are noted by an asterisk before the scientific name. 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

DENNSTAEDTIACEAE (Bracken Family)

Pteridium aquilinum (L.) Kuhn (western brackenfern)

DRYOPTERIDACEAE (Wood Fern Family)

Polystichum munitum (Kaulfuss) K. Presl (western swordfern)

PTERIDACEAE (Brake Family)

Aspidotis densa (Brack.) Lellinger (podfern)

ISOETACEAE (Quillwort Family)

Isoetes howellii Engelm. (Howell's quillwort)

Isoetes nuttallii A. Br. (Nuttall's quillwort)

GYMNOSPERMS

CUPRESSACEAE (Cypress Family)

Calocedrus decurrens (Torr.) Florin (incense cedar)

PINACEAE (Pine Family)

Pinus jeffreyi Grev. & Balf. (Jeffrey pine)

Pinus lambertiana Dougl. (sugar pine)

Pinus ponderosa Douglas ex C. Lawson (ponderosa pine)

Pseudotsuga menziesii (Mirbel) Franco var. *menziesii* (Douglas fir)

DICOTYLEDONS

ANACARDIACEAE (Sumac Family)

Toxicodendron diversilobum (Torr. & Gray) Greene (Pacific poison oak)

APIACEAE (Carrot Family)

Daucus pusillus Michx. (American carrot)

Horkelia daucifolia (Greene) Rydb. (carrot-leaved horkelia)

**Lomatium cookii* Kagan (Cook's desert parsley)

Lomatium macrocarpum (Nutt.) J.M. Coult. & Rose (large fruited lomatium)

Lomatium nudicaule (Pursh) J.M. Coult. & Rose (naked desert parsley)

Lomatium triternatum (Pursh) J.M. Coult. & Rose (nineleaf biscuitroot)

Osmorbiza berteroi DC. (mountain sweet cicely)

Sanicula crassicaulis Poepp. var. *crassicaulis* (Pacific sanicle)

Sanicula bipinnatifida Douglas ex Hook. (purple sanicle)

ASTERACEAE (Sunflower Family)

Achillea millefolium L. (common yarrow)

Adenocaulon bicolor Hook. (pathfinder)

Agoseris heterophylla (Nutt.) Greene (annual agoseris)

Anisocarpus madioides Nutt. (woodland tarweed)

Arnica spathulata Greene (Klamath arnica)

Centaurea x pratensis Thuill. (meadow knapweed)

Cirsium vulgare (Savi) Ten. (bull thistle)

Crepis (hawkbeard)

Eriophyllum lanatum (Pursh) J. Forbes (Oregon sunshine)

Hieracium albiflorum Hook. (white-flowered hawkweed)

Hypochaeris radicata L. (hairy cat's ears)

Cacaliopsis nardosmia (A. Gray) A. Gray ssp. *nardosmia* (silvercrown)

Madia exigua (Sm.) A. Gray (little tarweed)

Micropus californicus Fisch. & C.A. Mey. (slender cottonweed)

**Microseris howellii* A. Gray (Howell's microseris)

**Senecio hesperius* Greene (Siskiyou butterweed)

Senecio macounii Greene (Puget butterweed)

Wyethia angustifolia (DC.) Nutt. (narrow leaved mule's ears)

BETULACEAE (Birch Family)

Corylus cornuta Marshall var. *californica* (A. DC.) W.M. Sharp
(hazelnut)

BRASSICACEAE (Mustard Family)

**Arabis aculeolata* Greene (Waldo rockcress)

Arabis holboellii Hornem var. *retrofracta* (Graham) Rydb. (second rockcress)

**Arabis modesta* Rollins (modest rockcress)

Cardamine nuttallii Greene var. *gemmata* (Greene) Rollins
(redwood toothwort)

Draba verna L. (vernal whitlow-grass)

Lepidium campestre (L.) R. Br. (field cress)

Thysanocarpus curvipes Hook. (fringepod)

BORAGINACEAE (Borage Family)

Cryptantha intermedia (A. Gray) Greene (common cryptantha)

Cynoglossum grande Douglas ex Lehm. (Pacific hound's tongue)

Pectocarya setosa A. Gray (bristly combseed)

CAMPANULACEAE (Harebell Family)

