DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

RIN 1018–AW21

[Docket No. FWS–R1–ES–2009–0046]
[92210 1117–0000–B4]

Endangered and Threatened Wildlife and Plants; Proposed Designation of Critical Habitat for *Limnanthes floccosa* ssp. *grandiflora* (Large-Flowered Woolly Meadowfoam) and *Lomatium cookii* (Cook's Lomatium)

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Proposed rule.

SUMMARY: We, the U.S. Fish and Wildlife Service (Service), propose to designate critical habitat for two plants, *Limnanthes floccosa* ssp. *grandiflora* (large-flowered woolly meadowfoam) and *Lomatium cookii* (Cook's lomatium) under the Endangered Species Act of 1973, as amended (Act). We are proposing to designate 2,561 hectares (ha) (6,327 acres (ac)) as critical habitat for *Limnanthes floccosa* ssp. *grandiflora* in Jackson County, Oregon, and 2,875 ha (7,104 ac) as critical habitat for *Lomatium cookii* in Jackson and Josephine Counties, Oregon. The total critical habitat area proposed in this rule, including critical habitat units that overlap for the two species, is 4,467 ha (11,038 ac).

DATES: To provide us with adequate time to consider your comments, please ensure that we receive them on or before September 28, 2009. We must receive requests for public hearings, in writing, at the address shown in the **FOR FURTHER INFORMATION CONTACT** section by September 11, 2009.

ADDRESSES: You may submit comments and materials concerning this proposal by one of the following methods:

- Federal eRulemaking Portal: *http://www.regulations.gov*. Follow the instructions for submitting comments to Docket No. FWS–R1–ES–2009–0046.
- U.S. mail or hand-delivery: Public Comments Processing, Attn: Docket No. FWS–R1–ES–2009–0046; Division of Policy and Directives Management; U.S. Fish and Wildlife Service; 4401 N. Fairfax Drive, Suite 222; Arlington, VA 22203.

We will post all comments on *http://www.regulations.gov*. This generally means that we will post any personal information you provide us (see the **Public Comments** section below for more information).

FOR FURTHER INFORMATION CONTACT: Paul Henson, State Supervisor, U.S. Fish and Wildlife Service, Oregon Fish and Wildlife Office, 2600 SE 98th Avenue, Suite 100, Portland, OR 97266 (telephone 503–231–6179; facsimile 503–231–6195). If you use a telecommunications device for the deaf (TDD), call the Federal Information Relay Service (FIRS) at 800–877–8339.

SUPPLEMENTARY INFORMATION:

Public Comments

We intend that any final action resulting from this proposal will be as accurate and as effective as possible. Therefore, comments or suggestions from the public, other concerned governmental agencies, the scientific community, industry, or any other interested party concerning this proposed rule are hereby solicited. We particularly seek comments concerning:

(1) The reasons why we should or should not designate areas as ''critical habitat'' under section 4 of the Act (16 U.S.C. 1531 *et seq.*), including whether there are threats to *Limnanthes floccosa* ssp. *grandiflora* and *Lomatium cookii* from human activity, the degree of which can be expected to increase due to the designation, and whether the benefit of designation would outweigh threats to the species caused by the designation, such that the designation of critical habitat is prudent.

(2) Specific information on:

- The amount and distribution of habitat for the species included in this proposed rule;
- What areas occupied at the time of listing, and that contain physical and biological features essential for the conservation of the species, we should include and why;
- What areas not occupied at the time of listing that are essential to the conservation of the species we should include and why; and
- Special management considerations or protection that the proposed critical habitat may require.

(3) Specific information on *Limnanthes floccosa* ssp. *grandiflora* and *Lomatium cookii* and the habitat components (physical and biological features) essential to the conservation of these species, such as soil moisture gradient, microsite preferences, and light requirements.

(4) Any information on the biological or ecological requirements of these species.

(5) Land-use designations and current or planned activities in areas occupied by the species, and their possible impacts on the species and the proposed critical habitat.

(6) Any foreseeable economic, national security, or other potential impacts resulting from the proposed designation and, in particular, any impacts on small entities and the benefits of including or excluding areas that are subject to these impacts.

(7) Whether the benefits of excluding any particular area from critical habitat outweigh the benefits of including that area as critical habitat under section 4(b)(2) of the Act, after considering the potential impacts and benefits of the proposed critical habitat designation.

(8) Whether our approach to designating critical habitat could be improved or modified in any way to provide for greater public participation and understanding, or to assist us in accommodating public concerns and comments.

You may submit your comments and materials concerning this proposed rule by one of the methods listed in the **ADDRESSES** section. If you submit a comment via *http://www.regulations.gov*, your entire comment—including any personal identifying information—will be posted on the website. If you submit a hardcopy comment that includes personal identifying information, you may request at the top of your document that we withhold this information from public review. However, we cannot guarantee that we will be able to do so. We will post all hardcopy comments on *http://www.regulations.gov*.

Comments and materials we receive, as well as supporting documentation we used in preparing this proposed rule, will be available for public inspection at *http://www.regulations.gov*, or by appointment, during normal business hours, at the U.S. Fish and Wildlife Service, Oregon Fish and Wildlife Office (see **FOR FURTHER INFORMATION CONTACT**).

You may obtain copies of the proposed rule by mail from the Oregon Fish and Wildlife Office (see **FOR FURTHER INFORMATION CONTACT**) or by visiting the *Federal eRulemaking Portal* at *http://www.regulations.gov*.

Background

Species Information

Limnanthes floccosa ssp. *grandiflora* and *Lomatium cookii* were listed as endangered species under the Act in 2002 (67 FR 68004; November 7, 2002). In this proposed rule, we intend to discuss only those topics directly relevant to the designation of critical habitat for these two species. For detailed information on the taxonomy and biology of *L. f.* ssp. *grandiflora* and *L. cookii*, please refer to the final listing rule published in the **Federal Register**

on November 7, 2002 (67 FR 68004) and the Draft Recovery Plan for Listed Species of the Rogue Valley Vernal Pool and Illinois Valley Wet Meadow Ecosystems (USFWS 2006, pp. II-1 to II-17).

Limnanthes floccosa ssp. *grandiflora* and *Lomatium cookii* are endemic to seasonal wetland habitats of southwestern Oregon. *L. F.* ssp. *grandiflora* is restricted to Jackson County in the Rogue River Valley, where it co-occurs with *Lomatium cookii* in several areas near White City in an area known as the Agate Desert (ONHP 1997, p. 3; Huddleston 2001, p. 11). *Lomatium cookii* occurs in two disjunct locations: (1) in the Rogue River Valley, near the towns of Medford, White City, and Eagle Point; and (2) in the Illinois River Valley of Josephine County near the towns of Selma, Cave Junction, and O'Brien (ONHDB 1994, p. 5). The two locations are separated by approximately 48 kilometers (km) (30 miles (mi)).

Limnanthes floccosa ssp. *grandiflora*, commonly known as large-flowered woolly meadowfoam, is a small, annual forb (broad-leaved herb) in the false mermaid family (Limnanthaceae). The subspecies produces yellowish-white flowers that bloom in April and May and reaches a height of 15 centimeters (cm) (6 inches (in)) (Meinke 1982, p. 202). *L. f.* ssp. *grandiflora* is distinguished from the more common *L. f.* ssp. *floccosa* (common woolly meadowfoam) by its larger, sparser-haired calyxes (outer flower bracts), which typically produce a single flower per pedicel (flower stalk) (Kalin-Arroyo 1973, p. 188; USFWS 2006, pp. II-1–II-3). In contrast, *L. f.* ssp. *floccosa* typically produces smaller flowers with densely whitish and woolly haired calyxes; the flowers are formed in clusters. *L. f.* ssp. *grandiflora* occurs on the floor of the Middle Rogue River Basin in Jackson County in vernal pool–mounded prairie habitat (rain-fed seasonal wetlands in prairie characterized by gentle mound-swale topography) (Kalin-Arroyo 1973, p. 188; ONHP 1997, p. 4; USFWS 2006, pp. II-1–II-3).

Lomatium cookii, commonly known as Cook's lomatium or Cook's desert parsley, is a perennial, tap-rooted forb in the parsley family (Apiaceae) that produces light-yellow flowers from late March to May and reaches a height of 50 cm (20 in). This species is distinguished from the more common *Lomatium utriculatum* (foothill desert parsley) by having narrow bracts under the flower umbels (flower clusters), producing paler yellow flowers, and by typically lacking leaves on the flowering stems (Kagan 1986, pp. 73-74; USFWS 2006, pp. II-15–II-17). *Lomatium cookii* is associated with vernal pool–mounded prairie habitat, but also occurs in seasonally wet meadow habitat in forest openings (ONHDB 1994, pp. 9–10).

Limnanthes floccosa ssp. *grandiflora* and *Lomatium cookii* are both associated with the remaining relatively undisturbed vernal pool–mounded prairie habitat in the Middle Rogue River Basin's Agate Desert (Environmental Science Associates (ESA) 2007, p. 2-1; ONHP 1997, p. 3). Relative to the pools, the plants often occur in pool margins, or less often on both mound tops and depression bottoms of less intact vernal pools.

The substrate underlying the vernal pool topography in the Middle Rogue River Valley is primarily basalt within a matrix of thick clay soil, which creates a hardpan or duripan layer (mineral soil horizons relatively impervious to water). During fall and winter rains, water collects in shallow depressions of the vernal pool–mounded prairie habitat. Downward percolation of water is prevented by the presence of the duripan layer located from 0.18 to 0.75 meters (m) (0.6 to 2.5 feet (ft)) below the soil surface (Keeley and Zedler 1998, p. 2; Huddleston 2001, pp. 14–15). In areas north and northwest of Medford, the vicinity of White City, and north along low-elevation plains, *L. f.* ssp. *grandiflora* and *Lomatium cookii* occur on alluvial soils, primarily mapped as Agate-Winlo complex soils, but also occasionally on mapped Coker clay and Provig-Agate complex soils with 0 to 3 percent slopes. *L. f.* ssp. *grandiflora* also occasionally occurs on soils mapped as Carney clay and Winlo very gravelly loam in vernal pool habitat north of White City (USDA 2006b).

In the Agate Desert, the two plants are associated with microhabitats occupied by mostly annual native forbs and graminoids (grass-like plants), including *Alopecurus geniculatus* (water foxtail), *Deschampsia danthonioides* (slender hairgrass), *Eryngium petiolatum* (Oregon coyote thistle*), Trifolium depauperatum* (poverty clover), *Myosurus minimus* (tiny mouse-tail), *Navarretia leucocephala* ssp. *leucocephala* (white-head navarretia), *Lasthenia californica* (California goldfields), *Phlox gracilis* (slender phlox), *Plagiobothrys bracteatus* (bracted popcornflower), and *Triteleia hyacinthina* (white brodiaea) (OSU 2007); USFWS 2006, p. II-6). The vernal pool habitat occupied by *Limnanthes floccosa* ssp. *grandiflora* in the Agate Desert ranges from 372 to 469 m (1,220 to 1540 ft) in elevation (Huddleston 2001, p. 11; USGS 2002). The vernal pool habitat occupied by *Lomatium cookii* in the same basin area ranges from 372 to 411 m (1,220 to 1,350 ft) in elevation (Huddleston 2001, p. 11; USGS 2009).

The habitats occupied by *Lomatium cookii* in the Illinois River Valley are more complex than the Rogue River Valley in both soil composition and soil depth. *Lomatium cookii* occurs on 17 mapped soil types in the Illinois River Valley. The majority of *Lomatium cookii* occurrences in the Illinois River Valley are found on Brockman clay loam, Josephine gravelly loam, and Pollard loam (USDA 2008). Unlike the Middle Rogue River Basin soils, many of the *Lomatium cookii*-occupied soil types originate from stream-fed alluvium covering sedimentary or ultramafic rocks (ONHDB 1994, pp. 9–10). Ultramafic rock is a class of rock that is low in calcium and high in iron and magnesium and is often toxic to plants (Brady *et al.* 2005, p. 246). Pollard loam and Speaker-Josephine gravelly loam soils originate from non-ultramafic sources, while Brockman soil and most others types originate from ultramafic parent material (Silvernail and Meinke 2008, pp. 9–10).

Lomatium cookii plants exhibit a slightly different morphology in the Illinois River Valley than in the Rogue River Basin. Compared with Agate Desert plants, Illinois River Valley *Lomatium cookii* plants are less robust, have smaller plant dimensions, and have fewer numbers of floral units. Plants in the two areas also exhibit differences in floral and fruit morphology, seed length, the number of umbels (flower groups), length of peduncle (flower stalk), number of central umbellets (sub-flower groups) per umbel, and number of staminate flowers (male flowers) per peripheral and central umbellet (Silvernail and Meinke 2008, pp. 30–31).

In the Illinois River Valley, *Lomatium cookii* is known from six general areas along a 29-km (18-mi) stretch of the Illinois River within the large serpentine sheet composed of ultramafic rock that covers the central and southwestern portion of Josephine County. Within this landform, *Lomatium cookii* occurs only in areas with alluvial silts or clays that have been deposited over the ultramafic bedrock (ONHDB 1994, p. 9). In the Illinois River Valley, *Lomatium cookii* occurs in elevations that range from 383 to 488 m (1,256 to 1,600 ft) (USGS 2009).

Habitat occupied by *Lomatium cookii* in the Illinois Valley is primarily seasonally wet grassland meadows, on flats and slopes in mixed oak-conifer forested meadows, streambanks, or

forest openings, dominated by native grasses, including: *Danthonia californica* (California oatgrass), *Poa secunda* (rough bluegrass), *Deschampsia cespitosa* (tufted hairgrass), *Festuca roemeri* var. *klamathensis* (Klamath Roemer's fescue), *Achnatherum lemmonii* (Lemmon's needlegrass) and *Deschampsia danthonioides*. Native forbs include *Camassia* spp. (camas), *Ranunculus occidentalis* (western buttercup), and *Limnanthes gracilis* var. *gracilis* (slender meadowfoam) (ONHDB 1994, p. 9). The seasonally wet meadows occupied by *Lomatium cookii* in the Illinois River Valley usually occur as part of bottomland *Quercus garryana–Quercus kelloggii–Pinus ponderosa* (Oregon white oak–California black oak–ponderosa pine) savannas. Widely spaced, large pine trees are characteristic of the open meadow habitat with mixed pine and oak woodlands occurring along seasonal creeks.

At the time of listing in 2002, *Limnanthes floccosa* ssp. *grandiflora* was known from 15 distinct occurrences and *Lomatium cookii* was known from 36 occurrences throughout their ranges (67 FR 68004; November 7, 2002). Currently *L. f.* ssp. *grandiflora* has 22 documented occurrences and *Lomatium cookii* has 37 documented occurrences. *L. f.* ssp. *grandiflora* is found only in Jackson County, and is known from Shady Cove, Hammel Road, two areas northeast of Upper Table Rock, several areas north of Eagle Point, the Agate Reservoir, and at several vicinities in and around White City including: the Jackson County Sports Park (Hoover Ponds), the Hall and Military Slough tracks of the Denman Wildlife Area, on City of Medford property, several areas west of Whetstone Creek, and on several private properties (OHNIC 2008; Service database 2008). The four largest population centers of *L. f.* ssp. *grandiflora* include two areas in White City, Whetstone Creek, and an area northeast of Upper Table Rock. The smallest *L. f.* ssp. *grandiflora* population is known from an area just outside the Rogue Valley International–Medford Airport (Meyers 2008, p. 48).

Lomatium cookii occurs in both Jackson County and Josephine County. In Josephine County, where it is found in seasonal wet meadow habitats, *Lomatium cookii* has been reported from six general areas: (1) the vicinity of Selma; (2) the east base of Woodcock Mountain; (3) Rough and Ready Creek; (4) Illinois River Forks State Park; (5) French Flat; and (6) Laurel Road (ONHIC 2008; USFWS 2008). The six largest population centers of *Lomatium cookii* include two areas in French Flat, Laurel Road, and near the east base of Woodcock Mountain in Josephine County; and at the Rogue Valley International–Medford Airport and an area in east White City in Jackson County.

The two species co-occur in three general areas in Jackson County: (1) the vicinity of the Rogue International–Medford Airport in Medford; (2) in and around White City; and (3) areas west of Whetstone Creek. Specific locations where *Limnanthes floccosa* ssp. *grandiflora* and *Lomatium cookii* are found together have been reported in the Rogue River Valley at the Rogue Valley International–Medford Airport and various locations in and around White City including: the Jackson County Sports Park, the Hall Track of the Denman Wildlife Area, on City of Medford property, several areas west of Whetstone Creek, and on several private properties in and around White City (ONHIC 2008; USFWS 2008).

Lomatium cookii populations are generally found in habitats not subject to mining, agricultural development, residential or commercial development, and grazing (Oregon Natural Heritage Information Center (ONHIC) database 2008). Although, historically, many of these activities were thought to have negative impacts on the species, there are some notable exceptions, such as grazing, which can be beneficial if properly managed. At a few sites in Jackson County, for example, annual mowing, periodic burning, and grazing are practiced and appear to be compatible with survival and even proliferation of *Lomatium cookii* (Borgias 2004, p. 34). In fact, the largest and most prolific *Lomatium cookii* populations occur where compatible grazing or mowing practices occur repeatedly (Borgias 2004, p. 34). Although intensive cattle grazing has a significant negative impact, especially combined with the effects of competition with nonnative annual grasses, evidence suggests that *Lomatium cookii* is capable of persisting under moderate grazing pressure (Brock 1987, pp. 23, 30). Timing of grazing is also important, as grazing in the fall and winter growing season would reduce seed production by the plants (Brock 1987, p. 23). Sites occupied by *Lomatium cookii* that receive no management continue to support plant populations, but monitoring suggests that some of those populations are declining (Kaye and Thorpe 2008, pp. 16–25). Borgias (2004, p. 34) observed that, after several years without grazing or a fire at The Nature Conservancy's Agate Desert Preserve, thatch accumulated and recruitment of young *Lomatium cookii* declined due to the increases of nonnative annual grasses. Other reports indicate that vegetative succession, herbivory by voles (*Microtus* spp.), or both, may be the cause of declining populations (Kaye and Thorpe 2008, pp. 16–25).

Land uses associated with the largest, more intact populations of *Limnanthes floccosa* ssp. *grandiflora* and *Lomatium cookii* are vernal pool habitats managed using compatible agricultural practices. Actions conducive to large population sizes of either of the two species may include prescribed burns, controlled grazing practices, or regular mowing. The Rogue Valley International–Medford Airport is an example of an area that is mowed regularly to meet Federal Aviation Authority (FAA) safety requirements and that supports a large and prolific *Lomatium cookii* population that extends over 28 ha (70 ac) (R. Russell, pers. comm. 2004; S. Friedman, pers. obs. 2009). Within grazed properties, small isolated patches of *L. f.* ssp. *grandiflora* often continue to persist, perhaps due to suppression of invasive nonnative grasses (Meyers 2008, pp. 1–48; Wildlands, Inc. 2008, p. 1; Borgias 2004, p. 42).

Threats

Threats to *Limnanthes floccosa* ssp. *grandiflora* and *Lomatium cookii* in the Rogue River Valley include: residential, urban, and commercial development; agricultural development (including leveling, ditching, tilling, and stock pond construction or water impoundments); road construction and maintenance; aggregate mining; incompatible grazing practices; off-road vehicle (ORV) use that affects surface hydrology; vandalism (related to ORV use); encroachment by nonnative plants; and herbivory by gophers (family Geomyidae) and voles (67 FR 68004; Kaye and Thorpe, pp. 11–12).

- Residential, urban, agricultural, mining, and commercial development has resulted in an approximately 60 percent loss of the vernal pool landscape in the Rogue River Valley due to building construction, removal of habitat, altered hydrology, or altered topography (ONHP 1997, pp. 14–15; Wille and Petersen 2006, p. 1993).
- Ground-disturbing activities, such as road construction and maintenance or ORV use, can damage the clay pan layer and allow soil moisture to drain from the vernal pools or wet meadow habitats that the plants depend upon for reproduction and survival. Incompatible agricultural practices, including some timber management and crop management, can alter hydrology,

directly affect plants with equipment, or indirectly affect plants as a result of road construction. Road construction can result in population fragmentation, alteration of hydrology, or the covering of plants by fill material, resulting in degradation of habitat and direct loss of plants.

• Vandalism refers to the intentional disregard or dismantling of signing or fencing intended to protect certain wetland areas from unauthorized ORV use, which may then result in negative effects on the hydrology of the habitat.

• The removal of surface material in conjunction with mining activities results in the direct loss of habitats.

• Heavy grazing, especially from October through April, would be an example of incompatible grazing. The majority of seasonal growth for these two plants occurs during the winter, and if plants are grazed during the fall and winter months, they are less likely to produce seed in the spring or early summer (Brock 1987, p. 23). Vernal pool hydrology may also be altered by the compression and compaction disturbance caused by grazing livestock. Nonnative plants can outcompete and displace native plant species and may also inhibit successful germination of seeds. Herbivory by gophers and voles results in direct mortality of individual plants, as well as an indirect decrease in reproduction.

Limnanthes floccosa ssp. *grandiflora* and *Lomatium cookii* are also threatened by encroachment of nonnative annual herbs, including *Centaurea solstitialis* (yellow starthistle) and *Cardaria draba* (hoary cress), which may competitively exclude the two native species, as well as nonnative annual grasses, namely *Hordeum marinum* ssp. *gussoneanum* (Mediterranean barley) and *Taeniantherum caput-medusae* (medusahead). *Hordeum marinum* ssp. *gussoneanum* encroaches on microhabitats occupied by both species, but *T. caput-medusae* occurs on adjacent upland mound habitats, occasionally interfering with *Lomatium cookii* germination and growth, or stifling native plant growth in general. Reproduction of both *Lomatium cookii* and *L. f.* spp. *grandiflora* is impaired by the presence of introduced annual grasses, as seeds of both native species are not able to germinate under the dense thatch produced by nonnative annual grasses. Recently introduced nonnative invasive plants that are particularly threatening to *Lomatium cookii* in the Illinois Valley are *Alyssum murale* (yellowtuft) and *A. corsicum* (alisso di Corsica). These two plants were recently introduced to serpentine meadow habitat as part of an experiment to test their ability to accumulate nickel. Unfortunately the plants have now begun to spread rapidly across wide areas of serpentine meadow in particularly dense concentrations and threaten to encroach upon and displace *Lomatium cookii* populations in the Illinois Valley (ODA and USFS 2008, pp. 1–3).

Threats to *Lomatium cookii* in the Illinois Valley include aggregate and mineral mining, residential and urban development, impacts associated with timber harvesting practices, road construction and maintenance, ground disturbance by ORV use that affects surface hydrology, garbage dumping, succession of native woody vegetation due to fire suppression, incompatible grazing practices, and herbivory by gophers and voles; the effects of most of these threats are described above. The dumping of garbage, especially such large items as old appliances, can directly affect populations by crushing or smothering them. Succession of native woody vegetation, although a natural process, is normally held in check by fire. In the Illinois Valley, the longer fire return intervals due to fire suppression has led to the encroachment of native woody vegetation (trees and shrubs) into the wet meadow habitats occupied by *Lomatium cookii*. Such native woody plants include: *Ceanothus cuneatus* (buckbrush), *Pinus ponderosa* (Ponderosa pine), *Pinus jeffreyi* (Jeffrey pine), *Pseudotsuga menziesii* (Douglas-fir), and *Toxicodendron diversiloba* (poison oak). The succession of these species in *Lomatium cookii* habitat can isolate the species into small refuge pockets or cause widespread reduction of habitat suitability by reducing light availability (over-shading), limiting water and nutrient availability, fragmenting populations, and limiting space to grow. Individuals of *Lomatium cookii* growing in more shaded conditions, as when surrounded by shrubs, tend to be smaller and less robust than plants growing in more open areas in association with lower growing grasses and forbs (ONHIC 2008).

Several long-term monitoring efforts indicate that, at four protected locations in the Rogue and Illinois River Valleys, *Lomatium cookii* populations have experienced declines (D. Borgias, pers. comm. 2006; Kaye and Thorpe 2008, pp. 16–25). The causes are not specifically known but appear to be due to encroachment and over-shading from the succession of natural vegetation or increases in gopher and vole activity. At two of the declining *Lomatium cookii* populations, located at the French Flat Area of Critical Environmental Concern (ACEC), the Medford District of the Bureau of Land Management (BLM) is currently planning to arrest this decline by reducing shrub and tree encroachment (S. Fritts, pers. comm. 2009). At two *Lomatium cookii* populations located on The Nature Conservancy's Agate Desert Preserve and Whetstone Savanna Preserve, planting of native bunchgrass, mowing, and grazing are being considered to address declining plant numbers (D. Borgias, pers. comm. 2009).

Previous Federal Actions

For more information on Federal actions concerning *Limnanthes floccosa* ssp. *grandiflora* and *Lomatium cookii* prior to their listing, please refer to the final listing rule for the two plants published in the **Federal Register** on November 7, 2002 (67 FR 68004). At the time of listing, critical habitat was not designated for the two species due to higher priorities at that time.

On December 19, 2007, the Center for Biological Diversity filed a complaint against the Service (*Center for Biological Diversity* v. *Kempthorne, et al., 07-CV-2378 IEG, (S.D. CA*)) for failure to designate critical habitat for four plant species, including *Limnanthes floccosa* ssp. *grandiflora* and *Lomatium cookii* (the other two species occur in different regions). In a settlement agreement reached on April 11, 2008, we agreed to complete a critical habitat determination for *L. f.* ssp. *grandiflora* and *Lomatium cookii* in a single rulemaking because they share similar habitats. We agreed to submit a proposed critical habitat rule for both *L. f.* ssp. *grandiflora* and *Lomatium cookii* to the **Federal Register** by July 15, 2009, and a final rule by July 15, 2010.

In 2003, critical habitat was designated for the threatened vernal pool fairy shrimp (*Branchinecta lynchi*) in California and the Rogue River Valley of Oregon (68 FR 46683; August 6, 2003). The designated vernal pool fairy shrimp critical habitat in Oregon overlaps with approximately 2,101 ha (5,192 ac) of suitable habitat for *Limnanthes floccosa* ssp. *grandiflora* and 799 ha (1,974 ac) of suitable habitat for *Lomatium cookii* (68 FR 46683). The vernal pool fairy shrimp critical habitat designation resulted in additional regulatory review for habitats occupied by both *L. f.* ssp. *grandiflora* and *Lomatium cookii* in most of Jackson County due to the similarity and location of the vernal pool–mounded prairie habitat shared by these species. In this proposed rule, we will note where designated critical habitat for the

vernal pool fairy shrimp overlaps with that proposed for *L. f.* ssp. *grandiflora* and *Lomatium cookii.*

Prudency Determination

Section 4(a)(3) of the Act, as amended, and implementing regulations (50 CFR 424.12) require that, to the maximum extent prudent and determinable, we designate critical habitat at the time the species is determined to be endangered or threatened. Our regulations (50 CFR 424.12(a)) further state that the designation of critical habitat is not prudent when one or both of the following situations exist—(1) The species is threatened by taking or other human activity, and identification of critical habitat can be expected to increase the degree of threat to the species, or (2) such designation of critical habitat would not be beneficial to the species.

There is no documentation that *Limnanthes floccosa* ssp. *grandiflora* or *Lomatium cookii* are threatened by taking or targeted human activities such as collection. Since the publication of the Draft Recovery Plan for Listed Species of the Rogue Valley Vernal Pool and Illinois Valley Wet Meadow Ecosystems (draft recovery plan) (USFWS 2006, pp. IV-13–IV-14) in 2006, maps identifying core recovery areas for *L. f.* ssp. *grandiflora* and *Lomatium cookii* have been available to the public. The core recovery areas included focal areas where we anticipated conservation and protection could result in recovery of the two species. Most landowners and collectors have been aware of the location of general *L. f.* ssp. *grandiflora* and *Lomatium cookii* occurrence locations since publication of the draft recovery plan in 2006. We do not have any documentation that threats have increased since these species were listed and since the draft recovery plan was published.

In the absence of evidence that the designation of critical habitat would increase threats to a species, if there are any benefits to a critical habitat designation, then a prudent finding is warranted. The potential benefits of a critical habitat designation include: (1) Federal agency compliance with the consultation requirements to avoid destruction or adverse modification of critical habitat; (2) focusing conservation activities on the most essential features and areas; (3) providing educational benefits to State or county governments or private entities; and (4) preventing people from causing inadvertent harm to the species. The primary regulatory effect of critical habitat is the requirement under section 7(a)(2) of the Act that Federal agencies refrain from taking any action that destroys or adversely affects critical habitat. The proposed critical habitat for *Limnanthes floccosa* ssp. *grandiflora* and *Lomatium cookii* is composed of lands under Federal, State, county, municipal, and private ownership. Some of the lands designated as critical habitat may be subject to Federal actions that trigger the section 7 consultation requirement, such as the granting of Federal monies for conservation projects or the need for Federal permits for projects (for example, the filling of wetlands subject to section 404 of the Clean Water Act (33 U.S.C. 1344, *et seq.*)). There may also be some educational or informational benefits to the designation of critical habitat. Educational benefits include the notification of landowners, land managers, and the general public of the importance of protecting the habitat of these species. In the case of *L. f.* ssp. *grandiflora* and *Lomatium cookii*, these aspects of critical habitat designation would potentially benefit the conservation of these species.

Although these species are limited in their ecological and geographical ranges, we have no information indicating that a critical habitat designation would not be prudent due to the threat of overcollection or vandalism. Therefore, since we have determined that the designation of critical habitat will not likely increase the degree of threat to these species and may provide some measure of benefit, we find that designation of critical habitat is prudent for *Limnanthes floccosa* ssp. *grandiflora* and *Lomatium cookii*: thus, we are proposing to designate critical habitat in accordance with section 4(b)(2) of the Act.

Critical Habitat

Critical habitat is defined in section 3 of the Act as:

1. The specific areas within the geographical area occupied by a species, at the time it is listed in accordance with the Act, on which are found those physical or biological features

(a) Essential to the conservation of the species, and

(b) Which may require special management considerations or protection; and

2. Specific areas outside the geographical area occupied by a species at the time it is listed, upon a determination that such areas are essential for the conservation of the species.

Conservation, as defined under section 3 of the Act, means to use and the use of all methods and procedures that are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to the Act are no longer necessary.

Critical habitat receives protection under section 7 of the Act through the prohibition against destruction or adverse modification of critical habitat with regard to discretionary actions carried out, funded, or authorized by a Federal agency. Section 7 requires consultation on discretionary Federal actions that may affect critical habitat. The designation of critical habitat does not affect land ownership or establish a refuge, wilderness, reserve, preserve, or other conservation area. Such designation does not allow government or public access to private lands.

To be included in a critical habitat designation, the habitat within the geographic area occupied by the species at the time it was listed must first have the physical and biological features that are essential to the conservation of the species. Critical habitat designations identify, to the extent known using the best scientific data available, habitat areas that provide essential life-cycle needs of the species (i.e., areas on which are found the primary constituent elements, as defined at 50 CFR 424.12(b)). Occupied habitat that contains features essential to the conservation of the species meets the definition of critical habitat only if those features may require special management considerations or protection. Under the Act, we can designate areas that were unoccupied at the time of listing only when we determine that the best available scientific data demonstrate that the designation of the area is essential to the conservation of the species. When the best available scientific data do not demonstrate that the conservation needs of the species require such additional areas, we will not designate critical habitat in areas outside the geographical area occupied by the species at the time of listing. An area currently occupied by the species but not occupied at the time of listing may, however, be determined to be essential to the conservation of the species and may be included in the critical habitat designation.

Section 4 of the Act requires that we designate critical habitat on the basis of the best scientific and commercial data available. Further, our ''Policy on Information Standards Under the Endangered Species Act,'' published in the **Federal Register** on July 1, 1994 (59 FR 34271), and Section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001 (P.L. 106-554; H.R. 5658) and the

associated Information Quality Guidelines issued by the Service, provide criteria, establish procedures, and provide guidance to ensure that decisions made by the Service make use of the best scientific and commercial data available.

When we are determining which areas should be proposed as critical habitat, a primary source of information is generally the information developed during the listing process for the species. Additional information sources may include the recovery plan for the species, articles in peer-reviewed journals, conservation plans developed by States and counties, scientific status surveys and studies, biological assessments, or other unpublished materials and expert opinion or personal knowledge.

We recognize that designation of critical habitat may not include all of the habitat areas that may eventually be determined to be necessary for the recovery of the species, based on the scientific data currently before the Service, as new information may become available that indicates otherwise. In addition, habitat is often dynamic, and species may shift from one area to another over time. For these reasons, a critical habitat designation should not be interpreted as meaning that habitat outside the designation is unimportant or may not be required for the recovery of the species in question.

Areas that support populations, but are outside the critical habitat designation, will continue to be subject to conservation actions implemented under section 7(a)(1) of the Act and to the regulatory protections afforded by the section 7(a)(2) jeopardy prohibition, as determined on the basis of the best available information at the time of the action. Federally funded or permitted projects affecting listed species outside their designated critical habitat areas may still result in jeopardy findings under certain circumstances.

Methods

As required by section 4(b)(2)of the Act, we used the best scientific data available in determining areas occupied at the time of listing that contain the features essential to the conservation of *Limnanthes floccosa* ssp. *grandiflora* and *Lomatium cookii,* considered individually. We also determined whether those features may require special management considerations or protection. We reviewed available information that pertains to the habitat requirements of these species; these sources of information included, but were not limited to, the proposed (65 FR 30941; May 15, 2000) and final (67 FR 68004; November 7, 2002) rules to list these species; the draft recovery plan (USFWS 2006); data contained in reports prepared for or by the U.S. Bureau of Land Management (BLM) (1999 through 2008), the Oregon Department of Agriculture's (ODA) Native Plant Conservation Program (2007-2008), and The Nature Conservancy (TNC) (1998 through 2008); discussions with species experts including ODA, BLM, ONHIC, and TNC staff; data and information presented in academic research theses; data provided by ONHIC; Oregon State University herbarium records; and data submitted during section 7 consultations. Additionally, we utilized regional Geographic Information System (GIS) shape files for area calculations and mapping, such as United States Department of Agriculture (USDA) National Agriculture Imagery Program aerial imagery, USDA soil maps, and United States Geological Survey (USGS) contour maps (USDA 2006a, 2006b, 2008; USGS 2002, 2009). We are not currently proposing as critical habitat any areas outside the geographical area presently occupied by either *L. f.* ssp. *grandiflora* or *Lomatium cookii*, because the draft recovery plan indicates that recovery can be attained within the present range of each species (USFWS 2006). Our regulations stipulate that critical habitat shall be designated outside the areas presently occupied by a species only when a designation limited to its present range would be inadequate to ensure the conservation of the species (50 CFR 424.12(e)).

Primary Constituent Elements

In accordance with section 3(5)(A)(i) of the Act and regulations at 50 CFR 424.12(b), in determining which areas occupied at the time of listing to propose as critical habitat, we consider the physical and biological features essential to the conservation of the species and whether those features may require special management considerations or protection. These features may include, but are not limited to, the following:

(1) Space for individual and population growth, and for normal behavior;

(2) Food, water, air, light, minerals, or other nutritional or physiological requirements;

(3) Cover or shelter;

(4) Sites for breeding, reproduction, rearing (or development) of offspring, germination, or seed dispersal; and generally

(5) Habitats that are protected from disturbance or are representative of the historical geographical and ecological distributions of a species.

The appropriate quantity and spatial arrangement of the principal biological or physical features within the defined area essential to the conservation of the species comprise the ''primary constituent elements'' (PCEs) of critical habitat. As defined by our implementing regulations at 50 CFR 424.12(b)), these primary constituent elements may include, but are not limited to, features such as roost sites, nesting grounds, spawning sites, feeding sites, seasonal wetlands or drylands, water quality and quantity, host species or plant pollinators, geological formations, vegetation types, tides, and specific soil types.

The specific PCEs required for *Limnanthes floccosa* ssp. *grandiflora* and *Lomatium cookii* are derived from the biological needs of the species as described in the **Background** section of this proposed rule and the information presented below.

