

**ENVIRONMENTAL PROTECTION AGENCY****40 CFR Part 194**

[FRL-5954-7]

RIN 2060-AE30

**Opportunity to Comment on EPA's Analysis of Air Drilling as it Relates to EPA's Proposed Rule: "40 CFR Part 194, Criteria for the Certification and Re-certification of the Waste Isolation Pilot Plant's (WIPP) Compliance with the 40 CFR Part 191 Disposal Regulations: Certification Decision"**

AGENCY: Environmental Protection Agency.

ACTION: Notice of availability.

**SUMMARY:** The Environmental Protection Agency (EPA) is announcing the availability of EPA's analysis of the practice of air drilling during petroleum exploration and its impact on the ability of the Waste Isolation Pilot Plant to contain radioactive waste within federal environmental and public health limits. EPA's analysis of air drilling is now available for review in the public dockets listed in **ADDRESSES**.

**DATES:** EPA is requesting public comment on EPA's review of air drilling. Comments must be received by EPA's official docket on or before February 27, 1998.

**ADDRESSES:** EPA's official docket for all rulemaking activities under the Waste Isolation Pilot Plant Land Withdrawal Act, as amended, is located in Washington, DC, in the Air Docket, Room M1500, Mailcode 6102, U.S. EPA, 401 M Street, SW, Washington, DC 20460. Information on EPA's radioactive waste disposal standards (40 CFR part 191), the compliance criteria (40 CFR part 194), and EPA's proposed decision to certify WIPP is filed in the official EPA Air Docket, Dockets No. R-89-01, A-92-56, and A-93-02, respectively, and is available for review at the following three EPA WIPP docket locations in New Mexico: in Carlsbad at the Municipal Library, Hours: Mon-Thu, 10-9, Fri-Sat, 10-6, and Sun 1-5; in Albuquerque at the Government Publications Department, Zimmerman Library, University of New Mexico, Hours: Mon-Thu, 8-9, Fri, 8-5, Sat-Sun, 1-5; and in Santa Fe at the Fogelson Library, College of Santa Fe, Hours: Mon-Thu, 8-12 Midnight, Fri, 8-5, Sat, 9-5, and Sun, 1-9.

**Note:** The dockets in New Mexico contain only major items from the official Air docket in Washington, DC, plus all those documents added to the official docket since the October 1992 enactment of the WIPP Land Withdrawal Act, Pub. L. No. 102-579 (LWA).

As provided in EPA's regulations at 40 CFR Part 2, and in accordance with normal Air docket procedures, if copies of any docket materials are requested, a reasonable fee may be charged for photocopying.

**FOR FURTHER INFORMATION CONTACT:** Tom Peake, Office of Radiation and Indoor Air, (202) 564-9310 or call EPA's 24-hour toll-free WIPP Information Line, 1-800-331-WIPP.

**SUPPLEMENTARY INFORMATION:****Background**

The Department of Energy (DOE) is developing the Waste Isolation Pilot Plant (WIPP) near Carlsbad in southeastern New Mexico as a potential deep geologic repository for disposal of transuranic (TRU) radioactive waste. As defined by the WIPP LWA, as amended, TRU waste consists of materials containing elements having atomic numbers greater than 92 (with half-lives greater than twenty years), in concentrations greater than 100 nanocuries of alpha-emitting TRU isotopes per gram of waste. Most TRU waste consists of items contaminated during the production of nuclear weapons, e.g., rags, equipment, tools, and organic and inorganic sludges.

On October 23, 1997, the Environmental Protection Agency (EPA) announced its proposed decision to issue to the Secretary of the Department of Energy (DOE) a "certification of compliance" that the WIPP will comply with EPA's radioactive waste disposal standards at 40 CFR part 191, subject to several conditions related to: (1) Waste characterization (to determine the radionuclides and other contents of waste disposal containers); (2) quality assurance programs at DOE waste generator sites; (3) implementation of passive institutional controls (PICs) (intended to warn future generations about the hazards of the radioactive waste buried in the WIPP); and (4) panel seals (used to contain the waste within compartments in the facility). In addition, DOE is required to report to EPA any change in the activities or conditions at the WIPP that differ from those described in the Compliance Certification Application (CCA), and to immediately inform EPA of any activities or conditions at the WIPP that might cause the WIPP to exceed the containment requirements of the disposal regulations. This proposal, entitled "Criteria for the Certification and Recertification of the Waste Isolation Pilot Plant's Compliance with the 40 CFR Part 191 Disposal Regulations: Certification Decision; Proposed Rule," was published in the **Federal Register** at 62 FR 58791-58838

on October 30, 1997, which marked the start of a 120-day public comment period. EPA's proposed decision to certify WIPP is based on an extensive independent technical review and evaluation (including confirmatory audits and inspections) of the DOE's CCA and supplemental materials based on the requirements specified in the WIPP Compliance Criteria at 40 CFR part 194.

The public has raised air drilling for petroleum exploration as a potential scenario that should have been considered by the DOE in its submission of the Certification Compliance Application CCA. In the CCA, DOE assumes that mud is the fluid used in conjunction with drilling for resources. EPA has received comments indicating that the use of air (instead of mud) is a drilling technique that should be considered in the performance of the WIPP. EPA has analyzed the potential for air drilling, and the potential impacts that air drilling could have on the performance of the WIPP. This analysis is now available for public review in EPA's dockets.

The Agency concludes from its analysis of the impacts of air drilling that no adverse consequences would result on the ability of the WIPP site to meet the Agency radioactive waste disposal standards at 40 CFR 191. Therefore, the Agency's proposed decision of October 23, 1997, to issue the DOE a certification of compliance remains unchanged.

Dated: January 21, 1998.

**Richard D. Wilson,***Acting Assistant Administrator for Air and Radiation.*

[FR Doc. 98-1913 Filed 1-26-98; 8:45 am]

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**DEPARTMENT OF THE INTERIOR****Fish and Wildlife Service****50 CFR Part 17**

RIN 1018-AE53

**Endangered and Threatened Wildlife and Plants; Proposed Endangered Status for *Erigeron decumbens* var. *decumbens* (Willamette Daisy) and Fender's Blue Butterfly (*Icaricia icarioides fenderi*) and Proposed Threatened Status for *Lupinus sulphureus* ssp. *kincaidii* (Kincaid's lupine)**

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Proposed rule.