Campanula scouleri Hook. ex A. DC. (Scouler's bellflower)

Downingia elegans (Douglas ex Lindl.) Torr. (elegant downingia)

Githopsis specularioides Nutt. (common blue cup)

CAPRIFOLIACEAE (Honeysuckle Family)

Lonicera ciliosa (Pursh) Poir. ex DC. (orange honeysuckle)

Lonicera hispidula (Lindl.) Douglas ex Torr. & A. Gray (hairy honeysuckle)

Symphoricarpos albus (L.) S.F. Blake (common snowberry)

Symphoricarpos mollis Nutt. (creeping snowberry)

CARYOPHYLLACEAE (Pink Family)

Cerastium glomeratum Thuill. (sticky chickweed)

Minuartia douglasii (Fenzl ex Torr. & A. Gray) Mattf. (Douglas sandwort)

Silene hookeri Nutt. ssp. *bolanderi* (A. Gray) Abrams (Bolander's catchfly)

CONVOLVULACEAE (Morning-glory Family)

Calystegia occidentalis (A. Gray) Brummitt ssp. *occidentalis* (pale morning glory)

CORNACEAE (Dogwood Family)

Cornus nuttallii Audubon ex Torr. & A. Gray (Pacific dogwood)

ERICACEAE (Heath Family)

Arbutus menziesii Pursh (Pacific madrone)

Arctostaphylos columbiana Piper (hairy manzanita)

Arctostaphylos viscida Parry (whiteleaf manzanita)

Chimaphila umbellata (L.) W. Bartram (pipsissewa)

FABACEAE (Legume Family)

Lathyrus polyphyllus Nutt. (leafy peavine)

Lotus corniculatus L. (bird's foot trefoil)

Lotus oblongifolius (Benth.) Greene (Torrey's lotus)

Lotus purshianus Clem. & E.G. Clem. (Spanish clover)

Thermopsis rhombifolia (Nutt. ex Pursh) Nutt. ex Richardson var. *montana* (Nutt. ex Torr. & A. Gray) Isely (golden pea)

Trifolium dubium Sibth. (least hop clover)

Trifolium eriocephalum Nutt. (woolly-headed clover)

Trifolium variegatum Nutt. (white tip clover)

Vicia americana Muhl. ex Willd. (American vetch)

FAGACEAE (Oak Family)

Lithocarpus densiflorus (Hook. & Arn.) Rehder (tanoak)

Quercus garryana Douglas ex Hook. var. *garryana* (Oregon white oak)

Quercus garryana Douglas ex Hook. var. *breweri* (Engelm.) Jeps.
(Brewer oak)

Quercus kelloggii Newb. (California black oak)

GERANIACEAE (Geranium Family)

Erodium cicutarium (L.) L'Hér. ex Aiton (redstem filaree)

HYDROPHYLLACEAE (Waterleaf Family)

Hesperochiron californicus (Benth.) S. Watson (California hesperochiron)

Nemophila pedunculata Douglas ex Benth. (spreading nemophila)

Phacelia heterophylla Pursh (variable leaf phacelia)

HYPERICACEAE (St. John's wort Family)

Hypericum perforatum L. (St. Johnswort)

LAMIACEAE (Mint Family)

Prunella vulgaris L. (self-heal)

Satureja douglasii (Benth.) Briq. (yerba buena)

LIMNANTHACEAE (Meadowfoam Family)

**Limnanthes gracilis* Howell ssp. *gracilis* (slender meadowfoam)

MALVACEAE (Mallow Family)

Sidalcea malviflora (DC.) A. Gray ssp. *elegans* (Greene) C.L. Hitchc. (mallow sidalcea)

OLEACEAE (Olive Family)

Fraxinus latifolia Benth. (Oregon ash)

ONAGRACEAE (Evening Primrose Family)

Clarkia gracilis (Piper) A. Nelson & J.F. Macbr. (slender godetia)

Epilobium brachycarpum J. Presl (tall annual willowherb)

Epilobium rigidum Hausskn. (rigid willow herb)

OROBANCHACEAE (Broom-rape Family)

Orobanche uniflora L. (naked broomrape)

PLANTAGINACEAE (Plantain Family)

Plantago lanceolata L. (English plantain)

POLEMONIACEAE (Pink Family)