Space for Individual and Population Growth, Germination, and Seed Dispersal

Limnanthes floccosa ssp. *grandiflora* and *Lomatium cookii* both occur on vernal pool–mounded prairie and other ephemeral wetland habitats underlain by relatively undisturbed subsoils subject to periodic inundation (Borgias 2004, pp. 17–20; ONHDB 1994, pp. 9–10). In the Agate Desert, both species occur in low-gradient mounded habitat that supports a mosaic of low-growing native grasses and forbs and an absence of dense canopy vegetation. The pools typically fill during the winter rains and retain a wetted perimeter until late April. In years with higher than average winter rainfall, more depressions fill, and individual pools that are separate in dry years may merge together (Borgias 2004, p. 32). The dominant native grasses and forbs associated with vernal pool–mounded prairie habitat occupied by *L. f.* ssp. *grandiflora* and *Lomatium cookii* include: *Alopecurus geniculatus, Deschampsia danthonioides*, *Eryngium petiolatum, Lasthenia californica, Myosurus minimus, Navarretia leucocephala* ssp. *leucocephala, Phlox gracilis*, *Plagiobothrys bracteatus*, *Trifolium depauperatum*, and *Triteleia hyacinthina*. In the Agate Desert, vernal pool–mounded prairie habitats occupied by *Lomatium cookii*, range from 372 to 411 m (1,220 to 1,350 ft) in elevation. In the same habitat, *L. f.* ssp. *grandiflora* occurrences range from 372 to 469 m (1,220 to 1,540 ft) in elevation (USGS 2002).

In the Illinois River Valley, *Lomatium cookii* occurs primarily in alluvial

meadows underlain by relatively undisturbed ultramafic soils subject to winter inundation from rainfall, seasonal flooding, and overland drainage (ONHDB 1994, pp. 9–10). These seasonally wet meadows, occurring within *Quercus garryana-Quercus kelloggii-Pinus ponderosa* forest openings, are dominated by native grasses and forbs including*: Achnatherum lemmonii, Camassia* spp., *Danthonia californica, Deschampsia cespitosa*, *Festuca roemeri, Poa secunda*, *Ranunculus occidentalis*, and *Limnanthes gracilis* var. *gracilis* (ONHDB 1994, p. 9). Widely spaced, large pine trees are characteristic of the open meadow habitat with some mixed pine and oak woodlands occurring along seasonal creeks. In the Illinois River Valley area, *Lomatium cookii* ranges from 383 to 488 m (1,256 to 1,600 ft) in elevation (USGS 2009).

These specific habitats and hydrological regimes provide the conditions essential for the growth and survival of *Limnanthes floccosa* ssp. *grandiflora* and *Lomatium cookii* and for the successful production, germination, and dispersal of seeds.

Slope

In the Agate Desert, *Limnanthes floccosa* ssp. *grandiflora* and *Lomatium cookii* occur almost exclusively on low-gradient and flat terrains, not typically exceeding 3 percent slope (USDA 2006b). In the Agate Desert, *L. f.* ssp. *grandiflora* and *Lomatium cookii* occur predominately in Agate-Winlo complex soils mapped at 0 to 3 percent slope.

Most Illinois River Valley *Lomatium cookii* occurrences are found on a variety of soils that range from 0 to 8 percent slope (ONHIC 2008; USDA 2008). However, a few of the *Lomatium cookii* sites in the Illinois River Valley are on terrains with soils mapped up to 30 percent slope (ONHIC 2008).

Water and Nutritional or Physiological Requirements

Vernal pools typically become inundated or saturated during winter rains and hold water for sufficient lengths of time for *Limnanthes floccosa* ssp. *grandiflora* and *Lomatium cookii* to germinate, grow, and reproduce. Periodically, this geographic area may experience drought, and rainfall may be insufficient to fill pools. The composition of the plant community can vary from year to year depending on the timing and amount of annual rainfall and the type of land management on the site (Borgias 2004, p. 16). The vernal pools and wet meadow soils where the two plants occur are dry during the summer but become saturated with water nearly every year. The water regime is important for the sustenance of the two plants and for their ability to germinate, persist, and grow in wet conditions during the winter months.

Vernal pool habitats, ephemeral swales, seasonally wet meadows, and streamside habitats occupied by *Limnanthes floccosa* ssp. *grandiflora* and *Lomatium cookii* in the Rogue River and Illinois River valleys can be characterized as seasonal wetlands. The habitats are dominated by mostly obligate or facultative wetland vegetation. The *Lomatium cookii* occurrences at Rough and Ready Creek, the Rogue Valley International–Medford Airport, and a potentially introduced population at Woodcock Creek are clearly not wetlands but appear to have high clay content in the soil (Kagan 1994, p. 10; Silvernail and Meinke 2008, p. 31). The meadows at these sites may have enough of a clay component so that they would be seasonally wet (ONHDB 1994, p. 10).

The moisture and other nutritional or physiological requirements afforded by these sites provide the essential requirements for the growth, germination, reproduction, and successful seed dispersal of *Limnanthes floccosa* ssp. *grandiflora* and *Lomatium cookii.*

Soil

For *Lomatium cookii*, which occurs in both the Agate Desert and the Illinois River Valley, the habitat soil types between the two plant population centers are vastly different in a variety of chemical and physical characteristics. In particular, the soil types in the Agate Desert typically occupied by both *Limnanthes floccosa* ssp. *grandiflora* and *Lomatium cookii* are Agate–Winlo or Provig–Agate soils. Soils in the Illinois River Valley occupied by *Lomatium cookii* may be Abegg gravelly loam, Brockman clay loam, Copsey clay, Cornutt–Dubakel complex, Dumps, Eightlar extremely stony clay, Evans loam, Foehlin gravelly loam, Josephine gravelly loam, Kerby loam, Newberg fine sandy loam, Pearsoll–Rock outcrop complex, Pollard loam, Riverwash, Speaker–Josephine gravelly loam, Takilma cobbly loam, or Takilma Variant extremely cobbly loam. The majority of *Lomatium cookii* occurrences in the Illinois River Valley are found on Brockman clay loam, Josephine gravelly loam and Pollard loam (USDA 2008). In a soil analysis conduced by Silvernail and Meinke (2008, p. 30), samples from ultramafic *Lomatium cookii* habitat in the Illinois River Valley had higher concentrations of magnesium, nickel, chromium, cobalt, zinc, and copper and higher percent magnesium saturation. Soils from *Lomatium cookii* habitat in the Rogue River Valley had higher concentrations of calcium, nitrogen, phosphorus, potassium, manganese, iron, and boron. Soils from the two population centers had similar pH, cation exchange capacity, and percent sand, silt, or clay content (Silvernail and Meinke 2008, p. 30).

Habitats Protected from Disturbance

Development

Disturbance in the form of development is a major factor in the loss or degradation of habitat for *Limnanthes floccosa* ssp. *grandiflora* and *Lomatium cookii*. Residential or commercial development can directly eliminate or fragment essential habitat for both of the two species, causing declines in distribution and numbers. Agricultural development, such as ripping (a form of deep tilling that potentially undermines the hardpan layer of the soil), water diversion, and water impoundment can also eliminate habitat for the two plant species. Development can indirectly cause increases in nonnative plants in the habitat, in turn decreasing pollinators, habitat for pollinator species, and seed production of many native vernal pool plants (Thorp and Leong 1998, pp. 169–179). *L. f.* ssp. *grandiflora* and *Lomatium cookii* face immediate threats from urban and commercial development in the rapidly expanding Medford and White City metropolitan areas in the Rogue River Valley. Protected habitat is therefore of crucial importance for the growth and dispersal of these two species.

Based on aerial imagery, habitat areas that appear to provide sufficient buffer protection and continuous non-fragmented *Limnanthes floccosa* ssp. *grandiflora* habitat were typically greater than 8 ha (20 ac). Habitat areas of this size provide protection from adjacent development and weed sources and contained intact hydrology (USDA 2006a). This is the size of the smallest vernal pool–mounded prairie area that is known to support *L. f.* ssp. *grandiflora* (ONHIC 2008). Based on aerial imagery and ONHIC information, habitat areas that appeared to provide a sufficient buffer protection and continuous non-fragmented *Lomatium cookii* habitat covered at least 12 ha (30 ac). Habitat areas of this minimum size provide protection from adjacent development and weed sources and contained intact hydrology. The 12-ha (30-ac) habitat area is equivalent to the smallest wet meadow area in the Illinois River Valley

that supports *Lomatium cookii* (USDA 2006a, ONHIC 2008).

Invasive Nonnative Plants

Invasive nonnative species may outcompete *Limnanthes floccosa* ssp. *grandiflora* and *Lomatium cookii* for open, bare ground and reduce space available for the listed plants' growth (Borgias 2004, p. 45); therefore, the listed plants require microhabitats free of exotic or native invasive competitors. In the Agate Desert, invasive nonnative plants that compete with the two listed species include: *Centaurea solstitialis, Cardaria draba, Hordeum marinum* ssp. *gussoneanum*, and *Taeniantherum caput-medusae* (medusahead).

In the Illinois Valley, common introduced grasses in the grazed pastures in and around *Lomatium cookii* habitat include: *Festuca arundinacea* (tall fescue), *Dactylis glomerata* (orchard grass), and *Poa pratensis* (Kentucky bluegrass). In addition, the recently introduced nonnative invasive species *Alyssum murale* and *A. corsicum* threaten *Lomatium cookii* in this area.

Primary Constituent Elements for Limnanthes floccosa ssp. grandiflora and Lomatium cookii

Under our regulations, we are required to identify the known physical and biological features or PCEs essential to the conservation of *Limnanthes floccosa* ssp. *grandiflora* and *Lomatium cookii*, which may require special management considerations or protection. All areas proposed as critical habitat for *L. f.* ssp. *grandiflora* and *Lomatium cookii* were occupied at the time of listing, are within the species' historical geographic range, and provide sufficient PCEs to support at least one life-history function.

Based on our current knowledge of the life history, biology, and ecology of the species and the characteristics of the habitat necessary to sustain the essential life history functions of the species, we have determined that the PCEs for *Limnanthes floccosa* ssp. *grandiflora* critical habitat are:

(1) Vernal pools or ephemeral wetlands and the adjacent upland margins of these depressions that hold water for a sufficient length of time to sustain *Limnanthes floccosa* ssp. *grandiflora* germination, growth, and reproduction, occurring in the Agate Desert vernal pool landscape (ONHP 1997, p. 3). These vernal pools or ephemeral wetlands are seasonally inundated during wet years but do not necessarily fill with water every year due to natural variability in rainfall, and support native plant populations. Areas of sufficient size and quality are likely to have the following characteristics:

- Elevations from 372 to 469 m (1,220 to 1,540 ft);
- Associated dominant native plants including, not limited to: *Alopecurus geniculatus, Deschampsia danthonioides*, *Eryngium petiolatum, Lasthenia californica, Myosurus minimus*, *Navarretia leucocephala* ssp. *leucocephala, Phlox gracilis, Plagiobothrys bracteatus*, *Trifolium depauperatum*, and *Triteleia hyacinthina.*
- A minimum area of 8 ha (20 ac) to provide intact hydrology and protection from development and weed sources.

(2) The hydrologically and ecologically functional system of interconnected pools, ephemeral wetlands, or depressions within a matrix of surrounding uplands that together form vernal pool complexes within the greater watershed. The associated features may include the pool basin or depressions; an intact hardpan subsoil underlying the surface soils up to 0.75 m (2.5 ft) in depth; and surrounding uplands, including mound topography and other geographic and edaphic features, that support these systems of hydrologically interconnected pools and other ephemeral wetlands (which may vary in extent depending on site-specific characteristics of pool size and depth, soil type, and hardpan depth).

(3) Silt, loam, and clay soils that are of alluvial origin, with a 0 to 3 percent slope, primarily classified as Agate–Winlo complex soils, but also including Coker clay, Carney clay, Provig–Agate complex soils, and Winlo very gravelly loam soils.

(4) No or negligible presence of competitive nonnative invasive plant species. Negligible is defined for the purpose of this rulemaking as a minimal level of nonnative plant species that will still allow *Limnanthes floccosa* ssp. *grandiflora* to continue to survive and recover.

The need for space for individual and population growth, germination, seed dispersal, and reproduction is provided by PCEs 1 and 4; the need for soil moisture for growth, germination, reproduction, and seed dispersal is provided by PCE 2 (but not necessarily every year); the need for other nutritional or physiological requirements for the species is met by PCE 3; habitat free from disturbance that allows for sufficient reproduction and survival opportunities is provided by PCEs 1 and 4. All of the above described PCEs do not have to occur simultaneously within a unit for the unit to constitute critical habitat for *Limnanthes floccosa* ssp. *grandiflora.*

Based on our current knowledge of the life history, biology, and ecology of *Lomatium cookii* and the characteristics of the habitat necessary to sustain the essential life history functions of the species, we have determined that the PCEs for the species' critical habitat are:

(1) (A) In the Agate Desert, vernal pools and ephemeral wetlands and the adjacent upland margins of these depressions that hold water for a sufficient length of time to sustain *Lomatium cookii* germination, growth, and reproduction. These vernal pools or ephemeral wetlands support native plant populations and are seasonally inundated during wet years but do not necessarily fill with water every year due to natural variability in rainfall. Areas of sufficient size and quality are likely to have the following characteristics:

- Elevations from 372 to 411 m (1,220 to 1,350 ft);
- Associated dominant native plants including, not limited to: *Alopecurus geniculatus, Deschampsia danthonioides*, *Eryngium petiolatum, Lasthenia californica, Myosurus minimus, Navarretia leucocephala* ssp. *leucocephala, Phlox gracilis, Plagiobothrys bracteatus*, *Trifolium depauperatum*, and *Triteleia hyacinthina*; and
- A minimum area of 8 ha (20 ac) to provide intact hydrology and protection from development and weed sources.

(1) (B) In the Illinois River Valley, wet meadows in oak and pine forests that are seasonally inundated and support native plant populations. Areas of sufficient size and quality are likely to have the following characteristics:

- Elevations from 383 to 488 m (1,256 to 1,600 ft);
- Associated dominant native plants including, not limited to *Achnatherum lemmonii, Camassia* spp*., Danthonia californica*, *Deschampsia cespitosa, Festuca roemeri*, *Poa secunda, Ranunculus occidentalis*, and *Limnanthes gracilis* var. *gracilis*;
- Occur primarily in bottomland *Quercus garryana–Quercus kelloggii–Pinus ponderosa* (Oregon white oak–California black oak–ponderosa pine) forest openings along seasonal creeks; and
- A minimum area of 12 ha (30 ac) to provide intact hydrology and protection from development and weed sources.

(2) (A) In the Agate Desert, the hydrologically and ecologically functional system of interconnected pools or ephemeral wetlands or depressions within a matrix of surrounding uplands that together form

vernal pool complexes within the greater watershed. The associated features may include the pool basin and ephemeral wetlands; an intact hardpan subsoil underlying the surface soils up to 0.75 m (2.5 ft) in depth; and surrounding uplands, including mound topography and other geographic and edaphic features that support systems of hydrologically interconnected pools and other ephemeral wetlands (which may vary in extent depending on site-specific characteristics of pool size and depth, soil type, and hardpan depth).

(2) (B) In the Illinois Valley, the hydrologically and ecologically functional system of streams, slopes and wooded systems that surround and maintain seasonally wet alluvial meadows underlain by relatively undisturbed ultramafic soils within the greater watershed.

(3) (A) In the Agate Desert, silt, loam, and clay soils that are of ultramafic and nonultramafic alluvial origin, with a 0 to 3 percent slope, classified as Agate–Winlo or Provig–Agate soils.

(3) (B) In the Illinois Valley, silt, loam, and clay soils that are of ultramafic and nonultramafic alluvial origin, with a 0 to 30 percent slope, classified as Abegg gravelly loam, Brockman clay loam, Copsey clay, Cornutt–Dubakel complex, Dumps, Eightlar extremely stony clay, Evans loam, Foehlin gravelly loam, Josephine gravelly loam, Kerby loam, Newberg fine sandy loam, Pearsoll–Rock outcrop complex, Pollard loam, Riverwash, Speaker–Josephine gravelly loam, Takilma cobbly loam, or Takilma Variant extremely cobbly loam.

(4) No or negligible presence of competitive nonnative invasive plant species. Negligible is defined for the purpose of this rulemaking as a minimal level of nonnative plant species that will still allow *Lomatium cookii* to continue to survive and recover.

The need for space for individual and population growth, germination, seed dispersal, and reproduction is provided by PCEs 1 and 4; the need for soil moisture for growth, germination, reproduction, and seed dispersal is provided by PCE 2 (but not necessarily every year); the need for other nutritional or physiological requirements for the species is met by PCE 3; habitat free from disturbance that allows for sufficient reproduction and survival opportunities is provided by PCEs 1 and 4. All of the above described PCEs do not have to occur simultaneously within a unit for the unit to constitute critical habitat for *Lomatium cookii*.

This proposed designation includes the PCEs in the appropriate quantity and spatial arrangement necessary to support the life history functions of *Limnanthes floccosa* ssp. *grandiflora* and *Lomatium cookii* and are essential to the conservation of these species. Each of the areas proposed in this rule has been determined to contain sufficient PCEs to provide for one or more of the life history functions of *L. f.* ssp. *grandiflora* and *Lomatium cookii*. All of the above described PCEs do not have to occur simultaneously within a unit for the unit to constitute critical habitat.

Criteria Used To Identify Critical Habitat Boundaries

As required by section 4(b)(1)(A) of the Act, we used the best scientific data available in determining areas that contain the features that are essential to the conservation of *Limnanthes floccosa* ssp. *grandiflora* and *Lomatium cookii*. The steps we used in identifying critical habitat are as follows:

(1) Our initial step was to determine, in accordance with section 3(5)(A)(i) of the Act and regulations in 50 CFR 424.12, the physical and biological habitat features (the, PCEs) essential to the conservation of the species as explained in the previous section.

(2) We identified areas occupied by *Limnanthes floccosa* ssp. *grandiflora* and *Lomatium cookii* at the time of listing. Occupancy status was determined using occurrence data from the ONHIC database (ONHIC 2008), Medford BLM records (BLM 2005), a recent *L. f.* ssp. *grandiflora* status report (Meyers 2008, pp. 1–65), Service staff reports, data in reports submitted during section 7 consultations and by biologists holding section 10(a)(1)(A) recovery permits, research published in peer-reviewed articles, research presented in academic theses and agency reports, regional GIS coverages, and the OSU herbarium record database (OSU 2007). We determined occupancy at the time of listing by comparing survey and collection information and descriptions of occupied areas in the final listing rule published in the **Federal Register** on November 7, 2002 (67 FR 68004). At the time of the 2002 listing, 15 occurrences (sites) were known for *L. f.* ssp. *grandiflora* and 36 occurrences (sites) were known for *Lomatium cookii* (67 FR 68004).

Since the final listing rule was published, we have become aware of additional areas that we have determined were occupied at the time of listing. Two such areas were known at the time of listing, but at that time the species were thought to have been extirpated from those sites. First identified in 1937, the two areas had no exact location information (OSU 2007). Attempts were made to relocate the occurrences, but these attempts were unsuccessful. However, in 2005, the two areas were again found and each was occupied by a large number of *Lomatium cookii* plants. In addition, one other site occupied by *Lomatium cookii* was first identified in 2005, 3 years after the listing. Although we were not aware of this occupied area at the time of listing, it contained a large number of individual *Lomatium cookii* plants, relative to other occupied locations.

We conclude that for all such areas observed within 3 years of listing, it is highly unlikely that such large populations would have only just become established subsequent to the listing of the species. Based on long-term monitoring data, populations of such large size are generally reflective of robust populations that have persisted over the long term. Therefore, if a site was recorded within 3 years after the listing of the species (between 2002 and 2005), and the population at that site was so large that it must have been well-established and occupied for many years, we considered that area to have been occupied at the time of listing, because the evidence supports the site having been occupied but simply not yet recorded at the time of listing, or we had not been successful in relocating those sites that had been documented earlier.

Although various new occurrences have been identified since the time of listing in 2002, only three occurrences of *Lomatium cookii* correspond to new areas identified between the time of listing in 2002 and the year 2005 that we consider to have been occupied at the time of listing. Currently, we know of 22 documented occurrences of *Limnanthes floccosa* ssp. *grandiflora* and 37 documented occurrences of *Lomatium cookii* that correspond to a total of 25 areas we consider to have been occupied at the time of listing. Note that multiple occurrences may comprise a single occupied area; hence, there will be a greater number of occurrences than of occupied areas.

(3) We then considered areas identified as priority 1 and 2 recovery core areas in the draft recovery plan for the two species (USFWS 2006) to determine which areas contain the PCEs in the amount and spatial configuration essential to the conservation of the species. Most areas identified as priority 1 and 2 recovery areas in the draft recovery plan were incorporated into the proposed designation. The one exception is a site at the Medford Airport that was identified as a recovery area for *Limnanthes floccosa* ssp.

grandiflora in the draft recovery plan, but that site did not meet the size and quality criteria for critical habitat, as described below, and thus was not included in the proposed designation.

(4) We removed any nonfunctional vernal pool–mounded prairie or meadow habitat that was developed or degraded (not likely to contain PCEs) to ensure proposed critical habitat contains features essential to the conservation of each of the species (USDA 2006; ESA 2007, pp. 3-2 to 3-11). We also did not consider any areas of vernal pool–mounded prairie or meadows containing 10 or fewer reported individuals, as populations of this size could by chance, become extirpated due to:

(i) random natural events,

(ii) year-to-year variability in climate patterns, and

(iii) accidental human-influenced causes.

Furthermore, populations with 10 individuals or fewer could harbor detrimental genes caused by inbreeding depression. We considered populations of such small size as not likely to occur in habitats that provide the physical or biological features necessary to support populations capable of persisting for the long term, thus such areas would not be essential to the conservation of the two species.

(5) As a final step, we considered whether each of the areas identified may need special management considerations or protections. Our consideration of this factor is presented below.

Based on this analysis, we are proposing to designate 25 units as critical habitat for the two species: 8 for *Limnanthes floccosa* ssp. *grandiflora* and 17 for *Lomatium cookii*. Two of the 25 units are shared by both species. After applying the above criteria, we mapped the critical habitat unit boundaries at each of these 25 areas. We created maps using aerial imagery, 7.5 minute topographic maps, and GIS contour data. We used publicly available satellite imagery, for example, from the National Agriculture Imagery Program (USDA 2006) to assist in identifying areas that would provide the essential physical and biological features for the species, using digital habitat signatures.

In addition, based on aerial imagery, we made every effort to avoid including such developed areas as buildings, paved areas, and other structures that lack the PCEs for *Limnanthes floccosa* ssp. *grandiflora* and *Lomatium cookii* within the mapped boundaries of the proposed critical habitat. We combined the polygon data with information from aerial photos to determine the proposed critical habitat unit boundaries of each site. The scale of the maps prepared under the parameters for publication within the Code of Federal Regulations may not reflect the exclusion of such developed areas. Any such structures and the land under them inadvertently left inside critical habitat boundaries shown on the maps of this proposed rule have been excluded by text in the proposed rule and are not proposed for designation as critical habitat. Therefore, Federal actions limited to these areas would not trigger section 7 consultation, unless they affect the species, or primary constituent elements, or both, in adjacent critical habitat.

Special Management Considerations or Protections

The term critical habitat is defined in section 3(5)(A) of the Act, in part, as geographic areas on which are found those physical or biological features essential to the conservation of the species and ''which may require special management considerations or protection.'' Accordingly, in identifying critical habitat in occupied areas, we assess whether the PCEs within the areas determined to be occupied at the time of listing may require any special management considerations or protection. All areas being proposed as critical habitat require some level of management to address current and future threats to *Limnanthes floccosa* ssp. *grandiflora* and *Lomatium cookii*, to maintain or enhance the physical and biological features essential to their conservation, and to ensure the recovery and survival of these species.

The major threats to the PCEs in the areas identified as proposed critical habitat for *Limnanthes floccosa* ssp. *grandiflora* and *Lomatium cookii* include: development on private lands; incompatible agricultural and grazing practices; ground disturbance that affects surface hydrology, including ORV use and road construction or maintenance activities; mining activities; garbage dumping; the succession of meadow habitat to forested habitat due to fire suppression; and encroachment and displacement by nonnative plants. Herbivory by voles and gophers may also affect these species. In all of the proposed units in Jackson County, special management is needed to reduce or eradicate the threats posed by development, habitat fragmentation, ground disturbance that affects surface hydrology, and incompatible grazing practices. In all of the proposed units in Josephine County, special management is needed to reduce or eradicate the threats posed by development, ORV, mining activities, garbage dumping, and woody vegetative succession. Please refer to the unit descriptions in the **Proposed Critical Habitat Designation** section for further discussion of special management considerations or protection of the PCEs related to geographically specific threats to *L. f.* ssp. *grandiflora* and *Lomatium cookii*.

In addition, for all units, special management is needed to control and monitor the encroachment of nonnative, invasive plant species to maintain intact vernal pool–mounded prairies and wet meadow ecosystems such that they can continue to support populations of *Limnanthes floccosa* ssp. *grandiflora* and *Lomatium cookii*.

Special management considerations or protection of the vernal pool–mounded prairies and wet meadow habitats that may be needed to support reproduction and growth of *Limnanthes floccosa* ssp. *grandiflora* and *Lomatium cookii* include: controlled burning and vegetation clearing to maintain early seral stages; nonnative invasive plant species control; grazing management; the re-establishment of hydrology; re-seeding with native plants; monitoring; and protection from development (Borgias 2004, pp. 47–53; ONHDB 1994, pp. 13–20).

Proposed Critical Habitat Designation

The areas we are proposing as critical habitat currently provide the habitat components necessary to meet the primary biological needs of *Limnanthes floccosa* ssp. *grandiflora* and *Lomatium cookii*, as defined by the PCEs. The areas proposed for designation are those areas that we have determined are most likely to substantially contribute to conservation of *L. f.* ssp. *grandiflora* and *Lomatium cookii* and to contribute to the long-term survival and recovery of the species.

We have determined that 25 units totaling approximately 4,467 ha (11,038 ac) meet our definition of critical habitat for *Limnanthes floccosa* ssp. *grandiflora* and *Lomatium cookii*, including land under Federal, State, county, municipal, and private ownership. We are proposing 8 units of critical habitat for *L. f.* ssp. *grandiflora* and 17 units for *Lomatium cookii*; two of these units, White City and Whetstone Creek in Jackson County, contain habitat for both species (see Tables 1, 2, 3, and unit descriptions below). The critical habitat areas described below constitute our best current assessment of areas that meet the definition of critical habitat for *L. f.* ssp. *grandiflora* and *Lomatium cookii*. We have determined that all

areas proposed as critical habitat for *L. f.* ssp. *grandiflora* and *Lomatium cookii* were occupied at the time of listing and most are, we believe, currently occupied as well (recent survey information was not available for all sites).

The areas proposed as critical habitat for *Limnanthes floccosa* ssp. *grandiflora* are: (1) Unit RV1—Shady Cove; (2) Unit RV2—Hammel Road; (3) Unit RV3A, B, C, and D—North Eagle Point; (4) Unit RV4—Rogue Plains; (5) Unit RV5—Table Rock Terrace; (6) Unit RV6A, B, C, D, E, F, G, and H—White City; (7) Unit RV7— Agate Lake; and (8) Unit RV8—Whetstone Creek. Units coded with ''RV'' are in the Rogue Valley (Agate Desert), Jackson County.

The areas proposed as critical habitat for *Lomatium cookii* are: (1) Unit RV6A, F, G, and H—White City; (2) Unit RV8—Whetstone Creek; (3) Unit RV9A and B—Medford Airport; (4) Unit IV1—Anderson Creek; (5) Unit IV2—Draper Creek; (6) Unit IV3—Reeves Creek North; (7) Unit IV4—Reeves Creek East; (8); Unit IV5—Reeves Creek South; (9); Unit IV6A and B—Laurel Road; (10) Unit IV7—Illinois River Forks State Park; (11) Unit IV8—Woodcock Mountain; (12) Unit IV9—Riverwash; (13) Unit IV10—French Flat North; (14) Unit IV11—Rough and Ready Creek; (15) Unit IV12—French Flat Middle; (16) Unit IV13—Indian Hill; and (17) Unit IV14—Waldo. Units coded with ''IV'' are in the Illinois River Valley, Josephine County.

The approximate area and land ownership of each proposed critical habitat unit is shown in Tables 1, 2, and 3. Portions of units or entire units roughly correspond to the recovery core areas for each species as identified in the 2006 draft recovery plan (USFWS 2006). The recovery core areas were selected based on occurrence records and habitat identified through ground surveys, aerial imagery, topography features, and soil layers. As described above, we assessed all areas proposed as critical habitat to ensure that they provide the requisite PCEs for the species as defined in this proposed rule.

We conducted a regional review across the range of *Limnanthes floccosa* ssp. *grandiflora* and *Lomatium cookii* to evaluate and select vernal pool–mounded prairie and seasonally wet meadow habitats that provide the physical and biological features essential to the conservation of the species and that may require special management considerations or protection. Important factors we considered were the known presence of *L. f.* ssp. *grandiflora* and *Lomatium cookii* (populations greater than 10 individuals) and the presence of intact vernal pools, vernal pool complexes, open meadows, and meadow complexes supporting the hydrological characteristics necessary to provide the PCEs essential to the conservation of the two species. We identified vernal pool–mounded prairie and wet meadow complexes throughout the range of these species, which support high numbers of *L. f.* ssp. *grandiflora* and *Lomatium cookii* occurrences from the ONHIC database (2008) and reports (Meyers 2008, pp. 1–65; Kaye and Thorpe 2008, pp.16–25; ONHIC 2008; Service database 2008). However, as is the case with all critical habitat designations, areas outside of this designation may still prove to be necessary to the recovery of this species. A description of each area is outlined below.

Area 1: Jackson County, Oregon

In Jackson County, we are proposing eight critical habitat units for *Limnanthes floccosa* ssp. *grandiflora* and three critical habitat units for *Lomatium cookii*. The Jackson County units occur approximately 58 km (30 mi) east of the nearest unit proposed for *Lomatium cookii* species in Josephine County. All proposed critical habitat units in Jackson County are located within the Middle Rogue River Basin or ''Agate Desert.'' Two units, White City and Whetstone Creek, are occupied by both species.

Unit RV1: Shady Cove

We are proposing to designate Unit RV1 as critical habitat for *Limnanthes floccosa* ssp. *grandiflora*. Unit RV1 consists of approximately 8 ha (20 ac) of intact vernal pool–mounded prairie and was occupied by the species at the time of listing (ONHIC 2008). We have no current information regarding the status of this population but consider the plant to be extant within the unit, as we have no information indicating any activities have occurred that likely would have resulted in extirpation. Unit RV1 contains all of the PCEs for *L. f.* ssp. *grandiflora* and was identified in the draft recovery plan as the Shady Cove recovery core area (USFWS 2006, pp. IV-12–IV-13). This unit was not designated as vernal pool fairy shrimp critical habitat. It parallels a 430 m (ft) stretch of Highway 62 and is located 460 m (1,500 ft) west of Highway 62. The unit is 0.8 km (0.5 mi) south of Shady Cove, 1.3 km (0.8 mi) northeast of Takelma Park, and is 122 m (400 ft) east of the Rogue River. The unit is occurs on privately owned land. Aerial imagery indicates that the unit is composed of intact vernal pool–mounded prairie habitat (USDA 2006).

ONHIC database records make no mention of any ongoing threats to the *Limnanthes floccosa* ssp. *grandiflora* population within the unit; however, the occurrence information mentions that the adjacent habitat to the south had been leveled, indicating that agricultural development is occurring in the area (ONHIC 2008). The unit occurs in an area of predominant agricultural and grazing use (Borgias 2004, p. 8). Practices that could occur on the property that might negatively affect *L. f.* ssp. *grandiflora* habitat, if not properly managed, include water impoundment, tilling, and grazing. We are not aware of any conservation agreements or management plans to conserve *L. f.* ssp. *grandiflora* habitat within this unit. Special management considerations or protection may be required to restore, protect, and maintain the PCEs supported by Unit RV1 due to threats from agricultural development, potential incompatible grazing practices, and the encroachment of invasive, nonnative, annual plant species.

Unit RV2: Hammel Road

We are proposing to designate Unit RV2 as critical habitat for *Limnanthes floccosa* ssp. *grandiflora*. Unit RV2 consists of approximately 84 ha (207 ac) of intact vernal pool–mounded prairie. The unit is currently occupied by *L. f.* ssp. *grandiflora* and was occupied at the time of listing (ONHIC 2008). This critical habitat unit contains all of the PCEs for *L. f.* ssp. *grandiflora* and was identified as the Staley Road recovery core area in the draft recovery plan (USFWS 2006, pp. IV-12–IV-13). This unit is also designated as vernal pool fairy shrimp critical habitat and corresponds to vernal pool fairy shrimp critical habitat subunit 1A (North Agate Desert Unit) (71 FR 7117). It is located on privately owned land, 1.2 km (0.75 mi) northeast of the confluence of Reese Creek and the Rogue River, 1.3 km (0.8 mi) west of Highway 62, and 430 m (1,400 ft) east of the Rogue River.

A recent observation indicates that approximately 1,500 *L. f.* ssp. *grandiflora* are present on the unit (Meyers 2008, p. 6). Aerial imagery and field observations indicate that the unit is comprised of intact vernal pool–mounded prairie habitat (USDA 2006a; Meyers 2008, p. 6).

ONHIC database (2008) records indicate that light grazing occurs within this unit, and the grazing practices appear to have been compatible with the survival of *Limnanthes floccosa* ssp. *grandiflora* over the past 13 years. We are not aware of any conservation agreements or plans to protect *L. f.* ssp.

grandiflora habitat within this unit. Practices that could occur on the property that might negatively affect *L. f.* ssp. *grandiflora* habitat if not properly managed include water impoundment, tilling, and grazing. Special management considerations or protection may be required to restore, protect, and maintain the PCEs supported by Unit RV2 due to threats from agricultural development, potential incompatible grazing practices, and the encroachment of invasive, nonnative, annual plant species.

Unit RV3A, B, C, and D: North Eagle Point

We are proposing to designate Unit RV3 as critical habitat for *Limnanthes floccosa* ssp. *grandiflora*. The unit consists of four subunits totaling 539 ha (1,331 ac) of intact vernal pool habitat that is currently occupied by the species and was occupied at the time of listing (ONHIC 2008). This critical habitat unit contains all of the PCEs for *L. f.* ssp. *grandiflora* and was identified as the North Eagle Point recovery core area in the draft recovery plan (USFWS 2006, pp. IV-12–IV-13). Unit RV3 is also designated as vernal pool fairy shrimp critical habitat and corresponds to vernal pool fairy shrimp critical habitat subunits 1B, D, and G (North Agate Desert Unit) (71 FR 7117). The unit is located on privately owned land southwest of Mosser Mountain and northeast of Long Mountain. The four subunits loosely follow a 6.9 km (4.3 mi) stretch of Hog Creek beginning at its origin. Originating 3.8 km (2.4 mi) east of Highway 62 in subunit RV3D, Hog Creek runs through RV3C, crosses Highway 62, flows between RV3B (located 100 m (328 ft) west of Highway 62) and RV3A (located 600 m (1,970 ft) west of Highway 62), before emptying into the Rogue River after 2.4 km (1.5 mi). Subunit RV3A is located 560 m (1,837 ft) southeast of the confluence of Reese Creek and the Rogue River. Subunit RV3B is located 100 m (328 ft) west of Highway 62 at the intersection of Ball Road and extends along an 835 m (2,740 ft) stretch of Hog Creek. Subunit RV3C is located 2 km (1.2 mi) north of Eagle Point (see Index map) and extends 2.6 km (1.6 mi) south of the junction of Ball Road and Reese Creek Road. Subunit RV3D is located 3.2 km (2 mi) east of Long Mountain and is 2.4 km (1.5 mi) southeast of the junction of Highway 62 and Ball Road. It extends along a 1.8 km (1.1 mi) stretch of Hog Creek.

ONHIC Element Occurrence data accounts for two 1,000-plant *Limnanthes floccosa* ssp. *grandiflora* populations within this unit, one growing in an area of intact vernal pool–mounded prairie habitat and one in an atypical swale habitat alongside a fence. An additional 500 *L. f.* ssp. *grandiflora* plants growing in intact vernal pool–mounded prairie habitat on a separate property within the unit was reported by Wildlands, Inc. (Wildlands, Inc. 2008, p. 3). Aerial imagery indicates that the unit contains a significant amount of intact vernal pool–mounded prairie habitat (USDA 2006a).