**SUMMARY:** The U.S. Fish and Wildlife Service (Service) proposes endangered status pursuant to the Endangered Species Act (Act) of 1973, as amended, for a plant and a butterfly, *Erigeron decumbens* var. *decumbens* (Willamette daisy) and Fender's blue butterfly (*Icaricia icarioides fenderi*), and proposes threatened status for a plant, *Lupinus sulphureus* ssp. *kincaidii* (Kincaid's lupine). These species are restricted to native prairie in the Willamette Valley of Oregon and are currently known from a few small remnants of a formerly widespread distribution. In addition to its Oregon occurrences, *L. sulphureus* ssp. *kincaidii* is also known from one small site in southern Washington. The three taxa are threatened by one or more of the following—commercial and/or residential development, agriculture, silviculture, road improvement, over-collection, herbicide use, and naturally occurring demographic and random environmental events. This proposal, if made final, would invoke the Federal protection and recovery provisions of the Act for these plant and butterfly species.

**DATES:** Comments from all interested parties must be received by March 30, 1998. Public hearing requests must be received by March 13, 1998.

**ADDRESSES:** Comments and materials concerning this proposal should be sent to the State Supervisor, U.S. Fish and Wildlife Service, Oregon State Office, 2600 SE 98th Ave., Suite 100, Portland, Oregon 97266. Comments and materials received will be available for public inspection, by appointment, during normal business hours at the above address.

**FOR FURTHER INFORMATION CONTACT:** Dr. Andrew F. Robinson, Jr., Botanist; or Diana Hwang, Fish and Wildlife Biologist, U.S. Fish and Wildlife Service (see **ADDRESSES** section above or telephone 503-231-6179, FAX 503-231-6195).

**SUPPLEMENTARY INFORMATION:**

**Background**

Fender's blue butterfly (*Icaricia icarioides fenderi*), *Lupinus sulphureus* ssp. *kincaidii* (Kincaid's lupine), and *Erigeron decumbens* var. *decumbens* (Willamette daisy) are restricted to the Willamette Valley of Oregon. The valley is a 209 kilometer (km) long (130 miles (mi)) and 32-64 km (20-40 mi) wide alluvial flood plain with an overall northward gradient (Orr *et al.* 1992). The valley is narrow and flat at its southern end, widening and becoming hilly near its northern end at the confluence of the Willamette and

Columbia Rivers. In addition to its Oregon occurrences, *L. sulphureus* ssp. *kincaidii* is also known from one small site in southern Washington.

The alluvial soils of the Willamette Valley and southern Washington host a mosaic of grassland, woodland, and forest communities. Fender's blue butterfly, *Lupinus sulphureus* ssp. *kincaidii*, and *Erigeron decumbens* var. *decumbens* occupy native grassland habitats within the Willamette Valley. Based on the limited available evidence, Franklin and Dyrness (1973) asserted that most Willamette Valley grasslands are seral (one stage in a sequential progression), requiring natural or human-induced disturbance for their maintenance. Johannessen *et al.* (1971) indicated that the vast majority of Willamette Valley grasslands would be forested if left undisturbed. Important exceptions to this successional pattern are grass balds on valley hillsides, which may be climax grasslands due to the presence of deep, fine-textured, self-mulching soils or xeric (very dry) lithosoils (Franklin and Dyrness 1973).

Two native prairie types occur in the Willamette Valley, wet prairie and upland prairie. Fender's blue butterfly and *Lupinus sulphureus* ssp. *kincaidii* are typically found in native upland prairie with the dominant species being *Festuca rubra* (red fescue) and/or *Festuca idahoensis* (Idaho fescue) and *Calochortus tolmiei* (Tolmie's mariposa), *Silene hookeri* (Hooker's catchfly), *Fragaria virginiana* (broadpetal strawberry), *Sidalcea virgata* (rose checker-mallow), and *Lomatium* spp. (common lomatium) serving as herbaceous indicator species (Hammond and Wilson 1993). These dry, fescue prairies make up the majority of habitat for Fender's blue butterfly and *L. sulphureus* ssp. *kincaidii*. Although Fender's blue butterfly and *L. sulphureus* ssp. *kincaidii* are occasionally found on steep, south-facing slopes and barren rocky cliffs, neither of these species appear capable of occupying the most xeric oatgrass communities on these south facing slopes.

The primary habitat for *Erigeron decumbens* var. *decumbens* is native wetland prairie. This habitat is characterized by the seasonally-wet *Deschampsia caespitosa* (tufted hairgrass) community that occurs in low, flat regions of the Willamette Valley where flooding creates anaerobic and strongly reducing soil conditions. This wet prairie community includes *Juncus* spp. (rush) and *Danthonia californica* (California oatgrass) as co-dominant native species, as well as the introduced species *Festuca*

*arundinaceae* (tall fescue), *Bromus japonicus* (Japanese brome) and *Anthoxanthum odoratum* (sweet vernal grass) (USFWS 1993). Another endangered species, *Lomatium bradshawii* (Bradshaw's lomatium) also grows in wet prairie habitat. Atypically, one population of *E. decumbens* var. *decumbens* occurs on top of a dry, stony butte in an upland prairie.

The impact of humans on the botanical communities of the Willamette Valley date back several centuries to the Kalapooya Indians, who cleared and burned lands used for hunting and food gathering. Early accounts by David Douglas in 1826 indicate extensive burning of the valley floor, from its northern end at the falls of the Willamette River to its southern extremities near Eugene. Burned areas were documented by Douglas as being so complete as to limit the forage available for his horse and to reduce game availability (Douglas 1972). Accounts by other early explorers support Douglas' observations and suggest a pattern of annual burning by the Kalapooya (Johannessen *et al.* 1971). The Kalapooya land practices resulted in the maintenance of extensive wet and dry prairie grasslands, which may have facilitated their hunting efforts and limited the potential for sneak attacks by enemies (Clarke 1905, Douglas 1972, Minto 1900, Smith 1949). Although much of the woody vegetation was prevented from becoming established on the grasslands by this treatment, the random survival of young fire-resistant species such as *Quercus garryana* (Oregon white oak) accounted for the widely spaced trees on the margins of the valley (Habeck 1961). After 1848, burning decreased sharply through the efforts of settlers to suppress large-scale fires. Consequently, the open, park-like nature of the valley floor was lost, replaced by agricultural fields, dense oak and fir forests, and scrub lands following logging.

The Willamette basin covers approximately 2,600,000 hectares (ha) (6,400,000 acres (ac)), which was estimated in the mid-1880's to consist of one-sixth prairie and five-sixths forest (Lang 1885). The extent of the prairie component can be analyzed through historical information from land survey records. Natural grasslands described by Federal land surveyors in the 1850's were broken down into three distinct types—oak savannah, upland prairie, and wet prairie (Habeck 1961). Of the estimated 409,000 ha (1,010,000 ac) of historic native grasslands extant prior to 1850, approximately 277,000 ha (685,000 ac) appears to have consisted of upland prairie and 132,000 ha

(325,000 ac) of wet prairie (E. Alverson, The Nature Conservancy, Eugene, pers. comm., 1994).