Collomia heterophylla Hook. (varied leaf collomia)

Gilia capitata Sims (capitate gilia)

**Linanthus bolanderi* (A. Gray) Greene (Bolander's linanthus)

Linanthus bicolor (Nutt.) Greene (bicolored linanthus)

Navarretia intertexta (Benth.) Hook. (needle-leaved navarretia)

Phlox speciosa Pursh (showy phlox)

POLYGALACEAE (Milkwort Family)

Polygala californica Nutt. (California milkwort)

POLYGONACEAE (Buckwheat Family)

Eriogonum nudum Douglas ex Benth. (naked buckwheat)

Rumex acetosella L. (sheep sorrel)

Rumex crispus L. (curlyleaf dock)

PORTULACACEAE (Purslane Family)

Calandrinia ciliata (Ruíz & Pav.) DC. (red maids)

Claytonia exigua Torr. & A. Gray (pale springbeauty)

Claytonia perfoliata Donn ex Willd. (miner's lettuce)

**Lewisia oppositifolia* (S. Watson) B.L. Rob. (opposite leaved lewisia)

Montia fontana L. (water chickweed)

Montia linearis (Douglas ex Hook.) Greene (narrow leaved montia)

**Montia howellii* S. Watson (Howell's springbeauty)

PRIMULACEAE (Primrose Family)

Dodecatheon hendersonii A. Gray (Henderson's shootingstar)

Trientalis latifolia Hook. (western starflower)

RANUNCULACEAE (Buttercup Family)

Ranunculus occidentalis Nutt. (western buttercup)

RHAMNACEAE (Buckthorn Family)

- Ceanothus cuneatus* (Hook.) Nutt. ex Torr. & A. Gray
(buckbrush, wedgeleaf ceanothus)
Ceanothus integerrimus Hook. & Arn. (deer brush)
Ceanothus pumilus Greene (Siskiyou mat)

ROSACEAE (Rose Family)

- Amelanchier alnifolia* (Nutt.) Nutt. ex M. Roem. (serviceberry)
Potentilla glandulosa Lindl. (sticky cinquefoil)
Potentilla gracilis Douglas ex Hook. (slender cinquefoil)
Prunus subcordata Benth. (western plum)
Rosa gymnocarpa Nutt. (little wild rose)
Rubus armeniacus Focke (Himalayan blackberry)
Rubus laciniatus Willd. (cut leaf blackberry)

RUBIACEAE (Madder Family)

- Galium aparine* L. (cleavers)

SALICACEAE (Willow Family)

- Salix lasiolepis* Benth. (arroyo willow)

SAXIFRAGACEAE (Saxifrage Family)

- Lithophragma parviflorum* (Hook.) Nutt. ex Torr. & A. Gray
(small flowered fringe cup)
Saxifraga (saxifrage)

SCROPHULARIACEAE (Figwort Family)

- Castilleja rubicundula* (Jeps.) T.I. Chuang & Heckard ssp.
lithospermoides (Benth.) T.I. Chuang & Heckard (gromwell
paintbrush)
Collinsia grandiflora Douglas ex Lindl. (large flowered blue eyed Mary)
Collinsia parviflora Douglas ex Lindl. (small flowered blue eyed Mary)
Mimulus guttatus DC. (common monkeyflower)
**Mimulus douglasii* (Benth.) A. Gray (Douglas monkeyflower)
Triphysaria pusilla (Benth.) T.I. Chuang & Heckard (dwarf owl
clover)

- Tonella tenella* (Benth.) A. Heller (small flowered tonella)
Veronica (veronica)

VALERIANACEAE (Valerian Family)

- Plectritis congesta* (Lindl.) DC. (rosy plectritis)

VIOLACEAE (Violet Family)

- Viola adunca* Sm. (western long spurred violet)
Viola glabella Nutt. ex Torr. & A. Gray (smooth woodland violet)
Viola ballii A. Gray (Hall's violet)
Viola lobata Benth. (Lobed-leaf violet)