Some habitat in this unit has been degraded by cattle grazing practices and agricultural development (Wildlands, Inc. 2008, p. 1). The entire unit occurs in an area of predominant agricultural and grazing use (Borgias 2004, p. 8). Livestock have caused significant damage to large vernal pools within the unit by soil compaction and mound and pool topography alteration (Oregon Natural Heritage Program (ONHP) 1997, p. 16). In addition, vernal pool hydrology has been compromised in some portions of the unit by water impoundment, causing water to permanently fill some vernal pools in several areas (Southern Oregon Land Conservancy 2008, p. 3). In addition, nonnative invasive annual grasses have colonized large portions of the unit and threaten to encroach on *Limnanthes floccosa* ssp. *grandiflora* populations (Southern Oregon Land Conservancy 2008, p. 4).

There are established protective measures to conserve *Limnanthes floccosa* ssp. *grandiflora* and the habitat of the threatened vernal pool fairy shrimp on two private properties within this unit. Long-term management plans are in development for both of the properties to protect and restore vernal pool–mounded prairie function; these plans will cover approximately 20 percent of the land in the unit. Monitoring and improved grazing management are currently taking place on the two properties to further conserve *L. f.* ssp. *grandiflora* habitat (M. Young, pers. comm. 2009; Southern Oregon Land Conservancy 2008, p. 6). Other special management considerations or protection on other properties within the unit may be required to restore, protect, and maintain the PCEs supported by Unit RV3 due to threats from agricultural development, potential incompatible grazing practices, and the encroachment of invasive, nonnative, annual grasses.

Unit RV4: Rogue Plains

We are proposing to designate Unit RV4 as critical habitat for *Limnanthes floccosa* ssp. *grandiflora*. This unit consists of 245 ha (605 ac) of intact vernal pool–mounded prairie habitat that is currently occupied by the species and was occupied at the time of listing (ONHIC 2008; Meyers 2008, p. 10). This critical habitat unit contains all of the PCEs for *L. f. ssp. grandiflora* and was identified as the Rogue Plains recovery core area in the draft recovery plan (USFWS 2006, pp. IV-12–IV-13). Unit RV4 has been designated as critical habitat for vernal pool fairy shrimp and corresponds to vernal pool fairy shrimp critical habitat subunits 1C, E, and F (North Agate Desert Unit) (71 FR 7117). The unit occurs on privately owned land located 122 m (400 ft) southeast of the junction of Highway 234 and Modoc Road. It extends 2 km (1.2 mi) south along Modoc Road from the intersection, is located 1.4 km (0.87 mi) southwest of Dodge Bridge, and 1.0 km (0.6 mi) northwest of Rattlesnake Rapids on the Rogue River.

A recent *Limnanthes floccosa* ssp. *grandiflora* survey report within Unit RV4 describes a robust 5,000-plant population occurring at the privately owned ''Rogue River Plains Preserve.'' The report also describes a *L. f.* ssp. *grandiflora* occurrence from which the species appears to have been extirpated (Meyers 2008, pp. 10, 55). For the most part, aerial imagery and field observations indicate that the unit is composed of intact vernal pool–mounded prairie habitat (USDA 2006a; Meyers 2008, p. 6).

Some habitat within this unit appears to have been degraded (Meyers 2008, p. 55), however, the winter and spring grazing presently occurring at the Rogue River Plains Preserve property appears to be compatible with the survival of *Limnanthes floccosa* ssp. *grandiflora* (Borgias 2004, p. 42). A photograph attached to a recent survey report depicts weakly developed vernal-pool mounded prairie topography at the property. At the site of the extirpated *L. f.* ssp. *grandiflora* location within the unit, incompatible grazing practices may have contributed to the local extirpation of the species.

Threats facing vernal-pool mounded prairie habitat in this unit are agricultural development, incompatible grazing practices, and the encroachment of invasive, nonnative, annual grasses. A conservation easement, held by TNC and placed on the privately owned Rogue River Plains Preserve property, permits the landowners to continue restricted grazing on their property, while development and agricultural development rights are withdrawn. Other special management considerations or protection on other properties within the unit may be needed to restore, protect, and maintain

the PCEs supported by Unit RV4 due to threats from agricultural development, potential incompatible grazing practices, and the encroachment of invasive, nonnative, annual grasses.

Unit RV5: Table Rock Terrace

We are proposing to designate Unit RV5 as critical habitat for *Limnanthes floccosa* ssp. *grandiflora*. The unit includes 49 ha (122 ac) of intact vernal pool–mounded prairie habitat that has been occupied by the species since the time of listing (ONHIC 2008, USDA 2006a). Although a survey conducted on a portion of the unit in 2008 did not confirm presence of *L. f.* ssp. *grandiflora* plants (Meyers 2008, p. 59), a more recent partial survey verified the continued occupation of the unit by *L. f.* ssp. *grandiflora* (S. Friedman 2009, pers. obs.). This critical habitat unit contains all of the PCEs for *L. f.* ssp. *grandiflora* and was identified as the Table Rock Terrace recovery core area in the draft recovery plan (USFWS 2006, pp. IV-12–IV-13). This unit is not designated as vernal pool fairy shrimp critical habitat. Unit RV5 is located on privately owned land 670 m (2,200 ft) north of the junction of Modoc and Antioc Roads, is 1.4 km (0.9 mi) east of Upper Table Rock, and 650 m (2,300 ft) west of the Rogue River. This unit follows along an 800 m (2,600 ft) stretch of Modoc Road to the east of the unit and a 700 m (2,300 ft) stretch of Antioc Road west of the unit.

Threats facing vernal-pool mounded prairie habitat in this unit may include agricultural development, incompatible grazing practices, and the encroachment of invasive, nonnative, annual grasses. Other special management considerations or protection within the unit may be needed to restore, protect, and maintain the PCEs supported by Unit RV5 due to these threats.

Unit RV6, Subunits A, B, C, D, E, F, G, and H: White City

This unit consists of eight subunits that generally encompass the perimeter of White City. We are proposing to designate all subunits in this unit as critical habitat for *Limnanthes floccosa* ssp. *grandiflora.* In addition, we are proposing to designate subunits RV6 A, F, G, and H as critical habitat for *Lomatium cookii*. This 848-ha (2,095-ac) unit includes intact vernal pool–mounded prairie and swale habitats that were occupied by the two species at the time of listing; both species presently occur within some or all of the subunits. This critical habitat unit contains all of the PCEs for *L. f.* ssp. *grandiflora* and *Lomatium cookii* and was identified as the Agate Desert recovery core area in the draft recovery plan (USFWS 2006, pp. IV-12–IV-13). Unit RV6 is also designated as vernal pool fairy shrimp critical habitat and corresponds to vernal pool fairy shrimp critical habitat subunits 2A, B, C, D, and E and 3A and B (White City East and West Units) (71 FR 7117; February 10, 2006). The unit occurs on State, county, municipal and privately owned lands. It is located around White City, is 1.6 km (1.0 mi) southwest of Eagle Point, and is 440 m (1,444 ft) southeast of the confluence of the Rogue River and Little Butte Creek. Subunit RV6A is located north of Whetstone Creek and is 500 m (1,200 ft) west of the junction of Highway 62 and Antelope Road. Subunits RV6B, RV6C, RV6D and RV6E are located north of Avenue G in White City, south of Little Butte Creek, and 670 m (2,200 ft) southwest of Antelope Creek. Subunits RV6F and RV6G are located approximately 500 feet west of Dry Creek and are east of Highway 62 in White City. Subunit RV6H is located north of Whetstone Creek and south of Antelope Road. Subunit RV6H roughly encircles the Hoover Ponds, east of Highway 62, and is 850 m (2790 ft) east of subunit RV6A. The land in this unit is 29 percent State-owned, 6 percent county-owned, 10 percent municipally owned, and 55 percent privately owned.

This unit includes highly intact vernal pool–mounded prairie habitat. The Nature Conservancy manages a 22-ha (54-ac) parcel within this unit to conserve vernal pool–mounded prairie habitat and has recently developed a management plan to restore and enhance vernal pool function across 86 ha (213 ac) of habitat owned by the Oregon Department of Fish and Wildlife's (ODFW) Denman Wildlife Area. A mitigation site owned by Jackson County School District Number 9 protects 9.5 ha (24 ac) of intact vernal pool–mounded prairie habitat with one of the largest known populations of *Limnanthes floccosa* ssp. *grandiflora*. The City of Medford also leases 88 ha (217 ac) of vernal pool–mounded prairie for cattle grazing on some less intact vernal-pool mounded prairie habitat. In addition, the Oregon Department of Transportation (ODOT) manages two locations as roadside special management areas for the protection of *L. f.* ssp. *grandiflora* and *Lomatium cookii*.

Threats facing vernal pool–mounded prairie habitat in this unit include urban and commercial development, agricultural development, incompatible grazing practices, and the encroachment of invasive, nonnative annual grasses. The Nature Conservancy and Jackson County School District Number 9 have conducted prescribed burns, seeded with native plants, and erected signs and fences to control encroachment of nonnative invasive plants, discourage recreational ORV use, and restore native plant communities (Borgias 2004, p. 22; USFWS 2006, pp. I-18–I-21). ODFW has plans to restore vernal pool–mounded prairie habitat across the Denman Management Area by removing nonnative bunch grasses and restoring hydrologic flow by eliminating old road beds (Borgias *et al.* 2009, pp. 16-22). Other special management considerations or protection within the unit may be needed to restore, protect, and maintain the PCEs supported by Unit RV6 due to the described threats within the units.

Unit RV7: Agate Lake

We are proposing to designate Unit RV7 as critical habitat for *Limnanthes floccosa* ssp. *grandiflora*. This unit consists of 426 ha (1,053 ac) of intact vernal pool–mounded prairie and swale habitat; the unit is currently occupied by the species and was occupied at the time of listing (Meyers 2008, p. 45). This critical habitat unit contains all of the PCEs for *L. f.* ssp. *grandiflora* and was identified as the Agate Lake recovery core area in the draft recovery plan (USFWS 2006, pp. IV-12–IV-13). Unit RV7 has been designated as critical habitat for vernal pool fairy shrimp and corresponds to vernal pool fairy shrimp critical habitat subunit 2B (White City East Unit) (71 FR 7117; February 10, 2006). The unit occurs on federally and privately owned land located 500 m (1,640 ft) east of the Agate Reservoir, along a 5.4-km (3.4-mi) stretch roughly parallel and between Dry Creek and Antelope Creek, is 330 m (1,080 ft) north of Tater Hill, and is 1.4 km (0.9 mi) southeast of the confluence of Dry Creek and Antelope Creek. The land in this unit is approximately 9 percent federally owned and 89 percent privately owned.

The U.S. Bureau of Reclamation (BOR) has completed a management plan for 38 ha (94 ac) of slightly degraded vernal pool–mounded prairie habitat within this unit. BOR has established protective measures to conserve vernal pool–mounded prairie habitat. A long-term management plan has been finalized to protect and restore vernal pool–mounded prairie function (BOR 2006, p. 1-1). Previous to 2008, *Limnanthes floccosa* ssp. *grandiflora* had not been reported in the unit since 1965. In 2008, a 300-plant population of *L. f.* ssp. *grandiflora* was observed in recently restored vernal pool–mounded prairie habitat on Federal land within the unit (p. Meyers 2008, p. 45).

The PCEs in this unit are threatened by invasion of nonnative herbaceous annuals, trash dumping, activities associated with fire management (fire-line construction), vandalism, unauthorized ORV use, and incompatible grazing practices (BOR 2006, p. 1-8; Borgias 2004, p. 12). Therefore, special management considerations or protection may be required to restore, protect, and maintain the PCEs supported by Unit RV7 due to these threats.

Unit RV8: Whetstone Creek

We are proposing to designate Unit RV8 as critical habitat for *Limnanthes floccosa* ssp. *grandiflora* and *Lomatium cookii*. Unit RV8 consists of 362 ha (896 ac) of intact vernal pool–mounded prairie and swale habitat that was occupied by both species at the time of listing; both species continue to occur within the unit (ONHIC 2008; Meyers 2008, p. 20). This critical habitat unit contains all of the PCEs for *L. f.* ssp. *grandiflora* and *Lomatium cookii* and was identified as the Whetstone Creek recovery core area in the draft recovery plan (USFWS 2006, pp. IV-12–IV-13). Unit RV8 has been designated as critical habitat for vernal pool fairy shrimp and corresponds to vernal pool fairy shrimp critical habitat subunit 3C (White City West Unit) (71 FR 7117; February 10, 2006). The unit occurs on State, municipal, and privately owned land located just west of White City. The unit is located approximately 1.4 km (0.9 mi) southeast of the confluence of the Rogue River and Whetstone Creek, 2.2 km (1.4 mi) southwest of Tou Velle State Park, and 2.9 km southeast of the confluence of Bear Creek and the Rogue River. The unit roughly parallels a 2.6 km (1.6 mi) stretch of Whetstone Creek to the south. The land in this unit is 9 percent State-owned, 10 percent municipally owned, and 81 percent privately owned.

This unit includes highly intact vernal-pool mounded prairie habitat with partial protection by city regulation and private conservation easements. This is the only unit that includes a shrub and tree component within vernal pool–mounded prairie habitat. The Nature Conservancy manages a 58-ha (144-ac) parcel within this unit occupied by both *Limnanthes floccosa* ssp. *grandiflora* and *Lomatium cookii*. One of the primary purposes of the preserve is to conserve vernal pool–mounded prairie habitat. The Nature Conservancy has recently developed a management plan to restore and enhance vernal pool function across a 32-ha (80-ac), neighboring property owned by ODOT that also occurs within the unit. The City of Medford leases 36 ha (96 ac) of vernal pool–mounded prairie habitat within the unit for grazing.

The PCEs in this unit are threatened by invasion of nonnative herbaceous annuals, incompatible agricultural development, aggregate mining, unauthorized ORV use, and incompatible grazing practices (BOR 2006, pp. 1-8; Borgias 2004, p. 12). Therefore, special management considerations or protection on other properties within the unit may be required to restore, protect, and maintain the PCEs supported by Unit RV8 due to the threats mentioned above.

Unit RV9A and B: Medford Airport

We are proposing to designate Unit RV9 as critical habitat for *Lomatium cookii*. This unit consists of the subunits RV9A and RV9B. *Lomatium cookii* has been known from this unit since before the time it was listed (ONHIC 2008). Unit RV9 includes 76 ha (190 ac) of slightly degraded vernal pool–mounded prairie habitat. No areas within this unit were designated as vernal pool fairy shrimp critical habitat. A report on *Limnanthes floccosa* ssp. *grandiflora* within the unit indicates that the population has fewer than 10 individuals (Meyers 2008, p 48); therefore, we are not proposing to designate this unit as critical habitat for this species, as explained above in our criteria to identify critical habitat boundaries. This critical habitat unit contains all of the PCEs for *Lomatium cookii* and was identified as the Rogue Airfield recovery core area in the draft recovery plan (USFWS 2006, pp. IV-12–IV-13). The two subunits are located mostly within the Rogue Valley International – Medford Airport, approximately 2 km (1.2 mi) west of Coker Butte and 1.5 km (0.9 mi) northeast of Bear Creek. Subunit RV9A is located 1.4 km (0.9 mi) north of the Rogue Valley International – Medford Airport and is 300 m (980 ft) east of the junction of Vilas Road and Table Rock Road. Subunit RV9B is between Upton Slough and Bear Creek and 1.7 km northeast of the junction of Interstate 5 and Highway 62. The land in this unit is 93 percent county-owned and 7 percent privately owned.

This unit includes one of the most extensive and densest populations of *Lomatium cookii* within its range. The Rogue Valley International – Medford Airport is managed to meet FAA safety requirements. The property is completely fenced-in to exclude people and large animals and is periodically mowed to keep vegetation low and reduce use by large birds and other wildlife. The security fencing and regular mowing is compatible with *Lomatium cookii* growth, reproduction, and germination and has enabled a robust population to become established. Other properties not included in the airport security zone are properties within the City of Medford urban growth boundary likely to become commercially developed.

Threats facing the vernal pool–mounded prairie habitat in this unit are potential airport and commercial development. The development of a new runway that could be placed across the densest population of *Lomatium cookii* has been suggested in the long-term plan for the airport (Rogue Valley International–Medford Airport 2001, pp. 5-2–5-4; 6-4–6-6). Special management considerations or protection within the unit may be needed to conserve and maintain the PCEs supported by Unit RV9 due to this threat.

Area 2: Josephine County, Oregon

In Josephine County, we are proposing 14 critical habitat units for *Lomatium cookii*. The Josephine County units occur approximately 58 km (30 mi) west of the nearest unit proposed for this species in Jackson County. None of the Josephine County units were designated as critical habitat for the vernal pool fairy shrimp in Oregon.

Unit IV1: Anderson Creek

We are proposing to designate Unit IV1 as critical habitat for *Lomatium cookii*. Unit IV1 consists of 53 ha (132 ac) of intact wet meadow habitat that is currently occupied and was occupied by the species at the time of listing (ONHDB 1994, pp. 9–10; OSU 2008). Unit IV1 contains all the PCEs for *Lomatium cookii* and was identified in the draft recovery plan as the Anderson Creek recovery core area (USFWS 2006, pp. IV-11, IV-14). It is located on privately owned land, 3.5 km (2.2 mi) north of Selma, 14 km (8.8 mi) north of Cave Junction, along a 1.0 km (0.6 mi) stretch of Anderson Creek and Highway 199, 2.0 km (1.2 mi) southwest of Hays Hill Summit, and is 1.7 km (1.0 mi) northwest of the junction of Draper Valley Road and Indian Creek Road.

The two occurrences in this unit are the most northern known occurrences of *Lomatium cookii* in the Illinois Valley. Recent surveys located two populations in this unit, one with 135 plants and one with 1,000 plants. The two populations were reported as growing in open, grassy meadows (C. Shohet, pers. comm. 2005). Aerial imagery suggests the habitat in this unit is relatively intact wet meadow (USDA 2006a).

Potential threats to the *Lomatium cookii* habitat in this unit include

incompatible grazing practices, agricultural development, alterations in hydrology due to timber production, native and noxious weed encroachment, and woody vegetation succession as the result of fire suppression (J. Kagan, pers. comm. 2008; C. Shohet, pers. comm. 2005). Grazing is a common agricultural practice in the area (J. Kagan, pers. comm. 2008), but depending on management within this unit, it may be incompatible with growth, reproduction, and germination of the species. We are not aware of any conservation agreements or management plans to conserve critical habitat within this unit. Special management considerations or protection may be required to restore, protect, and maintain the PCEs supported by Unit IV1 due to threats from agricultural development, potential incompatible grazing practices, and woody vegetative succession due to decreased fire return intervals.

Unit IV2: Draper Creek

We are proposing to designate Unit IV2 as critical habitat for *Lomatium cookii*. This unit consists of 39 ha (97 ac) of intact wet meadow habitat, was occupied by *Lomatium cookii* at the time of listing (ONHDB 1994, p. 5; OSU 2008), and continues to be occupied by the species. Unit IV2 contains all of the PCEs for *Lomatium cookii* and was identified in the draft recovery plan as the Draper Creek recovery core area (USFWS 2006, pp. IV-11, IV-14). It is located on privately owned land 2.7 km (1.7 mi) northeast of Selma, 13.5 km (8.4 mi) north of Cave Junction, along a 900 m (2,900 ft) stretch of Draper Creek, located 800 m (2,600 ft) east of Anderson Creek. The unit is 800 m (2,600 ft) north-northwest of the confluence of Draper Creek and Davis Creek and is 200 m (650 ft) southeast of the junction of Draper Valley Road and Indian Creek Road.

According to a recent survey report, this unit includes relatively intact wet meadow habitat associated with Draper Creek. A recent survey located a 400-plant *Lomatium cookii* population here, reported as growing in an open, grassy meadow (C. Shohet, pers. comm. 2005). The *Lomatium cookii* occurrence in this unit is among the most northern known occurrences for this species in the Illinois Valley. Aerial imagery suggests the habitat in this unit may be reverting to oak and conifer succession in some areas (USDA 2006a).

Potential threats to the *Lomatium cookii* habitat in this unit include incompatible grazing practices, agricultural development, alterations in hydrology due to timber production, native and noxious weed encroachment, and woody vegetation succession (C. Shohet, pers. comm. 2005). Grazing is a common agricultural practice in the area (J. Kagan, pers. comm. 2009), but depending on management within the unit, it may be incompatible with growth, reproduction, and germination of the species. No conservation agreements or protections have been established within this unit, and we are not aware of any conservation plans to conserve critical habitat within this unit. Special management considerations or protection may be required to restore, protect, and maintain the PCEs supported by Unit IV2 due to threats from agricultural development, incompatible grazing practices, and woody vegetative succession due to increased fire return intervals.

Unit IV3: Reeves Creek North

We are proposing to designate Unit IV3 as critical habitat for *Lomatium cookii*. This unit consists of 105 ha (260 ac) of wet meadow habitat. *Lomatium cookii* occupied this unit at the time of listing and continues to be found here (ONHIC 2008). Unit IV3 contains all of the PCEs for *Lomatium cookii* and was identified in the draft recovery plan as the Reeves Creek West recovery core area (USFWS 2006, pp. IV-11, IV-14). This unit is located on Federal and privately owned land, 4.5 km (2.8 mi) south of Selma, 6.0 km (3.75 mi) north of Cave Junction, and 1.1 km (0.7 mi) northeast of Sauers Flat. The unit is located 1.4 km (0.9 mi) east of the confluence between Reeves Creek and the Illinois River and extends along a 2.0 km (1.2 mi) stretch of Reeves Creek, beginning 800 m (2,600 ft) northeast of the junction of Highway 199 and Reeves Creek Road. The land in this unit is 58 percent federally owned and 42 percent privately owned.

The wet meadow habitat in this unit is primarily threatened by natural vegetative succession, but there is potential for road maintenance to become a threat. Road maintenance often fragments populations and can directly affect plants. Woody vegetative succession can impact *Lomatium cookii* populations in this unit by over-shading. Due to this threat, the plants observed in this unit occur in smaller numbers and grow in more limited areas compared to other Illinois Valley populations and appear to be more fragmented (ONHIC 2008). Timber harvesting occurs in this unit periodically and could affect *Lomatium cookii* populations in the next few years. Special management considerations or protection may be required to restore, protect, and maintain the PCEs supported by Unit IV3 due to threats from woody vegetation succession, impacts associated with timber harvesting activities, and road maintenance.

Unit IV4: Reeves Creek East

We are proposing to designate Unit IV4 as critical habitat for *Lomatium cookii*. This unit consists of 69 ha (170 ac) of intact wet meadow habitat and has been occupied by *Lomatium cookii* since the time of listing (ONHIC 2008). Unit IV4 contains all of the PCEs for *Lomatium cookii* and was identified in the draft recovery plan as the Reeves Creek East recovery core area (USFWS 2006, pp. IV-11, IV-14). This unit is located on Federal and privately owned land, 6.2 km (3.9 mi) south of Selma, and 5.3 km (3.3 mi) northwest of Cave Junction. It occurs along a 500 m (1,640 ft) stretch of Reeves Creek located 700 m (2,300 ft) southeast of Unit IV3. The land in this unit is 52 percent federally owned and 48 percent privately owned.

The wet meadow habitat in this unit is primarily threatened by woody vegetative succession, activities associated with timber harvesting practices, road maintenance, and ORV use. The single *Lomatium cookii* population known from this unit is described as fragmented by a road cut. Portions of the habitat in this unit are also threatened by early seral forest succession (ONHIC 2008). As with the previous unit, plants observed in this unit occur in smaller numbers and grow in more limited areas compared to other Illinois Valley populations, and the populations appear to be more fragmented. Special management considerations or protection may be required to restore, protect, and maintain the PCEs supported by Unit IV4 due to threats from road construction, impacts associated with timber harvesting, woody vegetative succession, and ORV use.

Unit IV5: Reeves Creek South

We are proposing to designate Unit IV5 as critical habitat for *Lomatium cookii*. This unit consists of 158 ha (391 ac) of intact wet meadow habitat. This unit was occupied by *Lomatium cookii* at the time of listing and the species continues to be found there (ONHIC 2008). Unit IV5 contains all of the PCEs for *Lomatium cookii* and was identified in the draft recovery plan as the Reeves Creek West recovery core area (USFWS 2006, pp. IV-11, IV-14). The unit is located on both Federal and private land roughly parallel to Highway 199 for 2.5 km (1.6 mi), which is 500 m (1,640 ft) west of the unit. The unit is located 1.6

km (1.0 mi) north of Cave Junction, 1 km (0.6 mi) southeast of Sauers Flat, 800 m (2,600 ft) east of Kerby, and 1.2 km (0.7 mi) east of the confluence between Holton Creek and the Illinois River. The land in this unit is 65 percent federally owned and 35 percent privately owned.

The wet meadow habitat in this unit is primarily threatened by vegetative succession. Impacts associated with timber harvesting, road maintenance, and ORV use are threats that could affect the habitat within this unit within the next few years. The *Lomatium cookii* described in this unit is described as a fairly modest-sized population, with numbers up to 300 plants. The population in this unit is threatened by fragmentation due to woody vegetation succession. The population is somewhat scattered around open wet meadow patches dispersed within a young woody overstory (ONHIC 2008). Special management considerations or protection may be required to restore, protect, and maintain the PCEs supported by Unit IV5 due to threats from road construction, impacts associated with timber harvesting, woody vegetative succession, and ORV use.

Unit IV6A and B: Laurel Road

We are proposing to designate Unit IV6 as critical habitat for *Lomatium cookii*. This unit consists of two subunits totaling 209 ha (516 ac) of intact wet meadow habitat that was occupied by *Lomatium cookii* at the time of listing (ONHIC 2008); the species continues to be found there. Unit IV6 contains all of the PCEs for *Lomatium cookii* and was identified in the draft recovery plan as the Laurel Road recovery core area (USFWS 2006, pp. IV-11, IV-14). The unit is located west and alongside of the base of Lime Rock, 1.2 km (0.7 mi) east of the city of Cave Junction, and follows along Highway 46 for 1.5 km (0.9 mi). Subunit IV6A is located 1.3 km (0.8 mi) west of Lime Rock summit, 1.0 km east of the junction of Laurel Road and Highway 199, and is roughly parallel to Highway 199 for 1.3 km (0.8 mi), which lies approximately 1.0 km (0.6 mi) west of the subunit. Subunit IV6B is 2.7 km (1.7 mi) east of the confluence of the east and west forks of the Illinois River and from the intersection of Holland Loop Road and Highway 46; it extends approximately 1.8 km (1.1 mi) to the northeast and 2.7 km (1.7 mi) to the north. The land in this unit is 6 percent federally owned, less than 1 percent State, and 93 percent privately owned.

Unit IV6 is open meadow and roadside habitat at the base of Lime Rock. Highway 46 crosses the population and gravel was spread on the population at a pull-out. The population continues to thrive and even grows up through the gravel. J. Kagan described the population as occurring at the bottom of a small hill derived of ultramafic alluvium (ONHDB 1994, p. 9). The two populations in the unit are some of the most robust populations in the Illinois Valley. However, the *Lomatium cookii* population has been monitored since April 2003, and after several years of population size increases, the population has recently declined. The specific cause of the decline is not known.

The primary threats to the habitat in this unit are periodic roadside maintenance, occasional roadside disturbance, woody vegetative succession, nonnative invasive plants, and rural development. There are relatively few nonnative invasive plants that threaten *Lomatium cookii* at this site, perhaps due to the ultramafic-derived soils, but roadside maintenance is expected to occur often along this stretch of road and could increase the presence of invasive plants. Several inadvertent impacts have been caused to the population by construction equipment and vehicle traffic and periodic maintenance to the road. ODOT manages the population closely and has been able to ensure that their road repairs do not affect the population.

Special management considerations or protection may be required to restore, protect, and maintain the PCEs supported by Unit IV6 due to threats from rural development, roadside maintenance, woody vegetative succession, and invasive, nonnative plant species.

Unit IV7: Illinois River Forks State Park

We are proposing to designate Unit IV7 as critical habitat for *Lomatium cookii*. This unit consists of 55 ha (136 ac) of intact wet meadow habitat. *Lomatium cookii* has been known from this unit since the time of listing (ONHIC 2008). Unit IV7 contains all of the PCEs for *Lomatium cookii* and was identified in the draft recovery plan as the River Forks State Park recovery core area (USFWS 2006, pp. IV-11, IV-14). The unit is located 500 m (1640 ft) west of the city of Cave Junction, 600 m (1,970 ft) southeast of Pomeroy Dam, and is 230 m (750 ft) east of the confluence of the east and west forks of the Illinois River. The unit occurs along a 2.8 km (1.7 mi) stretch of the West Fork Illinois River. The unit occurs on 25 percent Federal, 44 percent State, and 31 percent privately owned land.

This unit is partially managed by the Oregon Parks and Recreation Department (OPRD). The OPRD manages both the Federal and State property and a management plan is currently in development to protect and conserve the habitat that support *Lomatium cookii*. Recent monitoring by Service staff (2008) observed a relatively robust population spread out alongside streamside meadow habitat (Service database 2008).

The primary threats to the habitat in this unit are natural woody vegetative succession and rural development. Agricultural development, incompatible grazing practices, and invasive, nonnative, annual plant species are also potential threats. Special management considerations or protection may be required to restore, protect, and maintain the PCEs supported by Unit IV7 due to the threats described above.

Unit IV8: Woodcock Mountain

We are proposing to designate Unit IV8 as critical habitat for *Lomatium cookii*. This unit consists of 348 ha (859 ac) of intact wet meadow habitat. *Lomatium cookii* was known from this unit at the time of listing and continues to occur there (ONHIC 2008). Unit IV8 contains all of the PCEs for *Lomatium cookii* and was identified in the draft recovery plan as part of the Rough and Ready Creek recovery core area (USFWS 2006, pp. IV-11, IV-14). The unit is located on Federal and privately owned land, 2.4 km (1.5 mi) southwest of the city of Cave Junction, 5.3 km (3.3 mi) north of O'Brien, is 140 m (ft) west of the confluence of Woodcock Creek and the West Fork Illinois River, and occurs along a 3.3 km (2.0 mi) stretch of West Side Road. Unit IV7 is 400 m (ft) west of Highway 199 and roughly parallels the highway for 5.0 km (3.1 mi). This unit occurs on 3 percent Federal, 1 percent State, and 96 percent privately owned land.

This unit contains abundant intact wet meadow habitat and includes several populations of *Lomatium cookii*, one of which may include more than 5,000 plants. The habitat occupied by the species is typical moist grassland dominated by the native bunch grasses *Danthonia californica* and *Deschampsia cespitosa*. A 39-ha (97-ac) private property that occurs within the unit is under a conservation easement. Threats that face the PCEs in this unit include woody vegetative succession, rural development, and incompatible agricultural development. Special management considerations or protection may be required to restore, protect, and maintain the PCEs supported by Unit IV8 due to these

threats and potentially from incompatible grazing practices and invasive, nonnative, annual plant species.

Unit IV9: Riverwash

We are proposing to designate Unit IV9 as critical habitat for *Lomatium cookii*. This unit consists of 12 ha (30 ac) of intact wet meadow and streambank habitat. *Lomatium cookii* has been known from this unit since the time of listing (ONHIC 2008). Unit IV9 contains all of the PCEs for *Lomatium cookii* and was identified in the draft recovery plan as part of the Rough and Ready Creek recovery core area (USFWS 2006, pp. IV-11, IV-14). The unit is located 4.2 km (2.6 mi) south of Cave Junction, 6.1 km (3.8 mi) north-northeast of O'Brien, and is located along the east bend of the West Fork Illinois River, 700 m (2,300 ft) south (upstream) of the confluence between Woodcock Creek and the West Fork Illinois River. The land in the unit is 34 percent federally owned, 5 percent State-owned, and 61 percent privately owned.

This unit includes the Danna Lytjen Special Management Area, a property of ODOT. It has been monitored by ODOT periodically since the time it was discovered (D. Sharp, pers. comm. 2009). The population within this unit is smaller (fewer than 50 plants) and occurs in wet meadow habitat alongside a ditch. The primary threats to habitat in this unit are periodic roadside maintenance, vegetative succession, occasional roadside disturbance, and rural development. Special management considerations or protection may be required to restore, protect, and maintain the PCEs supported by Unit IV9 due to threats from agricultural development, incompatible grazing practices, occasional roadside activities, vegetative succession, and rural development.

Unit IV10: French Flat North

We are proposing to designate Unit IV10 as critical habitat for *Lomatium cookii*. This unit consists of 45 ha (110 ac) of intact wet meadow habitat. *Lomatium cookii* has been known from this unit since the time of listing (ONHIC 2008). Unit IV10 contains all of the PCEs for *Lomatium cookii* and was identified in the draft recovery plan as part of the Rough and Ready Creek recovery core area (USFWS 2006, pp. IV-11, IV-14). The unit is located 3.7 km (2.3 mi) south of Cave Junction, 900 m (2,950 ft) north of the intersection of Sherrier Drive and Raintree Drive, 1.7 km (1.1 mi) southwest of the confluence of Althouse Creek and the East Fork Illinois River, and parallels a 300 m (980 ft) stretch of Rockydale Road. The land in this unit is under 22 percent Federal ownership and 78 percent private ownership. A portion of this unit occurs on BLM-managed land (Kaye and Thorpe 2008, p. 1).

The two *Lomatium cookii* populations in this unit occur in open mixed oak–conifer habitat. Aerial imagery suggests that the wet meadow habitat is fragmented, may be slowly degrading, and may require some management to maintain early seral stage vegetation (USDA 2006a). The primary threats to the PCEs in this unit are rural development and vegetative succession.

Special management considerations or protection may be required to restore, protect, and maintain the PCEs supported by Unit IV10 due to threats from rural development and woody vegetative succession.

Unit IV11: Rough and Ready Creek

We are proposing to designate Unit IV11 as critical habitat for *Lomatium cookii*. This unit consists of 61 ha (152 ac) of intact wet meadow habitat. *Lomatium cookii* has been known from this unit since the time of listing (ONHIC 2008). Unit IV11 contains all of the PCEs for *Lomatium cookii* and was identified in the draft recovery plan as part of the Rough and Ready Creek recovery core area (USFWS 2006, pp. IV-11, IV-14). The unit roughly follows along and is adjacent to a 1.9 km (1.2 mi) stretch of Airport Drive, is located 3 km (1.9 mi) north of O'Brien, 900 m (2,950 ft) west of the Rough and Ready Forest Wayside State Park, and is 122 m (400 ft) east of the confluence with the Illinois River and Rough and Ready Creek. The land in this unit is 48 percent federally owned and 52 percent privately owned.

A grouping of *Lomatium cookii* patches has been monitored within this unit for over 10 years (Kaye and Thorpe 2008, p. 26). Although the population is stable and not considered a large population, it appears to be resilient to various ORV threats and alterations in hydrology.

Threats present at this unit are in the form of ORVs, nonnative invasive forbs, alteration in hydrology caused by roadside maintenance, and natural succession. Special management considerations or protection may be required to restore, protect, and maintain the PCEs supported by Unit IV11 due to these threats.

Unit IV12: French Flat Middle

We are proposing to designate Unit IV12 as critical habitat for *Lomatium cookii*. This unit consists of 617 ha (1,524 ac) of intact wet meadow habitat. The unit has been occupied by *Lomatium cookii* since the time of listing. Unit IV12 contains all of the PCEs for *Lomatium cookii* and was identified in the draft recovery plan as the French Flat recovery core area (USFWS 2006, pp. IV-11, IV-14). The unit is located 4.5 km (2.8 mi) east of Cave Junction, 3.7 km (2.3 mi) northeast of O'Brien, 140 m (460 ft) north of Esterly Lakes, 1.4 km (0.9 mi) northeast of Indian Hill, 300 m (960 ft) east of the confluence of Rough and Ready Creek and the West Fork Illinois River, and follows along a 5.0 km (3.1 mi) stretch of Rockydale Road. Land within the unit is under 45 percent Federal ownership and 55 percent private ownership.

This unit contains some of the largest areas of intact wet meadow habitat within the Illinois Valley. Several *Lomatium cookii* populations occur within this unit. Two of the *Lomatium cookii* populations in the unit, each in excess of 40,000 individuals, have been closely monitored on BLM land for over 10 years (Kaye and Thorpe 2008, pp. 16–25). Although the populations are robust and dense compared to other locations, the rate of growth has been declining and plants may be slowly succumbing to various naturally caused threats, including woody vegetative succession and vole herbivory (Kaye and Thorpe 2008, pp. 16–25).