This extensive resource was rapidly depleted through the conversion of native prairie to agricultural use during settlement. Within 30 years of passage of the Donation Land Act of 1850, most prairie lands were occupied by European-American settlers who quickly subdivided their original land grants to accommodate the rapid increase in population (Lang 1885). The level, open tracts of prairie were the first to go under the plow (Lang 1885) and only boggy, flood-prone areas prevented complete conversion of the native grassland community to cropped monoculture. Limitations on development imposed by seasonal flooding and a high water table were, however, overcome after 1936, when the U.S. Army Corps of Engineers (Corps) initiated water projects to provide flood control and security for expanded agricultural activity.

Fender's blue butterfly, *Lupinus sulphureus* ssp. *kincaidii* and *Erigeron decumbens* var. *decumbens* likely once occurred over a large distribution throughout the historic native prairie, and have been eliminated from these areas as native prairie habitat has been converted to agriculture or otherwise developed. Native prairie vegetation in the Willamette Valley was decimated by the rapid expansion of agriculture during the 140-year period from the 1850's to the present. With extensive changes in the fire regime, disturbance forces that maintained native prairies were substantially altered. Fire suppression allowed shrub and tree species to overtake grasslands, while agricultural practices hastened the decline of native prairie species through habitat loss and increased grazing (Johannessen, et al. 1971; Franklin and Dyrness 1973). Refugia from these forces of change were limited to fence rows and intervening strips of land along agricultural fields and roadsides.

Although large prairie expanses dominated by native species had been lost by the early 1900's, many remnant grasslands with a large native species component have been recently identified. These remnants, even though dominated by exotic species, support the only remaining occurrences of native prairie species in the Willamette Valley. Current estimates of the remaining native upland prairie in the Willamette Valley total less than 400 ha (1,000 ac) (Alverson, pers. comm. 1994). This estimate represents only one-tenth of one percent of the original upland prairie once available to Fender's blue butterfly, *Lupinus sulphureus* ssp.

*kincaidii*, and less than one half of this habitat (84 sites) is currently occupied by Fender's blue butterfly and/or *L. sulphureus* ssp. *kincaidii* and/or *Erigeron decumbens* var. *decumbens*. Within this available habitat, *E. decumbens* var. *decumbens* occupies 28 sites across 116 ha (286 ac), *L. sulphureus* ssp. *kincaidii* occupies 51 sites across 145 ha (357 ac), while Fender's blue butterfly occupies 31 sites across 165 ha (408 ac). Similar losses have occurred for wet prairie habitats, but estimates of current acreage are not available.

#### Fender's Blue Butterfly

Fender's blue butterfly is one of about a dozen subspecies of Boisduval's blue butterfly (*Icaricia icarioides*). *Icaricia icarioides* is found in western North America; subspecies *fenderi* is restricted to the Willamette Valley (Dornfeld 1980; R. H. T. Mattoni, University of California, pers. comm. to C. Nagano 1997; J. Emmel, Hemet, California, pers. comm. to C. Nagano 1997). Fender's blue butterfly was described by Ralph W. Macey (1931) as *Plebejus maricopa fenderi* based on specimens he had collected in Yamhill County, Oregon. The species *maricopa* is currently considered to be a synonym of the species *icarioides* (Miller and Brown 1981). The species *icarcia* has been determined to be a member of the genus *Icaricia*, rather than the genus *Plebejus* (Miller and Brown 1981; R. H. T. Mattoni, pers. comm. to C. D. Nagano 1997). Subspecies *fenderi* was considered to be a synonym of the pardalis blue butterfly (*Icaricia icarioides pardalis*), an inhabitant of the central California Coast Range near San Francisco (Downey 1975; Miller and Brown 1981); however Fender's blue butterfly is a distinct taxon based on adult characters and geographic distribution (Dornfeld 1980; Hammond and Wilson 1993; R. H. T. Mattoni and J. Emmel, pers. comm. to C. D. Nagano 1997).

Fender's blue butterfly is a small sized butterfly with a wingspan of approximately 2.5 centimeter (cm) (1 inch (in)). The upper wings of the males are brilliant blue in color and the borders and basal areas are black. The upper wings of the females are completely brown colored. The undersides of the wings of both sexes are creamish tan with black spots surrounded with a fine white border or halo. The dark spots on the underwings of the males are small on Fender's blue butterfly; surrounded with wide white haloes on the pembina blue butterfly (*Icaricia icarioides pembina*); the underside is very pale whitish gray with

broad haloes around the black spots on the hindwings of Boisduval's blue butterfly.

The historic distribution of Fender's blue butterfly is not precisely known due to the limited information collected on this species prior to its description in 1931. Although the type specimens for this butterfly were collected in 1929 by Ralph W. Macey, only a limited number of collections were made between the time of the subspecies' discovery and Macey's last observation on May 23, 1937, in Benton County, Oregon (Hammond and Wilson 1992a). A lack of information on the identity of the butterfly's host plant caused researchers to focus their survey efforts on common lupine species known to occur in the vicinity of Macey's collections. As a result, no Fender's blue butterflies were observed during 20 years of widespread investigation. Finally, Fender's blue butterfly was rediscovered in 1989 by Dr. Paul Hammond at McDonald Forest, Benton County, Oregon on an uncommon species of lupine, *Lupinus sulphureus* ssp. *kincaidii*. Based on this additional information, recent surveys have determined that the animal is confined to the Willamette Valley and currently occupies 31 sites in Yamhill, Polk, Benton, and Lane Counties (Hammond and Wilson 1993; Schultz 1996). One population at Willow Creek is found in wet, *Deschampsia*-type prairie, while the remaining sites are found on drier upland prairies characterized by *Festuca* spp. Sites occupied by Fender's blue butterfly are located almost exclusively on the western side of the valley, within 33 km (21 mi) of the Willamette River.

Although only limited observations have been made of the early life stages of Fender's blue butterfly, the life cycle of the species likely is similar to other subspecies of *Icaricia icarioides* (R. H. T. Mattoni, pers. comm. to C. Nagano 1997; G. Pratt, Riverside, California, pers. comm. to C. Nagano 1997; Hammond and Wilson 1993). Adult butterflies lay their eggs on perennial *Lupinus* sp. (Ballmer and Pratt 1988), the foodplant of the caterpillar during May and June. Newly hatched larvae feed for a short time, reaching their second instar in the early summer, at which point they enter an extended diapause (maintaining a state of suspended activity). Diapausing larvae remain in the leaf litter at or near the base of the host plant through the fall and winter and some individuals likely become active again in March or April of the following year. Some larvae may be able to extend diapause for more than one season depending upon the

individual and environmental conditions (R. H. T. Mattoni pers. comm. to C. Nagano 1997). Once diapause is broken, the larvae feed and grow through three to four additional instars, enter their pupal stage, and then emerge as adult butterflies in April and May. Behavioral observations of Fender's blue butterfly indicate the larvae are alert to potential predators, with individuals dropping from their feeding position on lupine leaves to the base of the plant at the slightest sign of disturbance (C. Schultz, University of Washington, pers. comm. 1994). The life cycle of Fender's blue butterfly may be completed in one year.