MONOCOTYLEDONS**CYPERACEAE (Sedge Family)**

- Carex deweyana* Schwein. (Dewey's sedge)
Carex lenticularis Michx. (lens-shaped sedge)
Carex mendocinensis Olney (Mendocino sedge)
Carex multicaulis L.H. Bailey (many stemmed sedge)
Carex obnupta L.H. Bailey (slough sedge)
Carex nudata W. Boott (torrent sedge)
Carex praegracilis W. Boott (clustered field sedge)
Carex rossii W. Boott (Ross sedge)
Carex tumulicola Mack. (foothill sedge)

JUNCACEAE (Rush Family)

- Juncus bolanderi* Engelm. (Bolander's rush)
Juncus balticus Willd. (Baltic rush)
Juncus effusus L. (soft rush)
Juncus patens E. Mey. (spreading rush)
Juncus tenuis Willd. (slender rush)

- Luzula multiflora* (Ehrh.) Lej. ssp. *multiflora* (common woodrush)

IRIDACEAE (Iris Family)

- Iris bracteata* S. Watson (Siskiyou iris)
Iris chrysophylla Howell (slender-tubed iris)
Sisyrinchium bellum S. Watson (California blue-eyed grass)

LILIACEAE (Lily Family)

- Allium amplexans* Torr. (slenderleaf onion)
Allium bolanderi S. Watson (Bolander's onion)
Allium falcifolium Hook. & Arn. (sickle leaved onion)
Allium sanbornii A.W. Wood (Sanborn's onion)
Calochortus tolmiei Hook. & Arn. (Oregon mariposa lily)
Calochortus uniflorus Hook. & Arn. (shortstem mariposa)
Camassia quamash (Pursh) Greene (common camas)
Chlorogalum pomeridianum (DC.) Kunth (soap plant)
Erythronium howellii S. Watson (Howell's fawnlily)
Fritillaria affinis (Schult.) Sealy (checker lily)
Fritillaria glauca (Pursh) Spreng. (Siskiyou fritillary)
Fritillaria pudica (Pursh) Spreng. (yellow bells)
Hastingsia alba (Durand) S. Watson (serpentine rush lily)
Maianthemum racemosum (L.) Link ssp. *amplexicaule* (Nutt.)
LaFrankie (false Solomon's seal)
Triteleia howellii x *Triteleia multiflora* (hybrid triteleia)
Zigadenus venenosus S. Watson (meadow deathcamas)

ORCHIDACEAE (Orchid Family)

- Calypso bulbosa* (L.) Oakes (fairyslipper orchid)
Cypripedium montanum Douglas ex Lindl. (mountain lady slipper)
Goodyera oblongifolia Raf. (rattlesnake plantain)
Piperia candida Rand. Morgan & Ackerman (short-spurred
reinorchid)

POACEAE (Grass Family)

- Achnatherum lemmonii* (Vasey) Barkworth (Lemmon's needlegrass)
Aira caryophyllea L. (silver hairgrass)
Aristida oligantha Michx. (oldfield threeawn)
Bromus hordeaceus L. (soft brome)
Bromus tectorum L. (cheatgrass)
Danthonia californica Bol. (California oatgrass)
Deschampsia cespitosa (L.) P. Beauv. (tufted hairgrass)
Elymus elymoides (Raf.) Swezey (bottlebrush squirreltail)
Elymus glaucus Buckley (blue wildrye)
Festuca roemerii Yu.E. Alexeev var. *klamathensis* (Klamath fescue)
Holcus lanatus L. (common velvetgrass)
Koeleria macrantha (Ledeb.) Schult. (prairie junegrass)
Melica geyeri Munro ex Bol. (Geyer's oniongrass)
Poa secunda J. Presl ssp. *juncifolia* (Scribn.) Soreng (Nevada bluegrass)
Poa secunda J. Presl ssp. *secunda* (Sandberg bluegrass)
Taeniatherum caput-medusae (L.) Nevski (medusahead wildrye)
Vulpia bromoides (L.) Gray (six-weeks fescue)

Mark R. Mousseaux (yes, it's French-Canadian... pronounced "Moo-So") is the Medford BLM District Botanist and is responsible for coordination of the Botany/Rare plant, and ACEC program for the Medford District. He and his nine-year-old daughter have lived in southwestern Oregon since 2000. He was the US Forest Service Forest Botanist for the Idaho Panhandle National Forests in Coeur d'Alene, Idaho, for 6 years prior to coming to the BLM. He received a Masters in Forest Science in 1992 from the University of Idaho.