Threats commonly observed within this unit are: illegal ORV use; vandalism (related to ORV use); garbage dumping; mining; woody vegetative succession; substantial rodent herbivory on *Lomatium cookii* plants (voles); and competition with invasive, nonnative annual plant species. Several other *Lomatium cookii* populations that occur within this unit are not closely monitored. Therefore, special management considerations or protection may be required to restore, protect, and maintain the PCEs supported by Unit IV12 due to the threats described above.

Unit IV13: Indian Hill

We are proposing to designate Unit IV13 as critical habitat for *Lomatium cookii*. This unit consists of 18 ha (45 ac) of intact wet meadow habitat. It has been occupied by *Lomatium cookii* since the time of listing. Unit IV13 contains all of the PCEs for *Lomatium cookii*, and was identified in the draft recovery plan as the Indian Hill recovery core area (USFWS 2006, pp. IV-11, IV-14). The unit is adjacent to and lies east of a 900 m (2,950 ft) stretch of the West Fork Illinois River, located approximately 300 m south (upstream) of the confluence of Rough and Ready

Creek and the West Fork Illinois River. The unit is 1.8 km (1.1 mi) northeast of O'Brien and is 350 m (1,150 ft) northwest of Indian Hill. The land within this unit is 83 percent federally owned and 17 percent privately owned.

This unit contains a comma-shaped wet meadow supporting one *Lomatium cookii* population in excess of 9,000 plants. *Lomatium cookii* has been closely monitored in this unit for over 10 years (Kaye and Thorpe 2008, p 28). Although this population appears to be threatened by succession of woody vegetation and herbivory by voles, population monitoring indicates the population is stable.

Special management considerations or protection may be required to restore, protect, and maintain the PCEs supported by Unit IV6 due to threats from natural woody vegetative succession and vole herbivory.

Unit IV14: Waldo

We are proposing to designate Unit IV14 as critical habitat for *Lomatium cookii*. This unit consists of 40 ha (100 ac) of intact wet meadow habitat. This unit is presently occupied by the species and was occupied at the time of listing. Unit IV14 contains all of the PCEs for *Lomatium cookii* and was identified in the draft recovery plan as the French Flat recovery core area (USFWS 2006, pp. IV-11, IV-14). The unit is located 3.4 km (2.1 mi) east-southeast O'Brien, 230 m (750 ft) west of Waldo, 2.4 km (1.5 mi) southeast of Indian Hill, and is 1.5 km (0.9 mi) southwest of Esterly Lakes. The land within this unit is under 59 percent Federal ownership and 41 percent private ownership.

This unit includes a single *Lomatium cookii* population on BLM-managed land that has not been visited since 1998. Aerial imagery suggests that the open mixed oak-conifer habitat in the unit includes patchy wet meadows and appears to be threatened by succession of natural woody vegetation succession and mineral mining. Aerial imagery suggests that the wet meadow habitat, as of 2006, is slowly becoming degraded and may require some management to maintain early seral stage vegetation (USDA 2006a). The primary threats to the habitat in this unit are mining and natural vegetation succession.

Special management considerations or protection may be required to restore, protect, and maintain the PCEs supported by Unit IV14 due to threats from woody vegetative succession and mineral mining.

Tables 1 and 2 provide a summary of the approximate area (ha and ac) of units in Jackson County by Federal, State, county, municipal, and private ownership determined to meet the definition of critical habitat for *Limnanthes floccosa* ssp. *grandiflora* and *Lomatium cookii*. Table 3 provides a summary of the approximate area (ha/ac) of units for *Lomatium cookii* in Josephine County by Federal, State, and private ownership determined to meet the definition of critical habitat.

TABLE 1—CRITICAL HABITAT UNITS AND OWNERSHIP IN HECTARES (ACRES) FOR *Limnanthes floccosa* SSP. *grandiflora* IN JACKSON COUNTY, OREGON (ALL TOTALS ARE ROUNDED).

Critical Habitat Unit	Private	Municipal	County	State	Federal	Total Area
Shady Cove (RV1)	8 (20)					8 (20)
Hammel Road (RV2)	84 (207)	.....	.....	.....	.....	84 (207)
North Eagle Point (RV3A-D)	539 (1,331)	.....	.....	.....	.....	539 (1,331)
Rogue Plains (RV4)	244.5 (604)	.....	0.5 (1)	.....	.....	245 (605)
Table Rock Terrace (RV5)	49 (121.5)	.....	.....	.....	.....	49 (122)
White City (RV6A-H)	447 (1,104)	87 (214)	68 (168)	246 (609)	.....	848 (2,095)
Agate Lake (RV7)	397 (981.5)	.....	.....	.....	29 (71)	426 (1,053)
Whetstone Creek (RV8)	290 (719.5)	37 (91.5)	0.2 (0.5)	34 (84)	.....	362 (896)
Total Area	2,059.5 (5,088)	124 (306)	69 (170)	279.5 (691)	29 (71)	2,561 (6,327)

TABLE 2—CRITICAL HABITAT UNITS AND OWNERSHIP IN HECTARES (ACRES) FOR *Lomatium cookii* IN JACKSON COUNTY, OREGON (TOTALS ARE ROUNDED).

Critical Habitat Unit	Private	Municipal	County	State	Federal	Total Area
White City (RV6A, F, G, H)	324 (802)	87 (214)	56 (138)	141 (349)	.....	608 (1,503)
Whetstone Creek (RV8)	291 (719.5)	37 (91.5)	0.2 (0.5)	34 (84)	.....	362 (895.5)
Medford Airport (RV9A-B)	3 (8)	0.4 (1)	73 (180)	.....	.....	76 (190)
Total Area	620 (1,532)	124.4 (307)	129.2 (319)	174 (430)	.....	1,046 (2,589)

TABLE 3—CRITICAL HABITAT UNITS AND OWNERSHIP IN HECTARES (ACRES) FOR *Lomatium cookii* IN JOSEPHINE COUNTY, OREGON (TOTALS ARE ROUNDED).

Critical Habitat Unit	Private	State	Federal	Total Area
Anderson Creek (IV1)	53.4 (131.9)	.....	.....	53 (132)

TABLE 3—CRITICAL HABITAT UNITS AND OWNERSHIP IN HECTARES (ACRES) FOR *Lomatium cookii* IN JOSEPHINE COUNTY, OREGON (TOTALS ARE ROUNDED).—Continued

Critical Habitat Unit	Private	State	Federal	Total Area
Draper Creek (IV2)	39.4 (97.3)	.....	.....	39 (97)
Reeves Creek North (IV3)	44 (109)	.....	61 (151)	105 (260)
Reeves Creek East (IV4)	33 (81.4)	.....	36 (88.5)	69 (170)
Reeves Creek South (IV5)	55 (137)	.....	103 (254)	158 (391)
Laurel Road (IV6A-B)	192.8 (476)	4 (10)	12 (29.5)	209 (516)
Illinois River Forks State Park (IV7)	17 (42)	24.8 (60)	13.8 (34)	55 (136)
Woodcock Mountain (IV8)	336.9 (832.5)	.....	10.7 (26.5)	348 (859)
Riverwash (IV9)	7.4 (18.3)	0.6 (1.5)	4.1 (10.2)	12 (30)
French Flat North (IV10)	34.8 (86)	.....	9.8 (24.3)	45 (110)
Rough and Ready Creek (IV11)	31.6 (78)	.....	29.7 (73.5)	61 (152)
French Flat Middle (IV12)	351.5 (868.6)	.....	277.2 (685)	617 (1,524)
Indian Hill (IV12)	3.1 (7.7)	.....	15.1 (37.3)	18 (45)
Waldo (IV14)	16.4 (40.6)	.....	28.9 (59)	40 (100)
Total Area	1,215.9 (3,006.3)	29.4 (71.5)	601.3 (1,472.8)	1829 (4,521)

Effects of Critical Habitat Designation

Section 7 Consultation

Section 7(a)(2) of the Act requires Federal agencies, including the Service, to ensure that actions they fund, authorize, or carry out are not likely to destroy or adversely modify critical habitat. However, decisions by the courts of appeals for the Fifth and Ninth Circuits have invalidated our regulatory definition of ''destruction or adverse modification'' (50 CFR 402.02) (see *Gifford Pinchot Task Force v. U.S. Fish and Wildlife Service*, 378 F. 3d 1059 (9th Cir 2004) and *Sierra Club* v. *U.S. Fish and Wildlife Service et al.*, 245 F.3d 434, 442F (5th Cir 2001)). Instead, we rely upon the statutory provisions of the Act to make that determination. Under the statutory provisions of the Act, the key factor in determining whether an action will destroy or adversely modify critical habitat is whether, with implementation of the proposed Federal action, the affected critical habitat would remain functional (or retain those PCEs that relate to the ability of the area to support the species) to serve its intended conservation role for the species.

Section 7(a) of the Act requires Federal agencies, including the Service, to evaluate their actions with respect to any species that is proposed or listed as endangered or threatened and with respect to its critical habitat, if any is proposed or designated. Regulations implementing this interagency cooperation provision of the Act are codified at 50 CFR part 402.

Section 7(a)(4) of the Act requires Federal agencies to confer with the Service on any action that is likely to jeopardize the continued existence of a species proposed for listing or result in destruction or adverse modification of proposed critical habitat. This is a procedural requirement only, as any conservation recommendations in a conference report or opinion are strictly advisory. However, once proposed species become listed, or proposed critical habitat is designated as final, the full prohibitions of section 7(a)(2) of the Act apply to any Federal action. The primary utility of the conference procedures is to maximize the opportunity for a Federal agency to adequately consider proposed species and critical habitat and avoid potential delays in implementing their proposed action as a result of the section 7(a)(2) compliance process, should those species be listed or the critical habitat designated.

We may conduct conferences either informally or formally. We typically use informal conferences as a means of providing advisory conservation recommendations to assist the agency in eliminating conflicts that the proposed action may cause with respect to the proposed critical habitat. We typically use formal conferences when the Federal agency or the Service believes the proposed action is likely to adversely affect a species proposed for listing or degrade proposed critical habitat in some manner.

We generally provide the results of an informal conference in a conference report, while we provide the results of a formal conference in a conference opinion. We typically prepare conference opinions on proposed critical habitat in accordance with procedures contained at 50 CFR 402.14, as if the proposed critical habitat was already designated. If no substantial new information or changes in the action alter the content of the opinion, we may adopt the conference opinion as the biological opinion when the critical habitat is designated (see 50 CFR 402.10(d)).

If a species is listed or critical habitat is designated, section 7(a)(2) of the Act requires Federal agencies to ensure that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of such a species or to destroy or adversely modify its critical habitat. Activities on State, tribal, local, or private lands requiring a Federal permit (such as a permit from the U.S. Army Corps of Engineers under section 404 of the Clean Water Act (33 U.S.C. 1251 *et seq.*) or a permit from us under section 10 of the Act) or involving some other Federal action (such as funding from the Federal Highway

Administration, Federal Aviation Administration, or the Federal Emergency Management Agency) are subject to the section 7(a)(2) consultation process. Federal actions not affecting listed species or critical habitat, and actions on State, tribal, local, or private lands that are not federally funded, authorized, or permitted, do not require section 7(a)(2) consultations.

If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency (action agency) must enter into consultation with us. At the conclusion of this consultation, the Service will issue either:

(1) a concurrence letter for Federal actions that may affect, but are not likely to adversely affect, listed species or critical habitat; or

(2) a biological opinion for Federal actions that may affect, but are likely to adversely affect, listed species or critical habitat.

If we issue a biological opinion concluding that a project is likely to result in jeopardy to a listed species or the destruction or adverse modification of critical habitat, we also provide reasonable and prudent alternatives to the project, if any are identifiable, to avoid these outcomes. We define ''reasonable and prudent alternatives'' at 50 CFR 402.02 as alternative actions identified during consultation that:

- Can be implemented in a manner consistent with the intended purpose of the action,
- Can be implemented consistent with the scope of the Federal agency's legal authority and jurisdiction,
- Are economically and technologically feasible, and
- Would, in the Director's opinion, avoid jeopardizing the continued existence of the listed species or destroying or adversely modifying critical habitat.

Reasonable and prudent alternatives can vary from slight project modifications to extensive redesign or relocation of the project. Costs associated with implementing a reasonable and prudent alternative are similarly variable.

Regulations at 50 CFR 402.16 require Federal agencies to reinitiate consultation on previously reviewed actions in instances where a new species is listed or critical habitat is subsequently designated that may be affected and the Federal agency has retained discretionary involvement or control over the action. Consequently, some Federal agencies may need to request reinitiation of consultation with us on actions for which formal consultation has been completed, if those actions with discretionary involvement may affect subsequently listed species or designated critical habitat.

Application of the Jeopardy and Adverse Modification Standards

Jeopardy Standard

Currently, the Service applies an analytical framework for *Limnanthes floccosa* ssp. *grandiflora* and *Lomatium cookii* jeopardy analyses that relies heavily on the importance of known populations to the species' survival and recovery. The section 7(a)(2) of the Act analysis is focused not only on these populations but also on the habitat conditions necessary to support them.

The jeopardy analysis usually expresses the survival and recovery needs of *Limnanthes floccosa* ssp. *grandiflora* and *Lomatium cookii* in a qualitative fashion without making distinctions between what is necessary for survival and what is necessary for recovery. Generally, the jeopardy analysis focuses on the range-wide statuses of *L. f.* ssp. *grandiflora* and *Lomatium cookii*, respectively, the factors responsible for that condition, and what is necessary for each species to survive and recover. An emphasis is also placed on characterizing the conditions of *L. f.* ssp. *grandiflora* and *Lomatium cookii* in the area affected by the proposed Federal action and the role of affected populations in the survival and recovery of *L. f.* ssp. *grandiflora* and *Lomatium cookii*. That context is then used to determine the significance of adverse and beneficial effects of the proposed Federal action and any cumulative effects for purposes of making the jeopardy determination.

Adverse Modification Standard

The key factor related to the adverse modification determination is whether, with implementation of the proposed Federal action, the affected critical habitat would continue to serve its intended conservation role for the species. Generally, the conservation role of *Limnanthes floccosa* ssp. *grandiflora* and *Lomatium cookii* critical habitat units is to support the various life-history needs and provide for the conservation of the species. Activities that may destroy or adversely modify critical habitat are those that alter the PCEs to an extent that appreciably reduces the conservation value of critical habitat for *L. f.* ssp. *grandiflora* and *Lomatium cookii*.

Section 4(b)(8) of the Act requires us to briefly evaluate and describe in any proposed or final regulation that designates critical habitat those activities involving a Federal action that may destroy or adversely modify such habitat, or that may be affected by such designation. Activities that may destroy or adversely modify critical habitat may also jeopardize the continued existence of the species.

Activities that, when carried out, funded, or authorized by a Federal agency, may affect critical habitat and therefore result in consultation for *Limnanthes floccosa* ssp. *grandiflora* and *Lomatium cookii* include, but are not limited to:

(1) Actions that would result in ground disturbance to vernal pool–mounded prairie and seasonally wet meadow habitat. Such activities could include, but are not limited to: residential or recreational development, ORV activity, dispersed recreation, new road construction or widening, existing road maintenance, and incompatible grazing practices (such as grazing during the winter, when pools are wet and most likely to be subjected to disruption of the underlying clay layer). These activities could cause direct loss of *Limnanthes floccosa* ssp. *grandiflora* and *Lomatium cookii*-occupied areas, and affect vernal pools and wet meadows by damaging or eliminating habitat, altering soil composition due to increased erosion, and increasing densities of nonnative plant species.

In addition, changes in soil composition may lead to changes in the vegetation composition, such as growth of shrub cover resulting in decreased density or vigor of individual *Limnanthes floccosa* ssp. *grandiflora* and *Lomatium cookii* plants. These activities may also lead to changes in water flows and inundation periods that would degrade, reduce, or eliminate the habitat necessary for the growth and reproduction of *L. f.* ssp. *grandiflora* and *Lomatium cookii*.

(2) Actions that would significantly alter the hydrological regime of the vernal pool–mounded prairie and wet meadow habitat. Such activities could include residential or recreational development adjacent to meadows, ORV activity, dispersed recreation, new road construction or widening, and existing road maintenance. These activities could alter surface soil layers and hydrological regime in a manner that promotes loss of soil matrix components and moisture necessary to support the growth and reproduction of *Limnanthes floccosa* ssp. *grandiflora* and *Lomatium cookii*.

(3) Actions that would significantly reduce pollination or seed set (reproduction). Such activities could include, but are not limited to,

residential or recreational development, and grazing or mowing prior to seed set. These activities could prevent reproduction by removal or destruction of reproductive plant parts.

We consider all of the units proposed as critical habitat to contain the physical and biological features essential to the conservation of *Limnanthes floccosa* ssp. *grandiflora* and *Lomatium cookii*. All units are within the geographic range of the species and, with the possible exception of unit RV1, which has not been surveyed recently, are currently occupied by either *L. f.* ssp. *grandiflora* or *Lomatium cookii* or both. To ensure that their actions do not jeopardize the continued existence of *L. f.* ssp. *grandiflora* and *Lomatium cookii*, Federal agencies already consult with us on activities in areas currently occupied by the two plant species, or in unoccupied areas if the species may be affected by the action.

Exemptions

Application of Section 4(a)(3) of the Act

The Sikes Act Improvement Act of 1997 (Sikes Act) (16 U.S.C. 670a) required each military installation that includes land and water suitable for the conservation and management of natural resources to complete an integrated natural resources management plan (INRMP) by November 17, 2001. An INRMP integrates implementation of the military mission of the installation with stewardship of the natural resources found on the base. Each INRMP includes:

- An assessment of the ecological needs on the installation, including the need to provide for the conservation of listed species;
- A statement of goals and priorities;
- A detailed description of management actions to be implemented to provide for these ecological needs; and
- A monitoring and adaptive management plan.

Among other things, each INRMP must, to the extent appropriate and applicable, provide for fish and wildlife management; fish and wildlife habitat enhancement or modification; wetland protection, enhancement, and restoration where necessary to support fish and wildlife; and enforcement of applicable natural resource laws.

The National Defense Authorization Act for Fiscal Year 2004 (Public Law No. 108-136) amended the Endangered Species Act to limit areas eligible for designation as critical habitat. Specifically, section 4(a)(3)(B)(i) of the Act (16 U.S.C. 1533(a)(3)(B)(i)) now provides: ''The Secretary shall not designate as critical habitat any lands or other geographical areas owned or controlled by the Department of Defense, or designated for its use, that are subject to an integrated natural resources management plan prepared under section 101 of the Sikes Act (16 U.S.C. 670a), if the Secretary determines in writing that such plan provides a benefit to the species for which critical habitat is proposed for designation.''

There are no Department of Defense lands with a completed INRMP within the proposed critical habitat designation. Therefore, there are no specific lands that meet the criteria for being exempted from the designation of critical habitat pursuant to section 4(a)(3) of the Act.

Exclusions

Application of Section 4(b)(2) of the Act

Section 4(b)(2) of the Act states that the Secretary must designate or make revisions to critical habitat on the basis of the best available scientific data after taking into consideration the economic impact, national security impact, and any other relevant impacts of specifying any particular area as critical habitat. The Secretary may exclude an area from critical habitat if he determines that the benefits of such exclusion outweigh the benefits of specifying such area as part of the critical habitat, unless he determines, based on the best scientific data available, that the failure to designate such area as critical habitat will result in the extinction of the species. In making that determination, the legislative history is clear that the Secretary has broad discretion regarding which factor(s) to use and how much weight to give to any factor.

Under section 4(b)(2) of the Act, in considering whether to exclude a particular area from the designation, we must identify the benefits of including the area in the designation, identify the benefits of excluding the area from the designation, and determine whether the benefits of exclusion outweigh the benefits of inclusion. If, based on this analysis, we determine that the benefits of exclusion outweigh the benefits of inclusion, we can exclude the area only if such exclusion would not result in the extinction of the species.

Under section 4(b)(2) of the Act, we must consider all relevant impacts, including economic impacts. In addition to economic impacts, we consider a number of factors in a section 4(b)(2) analysis. For example, we consider whether there are lands owned by the Department of Defense (DOD) where a national security impact might exist. We also consider whether landowners or other public agencies have developed any Habitat Conservation Plans (HCPs) for the area, or whether there are conservation partnerships that would be encouraged or discouraged by designation of, or exclusion from, critical habitat in an area. In addition, we look at the presence of tribal lands or Tribal Trust resources that might be affected, and consider the government-to-government relationship of the United States with the tribal entities. We also consider any social impacts that might occur because of the designation. To ensure our final determination is based on the best available information, we are inviting comments on any foreseeable economic, national security, or other potential impacts resulting from this proposed designation of critical habitat from governmental, business, or private interests, and in particular, any potential impacts on small entities.

We are aware of several draft and one final management plan on lands owned by public agencies. We will consider for exclusion under section 4(b)(2) of the Act any existing management plans located within proposed critical habitat units, including the BOR Agate Lake Management Plan, any State agency management plans, management plans on any Medford District BLM locations occupied by *Lomatium cookii*, and other privately or publicly managed lands about which we receive more information during the 60–day comment period.

We are preparing an analysis of the potential economic impacts of the proposed designation of critical habitat for *Limnanthes floccosa* ssp. *grandiflora* and *Lomatium cookii*. We will announce the availability of the draft economic analysis as soon as it is completed, at which time we will seek public review and comment. At that time, copies of the draft economic analysis will be available for downloading from the Internet at *http://www.regulations.gov*, or from the Oregon Fish and Wildlife Office (see **FOR FURTHER INFORMATION CONTACT**). We may exclude areas from the final rule based on the information in the economic analysis.

At this time, we are not proposing any specific exclusions of areas from critical habitat under section 4(b)(2) of the Act for *Limnanthes floccosa* ssp. *grandiflora* and *Lomatium cookii*. We will consider any available information about areas covered by conservation or management plans that we should consider for exclusion from the designation under section 4(b)(2) of the Act including whether the benefit of exclusion of

those lands would outweigh the benefits of their inclusion. We specifically request any information on any operative or draft habitat conservation plans for *L. f.* ssp. *grandiflora* and *Lomatium cookii* that have been prepared under section 10(a)(1)(B) of the Act, or any other management or other conservation plans or agreements that benefits either plant or their PCEs.

Peer Review

In accordance with our joint policy published in the **Federal Register** on July 1, 1994 (59 FR 34270), we are obtaining the expert opinions of at least three appropriate and independent specialists regarding this proposed rule. The purpose of peer review is to ensure that our critical habitat designation is based on scientifically sound data, assumptions, and analyses. We have invited these peer reviewers to comment during this public comment period on our specific assumptions and conclusions in this proposed designation of critical habitat.

We will consider all comments and information we receive during this comment period on this proposed rule during our preparation of a final determination. Accordingly, our final decision may differ from this proposal.

Public Hearings

The Act provides for one or more public hearings on this proposal, if any request for public hearings is received within 45 days of publication of this proposal. Send your request to the address listed in **FOR FURTHER INFORMATION CONTACT**. We will schedule public hearings on this proposal, if any are requested, and announce the dates, times, and places of those hearings, as well as how to obtain reasonable accommodations, in the **Federal Register** and local newspapers at least 15 days before the first hearing.

Required Determinations

Regulatory Planning and Review

The Office of Management and Budget (OMB) has determined that this rule is not significant under Executive Order (E.O.) 12866. OMB bases its determination upon the following four criteria:

1. Whether the rule will have an annual effect of $100 million or more on the economy or adversely affect an economic sector, productivity, jobs, the environment, or other units of the government.

2. Whether the rule will create inconsistencies with other Federal agencies' actions.

3. Whether the rule will materially affect entitlements, grants, user fees, loan programs, or the rights and obligations of their recipients.

4. Whether the rule raises novel legal or policy issues.

Regulatory Flexibility Act (5 U.S.C. 601 et seq.)

Under the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*, as amended by the Small Business Regulatory Enforcement Fairness Act (SBREFA) of 1996), whenever an agency is required to publish a notice of rulemaking for any proposed or final rule, it must prepare and make available for public comment a regulatory flexibility analysis that describes the effects of the rule on small entities (such as small businesses, small organizations, and small government jurisdictions). However, no regulatory flexibility analysis is required if the head of the agency certifies the rule will not have a significant economic impact on a substantial number of small entities. The SBREFA amended the Regulatory Flexibility Act (RFA) to require Federal agencies to provide a statement of the factual basis for certifying that the rule will not have a significant economic impact on a substantial number of small entities.

At this time, the Service lacks the available economic information necessary to provide an adequate factual basis for the required RFA finding. Therefore, the RFA finding is deferred until completion of the draft economic analysis prepared pursuant to section 4(b)(2) of the Act and E.O. 12866. This draft economic analysis will provide the required factual basis for the RFA finding. Upon completion of the draft economic analysis, the Service will publish a notice of availability of the draft economic analysis of the proposed designation and reopen the public comment period for the proposed designation. The Service will include with the notice of availability, as appropriate, an initial regulatory flexibility analysis or a certification that the rule will not have a significant economic impact on a substantial number of small entities accompanied by the factual basis for that determination. The Service has concluded that deferring the RFA finding until completion of the draft economic analysis is necessary to meet the purposes and requirements of the RFA. Deferring the RFA finding in this manner will ensure that the Service makes a sufficiently informed determination based on adequate economic information and provides the necessary opportunity for public comment.

Unfunded Mandates Reform Act (2 U.S.C. 1501 et seq.)

In accordance with the Unfunded Mandates Reform Act (2 U.S.C. 1501), the Service makes the following findings:

(a) This rule will not produce a Federal mandate. In general, a Federal mandate is a provision in legislation, statute, or regulation that would impose an enforceable duty upon State, local, tribal governments, or the private sector and includes both ''Federal intergovernmental mandates'' and ''Federal private sector mandates.'' These terms are defined in 2 U.S.C. 658(5)-(7). ''Federal intergovernmental mandate'' includes a regulation that ''would impose an enforceable duty upon State, local, or tribal governments'' with two exceptions. It excludes ''a condition of Federal assistance.'' It also excludes ''a duty arising from participation in a voluntary Federal program,'' unless the regulation ''relates to a then-existing Federal program under which $500,000,000 or more is provided annually to State, local, and tribal governments under entitlement authority,'' if the provision would ''increase the stringency of conditions of assistance'' or ''place caps upon, or otherwise decrease, the Federal Government's responsibility to provide funding,'' and the State, local, or tribal governments ''lack authority'' to adjust accordingly. At the time of enactment, these entitlement programs were: Medicaid; AFDC work programs; Child Nutrition; Food Stamps; Social Services Block Grants; Vocational Rehabilitation State Grants; Foster Care, Adoption Assistance, and Independent Living; Family Support Welfare Services; and Child Support Enforcement. ''Federal private sector mandate'' includes a regulation that ''would impose an enforceable duty upon the private sector, except (i) a condition of Federal assistance or (ii) a duty arising from participation in a voluntary Federal program.''

The designation of critical habitat does not impose a legally binding duty on non-Federal government entities or private parties. Under the Act, the only regulatory effect is that Federal agencies must ensure that their actions do not destroy or adversely modify critical habitat under section 7. While non-Federal entities that receive Federal funding, assistance, or permits, or that otherwise require approval or authorization from a Federal agency for an action, may be indirectly affected by the designation of critical habitat, the legally binding duty to avoid destruction or adverse modification of

critical habitat rests squarely on the Federal agency. Furthermore, to the extent that non-Federal entities are indirectly affected because they receive Federal assistance or participate in a voluntary Federal aid program, the Unfunded Mandates Reform Act would not apply; nor would critical habitat shift the costs of the large entitlement programs listed above on to State governments.

(b) We do not believe that this rule will significantly or uniquely affect small governments because small governments will be affected only to the extent that any programs having Federal funds, permits, or other authorized activities must ensure that their actions will not adversely affect the critical habitat. Therefore, a Small Government Agency Plan is not required. However, as we conduct our economic analysis, we will further evaluate this issue and revise this assessment if appropriate.

Takings

In accordance with E.O. 12630 (Government Actions and Interference with Constitutionally Protected Private Property Rights), we have analyzed the potential takings implications of designating critical habitat for each of the two species in a takings implications assessment. The takings implications assessment concludes that this designation of critical habitat for *Limnanthes floccosa* ssp. *grandiflora* and *Lomatium cookii* does not pose significant takings implications for lands within or affected by the proposed designation.

Federalism

In accordance with E.O. 13132 (Federalism), this proposed rule does not have significant Federalism effects. A Federalism assessment is not required. In keeping with Department of the Interior policy, we requested information from, and coordinated development of, this proposed critical habitat designation with appropriate State resource agencies in Oregon. The designation of critical habitat for *Limnanthes floccosa* ssp. *grandiflora* and *Lomatium cookii* would impose no additional restrictions to those currently in place and, therefore, would have little incremental impact on State and local governments and their activities. The designation may have some benefit to these governments because the areas that contain the features essential for the conservation of the species would be more clearly defined, and the primary constituent elements of the habitat necessary to the conservation of the species would be specifically identified. This information would not alter where and what federally sponsored activities may occur. However, it may assist local governments in long-range planning (rather than having them wait for case-by-case section 7 consultations to occur).

Civil Justice Reform

In accordance with E.O. 12988 (Civil Justice Reform), the Office of the Solicitor has determined that the rule does not unduly burden the judicial system and that it meets the requirements of sections 3(a) and 3(b)(2) of the Order. We have issued this proposed critical habitat designation in accordance with the provisions of the Act. This proposed rule identifies the primary constituent elements within the designated areas to assist the public in understanding the habitat needs of each of the species being considered in this proposed rule.

Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.)

This rule does not contain any new collections of information that require approval by OMB under the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 *et seq.*). This rule will not impose recordkeeping or reporting requirements on State or local governments, individuals, businesses, or organizations. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number.

National Environmental Policy Act (NEPA)

It is our position that, outside the jurisdiction of the United States Court of Appeals for the Tenth Circuit, we do not need to prepare environmental analyses as defined by NEPA (42 U.S.C. 4321 *et seq.*) in connection with designating critical habitat under the Act. We published a notice outlining our reasons for this determination in the **Federal Register** on October 25, 1983 (48 FR 49244). This position was upheld by the United States Court of Appeals for the Ninth Circuit (Douglas County v. Babbitt, 48 F.3d 1495 (9th Cir. 1995), cert. denied 516 U.S. 1042 (1996)).

Clarity of the Rule

We are required by E.O. 12866 and 12988 and by the Presidential Memorandum of June 1, 1998, to write all rules in plain language. This means that each rule we publish must:

(a) Be logically organized;

(b) Use the active voice to address readers directly;

(c) Use clear language rather than jargon;

(d) Be divided into short sections and sentences; and

(e) Use lists and tables wherever possible.

If you feel that we have not met these requirements, send us comments by one of the methods listed in the **ADDRESSES** section. To better help us revise the rule, your comments should be as specific as possible. For example, you should tell us the numbers of the sections or paragraphs that are unclearly written, which sections or sentences are too long, the sections where you feel lists or tables would be useful, etc.

Government-to-Government Relationship with Tribes

In accordance with the President's memorandum of April 29, 1994, Government-to-Government Relations with Native American Tribal of the Interior's manual at 512 DM 2, we readily acknowledge our responsibility to communicate meaningfully with recognized Federal tribes on a government-to-government basis. In accordance with Secretarial Order 3206 of June 5, 1997 (American Indian Tribal Rights, Federal-Tribal Trust Responsibilities, and the Endangered Species Act), we readily acknowledge our responsibilities to work directly with tribes in developing programs for healthy ecosystems, to acknowledge that tribal lands are not subject to the same controls as Federal public lands, to remain sensitive to Indian culture, and to make information available to tribes. We have determined that there are no tribal lands that were occupied by *Limnanthes floccosa* ssp. *grandiflora* and *Lomatium cookii* at the time of listing that contain the features essential for the conservation of the species, and no tribal lands that are in unoccupied areas that are essential for the conservation of the species. Therefore, this proposed designation of critical habitat does not involve any tribal lands.

Energy Supply, Distribution, or Use

Executive Order 13211 (Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use) requires agencies to prepare Statements of Energy Effects when undertaking certain actions. This proposed rule to designate critical habitat for *Limnanthes floccosa* ssp. *grandiflora* and *Lomatium cookii* is not expected to significantly affect energy supplies, distribution, or use. Therefore, this action is not a significant energy action, and no Statement of Energy Effects is required. However, we will further evaluate this issue as we

conduct our economic analysis, and revise this assessment as warranted.

References Cited

A complete list of all references cited in this rulemaking is available upon request from the State Supervisor, Oregon Fish and Wildlife Office (see **FOR FURTHER INFORMATION CONTACT** section) or from *http://www.regulations.gov*.

Author(s)

The primary authors of this document are the staff of the Roseburg Field Office of the Oregon Fish and Wildlife Office.

List of Subjects in 50 CFR Part 17

Endangered and threatened species, Exports, Imports, Reporting and recordkeeping requirements, Transportation.

Proposed Regulation Promulgation

Accordingly, we propose to amend part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, as set forth below:

PART 17—[AMENDED]

1. The authority citation for part 17 continues to read as follows:

Authority: 16 U.S.C. 1361–1407; 16 U.S.C. 1531–1544; 16 U.S.C. 4201–4245; Pub. L. 99–625, 100 Stat. 3500; unless otherwise noted.

2. In § 17.12(h), revise the entries for *Limnanthes floccosa* ssp. *grandiflora* and *Lomatium cookii* under ''FLOWERING PLANTS'' in the List of Endangered and Threatened Plants to read as follows:

§ 17.12 Endangered and threatened plants.

* * * * *

(h) * * *

Species		Historic range	Family	Status	When listed	Critical habitat	Special rules
Scientific name	Common name						
Flowering Plants							
*	*	*	*	*	*	*	
Limnanthes floccosa ssp. *grandiflora*	large-flowered woolly meadowfoam	U.S.A. (OR)	Limnanthaceae	E	733	17.96(a)	NA
*	*	*	*	*	*	*	
Lomatium cookii	Cook's lomatium (Cook's desert parsley)	U.S.A. (OR)	Apiaceae	E	733	17.96(a)	NA
*	*	*	*	*	*	*	

* * * * *

3. Amend § 17.96(a) by adding an entry for ''*Lomatium cookii*'' in alphabetical order under Family Apiaceae and by adding an entry for ''*Limnanthes floccosa* ssp. *grandiflora*'' in alphabetical order under Family Limnanthaceae to read as follows:

§ 17.96 Critical habitat—plants.

* * * * *

(a) *Flowering plants.*

* * * * *

Family Apiaceae: Lomatium cookii (Cook's lomatium)

(1) Critical habitat units for *Lomatium cookii* are depicted for Jackson and Josephine Counties, Oregon, on the maps below.

(2) The primary constituent elements for *Lomatium cookii* are:

(i) In the Agate Desert, vernal pools and ephemeral wetlands and the adjacent upland margins of these depressions that hold water for a sufficient length of time to sustain *Lomatium cookii* germination, growth, and reproduction. These vernal pools or ephemeral wetlands support native plant populations and are seasonally inundated during wet years but do not necessarily fill with water every year due to natural variability in rainfall. Areas of sufficient size and quality are likely to have the following characteristics:

(A) Elevations from 372 to 411 m (1,220 to 1,350 ft);

(B) Associated dominant native plants including, not limited to: *Alopecurus geniculatus, Deschampsia danthonioides*, *Eryngium petiolatum, Lasthenia californica, Myosurus minimus, Navarretia leucocephala* ssp. *leucocephala, Phlox gracilis, Plagiobothrys bracteatus*, *Trifolium depauperatum*, and *Triteleia hyacinthina*; and

(C) A minimum area of 8 ha (20 ac) to provide intact hydrology and protection from development and weed sources.

(ii) In the Illinois River Valley, wet meadows in Oregon Oak and pine forests that are seasonally inundated and support native plant populations. Areas of sufficient size and quality are likely to have the following characteristics:

(A) Elevations between from 383 to 488 m (1,256 to 1,600 ft);

(B) Associated dominant native plants including, not limited to *Achnatherum lemmonii, Camassia* spp.*, Danthonia californica*, *Deschampsia cespitosa, Festuca roemeri*, *Poa secunda, Ranunculus occidentalis*, and *Limnanthes gracilis* var. *gracilis*;

(C) Occur primarily in bottomland *Quercus garryana–Quercus kelloggii–Pinus ponderosa* (Oregon white oak–California black oak–ponderosa pine) forest openings along seasonal creeks; and

(D) A minimum area of 12 ha (30 ac) to provide intact hydrology and protection from development and weed sources.