The larvae of many species of lycaenid butterflies, including *Icaricia icarioides*, possess specialized glands that secrete a sweet solution sought by some ant species who may actively "tend" and protect them from predators and parasites (Ballmer and Pratt 1988; G. Pratt pers. comm. to C. Nagano 1997). Although other subspecies of Boisduval's blue butterfly are tended by ants during their larval stage (Downey 1962, 1975; Thomas Reid Associates 1982; R. H. T. Mattoni and G. Pratt, pers. comm. to C. Nagano 1997), limited observations of Fender's blue butterfly larvae in the field have failed to document such a mutualistic association (Hammond 1994). However, this may be due to the nocturnal activity patterns of the larvae of *Icaricia icarioides* as it appears that this species has an obligate relationship with ants (G. Pratt pers. comm. to C. Nagano 1997). Non-native Argentine ants (*Iridomyrmex humilis*) have been observed tending Fender's blue butterfly larvae during indoor rearing trials (Schultz, pers. comm. 1994).

The near absence of Fender's blue butterfly at sites without *Lupinus sulphureus* ssp. *kincaidii* suggest that *L. laxiflorus* (spurred lupine) and *L. albicaulis* (sickle keeled lupine) are secondary foodplants used by the animal (Hammond and Wilson 1993k). Fender's blue butterfly inhabits two sites that contain only *L. laxiflorus*, where it is the primary foodplant (Schultz 1996) and *L. laxiflorus* co-occurs with *L. sulphureus* ssp. *kincaidii* at two additional sites (Hammond and Wilson 1993). Fender's blue butterfly occupies six sites containing only *L. albicaulis*, where it is the primary foodplant. However, the butterfly is declining at two of these sites. *Lupinus albicaulis* and *L. laxiflorus* may possess physical or biochemical properties that render them less suitable for Fender's blue butterfly than *L. sulphureus* ssp. *kincaidii*. This phenomenon in foodplants has been documented in

other species of butterflies and moths (Longcore *et al.* 1997).

#### **Lupinus Sulphureus ssp. Kincaidii**

*Lupinus sulphureus* ssp. *kincaidii* was first described in 1924 by C.P. Smith as *L. oregonus* var. *kincaidii* from a collection made in Corvallis, Oregon (Kuykendall and Kaye 1993a). Phillips (1955) transferred the taxon to a subspecies status as *L. sulphureus* ssp. *kincaidii*. Hitchcock *et al.* (1961) retained the position noted by Phillips (1955), but preferred the combination as a varietal rank, *L. sulphureus* var. *kincaidii*.

*Lupinus sulphureus* ssp. *kincaidii* occupies 51 sites throughout the Willamette Valley and one site in southern Washington. The northern limit of *L. sulphureus* ssp. *kincaidii* is Lewis County, Washington, while it ranges south to Douglas County, Oregon, a latitudinal span of over 400 km (250 mi). This distribution implies a close association with native upland prairie sites that are characterized by heavier soils and mesic to slightly xeric soil moisture levels. At the southern limit of its range, the subspecies occurs on well-developed soils adjacent to serpentine outcrops where the plant is often found under scattered oaks (Kuykendall and Kaye 1993a).

With its low-growing habit and unbranched inflorescence, *Lupinus sulphureus* ssp. *kincaidii* is easily distinguished from other sympatric members of the genus *Lupinus*. Its aromatic flowers have a slightly reflexed, distinctly ruffled banner and are yellowish-cream colored, often showing shades of blue on the keel. The upper calyx lip is short, yet unobscured by the reflexed banner when viewed from above. The leaflets tend to be a deep green with an upper surface that is often glabrous. The plants are 4–8 decimeters (dm) (16–32 in) tall, with single to multiple unbranched flowering stems and basal leaves that remain after flowering (Kuykendall and Kaye 1993).

*Lupinus sulphureus* ssp. *kincaidii* is a long-lived perennial species, with a maximum reported age of 25 years (M. Wilson, Oregon State University, *in litt.*, 1993). Individual plants are capable of spreading by rhizomes producing clumps of plants exceeding 20 meters (m) (65.62 feet (ft)) in diameter (P. Hammond, independent consultant, pers. comm. 1994). The long rhizomes do not produce adventitious roots, apparently do not separate from the parent clump, and the clumps may be short-lived, regularly dying back to the crown (Kuykendall and Kaye 1993a). Self-incompatible, *L. sulphureus* ssp. *kincaidii* is pollinated by solitary bees

and flies (P. Hammond, pers. comm. 1994). Seed set and seed production are low, with few (but variable) numbers of flowers producing fruit from year to year and each fruit containing an average of 0.3–1.8 seeds (Liston *et al.* 1994). Seeds are dispersed from fruits that open explosively upon drying.

#### **Erigeron Decumbens var. Decumbens**

Thomas Nuttall (1840) based his description of *Erigeron decumbens* on a specimen he collected in the summer of 1835. The autonym *E. decumbens* var. *decumbens* was automatically established by Cronquist (1947) when he described *E. decumbens* var. *robustior*. Recent revisions of the *Erigeron* genus (Strother and Ferlatte 1988, Nesom 1989) treat the plant as a variety, *E. decumbens* var. *decumbens*.

According to Strother and Ferlatte (1988), *Erigeron decumbens* var. *decumbens* is geographically limited to the Willamette Valley. They also restrict the morphologically similar *E. decumbens* var. *robustior* to Humboldt and western Trinity Counties, California. Intermediate specimens of *Erigeron* from southern Oregon are considered by Strother and Ferlatte (1988) to be robust specimens of *E. eatonii* var. *plantagineus*.

A review of herbarium specimens by Clark *et al.* (1993) shows a historical distribution of *Erigeron decumbens* var. *decumbens* throughout the Willamette Valley. Collections were frequent between 1881 and 1934, yet from 1934 to 1980 no collections or observations were made (Clark *et al.* 1993). The species was rediscovered in 1980 in Lane County, Oregon, and has since been identified at 28 sites in Polk, Marion, Linn, Benton, and Lane counties, Oregon. With 28 occurrences and 115 ha (284 ac) of occupied habitat, *E. decumbens* var. *decumbens* has the most restricted range of the species proposed for listing herein.