(iii) In the Agate Desert, the hydrologically and ecologically functional system of interconnected pools or ephemeral wetlands or depressions within a matrix of surrounding uplands that together form vernal pool complexes within the greater watershed. The associated features may include the pool basin and ephemeral wetlands; an intact hardpan subsoil underlying the surface soils up to 0.75 m (2.5 ft); and surrounding uplands, including mound topography and other geographic and edaphic features that support systems of hydrologically interconnected pools and other ephemeral wetlands (which may vary in extent depending on site-specific characteristics of pool size and depth, soil type, and hardpan depth).

(iv) In the Illinois Valley, the hydrologically and ecologically

functional system of streams, slopes and wooded systems that surround and maintain seasonally wet alluvial meadows underlain by relatively undisturbed ultramafic soils within the greater watershed.

(v) In the Agate Desert, silt, loam, and clay soils that are of ultramafic and nonultramafic alluvial origin, with a 0 to 3 percent slope, classified as Agate–Winlo or Provig–Agate soils.

(vi) In the Illinois Valley, silt, loam, and clay soils that are of ultramafic and nonultramafic alluvial origin, with a 0 to 30 percent slope, classified as Abegg gravelly loam, Brockman clay loam, Copsey clay, Cornut–Dubakel complex, Dumps, Eightlar extremely stony clay, Evans loam, Foehlin gravelly loam, Josephine gravelly loam, Kerby loam, Newberg fine sandy loam, Pearsoll–Rock outcrop complex, Pollard loam, Riverwash, Speaker–Josephine gravelly loam, Takilma cobbly loam, or Takilma Variant extremely cobbly loam.

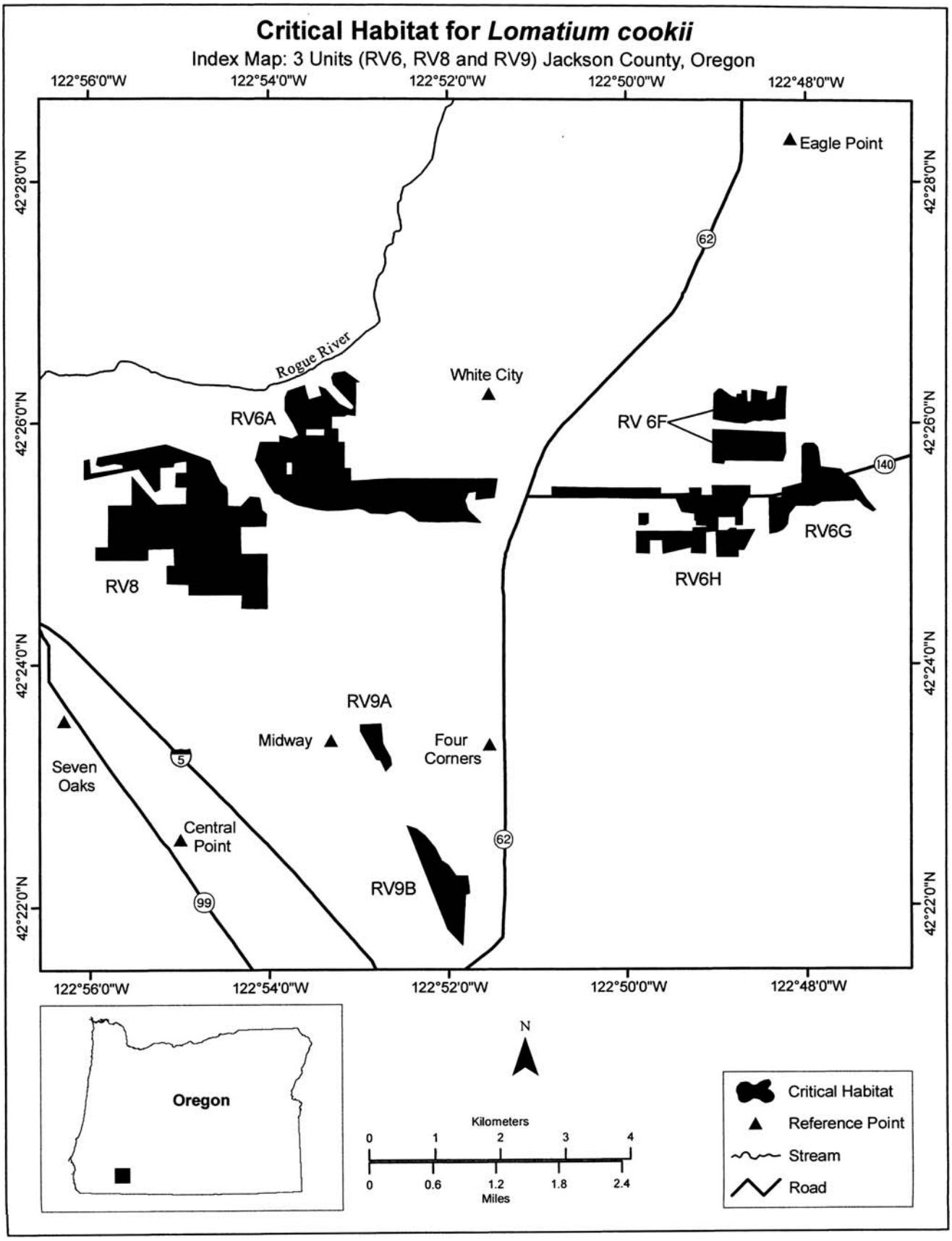
(vii) No or negligible presence of competitive nonnative invasive plant species. (In this usage, ''negligible'' means a minimal level of nonnative plant species that will still allow *Lomatium cookii* to continue to survive and recover.)

(3) Critical habitat does not include manmade structures (including, but not limited to, buildings, aqueducts, runways, roads, and other paved areas) and the land on which they are located existing within the legal boundaries on the effective date of this rule and not containing one or more of the primary constituent elements.

(4) Critical habitat map units. These critical habitat units were mapped using Universal Transverse Mercator, Zone 10, North American Datum 1983 (UTM NAD 83) coordinates. These coordinates establish the vertices and endpoints of the boundaries of the units.

(5) *Note*: Jackson County Index Map for critical habitat for *Lomatium cookii* follows:

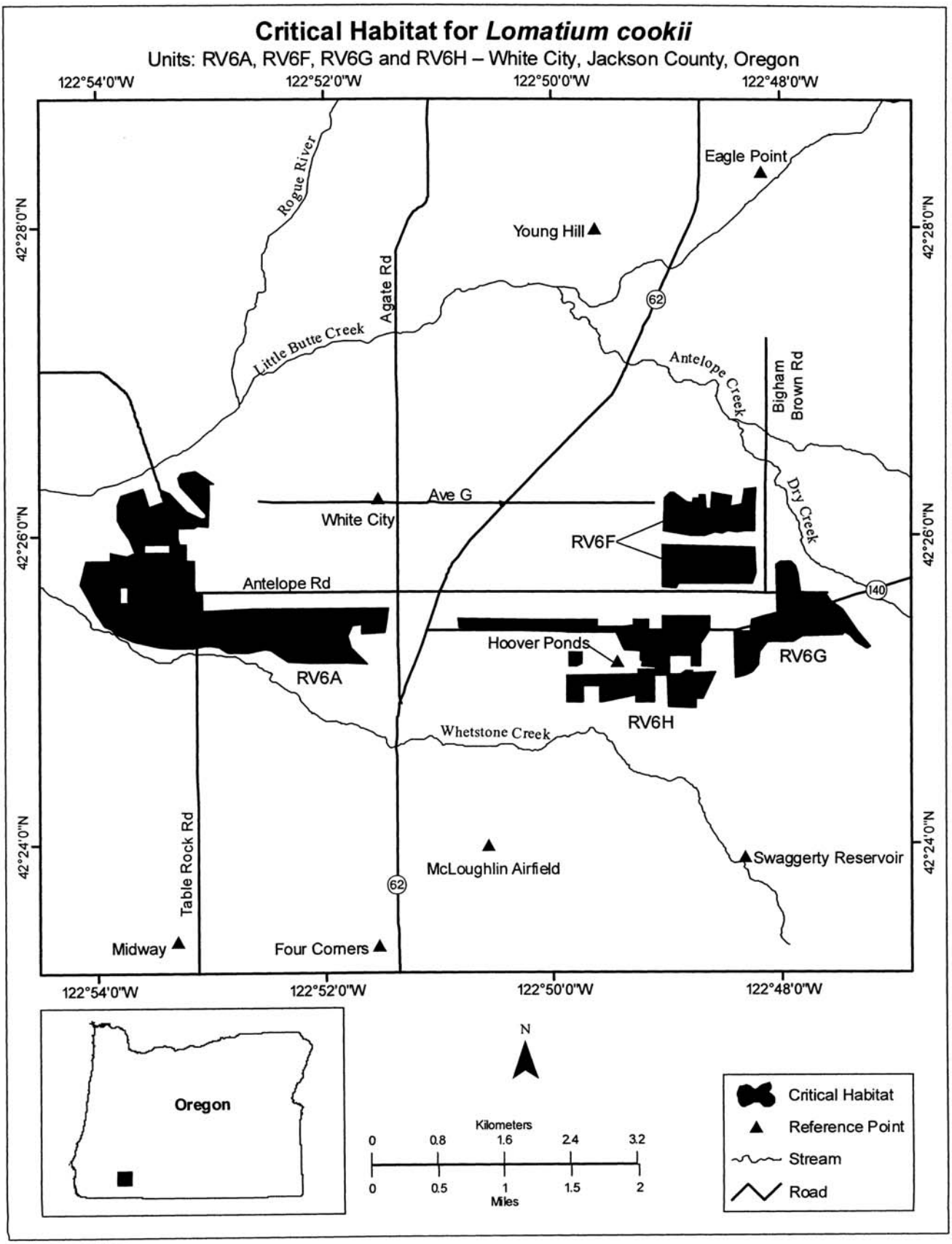
BILLING CODE 4310–55–S


Critical Habitat for Lomatium cookii
Index Map: 3 Units (RV6, RV8 and RV9) Jackson County, Oregon
122°56'0"W
122°54'0"W
122°52'0"W
122°50'0"W
122°48'0"W
42°28'0"N
42°26'0"N
42°24'0"N
42°22'0"N
Eagle Point
62
Rogue River
White City
RV6A
RV 6F
140
RV6G
RV6H
RV8
RV9A
Midway
Four Corners
Seven Oaks
5
Central Point
99
RV9B
Oregon
N
Kilometers
0 1 2 3 4
0 0.6 1.2 1.8 2.4
Miles
Critical Habitat
Reference Point
Stream
Road

(6) Unit RV6, subunits A, F, G, and H for *Lomatium cookii*: White City, Jackson County, Oregon.

(i) Unit RV6 for *Lomatium cookii* consists of 608 ha (1,503 ac) of intact vernal pool–mounded prairie and swale habitats. RV6 is located around White City, is 1.6 km (1.0 mi) southwest of Eagle Point, and is 440 m (1,444 ft) southeast of the confluence of the Rogue River and Little Butte Creek. Subunit RV6A is located north of Whetstone Creek and is 500 m (1,200 ft) west of the junction of Highway 62 and Antelope Road. Subunits RV6F and RV6G are located approximately 500 feet west of Dry Creek and are east of Highway 62 in White City. Subunit RV6H is located north of Whetstone Creek and south of Antelope Road. Subunit RV6H roughly encircles the Hoover Ponds, east of Highway 62, and is 850 m (2790 ft) east of subunit RV6A.

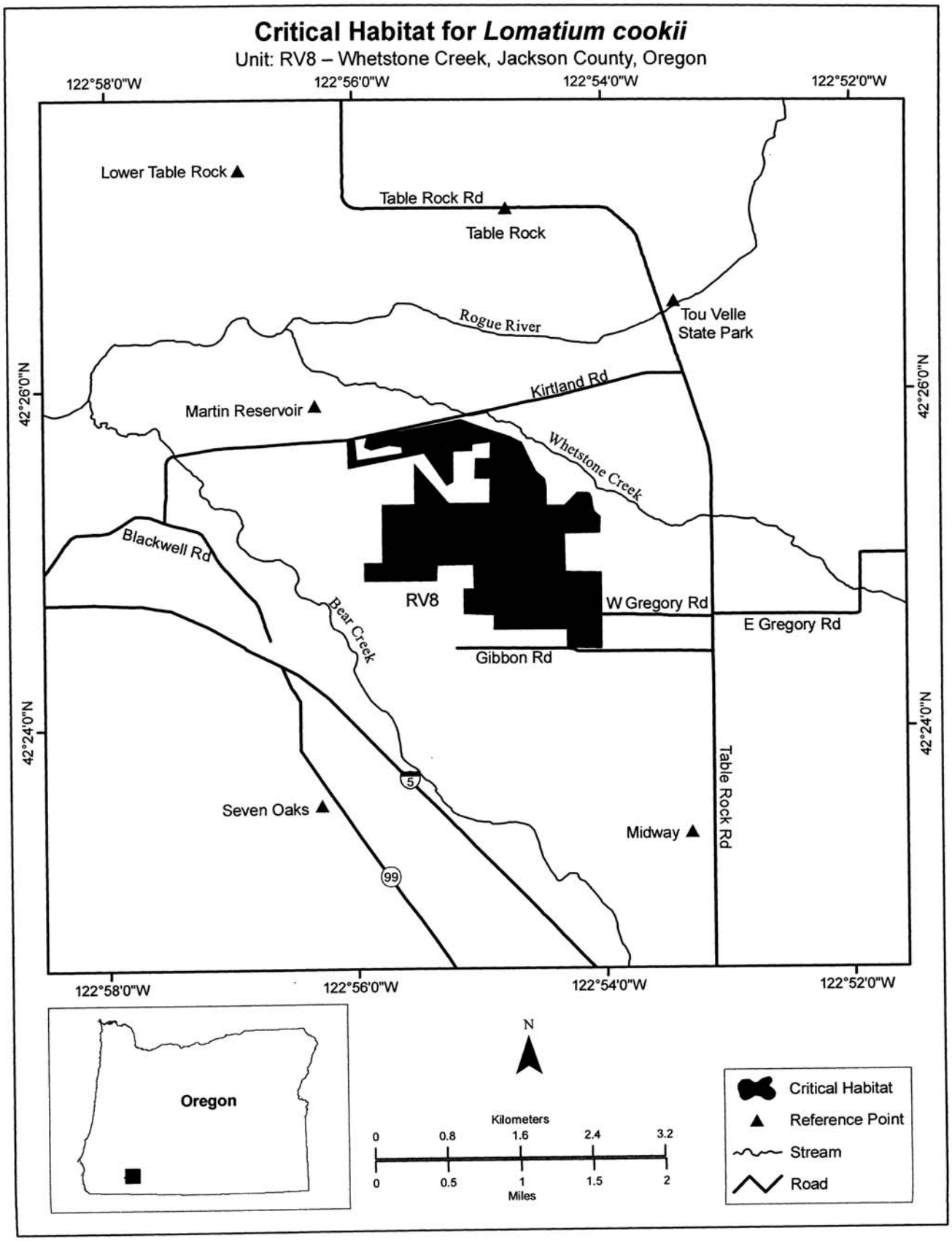
(ii) *Note*: Map of Unit RV6 Critical Habitat for *Lomatium cookii* follows:


Critical Habitat for Lomatium cookii
Units: RV6A, RV6F, RV6G and RV6H – White City, Jackson County, Oregon
122°54'0"W
122°52'0"W
122°50'0"W
122°48'0"W
42°28'0"N
42°26'0"N
42°24'0"N
Rogue River
Eagle Point
Young Hill
Agate Rd
62
Little Butte Creek
Antelope Creek
Bigham Brown Rd
Dry Creek
Ave G
White City
RV6F
Antelope Rd
140
Hoover Ponds
RV6G
RV6A
RV6H
Whetstone Creek
Table Rock Rd
McLoughlin Airfield
Swaggerty Reservoir
Midway
Four Corners
Oregon
N
Kilometers
0 0.8 1.6 2.4 3.2
Miles
0 0.5 1 1.5 2
Critical Habitat
Reference Point
Stream
Road

(7) Unit RV8 for *Lomatium cookii*: Whetstone Creek, Jackson County, Oregon.

(i) Unit RV8 for *Lomatium cookii* consists of 362 ha (896 ac) of intact vernal pool–mounded prairie and swale habitat. Unit RV8 is located approximately 1.4 km (0.9 mi) southeast of the confluence of the Rogue River and Whetstone Creek, 2.2 km (1.4 mi) southwest of Tou Velle State Park, and 2.9 km southeast of the confluence of Bear Creek and the Rogue River. The unit roughly parallels a 2.6 km (1.6 mi) stretch of Whetstone Creek to the south.

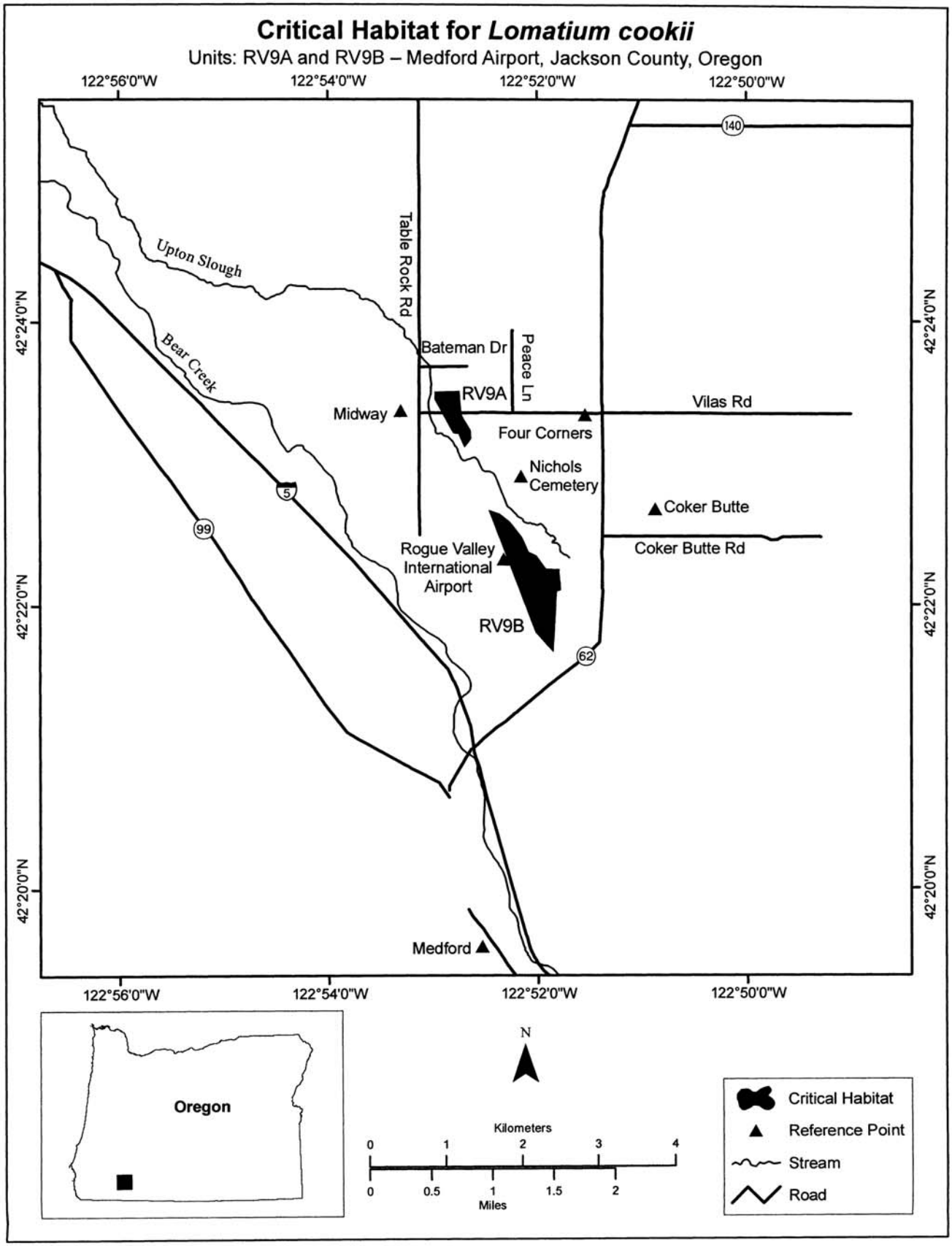
(ii) *Note*: Map of Unit RV8 Critical Habitat for *Lomatium cookii* follows:


Critical Habitat for Lomatium cookii
Unit: RV8 – Whetstone Creek, Jackson County, Oregon
122°58'0"W
122°56'0"W
122°54'0"W
122°52'0"W
42°26'0"N
42°24'0"N
Lower Table Rock
Table Rock Rd
Table Rock
Rogue River
Tou Velle State Park
Kirtland Rd
Martin Reservoir
Whetstone Creek
Blackwell Rd
RV8
W Gregory Rd
E Gregory Rd
Bear Creek
Gibbon Rd
Table Rock Rd
Seven Oaks
Midway
5
99
Oregon
N
Kilometers
0 0.8 1.6 2.4 3.2
0 0.5 1 1.5 2
Miles
Critical Habitat
Reference Point
Stream
Road

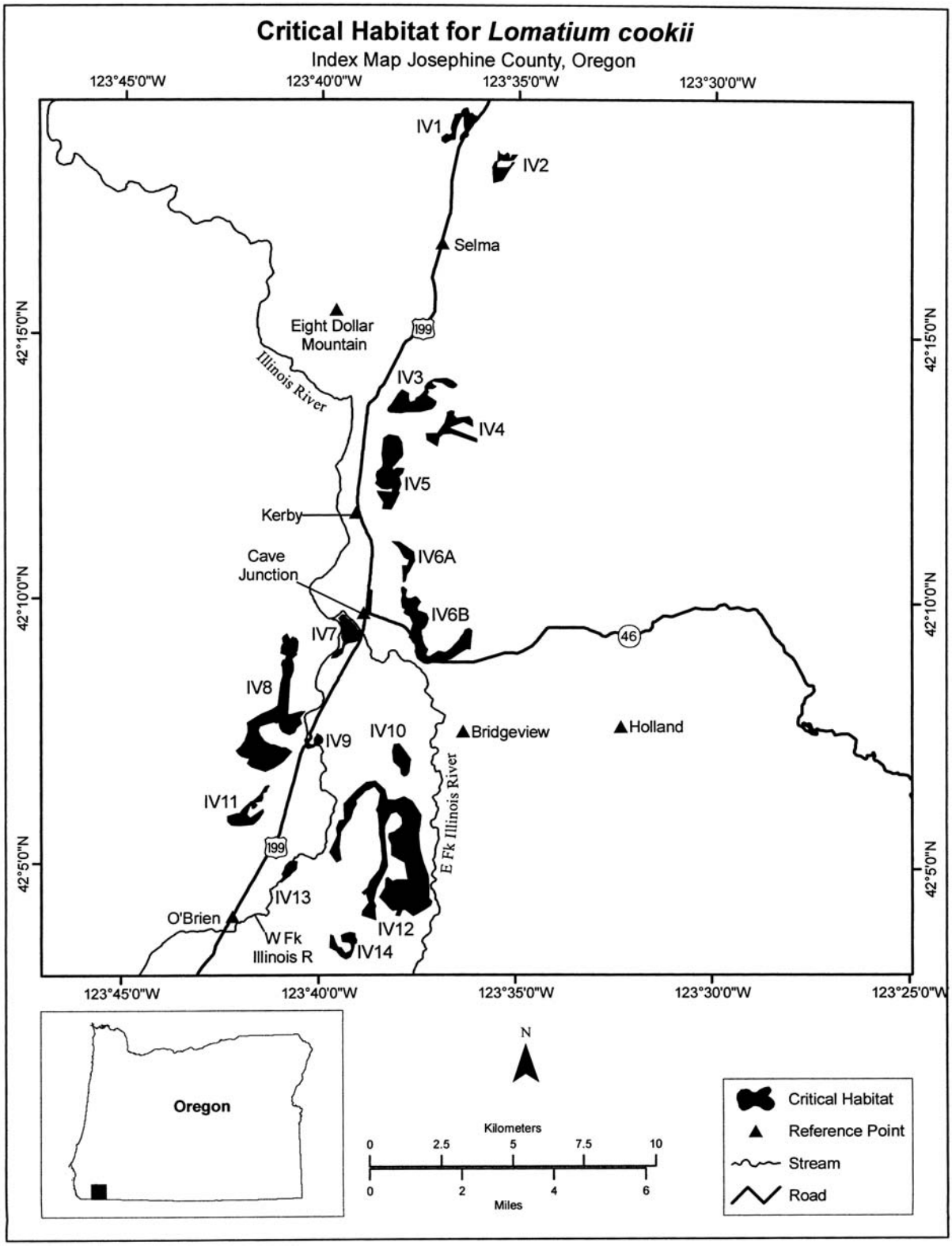
(8) Unit RV9 for *Lomatium cookii*: Medford Airport, Jackson County, Oregon.

(i) Unit RV9 consists of 77 ha (190 ac) of slightly degraded vernal pool–mounded prairie habitat. The two subunits of RV9 are located mostly within the Rogue Valley International – Medford Airport, approximately 2 km (1.2 mi) west of Coker Butte and 1.5 km (0.9 mi) northeast of Bear Creek. Subunit RV9A is located 1.4 km (0.9 mi) north of the Rogue Valley International – Medford Airport and is 300 m (980 ft) east of the junction of Vilas Road and Table Rock Road. Subunit RV9B is between Upton Slough and Bear Creek and 1.7 km northeast of the junction of Interstate 5 and Highway 62.

(ii) *Note*: Map of Unit RV9 Critical Habitat for *Lomatium cookii* follows:


Critical Habitat for Lomatium cookii
Units: RV9A and RV9B – Medford Airport, Jackson County, Oregon
122°56'0"W
122°54'0"W
122°52'0"W
122°50'0"W
42°24'0"N
42°22'0"N
42°20'0"N
140
Table Rock Rd
Upton Slough
Bear Creek
Bateman Dr
Peace Ln
RV9A
Midway
Vilas Rd
Four Corners
Nichols Cemetery
Coker Butte
Coker Butte Rd
5
99
62
Rogue Valley International Airport
RV9B
Medford
Oregon
N
Kilometers
0 1 2 3 4
0 0.5 1 1.5 2
Miles
Critical Habitat
Reference Point
Stream
Road

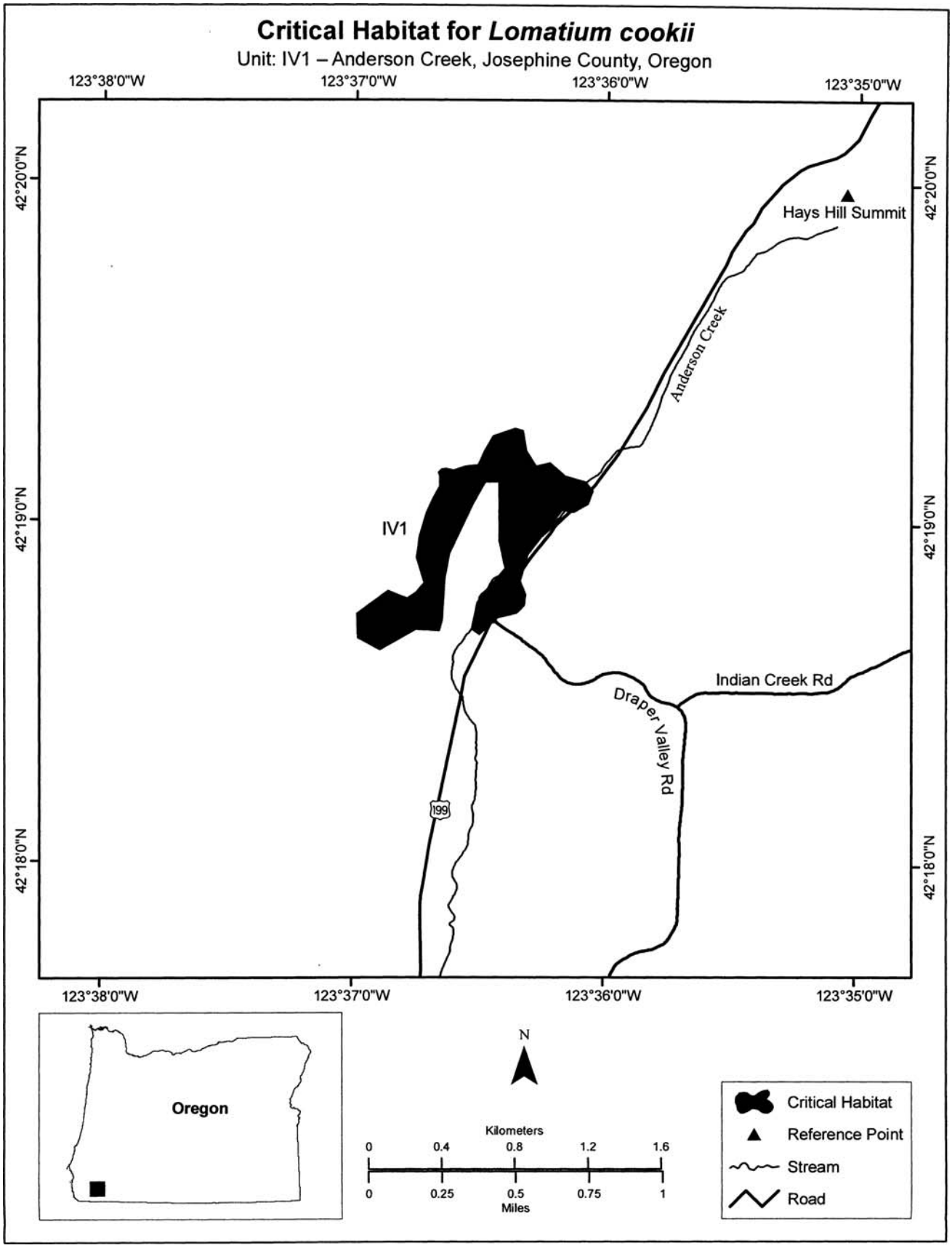
(9) *Note*: Josephine County Index Map for critical habitat for *Lomatium cookii* follows:



(10) Unit IV1 for *Lomatium cookii*: Anderson Creek, Josephine County, Oregon.

(i) Unit IV1 consists of 53 ha (132 ac) of intact wet meadow habitat. It is located 3.5 km (2.2 mi) north of Selma, 14 km (8.8 mi) north of Cave Junction, along a 1.0 km (0.6 mi) stretch of Anderson Creek and Highway 199, 2.0 km (1.2 mi) southwest of Hays Hill Summit, and is 1.7 km (1.0 mi) northwest of the junction of Draper Valley Road and Indian Creek Road.

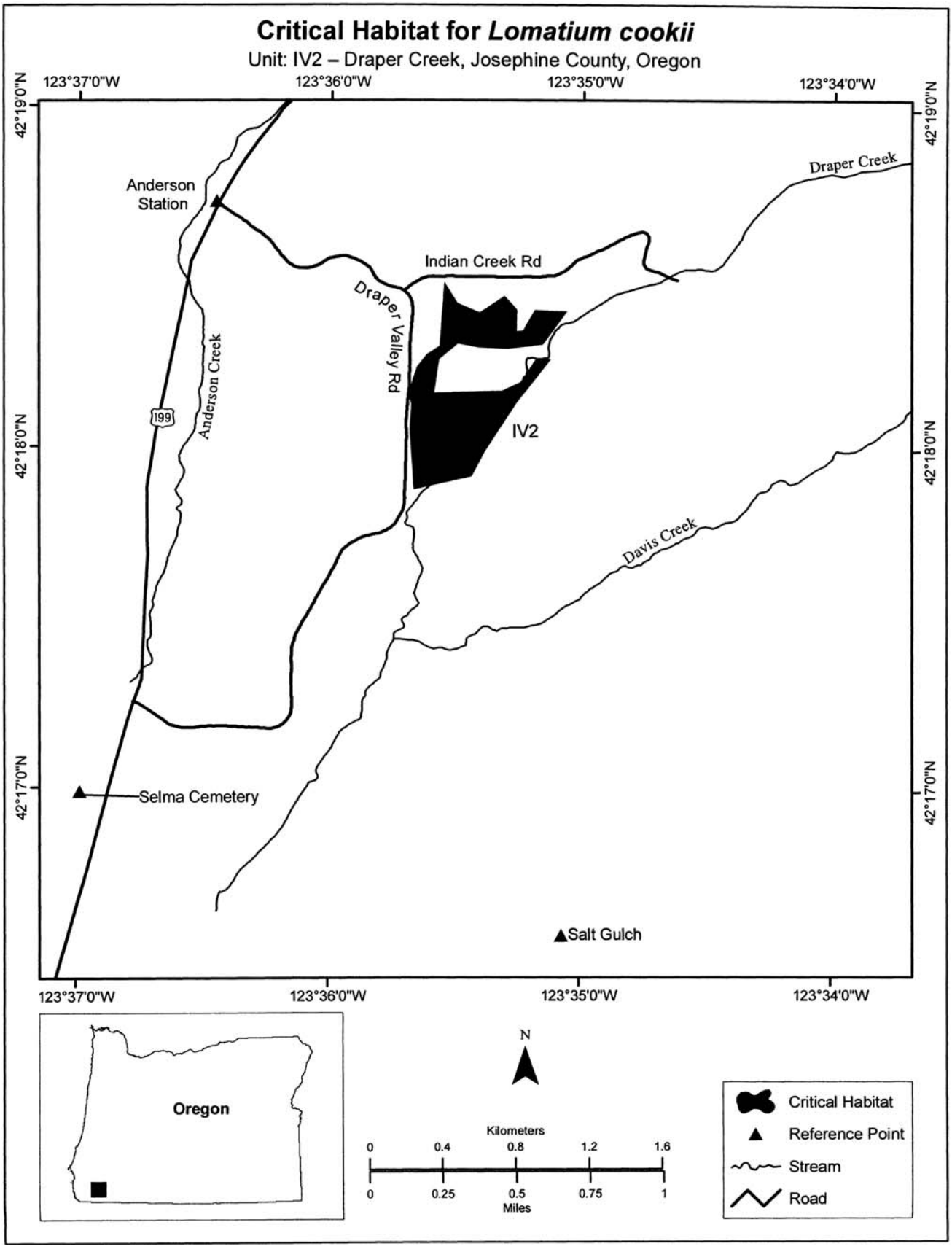
(ii) *Note*: Map of Unit IV1 Critical Habitat for *Lomatium cookii* follows:


Critical Habitat for *Lomatium cookii*
Unit: IV1 – Anderson Creek, Josephine County, Oregon
123°38'0"W
123°37'0"W
123°36'0"W
123°35'0"W
42°20'0"N
42°19'0"N
42°18'0"N
Hays Hill Summit
Anderson Creek
IV1
Indian Creek Rd
Draper Valley Rd
199
Oregon
N
Kilometers
0
0.4
0.8
1.2
1.6
0
0.25
0.5
0.75
1
Miles
Critical Habitat
Reference Point
Stream
Road

(11) Unit IV2 for *Lomatium cookii*: Draper Creek, Josephine County, Oregon.

(i) Unit IV2 is composed of 39 ha (97 ac) of intact wet meadow habitat. It is located 2.7 km (1.7 mi) northeast of Selma, 13.5 km (8.4 mi) north of Cave Junction, along a 900 m (2,900 ft) stretch of Draper Creek, located 800 m (2,600 ft) east of Anderson Creek. The unit is 800 m (2,600 ft) north-northwest of the confluence of Draper Creek and Davis Creek and is 200 m (650 ft) southeast of the junction of Draper Valley Road and Indian Creek Road.

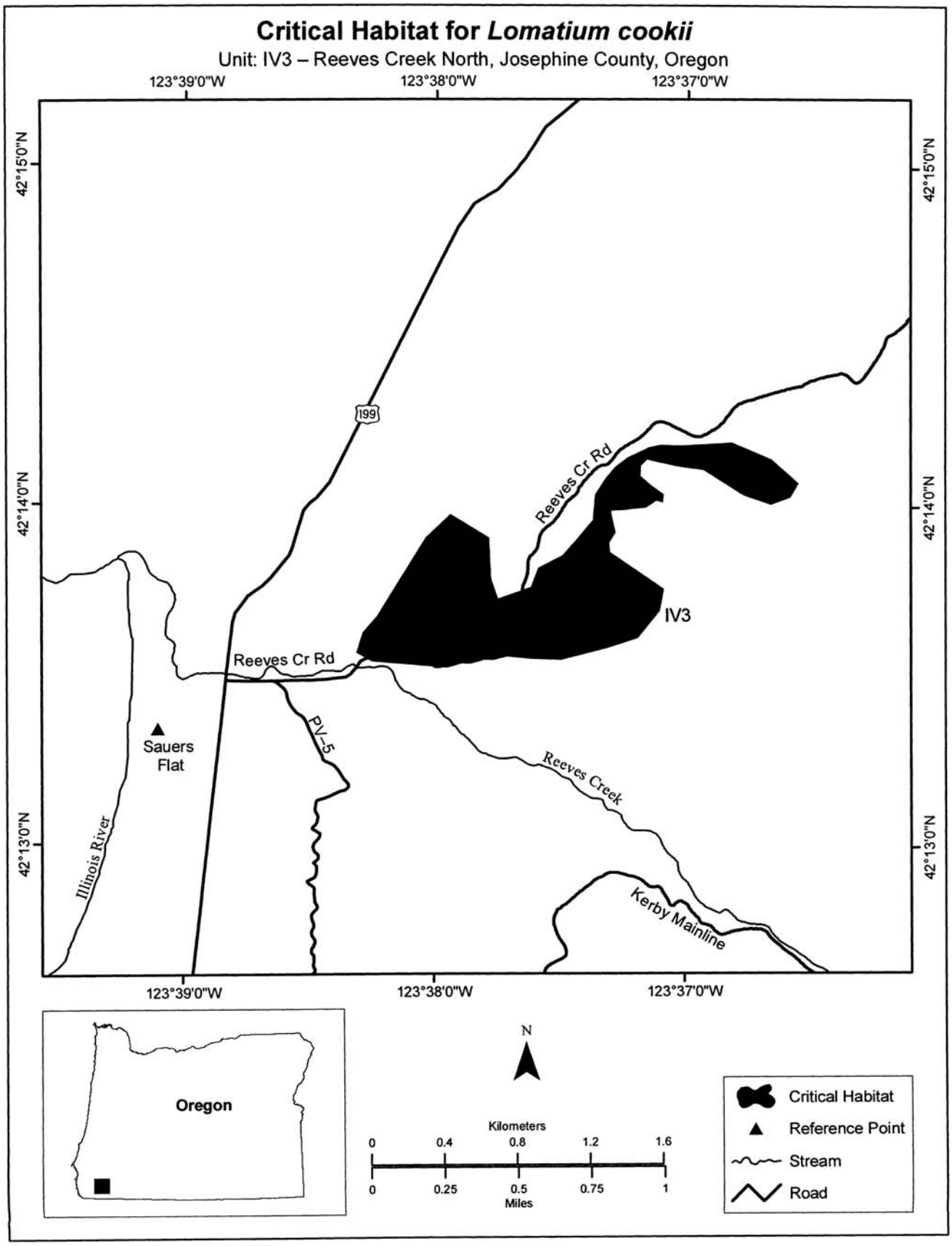
(ii) *Note*: Map of Unit IV2 Critical Habitat for *Lomatium cookii* follows:


Critical Habitat for *Lomatium cookii*
Unit: IV2 – Draper Creek, Josephine County, Oregon
123°37'0"W
123°36'0"W
123°35'0"W
123°34'0"W
42°19'0"N
42°18'0"N
42°17'0"N
Anderson Station
Draper Creek
Indian Creek Rd
Draper Valley Rd
Anderson Creek
199
IV2
Davis Creek
Selma Cemetery
Salt Gulch
Oregon
N
Kilometers
0
0.4
0.8
1.2
1.6
0
0.25
0.5
0.75
1
Miles
Critical Habitat
Reference Point
Stream
Road

(12) Unit IV3 for *Lomatium cookii*: Reeves Creek North, Josephine County, Oregon.

(i) Unit IV3 consists of 105 ha (260 ac) of wet meadow habitat. The unit is located 1.4 km (0.9 mi) east of the confluence between Reeves Creek and the Illinois River and extends along a 2.0 km (1.2 mi) stretch of Reeves Creek, beginning 800 m (2,600 ft) northeast of the junction of Highway 199 and Reeves Creek Road.

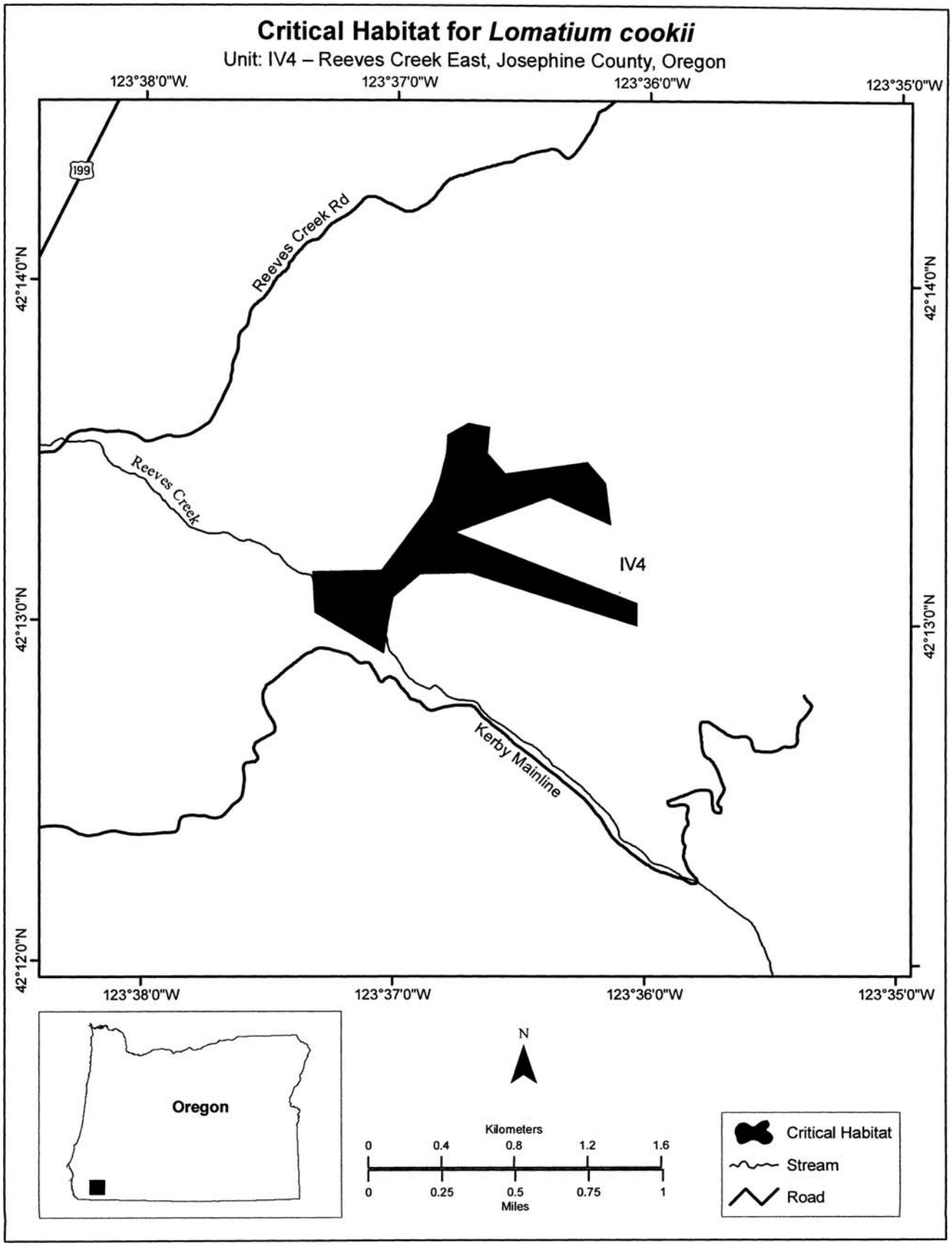
(ii) *Note*: Map of Unit IV3 Critical Habitat for *Lomatium cookii* follows:


Critical Habitat for Lomatium cookii
Unit: IV3 – Reeves Creek North, Josephine County, Oregon
123°39'0"W
123°38'0"W
123°37'0"W
42°15'0"N
42°14'0"N
42°13'0"N
199
Reeves Cr Rd
IV3
Reeves Cr Rd
Sauers Flat
PV-5
Reeves Creek
Illinois River
Kerby Mainline
Oregon
N
Kilometers
0
0.4
0.8
1.2
1.6
0
0.25
0.5
0.75
1
Miles
Critical Habitat
Reference Point
Stream
Road

(13) Unit IV4 for *Lomatium cookii*: Reeves Creek East, Josephine County, Oregon.

(i) Unit IV4 consists of 69 ha (170 ac) of intact wet meadow habitat. It is located 6.2 km (3.9 mi) south of Selma and 5.3 km (3.3 mi) northwest of Cave Junction. It occurs along a 500 m (1,640 ft) stretch of Reeves Creek located 700 m (2,300 ft) southeast of Unit IV3.

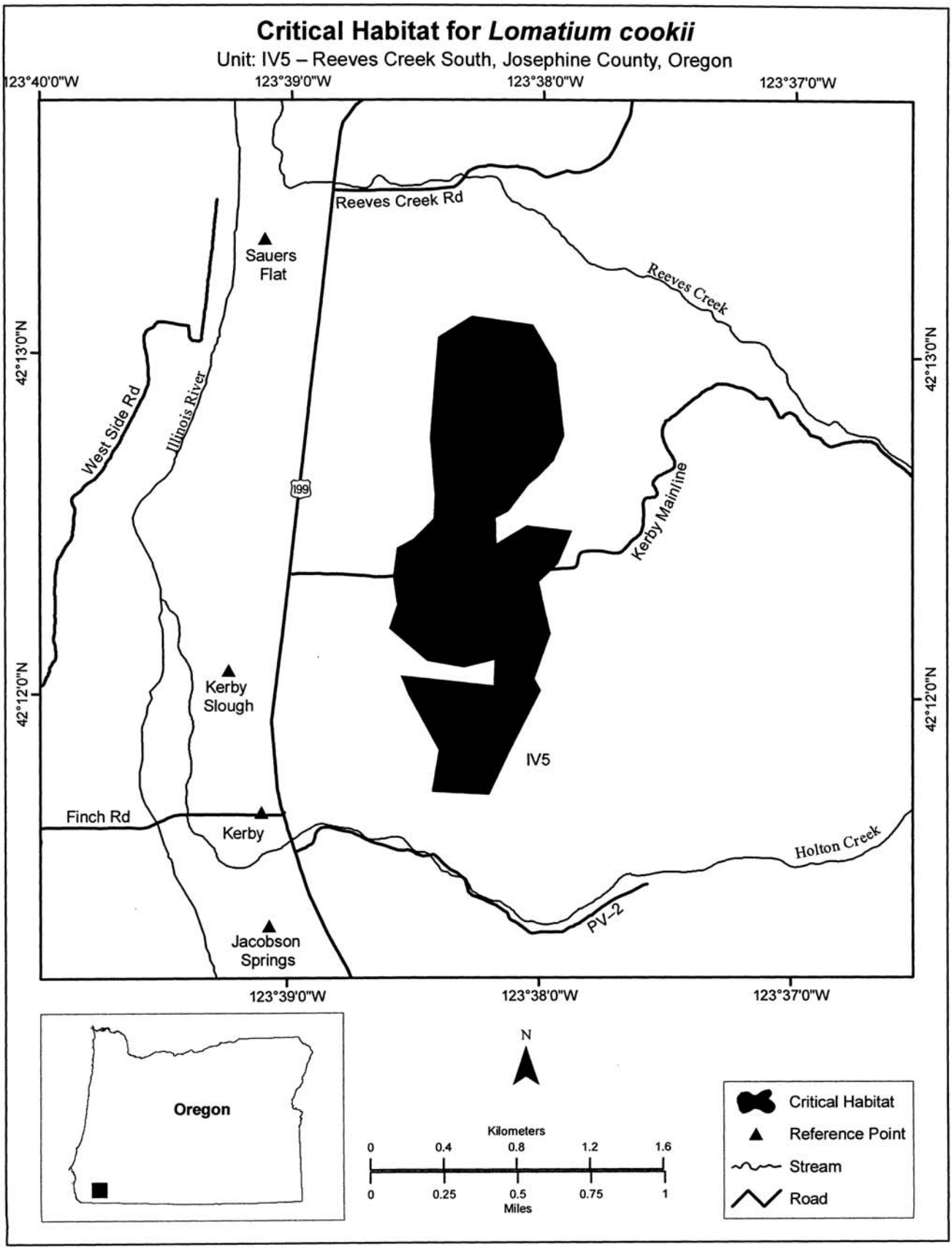
(ii) *Note*: Map of Unit IV4 Critical Habitat for *Lomatium cookii* follows:


Critical Habitat for *Lomatium cookii*
Unit: IV4 – Reeves Creek East, Josephine County, Oregon
123°38'0"W
123°37'0"W
123°36'0"W
123°35'0"W
42°14'0"N
42°13'0"N
42°12'0"N
199
Reeves Creek Rd
Reeves Creek
IV4
Kerby Mainline
Oregon
N
Kilometers
0
0.4
0.8
1.2
1.6
0
0.25
0.5
0.75
1
Miles
Critical Habitat
Stream
Road

(14) Unit IV5 for *Lomatium cookii*: Reeves Creek South, Josephine County, Oregon.

(i) Unit IV5 consists of 158 ha (391 ac) of intact wet meadow habitat. The unit is roughly parallel to Highway 199 for 2.5 km (1.6 mi), which is 500 m (1,640 ft) west of the unit. The unit is located 1.6 km (1.0 mi) north of Cave Junction, 1 km (0.6 mi) southeast of Sauers Flat, 800 m (2,600 ft) east of Kerby, and 1.2 km (0.7 mi) east of the confluence between Holton Creek and the Illinois River.

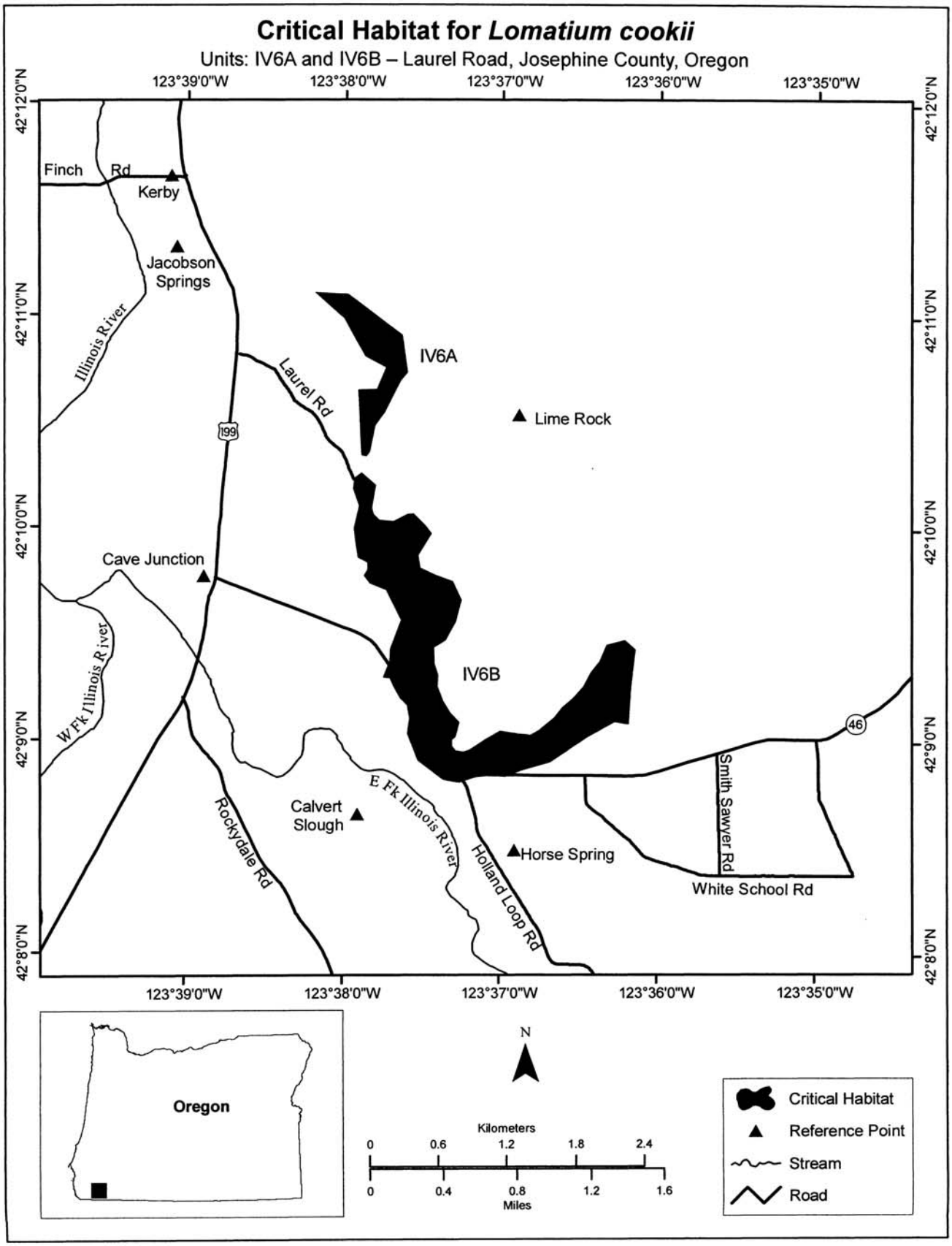
(ii) *Note*: Map of Unit IV5 Critical Habitat for *Lomatium cookii* follows:


Critical Habitat for *Lomatium cookii*
Unit: IV5 – Reeves Creek South, Josephine County, Oregon
123°40'0"W
123°39'0"W
123°38'0"W
123°37'0"W
42°13'0"N
42°12'0"N
Reeves Creek Rd
Sauers Flat
Reeves Creek
West Side Rd
Illinois River
199
Kerby Mainline
Kerby Slough
IV5
Finch Rd
Kerby
Holton Creek
PV-2
Jacobson Springs
Oregon
N
Kilometers
0 0.4 0.8 1.2 1.6
0 0.25 0.5 0.75 1
Miles
Critical Habitat
Reference Point
Stream
Road

(15) Unit IV6 for *Lomatium cookii*: Laurel Road, Josephine County, Oregon.

(i) Unit IV6 totals 209 ha (516 ac) of intact wet meadow habitat. It is located west and alongside of the base of Lime Rock, 1.2 km (0.7 mi) east of the city of Cave Junction, and follows along Highway 46 for 1.5 km (0.9 mi). Subunit IV6A is located 1.3 km (0.8 mi) west of Lime Rock summit, 1.0 km east of the junction of Laurel Road and Highway 199, and is roughly parallel to Highway 199 for 1.3 km (0.8 mi), which lies approximately 1.0 km (0.6 mi) west of the subunit. Subunit IV6B is 2.7 km (1.7 mi) east of the confluence of the east and west forks of the Illinois River and from the intersection of Holland Loop Road and Highway 46; it extends approximately 1.8 km (1.1 mi) to the northeast and 2.7 km (1.7 mi) to the north.

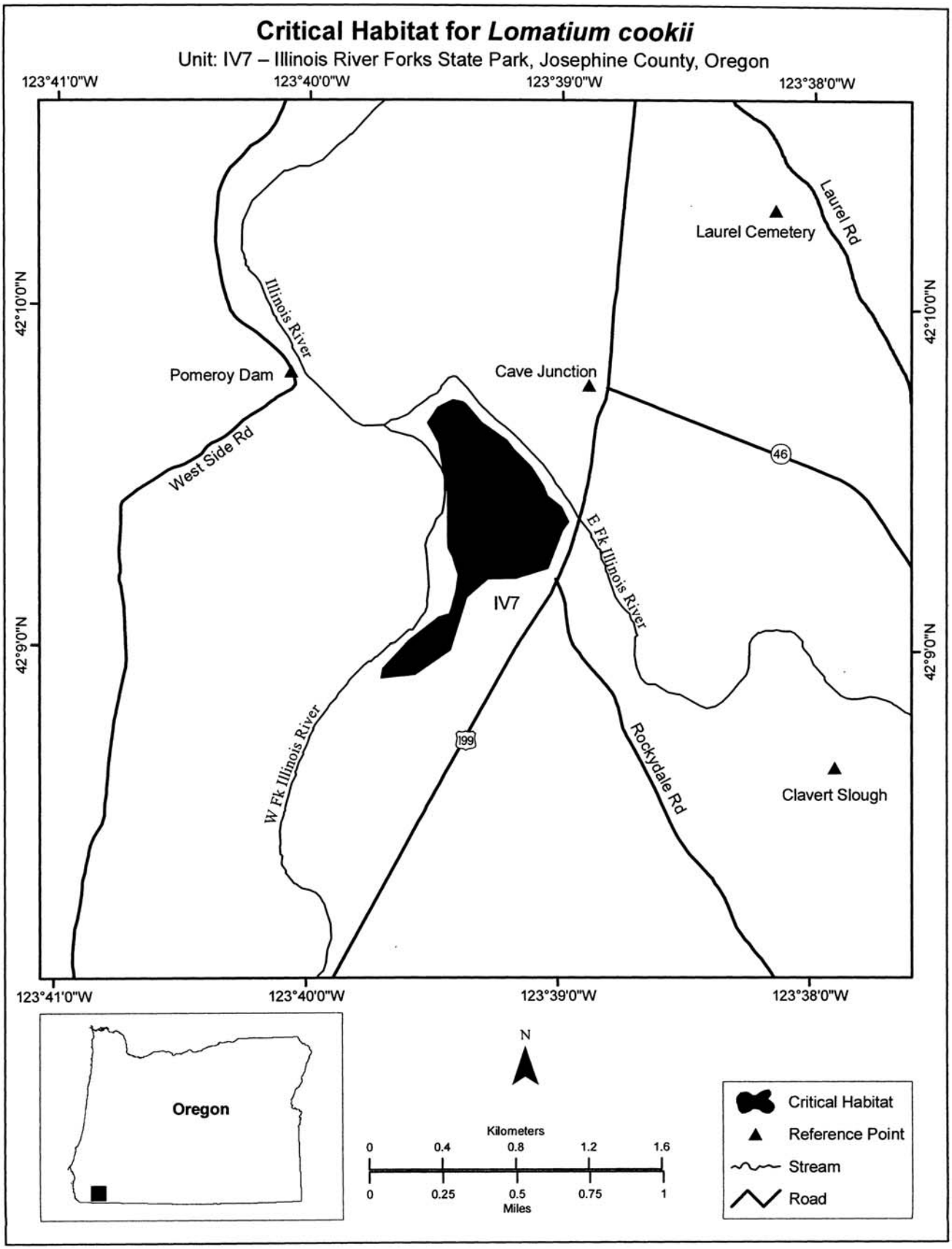
(ii) *Note*: Map of Unit IV6 Critical Habitat for *Lomatium cookii* follows:


Critical Habitat for Lomatium cookii
Units: IV6A and IV6B – Laurel Road, Josephine County, Oregon
123°39'0"W
123°38'0"W
123°37'0"W
123°36'0"W
123°35'0"W
42°12'0"N
42°11'0"N
42°10'0"N
42°9'0"N
42°8'0"N
Finch Rd
Kerby
Jacobson Springs
Illinois River
Laurel Rd
199
IV6A
Lime Rock
Cave Junction
W Fk Illinois River
IV6B
46
Smith Sawyer Rd
White School Rd
E Fk Illinois River
Calvert Slough
Rockydale Rd
Horse Spring
Holland Loop Rd
Oregon
N
Kilometers
0 0.6 1.2 1.8 2.4
0 0.4 0.8 1.2 1.6
Miles
Critical Habitat
Reference Point
Stream
Road

(16) Unit IV7 for *Lomatium cookii*: Illinois River Forks State Park, Josephine County, Oregon.

(i) Unit IV7 consists of 55 ha (136 ac) of intact wet meadow habitat. The unit is located 500 m (1640 ft) west of the city of Cave Junction, 600 m (1,970 ft) southeast of Pomeroy Dam, and is 230 m (750 ft) east of the confluence of the east and west forks of the Illinois River. The unit occurs along a 2.8 km (1.7 mi) stretch of the West Fork Illinois River.

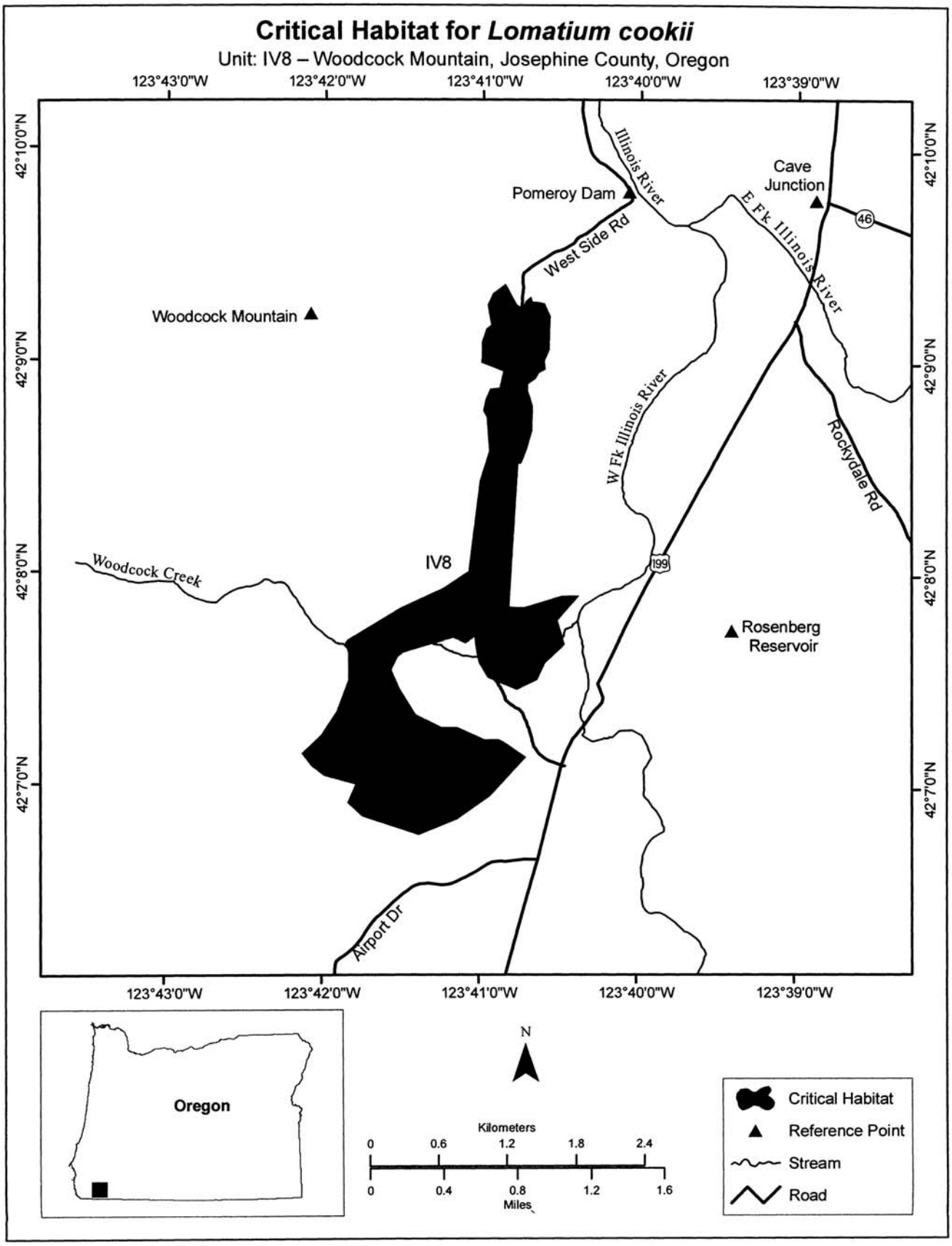
(ii) *Note*: Map of Unit IV7 Critical Habitat for *Lomatium cookii* follows:


Critical Habitat for Lomatium cookii
Unit: IV7 – Illinois River Forks State Park, Josephine County, Oregon
123°41'0"W
123°40'0"W
123°39'0"W
123°38'0"W
42°10'0"N
42°9'0"N
Laurel Cemetery
Laurel Rd
Illinois River
Pomeroy Dam
Cave Junction
West Side Rd
46
E Fk Illinois River
IV7
W Fk Illinois River
199
Rockydale Rd
Clavert Slough
Oregon
N
Kilometers
0
0.4
0.8
1.2
1.6
0
0.25
0.5
0.75
1
Miles
Critical Habitat
Reference Point
Stream
Road

(17) Unit IV8 for *Lomatium cookii*: Woodcock Mountain, Josephine County, Oregon.

(i) Unit IV8 consists of 347.5 ha (859 ac) of intact wet meadow habitat. The unit is located 2.4 km (1.5 mi) southwest of the city of Cave Junction, 5.3 km (3.3 mi) north of O'Brien, is 140 m (ft) west of the confluence of Woodcock Creek and the West Fork Illinois River, and occurs along a 3.3 km (2.0 mi) stretch of West Side Road. Unit IV7 is 400 m (ft) west of Highway 199 and roughly parallels the highway for 5.0 km (3.1 mi).

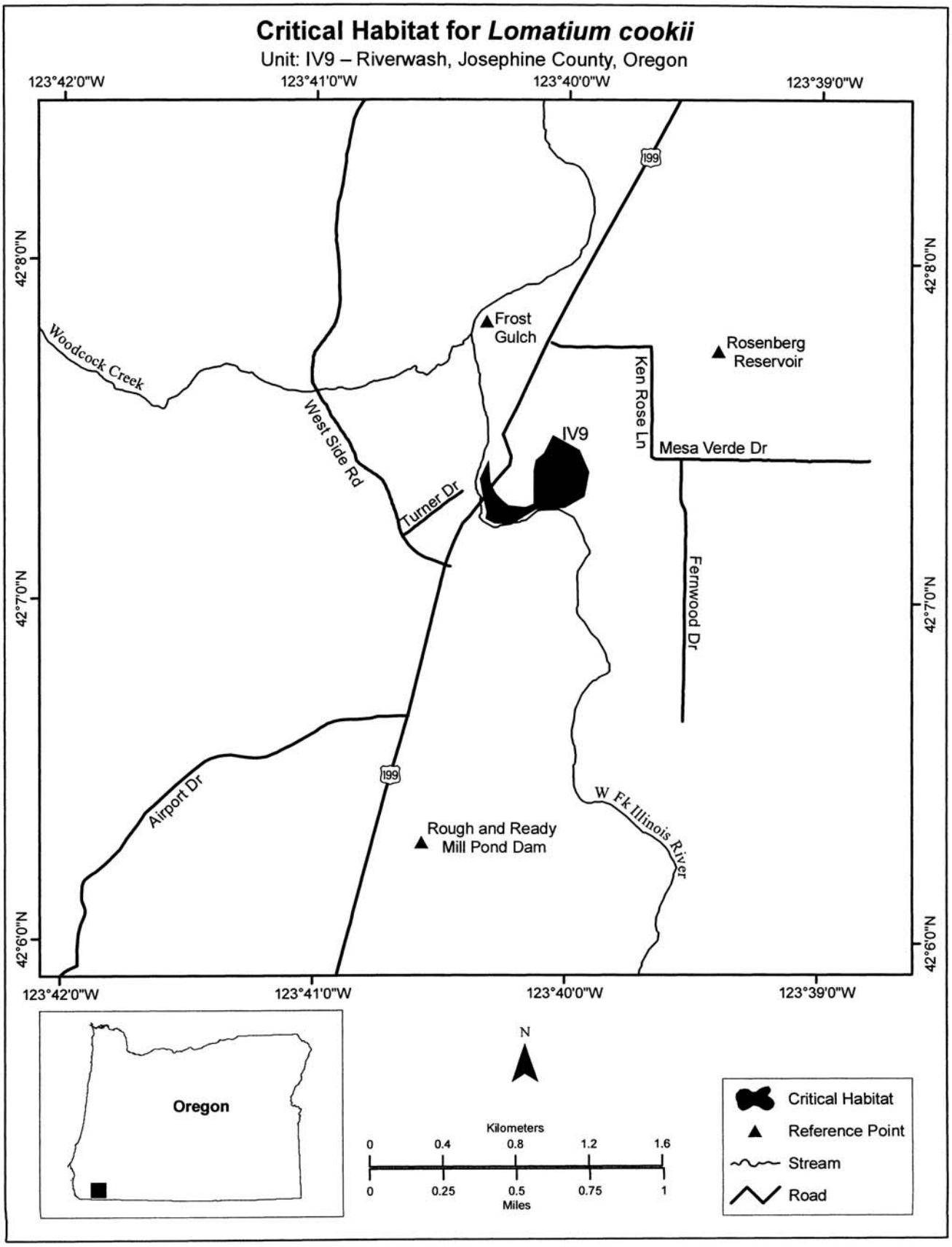
(ii) *Note*: Map of Unit IV8 Critical Habitat for *Lomatium cookii* follows:


Critical Habitat for Lomatium cookii
Unit: IV8 – Woodcock Mountain, Josephine County, Oregon
123°43'0"W
123°42'0"W
123°41'0"W
123°40'0"W
123°39'0"W
42°10'0"N
42°9'0"N
42°8'0"N
42°7'0"N
Illinois River
Pomeroy Dam
Cave Junction
46
West Side Rd
E Fk Illinois River
Woodcock Mountain
W Fk Illinois River
Rockydale Rd
Woodcock Creek
IV8
199
Rosenberg Reservoir
Airport Dr
Oregon
N
Kilometers
0
0.6
1.2
1.8
2.4
0
0.4
0.8
1.2
1.6
Miles
Critical Habitat
Reference Point
Stream
Road

(18) Unit IV9 for *Lomatium cookii*: Riverwash, Josephine County, Oregon.

(i) Unit IV9 consists of 12 ha (30 ac) of intact wet meadow and streambank habitat. It is located 4.2 km (2.6 mi) south of Cave Junction, 6.1 km (3.8 mi) north-northeast of O'Brien, and is located along the east bend of the West Fork Illinois River, 700 m (2,300 ft) south (upstream) of the confluence between Woodcock Creek and the West Fork Illinois River.