*Erigeron decumbens* var. *decumbens* is a perennial herb, 15–60 mm (0.6–2.4 in.) tall, with erect to sometimes prostrate stems at the base. The basal leaves often wither prior to flowering and are mostly linear, 5–12 cm (2–5 in.) long and 3–4 mm (0.1–0.2 in.) wide. Flowering stems produce 2–5 heads, each of which is daisy-like, with pinkish to pale blue ray flowers and yellow disk flowers. Ray flowers often fade to white with age (Siddall and Chambers 1978). The morphologically similar *E. eatonii* occurs east of the Cascade Mountains, while the sympatric species *Aster hallii* flowers later in the summer. *Erigeron decumbens* var. *decumbens* can be confused with *A. hallii* in their vegetative state, but close

examination reveals the reddish stems of *A. hallii* in contrast to the green stems of *E. decumbens* var. *decumbens* (Clark *et al.* 1993).

As with many species in the family Asteraceae, *Erigeron decumbens* var. *decumbens* produces large quantities of wind-dispersed seed. Flowering typically occurs in June and July with pollination carried out by syrphid flies and solitary bees. Seeds are released in July and August. Although the seeds are wind-dispersed, the short stature of this species likely precludes the long-distance travel of many of these seeds. *Erigeron decumbens* var. *decumbens* is capable of vegetative spreading and is commonly found in large clumps scattered throughout a site (Clark *et al.* 1993).

#### Previous Federal Action

*Erigeron decumbens* var. *decumbens* was initially included as a category 2 candidate in a Notice of Review published by the Service on December 15, 1980 (45 FR 82506). Category 2 candidates were those species for which the Service had information in its possession indicating that listing may be appropriate, but for which additional information was needed to support the preparation of a proposed rule. On November 28, 1983, the Service published a Notice of Review upgrading this species to category 1 status (48 FR 53649). Category 1 taxa were taxa for which the Service had sufficient data in its possession to support preparation of listing proposals. Subsequently, *E. decumbens* var. *decumbens* was reassigned category 2 candidacy by a Notice of Review published on September 27, 1985 (50 FR 39527). On February 21, 1990 the Service published a Notice of Review (55 FR 6202) that reinstated *E. decumbens* var. *decumbens* as a category 1 candidate and also designated *Lupinus sulphureus* ssp. *kincaidii* as a category 2 candidate (55 FR 6121). The Service published a Notice of Review on February 28, 1996 (61 FR 7596), updating the candidate species list and changing the policy on candidates to discontinue the use of candidate categories. *Erigeron decumbens* var. *decumbens* was retained as a candidate species; however, *Lupinus sulphureus* ssp. *kincaidii* and other former category 2 candidates were not. The 1997 Notice of Review retained *Erigeron decumbens* var. *decumbens* as a candidate species; *Lupinus sulphureus* ssp. *kincaidii* was not included as a candidate. Since this Notice of Review was published, the Service has reevaluated the available information and determined that listing is warranted for both *Erigeron*

*decumbens* var. *decumbens* and *Lupinus sulphureus* ssp. *kincaidii*.

Fender's blue butterfly was initially assigned to category 3A taxa in the Notice of Review published by the Service on January 6, 1989 (54 FR 572). The best available information at that time indicated that this butterfly was likely extinct because the subspecies was last observed in 1937. Category 3A taxa were taxa for which the Service had pervasive evidence of extinction, however if rediscovered, such taxa might be reconsidered for listing. The rediscovery of this butterfly in May 1989 prompted the Service to change the status of the subspecies to a category 2 candidate in the Notice of Review published on November 21, 1991 (56 FR 58830). In the Notice of Review published on February 28, 1996 (61 FR 7596), the Service retained Fender's blue butterfly as a candidate for listing. The 1997 Notice of Review also retained Fender's blue butterfly as a candidate for listing.

The processing of this proposed listing rule conforms with the Service's final listing priority guidance for fiscal year (FY) 1997 that was published in the **Federal Register** on December 5, 1996 (61 FR 64475-64481), and the Service's extension of the FY 1997 guidance published in the **Federal Register** on October 23, 1997 (62 FR 55268). The guidance clarifies the order in which the Service will process rulemakings following two related events—(1) the lifting, on April 26, 1996, of the moratorium on final listings imposed on April 10, 1995 (Public Law 104-6), and (2) the restoration of significant funding for listing through passage of the omnibus budget reconciliation law on April 26, 1996, following severe funding constraints imposed by a number of continuing resolutions between November 1995 and April 1996. The guidance calls for giving highest priority to handling emergency situations (Tier 1) and second highest priority (Tier 2) to resolving the listing status of the outstanding proposed listings. Tier 3 includes the processing of new proposed listings for species facing high magnitude threats. This proposed rule for Fender's blue butterfly (*Icaricia icarioides fenderi*), *Lupinus sulphureus* ssp. *kincaidii* (Kincaid's lupine), and *Erigeron decumbens* var. *decumbens* (Willamette daisy) falls under Tier 3. According to the Listing Priority Guidance, the Service is operating under a more balanced listing program and may process Tier 3 actions. Processing of this proposed rule is in accordance with the current Listing Priority Guidance.

#### Summary of Factors Affecting the Species

Section 4 of the Endangered Species Act and regulations (50 CFR Part 424) promulgated to implement the listing provisions of the Act set forth the procedures for adding species to the Federal lists. A species may be determined to be an endangered or threatened species due to one or more of the five factors described in Section 4(a)(1). These factors and their application to Fender's blue butterfly (*Icaricia icarioides fenderi*), *Lupinus sulphureus* Dougl. ssp. *kincaidii* (Smith) Phillips (Kincaid's lupine), and *Erigeron decumbens* Nutt. var. *decumbens* (Willamette daisy) are as follows.

##### A. The Present or Threatened Destruction, Modification, or Curtailment of its Habitat or Range

The primary loss of habitat for Fender's blue butterfly, *Lupinus sulphureus* ssp. *kincaidii*, and *Erigeron decumbens* var. *decumbens* has resulted from the extensive alteration of native prairie in the Willamette Valley that has occurred over the last 140 years, described in the "Background" section above. As a result, over 99 percent of the native prairie in the Willamette Valley, the only known habitat area of Fender's blue butterfly, *L. sulphureus* ssp. *kincaidii*, and *E. decumbens* var. *decumbens*, has been lost (E. Alverson, pers. comm. 1994).