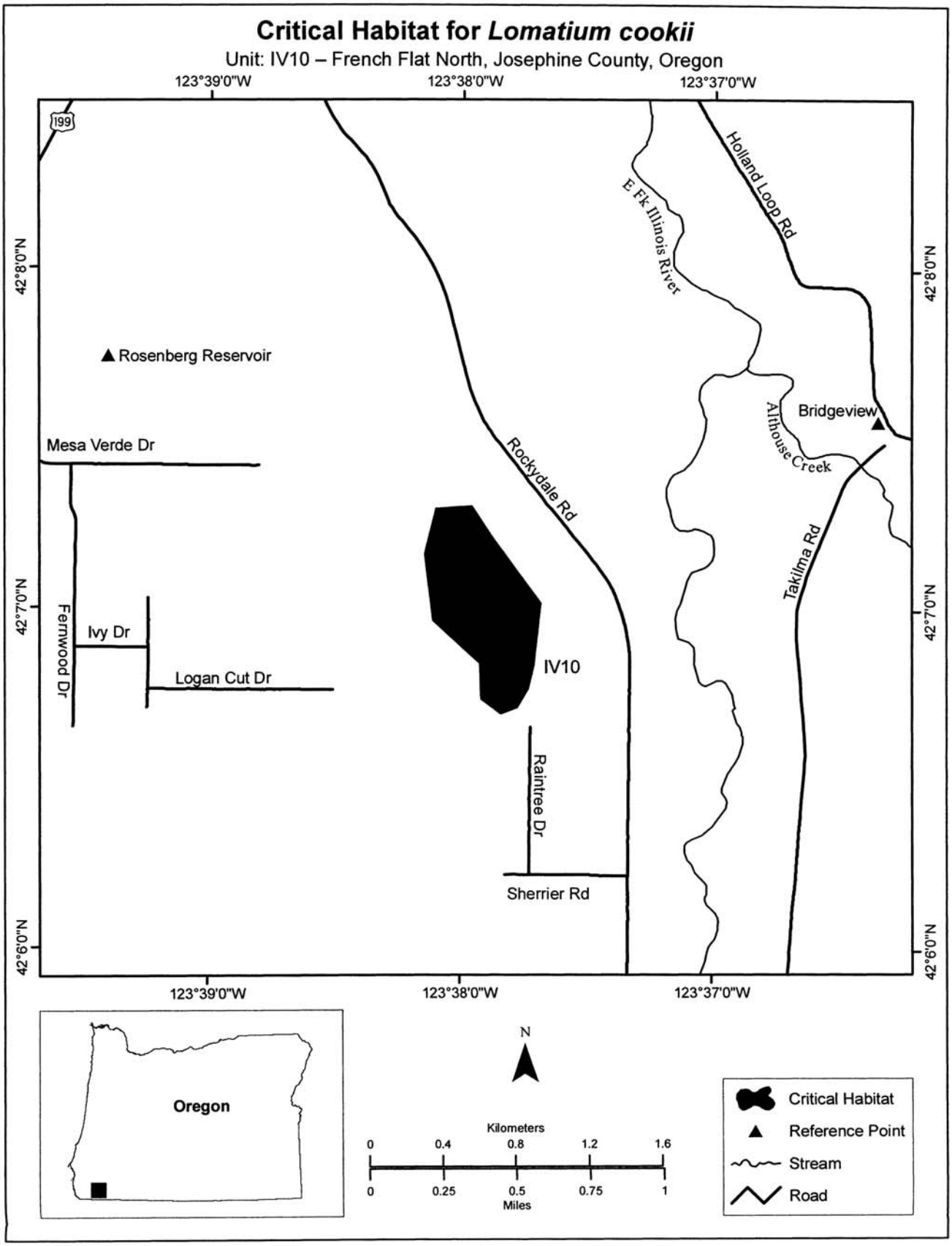
(ii) *Note*: Map of Unit IV9 Critical Habitat for *Lomatium cookii* follows:


Critical Habitat for *Lomatium cookii*
Unit: IV9 – Riverwash, Josephine County, Oregon
123°42'0"W
123°41'0"W
123°40'0"W
123°39'0"W
42°8'0"N
42°7'0"N
42°6'0"N
199
Frost Gulch
Rosenberg Reservoir
Woodcock Creek
West Side Rd
Ken Rose Ln
IV9
Mesa Verde Dr
Turner Dr
Fernwood Dr
Airport Dr
W Fk Illinois River
Rough and Ready Mill Pond Dam
Oregon
N
Kilometers
0
0.4
0.8
1.2
1.6
0
0.25
0.5
0.75
1
Miles
Critical Habitat
Reference Point
Stream
Road

(19) Unit IV10 for *Lomatium cookii*: French Flat North, Josephine County, Oregon.

(i) Unit IV10 consists of 44.5 ha (110 ac) of intact wet meadow habitat. The unit is located 3.7 km (2.3 mi) south of Cave Junction, 900 m (2,950 ft) north of the intersection of Sherrier Drive and Raintree Drive, 1.7 km (1.1 mi) southwest of the confluence of Althouse Creek and the East Fork Illinois River, and parallels a 300 m (980 ft) stretch of Rockydale Road.

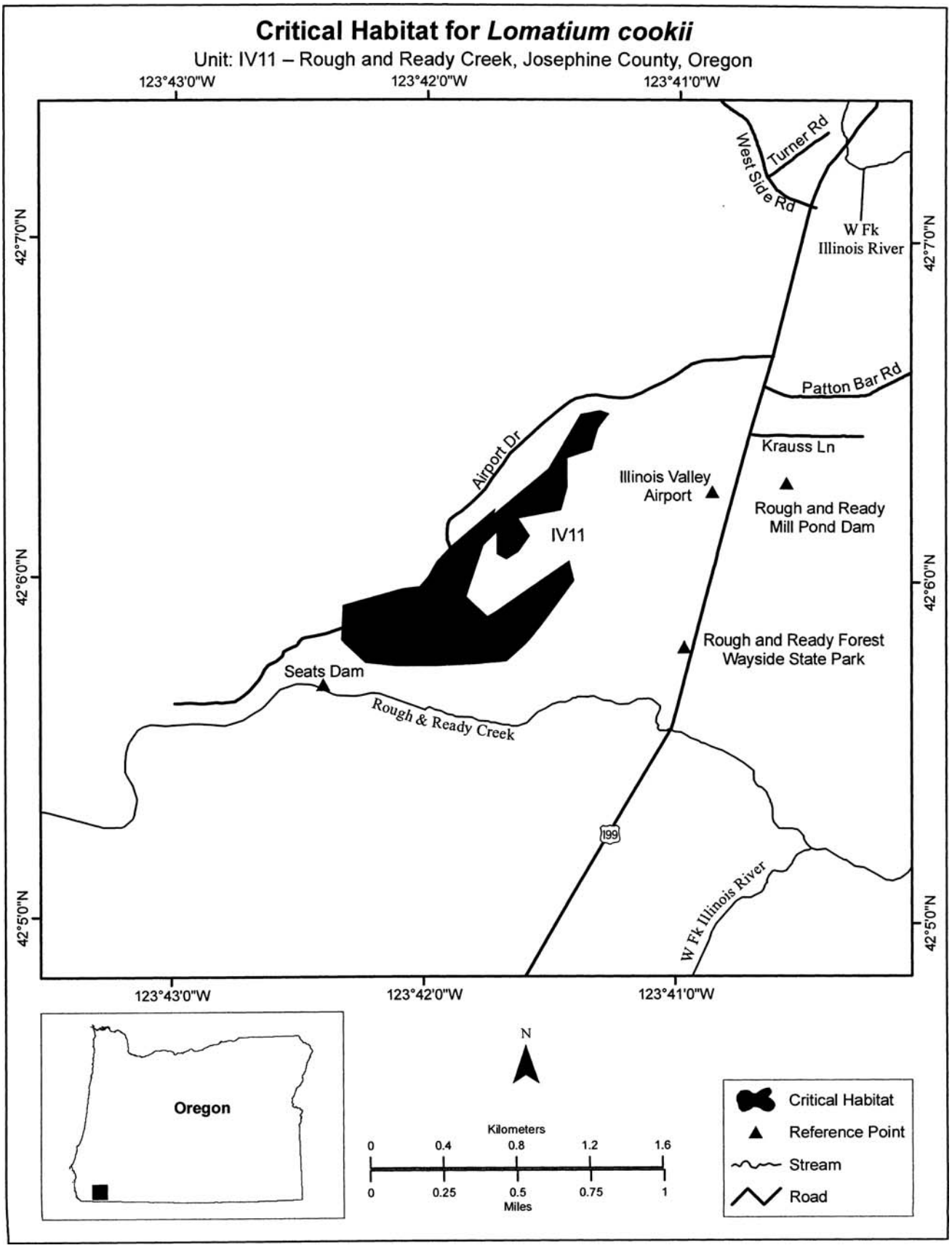
(ii) *Note*: Map of Unit IV10 Critical Habitat for *Lomatium cookii* follows:


Critical Habitat for *Lomatium cookii*
Unit: IV10 – French Flat North, Josephine County, Oregon
123°39'0"W
123°38'0"W
123°37'0"W
42°8'0"N
42°7'0"N
42°6'0"N
199
Rosenberg Reservoir
Mesa Verde Dr
Fernwood Dr
Ivy Dr
Logan Cut Dr
Rockydale Rd
IV10
Raintree Dr
Sherrier Rd
E Fk Illinois River
Holland Loop Rd
Althouse Creek
Bridgeview
Takilma Rd
Oregon
N
Kilometers
0 0.4 0.8 1.2 1.6
Miles
0 0.25 0.5 0.75 1
Critical Habitat
Reference Point
Stream
Road

(20) Unit IV11 for *Lomatium cookii*: Rough and Ready Creek, Josephine County, Oregon.

(i) Unit IV11 consists of 61.5 ha (152 ac) of intact wet meadow habitat. The unit roughly follows along and is adjacent to a 1.9 km (1.2 mi) stretch of Airport Drive, is located 3 km (1.9 mi) north of O'Brien, 900 m (2,950 ft) west of the Rough and Ready Forest Wayside State Park, and is 122 m (400 ft) east of the confluence with the Illinois River and Rough and Ready Creek.

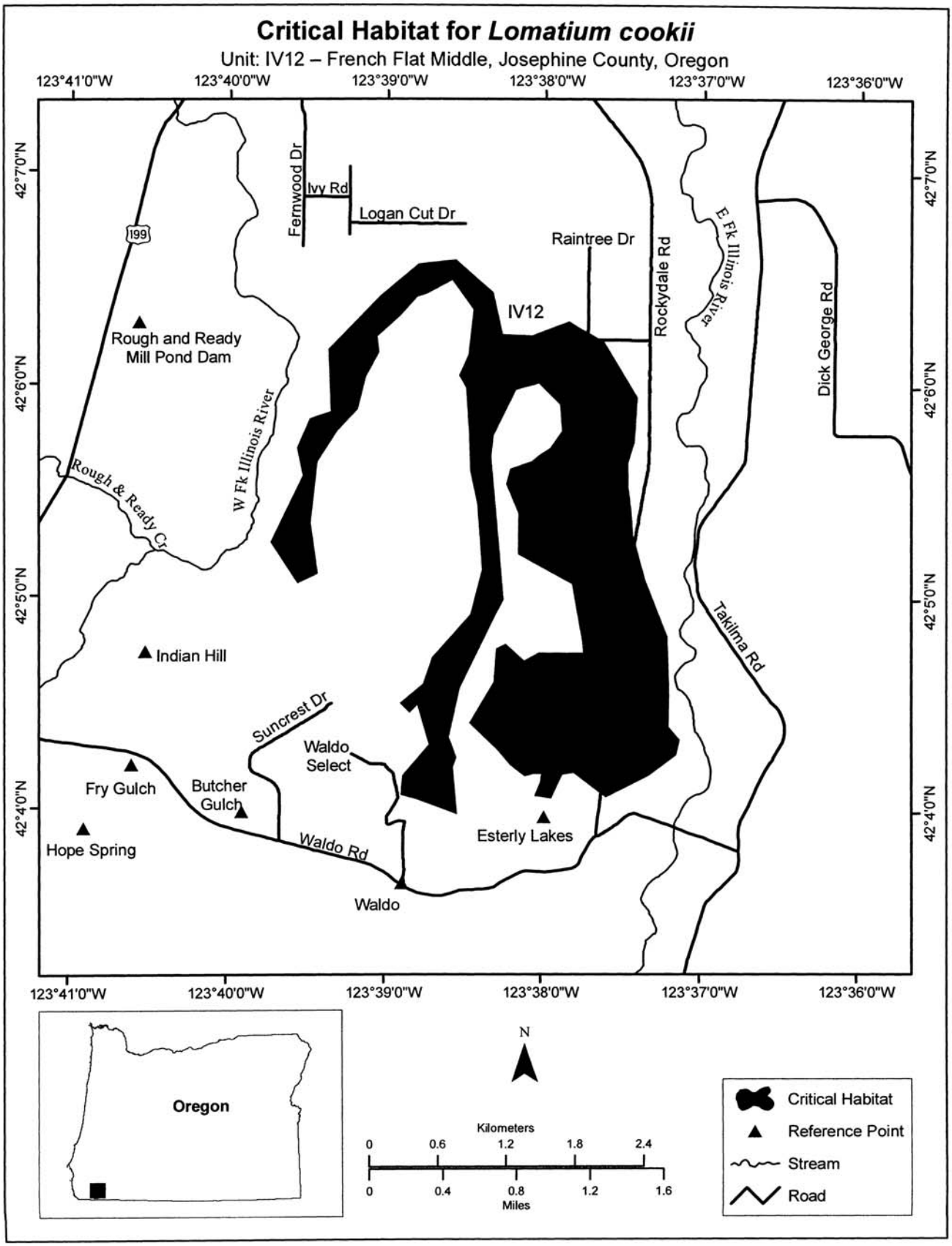
(ii) *Note*: Map of Unit IV11 Critical Habitat for *Lomatium cookii* follows:


Critical Habitat for *Lomatium cookii*
Unit: IV11 – Rough and Ready Creek, Josephine County, Oregon
123°43'0"W
123°42'0"W
123°41'0"W
42°7'0"N
42°6'0"N
42°5'0"N
Turner Rd
West Side Rd
W Fk Illinois River
Patton Bar Rd
Krauss Ln
Airport Dr
Illinois Valley Airport
Rough and Ready Mill Pond Dam
IV11
Rough and Ready Forest Wayside State Park
Seats Dam
Rough & Ready Creek
199
W Fk Illinois River
Oregon
N
Kilometers
0 0.4 0.8 1.2 1.6
0 0.25 0.5 0.75 1
Miles
Critical Habitat
Reference Point
Stream
Road

(21) Unit IV12 for *Lomatium cookii*: French Flat Middle, Josephine County, Oregon.

(i) Unit IV12 consists of 617 ha (1,524 ac) of intact wet meadow habitat. The unit is located 4.5 km (2.8 mi) east of Cave Junction, 3.7 km (2.3 mi) northeast of O'Brien, 140 m (460 ft) north of Esterly Lakes, 1.4 km (0.9 mi) northeast of Indian Hill, 300 m (960 ft) east of the confluence of Rough and Ready Creek and the West Fork Illinois River, and follows along a 5.0 km (3.1 mi) stretch of Rockydale Road.

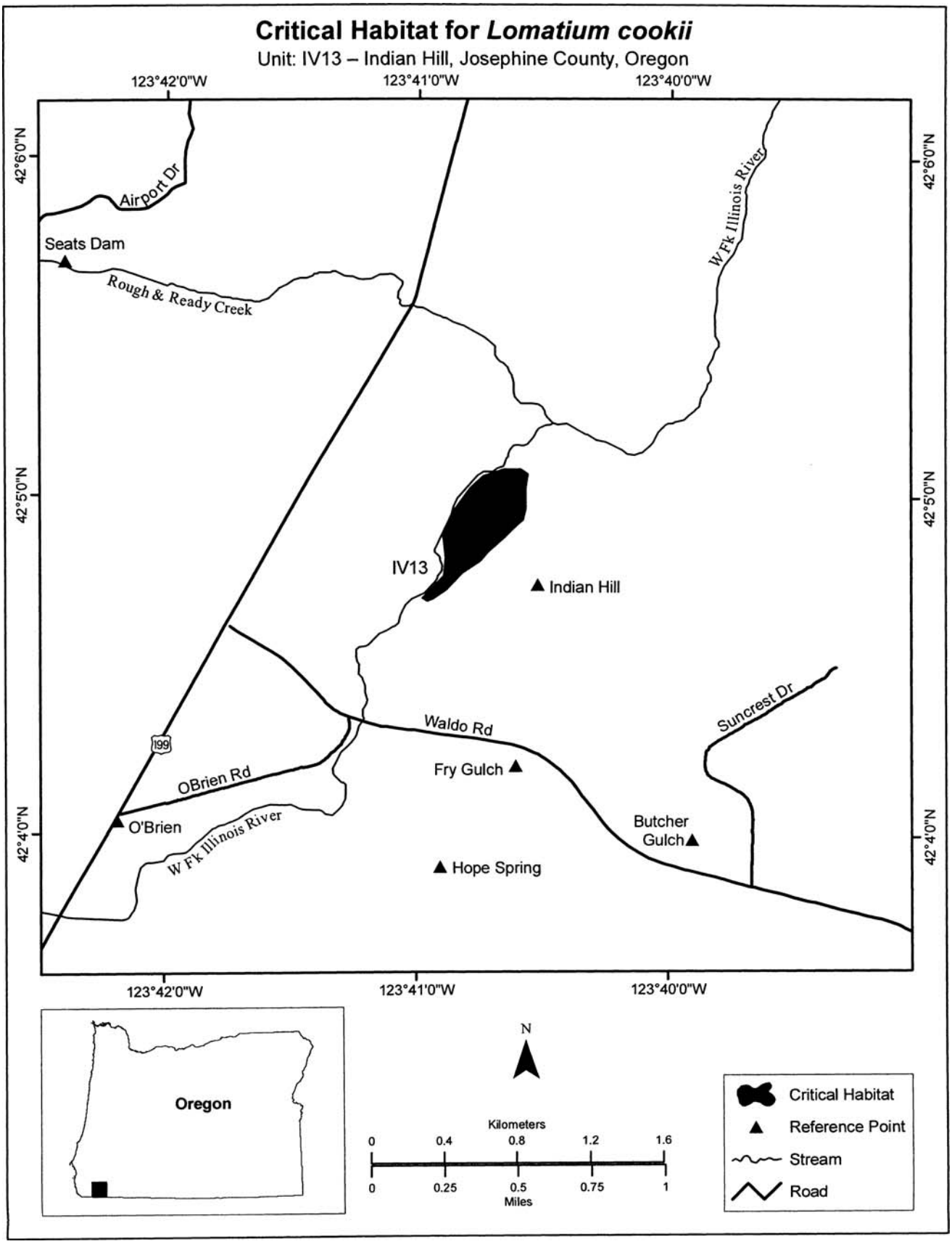
(ii) *Note*: Map of Unit IV12 Critical Habitat for *Lomatium cookii* follows:


Critical Habitat for Lomatium cookii
Unit: IV12 – French Flat Middle, Josephine County, Oregon
123°41'0"W
123°40'0"W
123°39'0"W
123°38'0"W
123°37'0"W
123°36'0"W
42°7'0"N
42°6'0"N
42°5'0"N
42°4'0"N
Fernwood Dr
Ivy Rd
Logan Cut Dr
Raintree Dr
Rockydale Rd
E Fk Illinois River
Dick George Rd
199
IV12
Rough and Ready Mill Pond Dam
W Fk Illinois River
Rough & Ready Cr
Indian Hill
Takilma Rd
Suncrest Dr
Waldo Select
Fry Gulch
Butcher Gulch
Hope Spring
Waldo Rd
Esterly Lakes
Waldo
Oregon
N
Kilometers
0
0.6
1.2
1.8
2.4
Miles
0
0.4
0.8
1.2
1.6
Critical Habitat
Reference Point
Stream
Road

(22) Unit IV13 for *Lomatium cookii*: Indian Hill, Josephine County, Oregon.

(i) Unit IV13 consists of 18 ha (45 ac) of intact wet meadow habitat. The unit is located adjacent to and lies east of a 900 m (2,950 ft) stretch of the West Fork Illinois River, located approximately 300 m south (upstream) of the confluence of Rough and Ready Creek and the West Fork Illinois River. The unit is 1.8 km (1.1 mi) northeast of O'Brien and is 350 m (1,150 ft) northwest of Indian Hill.

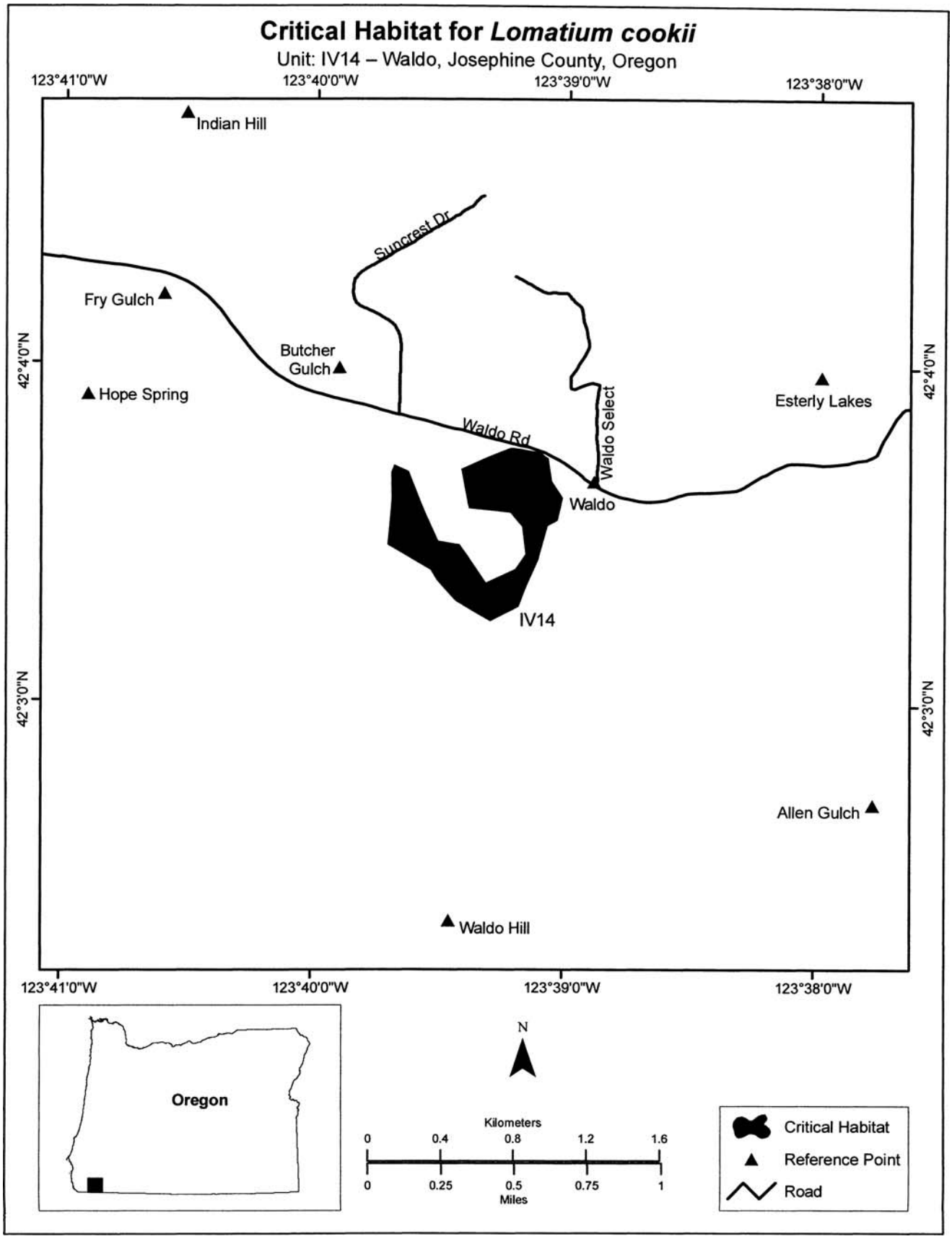
(ii) *Note*: Map of Unit IV13 Critical Habitat for *Lomatium cookii* follows:


Critical Habitat for Lomatium cookii
Unit: IV13 – Indian Hill, Josephine County, Oregon
123°42'0"W
123°41'0"W
123°40'0"W
42°6'0"N
42°5'0"N
42°4'0"N
Airport Dr
Seats Dam
Rough & Ready Creek
W Fk Illinois River
IV13
Indian Hill
Waldo Rd
Suncrest Dr
199
OBrien Rd
O'Brien
Fry Gulch
Butcher Gulch
Hope Spring
W FK Illinois River
Oregon
N
Kilometers
0
0.4
0.8
1.2
1.6
0
0.25
0.5
0.75
1
Miles
Critical Habitat
Reference Point
Stream
Road

(23) Unit IV14 for *Lomatium cookii*: Waldo, Josephine County, Oregon.

(i) Unit IV14 consists of 40 ha (100 ac) of intact wet meadow habitat. The unit is located 3.4 km (2.1 mi) east-southeast O'Brien, 230 m (750 ft) west of Waldo, 2.4 km (1.5 mi) southeast of Indian Hill, and is 1.5 km (0.9 mi) southwest of Esterly Lakes.

(ii) *Note*: Map of Unit IV14 Critical Habitat for *Lomatium cookii* follows:


Critical Habitat for *Lomatium cookii*
Unit: IV14 – Waldo, Josephine County, Oregon
123°41'0"W
123°40'0"W
123°39'0"W
123°38'0"W
42°4'0"N
42°3'0"N
Indian Hill
Suncrest Dr
Fry Gulch
Butcher Gulch
Hope Spring
Waldo Rd
Waldo Select
Waldo
Esterly Lakes
IV14
Allen Gulch
Waldo Hill
Oregon
N
Kilometers
0
0.4
0.8
1.2
1.6
0
0.25
0.5
0.75
1
Miles
Critical Habitat
Reference Point
Road

* * * * *

Family Limnanthaceae: *Limnanthes floccosa* **ssp.** *grandiflora* **(large-flowered woolly meadowfoam)**

(1) Critical habitat units for *Limnanthes floccosa* ssp. *grandiflora* are depicted for Jackson County, Oregon, on the maps below.

(2) The primary constituent elements for *Limnanthes floccosa* ssp. *grandiflora* are:

(i) Vernal pools or ephemeral wetlands and the adjacent upland margins of these depressions that hold water for a sufficient length of time to sustain *Limnanthes floccosa* ssp. *grandiflora* germination, growth, and reproduction, occurring in the Agate Desert vernal pool landscape. These vernal pools or ephemeral wetlands are seasonally inundated during wet years but do not necessarily fill with water every year due to natural variability in rainfall, and support native plant populations. Areas of sufficient size and quality are likely to have the following characteristics:

(A)Elevations from 372 to 469 m (1,220 to 1,540 ft);

(B)Associated dominant native plants including, not limited to: *Alopecurus geniculatus, Deschampsia danthonioides*, *Eryngium petiolatum, Lasthenia californica, Myosurus minimus*, *Navarretia leucocephala* ssp. *leucocephala, Phlox gracilis, Plagiobothrys bracteatus*, *Trifolium depauperatum*, and *Triteleia hyacinthine;* and

(C)A minimum area of 8 ha (20 ac) to provide intact hydrology and protection from development and weed sources.

(ii) The hydrologically and ecologically functional system of interconnected pools or ephemeral wetlands or depressions within a matrix of surrounding uplands that together form vernal pool complexes within the greater watershed. The associated features may include the pool basin or depressions; an intact hardpan subsoil underlying the surface soils up to 0.75 m (2.5 ft); and surrounding uplands, including mound topography and other geographic and edaphic features, that support these systems of hydrologically interconnected pools and other ephemeral wetlands (which may vary in extent depending on site-specific characteristics of pool size and depth, soil type and hardpan depth).

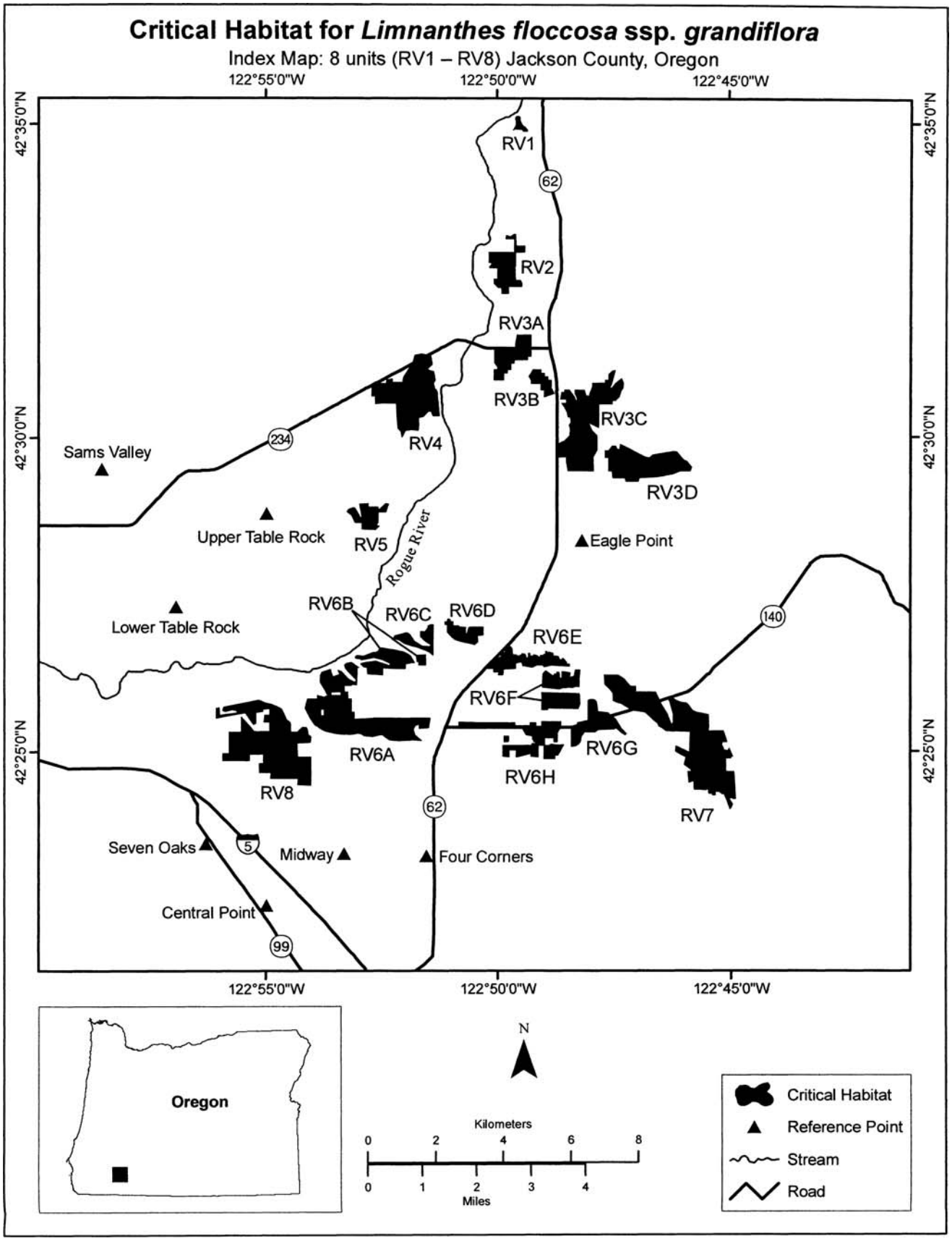
(iii) Silt, loam, and clay soils that are of alluvial origin, with a 0 to 3 percent slope, primarily classified as Agate-Winlo complex soils, but also including Coker clay, Carney clay, Provig-Agate complex soils, and Winlo very gravelly loam soils.

(iv) No or negligible presence of competitive nonnative invasive plant species. (In this usage, ''negligible'' means a minimal level of nonnative plant species that will still allow *Limnanthes floccosa* ssp. *grandiflora* to continue to survive and recover.)

(3) Critical habitat does not include manmade structures (including, but not limited to, buildings, aqueducts, runways, roads, and other paved areas) and the land on which they are located existing within the legal boundaries on the effective date of this rule and not containing one or more of the primary constituent elements.

(4) Critical habitat unit maps. These critical habitat units were mapped using Universal Transverse Mercator, Zone 10, North American Datum 1983 (UTM NAD 83) coordinates. These coordinates establish the vertices and endpoints of the boundaries of the units.

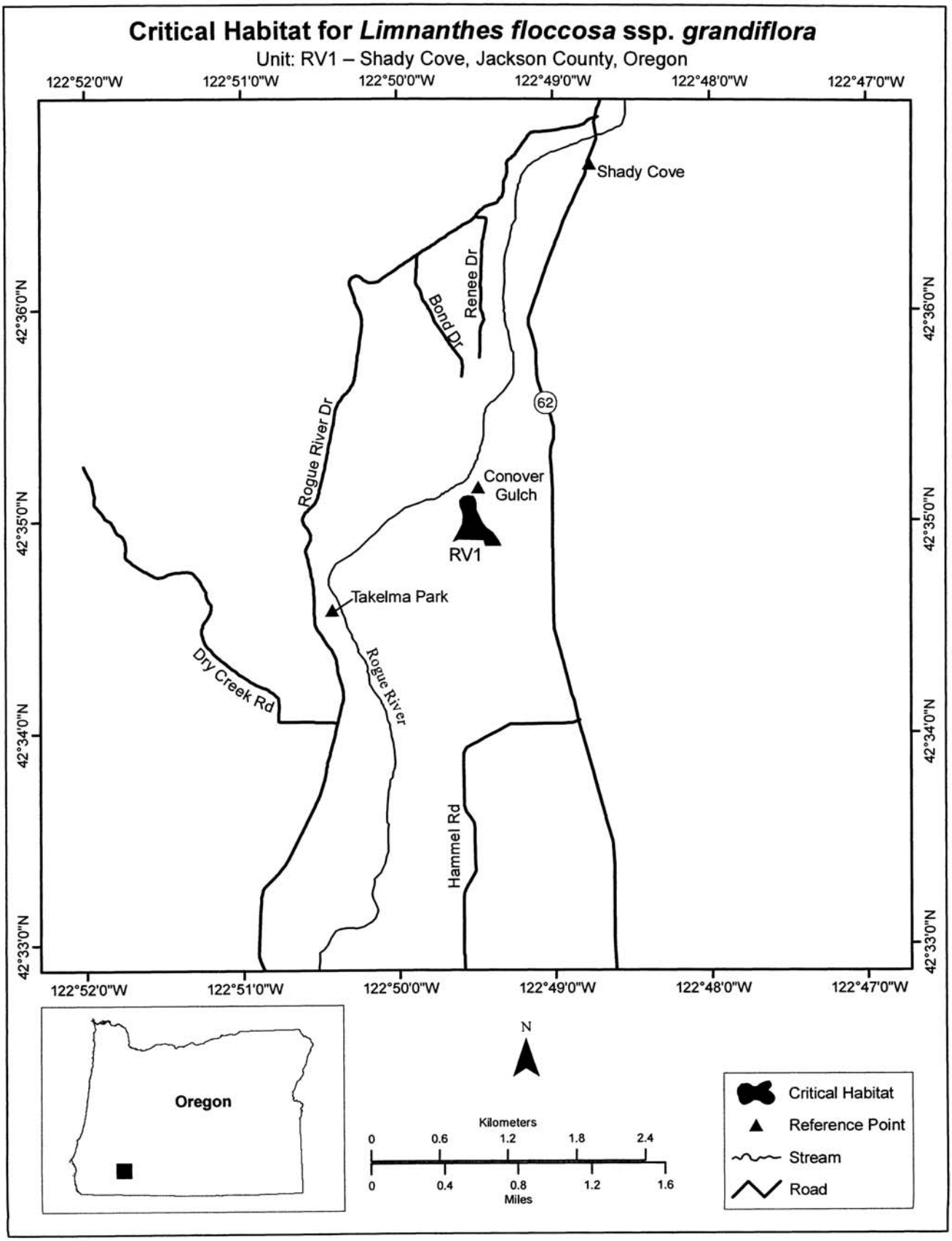
(5) Note: Index Map for critical habitat for *Limnanthes floccosa* ssp. *grandiflora* in Jackson County, Oregon, follows:


Critical Habitat for *Limnanthes floccosa* ssp. *grandiflora*
Index Map: 8 units (RV1 – RV8) Jackson County, Oregon
122°55'0"W
122°50'0"W
122°45'0"W
42°35'0"N
42°30'0"N
42°25'0"N
RV1
RV2
RV3A
RV3B
RV3C
RV3D
RV4
RV5
RV6A
RV6B
RV6C
RV6D
RV6E
RV6F
RV6G
RV6H
RV7
RV8
Sams Valley
Upper Table Rock
Lower Table Rock
Eagle Point
Rogue River
Seven Oaks
Midway
Four Corners
Central Point
62
234
140
5
99
Oregon
N
Kilometers
0 2 4 6 8
0 1 2 3 4
Miles
Critical Habitat
Reference Point
Stream
Road

(6) Unit RV1 for *Limnanthes floccosa ssp. grandiflora*: Shady Cove, Jackson County, Oregon.

(i) Unit RV1 consists of approximately 8 ha (20 ha) of intact vernal pool–mounded prairie habitat. The unit is located 460 m (1,500 ft) west of Highway 62 and parallels a 430 m (ft) stretch of the highway. The unit is 0.8 km (0.5 mi) south of Shady Cove, 1.3 km (0.8 mi) northeast of Takelma Park, and is 122 m (400 ft) east of the Rogue River.

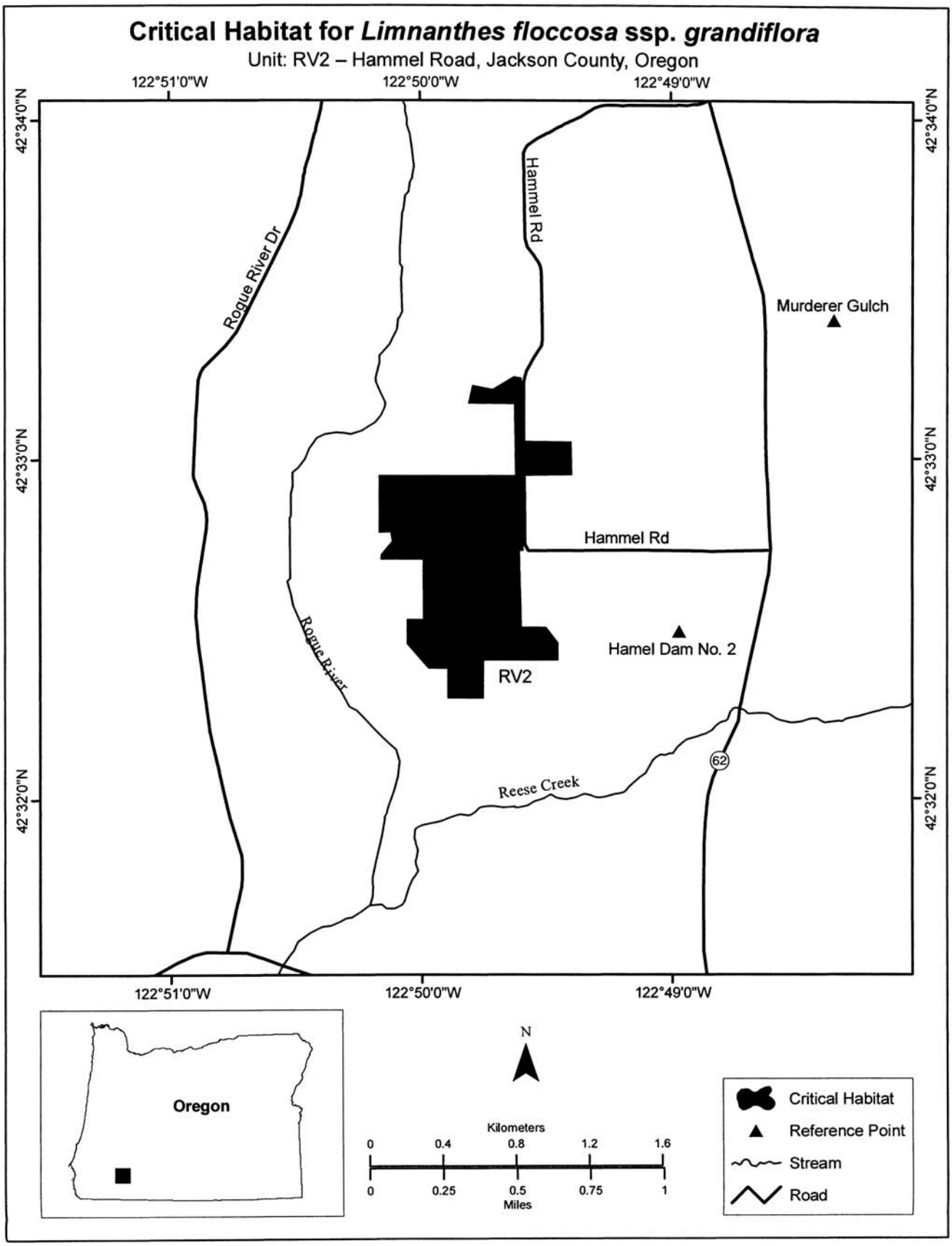
(ii) *Note*: Map of Unit RV1 Critical Habitat for *Limnanthes floccosa* ssp. *grandiflora* follows:


Critical Habitat for *Limnanthes floccosa* ssp. *grandiflora*
Unit: RV1 – Shady Cove, Jackson County, Oregon
122°52'0"W
122°51'0"W
122°50'0"W
122°49'0"W
122°48'0"W
122°47'0"W
42°36'0"N
42°35'0"N
42°34'0"N
42°33'0"N
Shady Cove
Renee Dr
Bond Dr
Rogue River Dr
62
Conover Gulch
RV1
Takelma Park
Dry Creek Rd
Rogue River
Hammel Rd
Oregon
N
Kilometers
0
0.6
1.2
1.8
2.4
Miles
0
0.4
0.8
1.2
1.6
Critical Habitat
Reference Point
Stream
Road

(7) Unit RV2 for *Limnanthes floccosa* ssp. *grandiflora*: Hammel Road, Jackson County, Oregon.

(i) Unit RV 2 consists of approximately 84 ha (207 ac) of intact vernal pool–mounded prairie. The unit located 1.2 km (0.75 mi) northeast of the confluence of Reese Creek and the Rogue River, 1.3 km (0.8 mi) west of Highway 62, and 430 m (1,400 ft) east of the Rogue River.

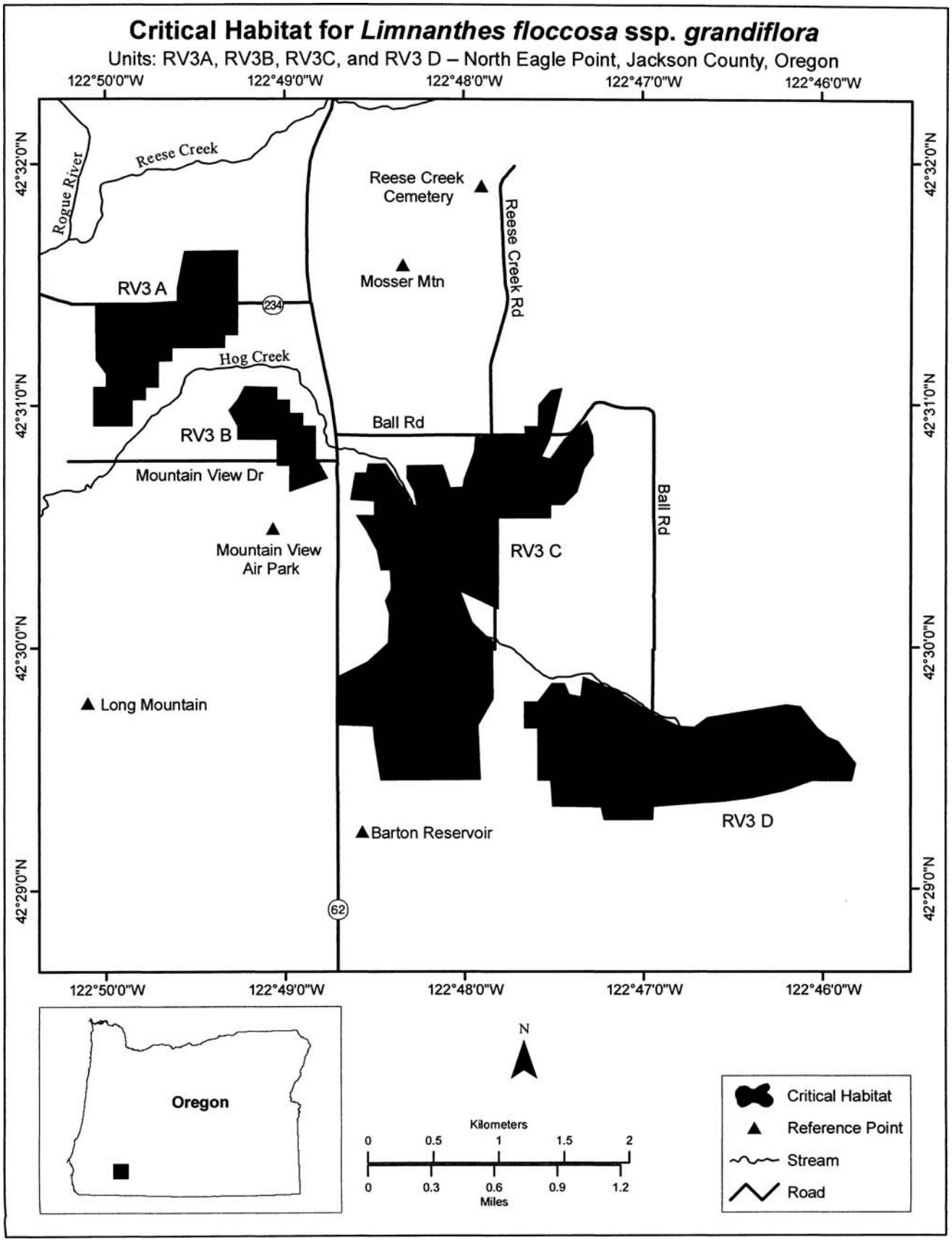
(ii) *Note*: Map of Unit RV2 Critical Habitat for *Limnanthes floccosa* ssp. *grandiflora* follows:


Critical Habitat for *Limnanthes floccosa* ssp. *grandiflora*
Unit: RV2 – Hammel Road, Jackson County, Oregon
122°51'0"W
122°50'0"W
122°49'0"W
42°34'0"N
42°33'0"N
42°32'0"N
Rogue River Dr
Hammel Rd
Murderer Gulch
Hammel Rd
Rogue River
Hamel Dam No. 2
RV2
Reese Creek
62
Oregon
N
Kilometers
0
0.4
0.8
1.2
1.6
0
0.25
0.5
0.75
1
Miles
Critical Habitat
Reference Point
Stream
Road

(8) Unit RV3 for *Limnanthes floccosa* ssp. *grandiflora*: North Eagle Point, Jackson County, Oregon.

(i) Unit RV3 is composed of four subunits and totals 538.5 ha (1,331 ac) of intact vernal pool habitat. The unit is located southwest of Mosser Mountain and northeast of Long Mountain. The four subunits loosely follow a 6.9 km (4.3 mi) stretch of Hog Creek beginning at its origin. Originating 3.8 km (2.4 mi) east of Highway 62 in subunit RV3D, Hog Creek runs through RV3C, crosses Highway 62, flows between RV3B (located 100 m (328 ft) west of Highway 62) and RV3A (located 600 m (1,970 ft) west of Highway 62), before emptying into the Rogue River after 2.4 km (1.5 mi). Subunit RV3A is located 560 m (1,837 ft) southeast of the confluence of Reese Creek and the Rogue River. Subunit RV3B is located 100 m (328 ft) west of Highway 62 at the intersection of Ball Road and extends along an 835 m (2,740 ft) stretch of Hog Creek. Subunit RV3C is located 2 km (1.2 mi) north of Eagle Point (see Index map) and extends 2.6 km (1.6 mi) south of the junction of Ball Road and Reese Creek Road. Subunit RV3D is located 3.2 km (2 mi) east of Long Mountain and is 2.4 km (1.5 mi) southeast of the junction of Highway 62 and Ball Road. It extends along a 1.8 km (1.1 mi) stretch of Hog Creek.

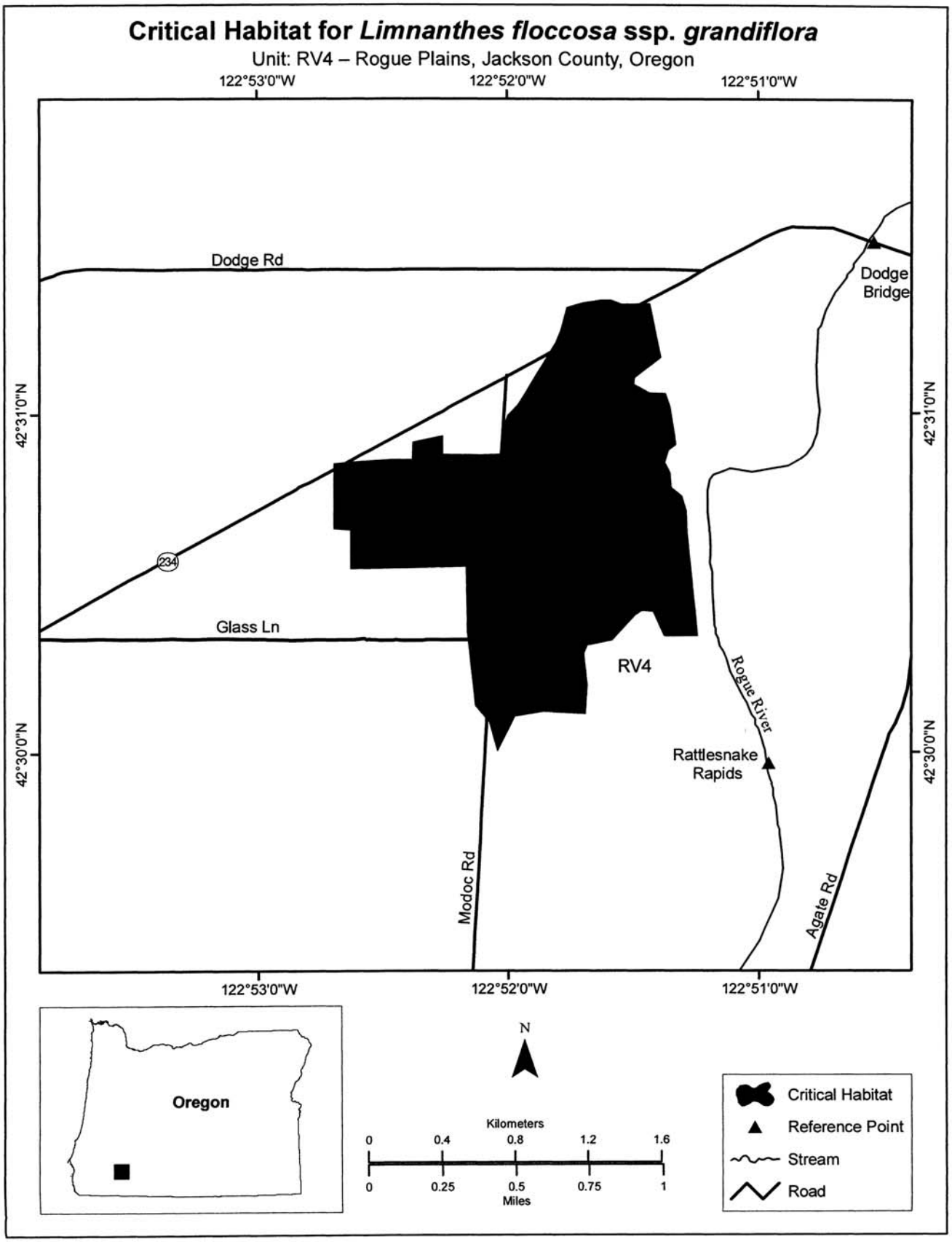
(ii) *Note*: Map of Unit RV3 Critical Habitat for *Limnanthes floccosa* ssp. *grandiflora* follows:


Critical Habitat for Limnanthes floccosa ssp. grandiflora
Units: RV3A, RV3B, RV3C, and RV3 D – North Eagle Point, Jackson County, Oregon
122°50'0"W
122°49'0"W
122°48'0"W
122°47'0"W
122°46'0"W
42°32'0"N
42°31'0"N
42°30'0"N
42°29'0"N
Rogue River
Reese Creek
Reese Creek Cemetery
Reese Creek Rd
Mosser Mtn
RV3 A
234
Hog Creek
RV3 B
Ball Rd
Mountain View Dr
Mountain View Air Park
RV3 C
Ball Rd
Long Mountain
Barton Reservoir
RV3 D
62
Oregon
N
Kilometers
0
0.5
1
1.5
2
0
0.3
0.6
0.9
1.2
Miles
Critical Habitat
Reference Point
Stream
Road

(9) Unit RV4 for *Limnanthes floccosa* ssp. *grandiflora*: Rogue Plains, Jackson County, Oregon.

(i) Unit RV4 consists of 245 ha (605 ac) of intact vernal pool–mounded prairie habitat. The unit is located 122 m (400 ft) southeast of the junction of Highway 234 and Modoc Road. It extends 2 km (1.2 mi) south along Modoc Road from the intersection, is located 1.4 km (0.87 mi) southwest of Dodge Bridge, and 1.0 km (0.6 mi) northwest of Rattlesnake Rapids on the Rogue River.

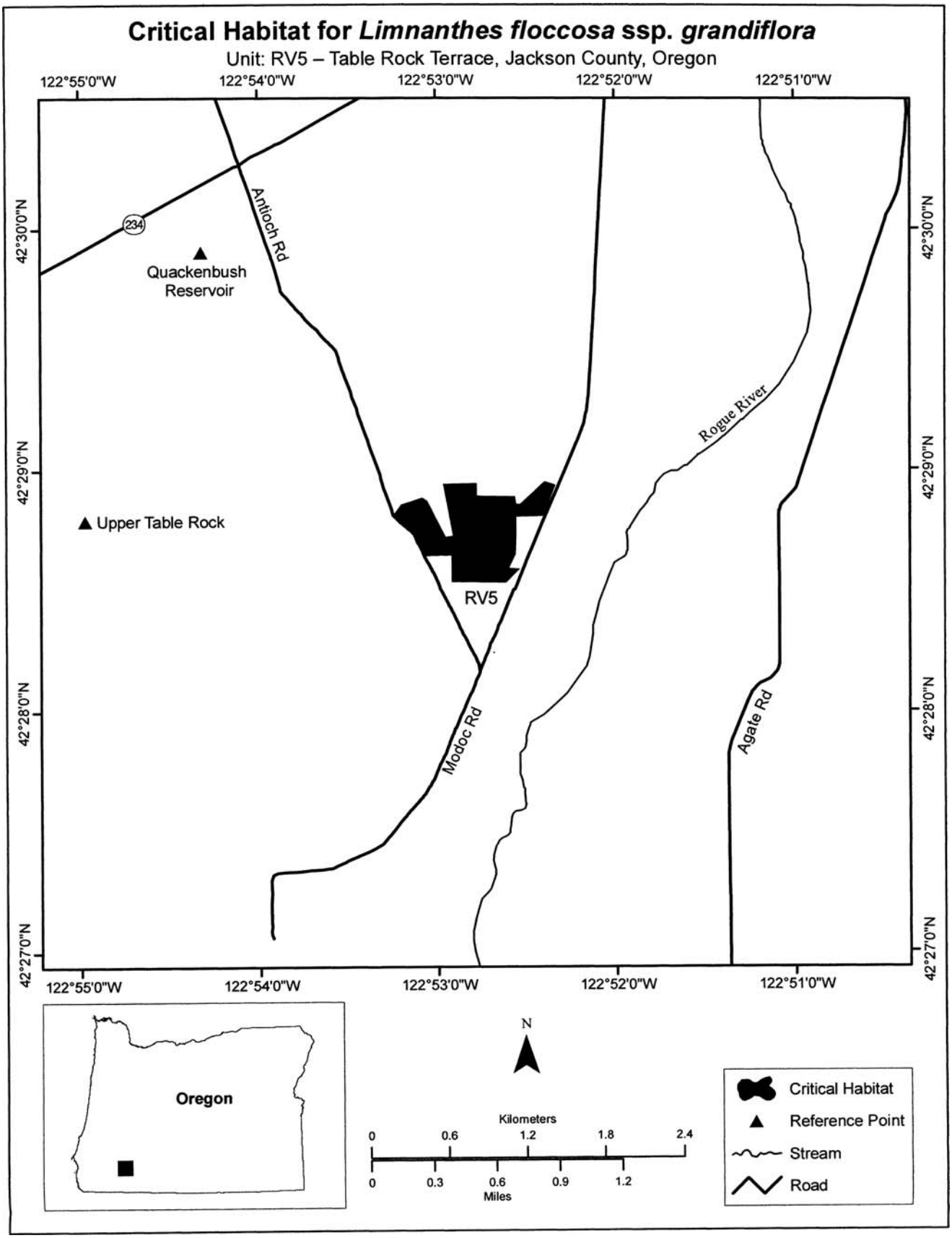
(ii) *Note*: Map of Unit RV4 Critical Habitat for *Limnanthes floccosa* ssp. *grandiflora* follows:


Critical Habitat for *Limnanthes floccosa* ssp. *grandiflora*
Unit: RV4 – Rogue Plains, Jackson County, Oregon
122°53'0"W
122°52'0"W
122°51'0"W
42°31'0"N
42°30'0"N
Dodge Rd
Dodge Bridge
234
Glass Ln
RV4
Rogue River
Rattlesnake Rapids
Modoc Rd
Agate Rd
Oregon
N
Kilometers
0 0.4 0.8 1.2 1.6
0 0.25 0.5 0.75 1
Miles
Critical Habitat
Reference Point
Stream
Road

(10) Unit RV5 for *Limnanthes floccosa ssp. grandiflora*: Table Rock Terrace, Jackson County, Oregon.

(i) Unit RV5 includes 49.5 ha (122 ac) of intact vernal pool–mounded prairie habitat. The unit is located on privately owned land 670 m (2,200 ft) north of the junction of Modoc and Antioc Roads, is 1.4 km (0.9 mi) east of Upper Table Rock, and 650 m (2,300 ft) west of the Rogue River. This unit follows along an 800 m (2,600 ft) stretch of Modoc Road to the east of the unit and a 700 m (2,300 ft) stretch of Antioc Road to the west of the unit.

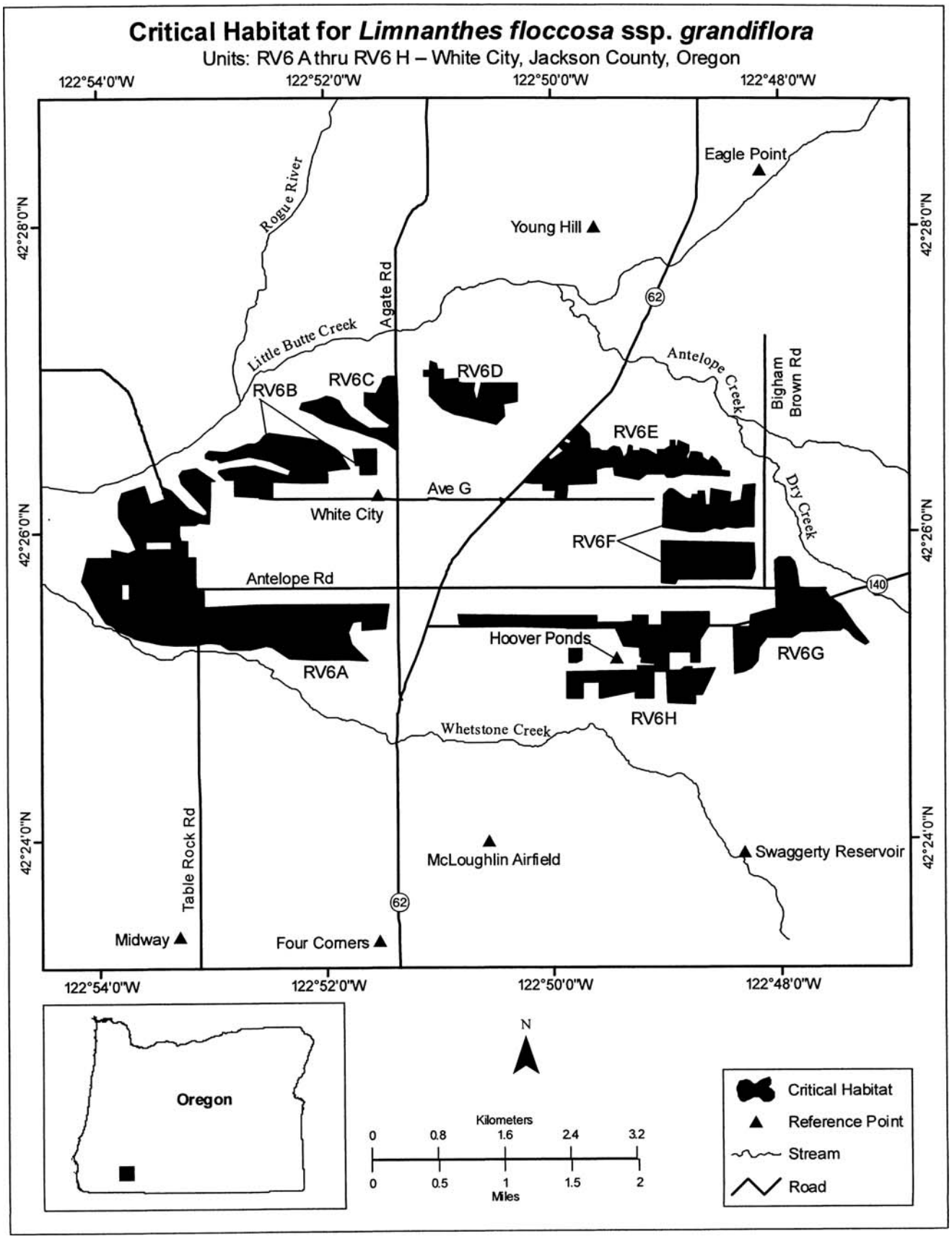
(ii) *Note*: Map of Unit RV5 Critical Habitat for *Limnanthes floccosa* ssp. *grandiflora* follows:


Critical Habitat for *Limnanthes floccosa* ssp. *grandiflora*
Unit: RV5 – Table Rock Terrace, Jackson County, Oregon
122°55'0"W
122°54'0"W
122°53'0"W
122°52'0"W
122°51'0"W
42°30'0"N
42°29'0"N
42°28'0"N
42°27'0"N
234
Antioch Rd
Quackenbush Reservoir
Upper Table Rock
RV5
Rogue River
Modoc Rd
Agate Rd
Oregon
N
Kilometers
0
0.6
1.2
1.8
2.4
Miles
0
0.3
0.6
0.9
1.2
Critical Habitat
Reference Point
Stream
Road

(11) Unit RV6 for *Limnanthes floccosa* ssp. *grandiflora*: White City, Jackson County, Oregon.

(i) Unit RV6 for *Limnanthes floccosa* ssp. *grandiflora* is 848 ha (2,095 ac) in size and includes intact vernal pool–mounded prairie and swale habitats. The unit is located around White City, is 1.6 km (1.0 mi) southwest of Eagle Point, and is 440 m (1,444 ft) southeast of the confluence of the Rogue River and Little Butte Creek. Subunit RV6A is located north of Whetstone Creek and is 500 m (1,200 ft) west of the junction of Highway 62 and Antelope Road. Subunits RV6B, RV6C, RV6D, and RV6E are located north of Avenue G in White City, south of Little Butte Creek, and 670 m (2,200 ft) southwest of Antelope Creek. Subunits RV6F and RV6G are located approximately 500 feet west of Dry Creek and are east of Highway 62 in White City. Subunit RV6H is located north of Whetstone Creek and south of Antelope Road. Subunit RV6H roughly encircles the Hoover Ponds, east of Highway 62, and is 850 m (2790 ft) east of subunit RV6A.

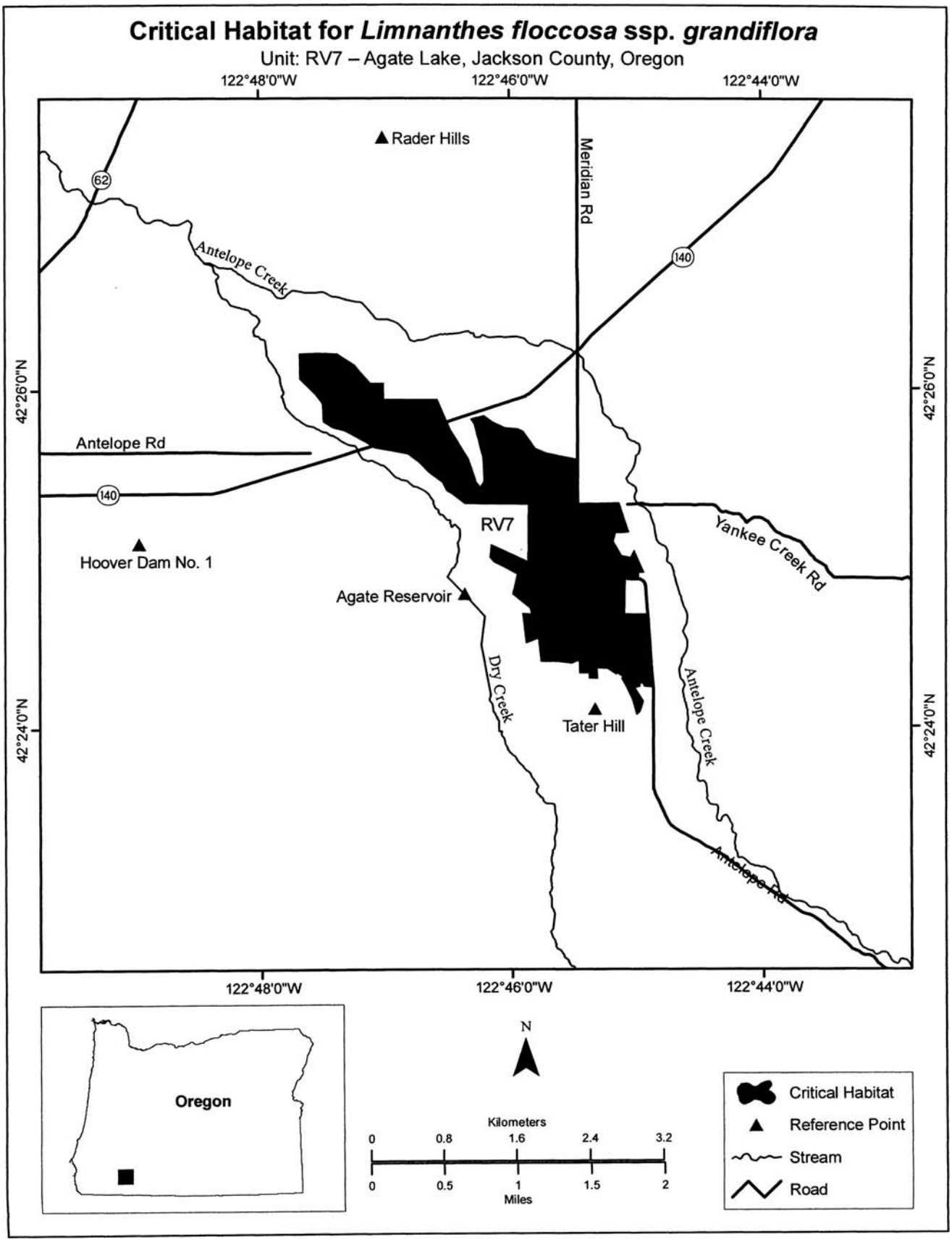
(ii) *Note*: Map of Unit RV6 Critical Habitat for *Limnanthes floccosa* ssp. *grandiflora* follows:


Critical Habitat for *Limnanthes floccosa* ssp. *grandiflora*
Units: RV6 A thru RV6 H – White City, Jackson County, Oregon
122°54'0"W
122°52'0"W
122°50'0"W
122°48'0"W
42°28'0"N
42°26'0"N
42°24'0"N
Rogue River
Eagle Point
Young Hill
Agate Rd
62
Little Butte Creek
Antelope Creek
Bigham Brown Rd
RV6B
RV6C
RV6D
RV6E
Ave G
White City
Dry Creek
RV6F
Antelope Rd
140
Hoover Ponds
RV6G
RV6A
RV6H
Whetstone Creek
Table Rock Rd
McLoughlin Airfield
Swaggerty Reservoir
Midway
Four Corners
Oregon
N
Kilometers
0 0.8 1.6 2.4 3.2
0 0.5 1 1.5 2
Miles
Critical Habitat
Reference Point
Stream
Road

(12) Unit RV7: for *Limnanthes floccosa* spp. *grandiflora*: Agate Lake, Jackson County, Oregon.

(i) Unit RV7 consists of 426 ha (1,053 ac) of intact vernal pool–mounded prairie and swale habitat. The unit is located 500 m (1,640 ft) east of the Agate Reservoir, along a 5.4-km (3.4-mi) stretch roughly parallel and between Dry Creek and Antelope Creek, is 330 m (1,080 ft) north of Tater Hill, and is 1.4 km (0.9 mi) southeast of the confluence of Dry Creek and Antelope Creek.

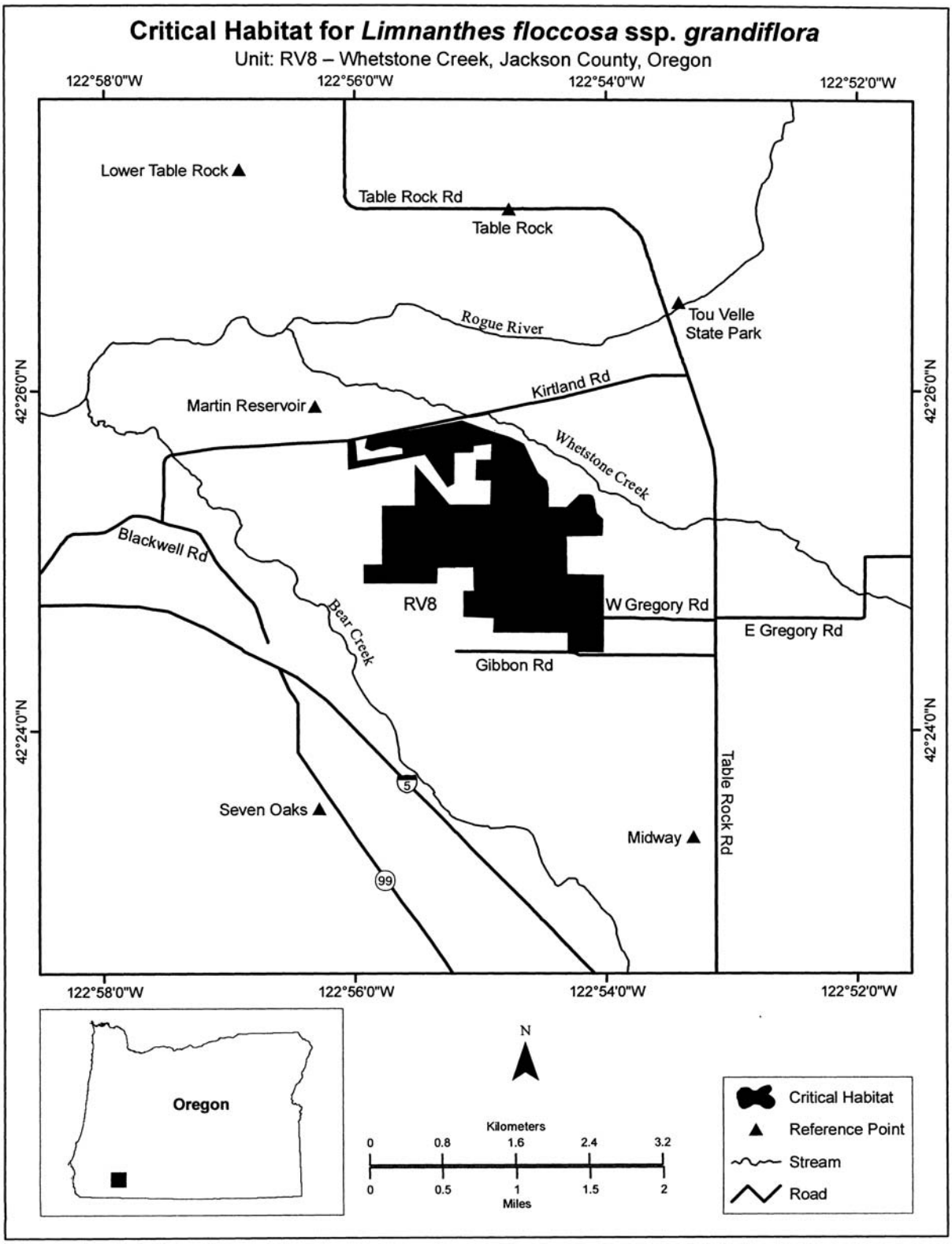
(ii) *Note*: Map of Unit RV7 Critical Habitat for *Limnanthes floccosa* ssp. *grandiflora* follows:


Critical Habitat for *Limnanthes floccosa* ssp. *grandiflora*
Unit: RV7 – Agate Lake, Jackson County, Oregon
122°48'0"W
122°46'0"W
122°44'0"W
42°26'0"N
42°24'0"N
Rader Hills
Meridian Rd
62
140
Antelope Creek
Antelope Rd
RV7
Hoover Dam No. 1
Agate Reservoir
Yankee Creek Rd
Dry Creek
Tater Hill
Antelope Creek
Antelope Rd
Oregon
N
Kilometers
0 0.8 1.6 2.4 3.2
0 0.5 1 1.5 2
Miles
Critical Habitat
Reference Point
Stream
Road

(13) Unit RV8 for *Limnanthes floccosa ssp. grandiflora*: Whetstone Creek, Jackson County, Oregon.

(i) Unit RV8 consists of 362.5 ha (896 ac) of intact vernal pool–mounded prairie and swale habitat. The unit is located approximately 1.4 km (0.9 mi) southeast of the confluence of the Rogue River and Whetstone Creek, 2.2 km (1.4 mi) southwest of Tou Velle State Park, and 2.9 km southeast of the confluence of Bear Creek and the Rogue River. The unit roughly parallels a 2.6 km (1.6 mi) stretch of Whetstone Creek to the south.

(ii) *Note*: Map of Unit RV8 Critical Habitat for *Limnanthes floccosa* ssp. *grandiflora* follows:



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Dated: July 13, 2009

Jane Lyder

Deputy Assistant Secretary for Fish and Wildlife and Parks

[FR Doc. E9–17522 Filed 7–27–09; 8:45 am]

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