Within the 84 remnants of native prairie occupied by these species in the Willamette Valley, Fender's blue butterfly occurs at 31 sites (Hammond and Wilson 1993, Schultz 1996), *Lupinus sulphureus* ssp. *kincaidii* occurs at 51 sites (Kuykendall and Kaye 1993a), and *Erigeron decumbens* var. *decumbens* occurs at 28 sites (Clark *et al.* 1993). In this collection of sites, Fender's blue butterfly and *L. sulphureus* ssp. *kincaidii* are found in close association, occurring together at a total of 24 sites. *Erigeron decumbens* var. *decumbens* co-occurs with *L. sulphureus* ssp. *kincaidii* at only one site and with Fender's blue butterfly at only this same site, Baskett Butte. Typically these sites are small, with extirpation likely in the near future. Activities that destroy, modify or curtail the habitat of *L. sulphureus* ssp. *kincaidii*, *E. decumbens* var. *decumbens*, and Fender's blue butterfly are discussed below.

The immediacy of the threat of habitat loss in the last remaining 84 remnants of native prairie occupied by these species has been well documented. Habitat at 80 percent of the sites (e.g., 68 sites) is rapidly disappearing due to

agriculture practices, development activities, forestry practices, grazing, roadside maintenance, and commercial Christmas tree farms.

At least eleven prairie remnants are likely to be impacted by agricultural activities. Five of these are wetland prairies occupied by *Erigeron decumbens* var. *decumbens* and the remaining six are upland prairies occupied by *Lupinus sulphureus* ssp. *kincaidii* and Fender's blue butterfly. The types of impacts include examples such as a wheat field boundary adjustment near Buell in Polk County (Mill Creek-Hwy 22 at Buell) that is likely to lead to loss of a population of Fender's blue butterfly and *L. sulphureus* ssp. *kincaidii* (Hammond 1994). By 1996, this boundary adjustment was implemented with a diminished population of *L. sulphureus* ssp. *kincaidii* and Fender's blue butterfly still present; however, no Fender's blue butterflies were observed at this site in 1997 (Hammond, pers. comm. 1997). The majority of the habitat supporting populations of each of these species are habitat remnants, e.g., small habitat patches remaining after other habitat loss has occurred. Small habitat patches that occur along State and County roadsides face greater threats from agriculture than those occurring along non-roadside areas. While in past decades many roadside habitats were less disturbed, today roadside stretches of habitats adjoining grass seed farms are now being disked and/or sprayed with herbicides to kill all roadside vegetation (A. Robinson, U.S. Fish and Wildlife Service, pers. comm. 1997). Grass seed farms use herbicide spraying to create bare soil as a common practice to prevent the spread of weeds from roadsides into the grass seed fields. Many of these areas are inhabited by populations of *E. decumbens* var. *decumbens*.

Urban development has caused additional loss of prairie habitat (Clark *et al.* 1993; Hammond 1992, 1994, 1996; Kuykendall and Kaye 1993; Liston *et al.* 1994; Schultz, 1996; Sidall and Chambers 1978). Destruction of upland prairie habitat occupied by Fender's blue butterfly and *Lupinus sulphureus* ssp. *kincaidii* at several sites since 1992 has caused the butterflies at these sites to either completely die out or to be reduced to low, non-viable numbers (Hammond 1994, 1996). Future losses for 48 prairie remnants are projected as a result of urban development. This is the largest single factor currently threatening the survival of these prairie species. Nineteen of these remnants are wetland prairies supporting *Erigeron decumbens* var. *decumbens* and the

other 29 are upland prairie remnants supporting populations of Fender's blue butterfly and *L. sulphureus* ssp. *kincaidii*.

Examples of this type of threat are the Dallas-Oakdale Avenue sites 1 and 2 covering about 2 ha (5 ac) occupied by Fender's blue butterfly and *L. sulphureus* ssp. *kincaidii* near the town of Dallas in Polk County that is expected to be lost due to housing development planned at that site (Hammond 1996). The loss of native prairie habitat is further exemplified by the destruction of a site supporting 6,000 plants in Lane County, formerly the largest occurrence of *E. decumbens* var. *decumbens*, plowed under in 1986 prior to the development of an industrial and residential site (Kagan and Yamamoto 1987). Construction of a single driveway resulted in the loss of one site occupied by Fender's blue butterfly and *L. sulphureus* ssp. *kincaidii* in Kings Valley (Hammond 1994). Future highway construction potentially threatens the Nielson Road site of *L. sulphureus* ssp. *kincaidii* located in a highway expansion corridor in Lane County (Oregon Natural Heritage Program 1996). The population of Fender's blue butterfly and *L. sulphureus* ssp. *kincaidii* at Wren in Benton County occurs at two sites and covers about 9 ha (22 ac, however, only a portion of the population (7.4 ha) occurs on land owned by The Nature Conservancy (TNC). Heavy clearing and mowing activities on private lands adjacent to the TNC property has caused the decline of the lupine and is reducing the butterfly population at the Wren site to a non-viable state (Hammond and Wilson 1993). At the Willow Creek Main site, Fender's blue butterfly and *L. sulphureus* ssp. *kincaidii* occur together. This site is actively managed for the benefit of the species and the lands are considered relatively secure from development threats. Although this TNC site is considered a secure habitat area, extensive damage to habitat occupied by Fender's blue butterfly and *L. sulphureus* ssp. *kincaidii* occurred in 1996 during pipeline repair work conducted on a utility corridor easement. Two other moderately sized habitat patches occupied by *E. decumbens* var. *decumbens* face habitat loss from trash dumping (at the Grande Ronde site) and urbanization (at the west Eugene site) (Clark *et al.* 1993).

Silvicultural activities for timber production have threatened 6 percent (5 sites) of the remaining 84 prairie occurrences. The Coburg Ridge area-2 site in Lane County is the largest site occupied by Fender's blue butterfly and is among the best examples of remnant

upland native prairie in the Willamette Valley (Hammond 1994). Native species were severely damaged, however, by the application of grass-specific herbicide that eliminated grasses and severely damaged other herbaceous species prior to tree planting activities.

Approximately 1 ha (2.5 ac) was sprayed with herbicide. The saddle section of Coburg Ridge (area-2) that received aerial application of the herbicide is used by Fender's blue butterfly due to the presence of *Lupinus laxiflorus*, an alternate host plant, but this site does not contain *L. sulphureus* ssp. *kincaidii* (Schultz 1996). Loss of such alternate host plant sites further limits the habitat that is available to support Fender's blue butterfly. Additional tree-planting efforts by an adjacent Coburg Ridge landowner threatens to alter a different portion of the grassland in area-2, which has displayed the highest levels of butterfly activity in previous years (Schultz 1996). This site received spot herbicide application during the planting efforts, rather than the aerial broadcast method of the first case; therefore, the immediate effects to the habitat were not as severe. However, tree saplings were planted and as the trees grow they will eventually shade out the native prairie species, resulting in the loss of butterfly habitat. Herbicide spraying associated with reforestation after logging has also altered habitat and caused a decline of a *L. sulphureus* ssp. *kincaidii* population on Bureau of Land Management (BLM) properties. The other large sized occurrence of the butterfly and *L. sulphureus* ssp. *kincaidii* in Benton County on McDonald State Forest and adjacent private lands that could be similarly affected by surrounding silvicultural operations.

Grazing is currently impacting 12 of the occupied habitat patches, with five of these being wetlands occupied by *Erigeron decumbens* var. *decumbens*. Most of the habitat occupied by Fender's blue butterfly and *Lupinus sulphureus* ssp. *kincaidii* at the Oak Ridge south site in Yamhill County has been lost due to heavy grazing (Hammond 1996). Another site of *L. sulphureus* ssp. *kincaidii*, covering about 4.6 ha (11 ac) at Crabtree Hill in Lane County, is being damaged by extensive livestock grazing. The Crabtree Hill population of 6,000 plants is the largest known *L. sulphureus* ssp. *kincaidii* population.

The next most common threat to these species is roadside maintenance activities. At least 30 sites occur along roadsides and are impacted by maintenance activities. Examples

include the populations of Fender's blue butterfly and *Lupinus sulphureus* ssp. *kincaidii* at the Oak Ridge north site that were recently lost due to road maintenance activities. When planned developments are completed on the Oak Ridge south site, the butterfly and lupine will essentially be extirpated from the Oak Ridge area (Hammond 1996). Two sites on Oregon Department of Transportation (ODOT) property and one site on land owned by the City of Corvallis receive only limited protection and could potentially be impacted by future development and highway maintenance activities. Publicly-owned roadside sites receive varying degrees of protection on a district by district basis. Although some roadside sites have been marked as no-spray zones by the Native Plant Society of Oregon, this protective measure is not always effective. The roadside portion of a *L. sulphureus* ssp. *kincaidii* population in Kings Valley continues to receive herbicide application during roadside weed control activities, despite efforts to restrict spraying. Other roadside sites receive only sporadic protection during herbicide application. Privately managed roadside occurrences do not fare much better; extensive mowing at the Wren sites in Benton County and Fir Butte Road roadside sites in Lane County have caused declines in Fender's blue butterfly and *L. sulphureus* ssp. *kincaidii* populations (Hammond 1994). With frequent weed control efforts ongoing, as well as highway and driveway construction, small roadside occurrences of Fender's blue butterfly, *L. sulphureus* ssp. *kincaidii*, and *Erigeron decumbens* var. *decumbens* are unlikely to persist. Between 1994 and 1996, Fender's blue butterfly populations disappeared from (or are considered no longer viable) at least seven small roadside sites (Liberty Road, Monmouth Falls City Road, Fern Corner, Grant Creek, and McTimmonds Valley in Polk County, and two sites at Wren) and populations at many of the remaining roadside sites continue to decline.

Between 1990 and 1992, three sites occupied by both Fender's blue butterfly and *Lupinus sulphureus* ssp. *kincaidii* were lost in the McTimmond's Valley to the expansion of Christmas tree farming operations (Hammond 1994). Conversion of these three sites destroyed approximately 3 ha (7 ac) of habitat along roadside and private land that comprised the nucleus of two Fender's blue butterfly populations and a substantial number of *L. sulphureus* ssp. *kincaidii* plants. The two roadside occurrences of the butterfly that remain

nearby are no longer considered viable due to the loss of the source butterfly populations and considerable numbers of *L. sulphureus* ssp. *kincaidii* plants. Hammond (1994) stated that these two roadside occurrences are not expected to persist for more than a few additional years. The Service does not know if the two roadside occurrences still exist.

In summary, habitat loss from a wide variety of causes (urbanization, agriculture, silvicultural practices, and roadside maintenance) is a severe problem faced by Fender's blue butterfly, *Lupinus sulphureus* ssp. *kincaidii*, and *Erigeron decumbens* var. *decumbens* at a majority of their occurrences. Development and land alteration in the Willamette Valley has been so extensive that all the occurrences of the three species on the valley floor have essentially been relegated to small patches of habitat, except for three hilltop areas (Baskett Slough National Wildlife Refuge, Coburg Ridge, and McDonald State Forest) that, because of their topography, have not been subjected to agricultural and urban development activities occurring on the valley floor. Only 16 out of the 84 remnant prairie sites that are occupied by one or more of these species are currently not threatened with destruction of habitat. However, herbivory, exotic weed species competition, and/or succession threaten all of these 16 sites (see Factor E below for more information). As habitat loss continues on these prairie remnants, populations of the three species in these 64 areas are likely to be extirpated. At least 12 of 31 sites occupied by Fender's blue butterfly, 47 of 51 sites occupied by *L. sulphureus* ssp. *kincaidii*, and 24 of 28 sites occupied by *E. decumbens* var. *decumbens* occur on private lands and, without further action, are expected to be lost in the near future. The threat of extinction for these species is high, given the expected continuing extirpation of small populations, the continued habitat loss on moderate sites and large sites, and the continuing degradation of habitat, even on secure sites (see Factor E below for more information about continuing degradation of habitat).

#### *B. Overutilization for Commercial, Recreational, Scientific, or Educational Purposes*

Rare butterflies, such as Fender's blue butterfly are highly prized by insect collectors. Although there are no studies on the impact of the removal of individuals from natural populations of this animal, based on studies of another lycaenid butterfly (Duffey 1968), and an

endangered nymphalid butterfly (Gall, 1984a and 1984b), it is likely that Fender's blue butterfly could be adversely affected due to its isolated, possibly small populations. There is an international commercial trade for butterfly species proposed for listing, as well as other imperiled or rare butterflies (C.D. Nagano, J. Mendoza, and C. Schroeder, USFWS, pers. obs., 1992-1997) and specimens of Fender's blue butterfly are known to have recently been offered for trade (C. Nagano pers. obs.). Some collectors and dealers closely monitor listing activities by the Service and they are known to have stockpiled rare butterflies in anticipation of their becoming designated as endangered or threatened species (C.D. Nagano and J. Mendoza, pers. obs., 1992). Collecting from small colonies or repeated handling and marking (particularly of females and in years of low abundance) could seriously damage the populations through loss of individuals and genetic variability (Gall 1984b; Murphy 1988; Singer and Wedlake 1981). Collection of females dispersing from a colony also can reduce the probability that new colonies will be founded. Collectors pose a threat because they may be unable to recognize when they are depleting butterfly colonies below the thresholds of survival or recovery, especially when they lack appropriate biological training or the area is visited for a short period of time (Collins and Morris 1985).

There likely is high interest by collectors in Fender's blue butterfly due to its unique history of assumed extinction. The rediscovery in 1989 of this animal generated a great deal of publicity and interest, which in turn increases demand by collectors. Collectors often highly prize rare butterflies (Morris *et al.* 1991) and at times take all wild specimens obtainable for use in trade (U. S. Department of Justice, *in litt.* 1993). The populations of Fender's blue butterfly that remain face strong pressure from some members of the collecting community. Since many of the Fender's blue butterfly populations occur along public roadsides, the species is easily acquired and the extremely limited numbers and distribution of many of the remaining populations make this species vulnerable to collectors.

Due to their unattractive weedy like appearance, the threat to *Erigeron decumbens* var. *decumbens* and/or *Lupinus sulphureus* ssp. *kincaidii* from collection for horticultural purposes may be less than the threat from collectors faced by Fender's blue butterfly. Although no current evidence exists of such horticultural collection or

other overutilization for scientific purposes for either *E. decumbens* var. *decumbens* or *L. sulphureus* ssp. *kincaidii*, the threat posed by collecting for personal herbarium specimens is significant due to their rarity and the relative accessibility of roadside populations.

#### C. Disease or Predation

Although most lepidopteran larvae suffer significant mortality from parasitoid attack, no instances of parasitism (Hammond 1993) or disease (R. H. T. Mattoni, pers. comm. to C. D. Nagano 1997) have been documented for Fender's blue butterfly.

*Lupinus sulphureus* ssp. *kincaidii* evidently hosts a number of herbivore and parasite species. Gall-forming insects attack unopened flowers and the bases of woody stems. Weevils lay eggs in the developing floral embryos and their offspring stimulate the fruit to produce callous tissue as a food source. Misdirection of the developing fruit by weevil larvae effectively prevents viable seed formation in the parasitized fruits (Kuykendall and Kaye 1993b). Weevil damage at some sites (e.g., Willow Creek) can be high, with some plants suffering 90 percent loss of mature fruits (E. Alverson, pers. comm. 1994). Herbivory has been documented at all three Fern Ridge Reservoir sites. Loss of floral parts through herbivory can also significantly reduce reproduction. Larvae of the silvery blue butterfly (*Glaucopsyche lygdamus*) graze flowers for pollen and in doing so effectively destroy them. Silvery blue larvae can reach high population densities at some of the sites and may reduce the fecundity of *L. sulphureus* ssp. *kincaidii*, but do not appear to cause the death of mature individual plants (C. Schultz, pers. comm. 1994).

Evidence of insect herbivory on *Erigeron decumbens* var. *decumbens* is limited. Insect species collected on *E. decumbens* var. *decumbens* in 1993 included sap-sucking insects (Hemiptera), a bruchid beetle, thrips, and mites (Clark *et al.* 1993). Other threats from herbivory include consumption of *E. decumbens* var. *decumbens* by cattle; no plants were found in areas currently or recently grazed during surveys conducted in 1986 (Kagan and Yamamoto 1987) and only one site was observed to support *E. decumbens* var. *decumbens* in the presence of cattle in 1993 (Clark *et al.* 1993).

#### D. The Inadequacy of Existing Regulatory Mechanisms

In 1963, the protection of natural botanical resources by the State of

Oregon was initiated with the passage of the Oregon Wildflower Law (ORS 564.010–564.040). This law was designed to protect specific showy botanical groups including lilies, shooting stars, orchids, and rhododendrons from collection and trade by horticulturists interested in the cultivation of these species. It also prohibits the collection of wildflowers from “within 500 feet of the centerline of any public highway” (ORS 564.020 (2)). Although protective in spirit, the Oregon Wildflower Law carries minimal penalties and is rarely enforced. As a means of protecting *Lupinus sulphureus* ssp. *kincaidii* and *Erigeron decumbens* var. *decumbens* populations, the effectiveness of the law is doubtful.

In 1987, Oregon Senate Bill 533 was passed to augment the legislative actions available for the protection of the State's threatened and endangered species, both plant and animal. This bill, known as the Oregon Endangered Species Act, mandates responsibility for threatened and endangered species in Oregon to two State agencies—the Oregon Department of Agriculture (ODOA) for plant species (ORS 564.105) and the Oregon Department of Fish and Wildlife (ODFW) for “wildlife” species (ORS 496.172).

As reauthorized in 1995 (HB 2120), the Oregon Endangered Species Act does not include invertebrate animals in the definition of “wildlife.” Therefore, Fender's blue butterfly receives no protection under the Oregon Endangered Species Act. The Oregon Natural Heritage Program is the only State agency “which tracks locations of and works to protect the rare, threatened and endangered invertebrates of Oregon” (Oregon Natural Heritage Program 1993). The Heritage program has created a Sensitive Species invertebrate list, which includes Fender's blue butterfly as a “priority 1 species.” Priority 1 species are “taxa threatened or endangered throughout range” (Oregon Natural Heritage Program 1993). The program can assist planning agencies in managing lands for the benefit of rare invertebrate taxa, but it has no regulatory authority over rare invertebrates (Jimmy Kagan, Oregon Natural Heritage Program, pers. comm. 1997).

For plant species, the Oregon Endangered Species Act directs the ODOA to maintain a strong program to conserve and protect native plant species classified by the State as threatened or endangered. *Erigeron decumbens* var. *decumbens*, as a State-listed endangered species and *Lupinus sulphureus* ssp. *kincaidii* as a State-listed threatened species receive

protection on State-managed lands under the Oregon Endangered Species Act. The ODOA is able to regulate the import, export, or trafficking of State-listed plant species when they are in transit (under ORS 564.1200). The ODOA's ability to protect plant populations, such as restricting take under the Oregon Endangered Species Act, is limited to “land owned or leased by the State, or for which the State holds a recorded easement” (ORS 564.115). “Nothing in ORS 564.100 to 564.130 is intended \* \* \* to require the owner of any commercial forest land or other private land to take action to protect a threatened species or endangered species” on his lands (ORS 564.135(1)). As a result, populations of *L. sulphureus* ssp. *kincaidii* and *E. decumbens* var. *decumbens* on private lands receive minimal protection from their State status as endangered or threatened.

ODOT owns and manages roadside habitat where *Lupinus sulphureus* ssp. *kincaidii* and *Erigeron decumbens* var. *decumbens* are present. The Oregon Endangered Species Act requires the protection of these State-listed species. ODOT has responded, in conjunction with Oregon State University researchers and the Native Plant Society of Oregon, by providing road crews with maps of these areas and instruction to avoid herbicide use.

*Lupinus sulphureus* ssp. *kincaidii*, *Erigeron decumbens* var. *decumbens*, and Fender's blue butterfly occurrences within the Service's National Wildlife Refuges receive protection within the boundaries of the refuge. All three species occur together only at Baskett Slough National Wildlife Refuge, which actively manages habitat for the benefit of the species.

Under section 7 of the Endangered Species Act, Federal agencies are required to consult with the Service if any action they regulate, fund or carry out may jeopardize the continued existence of an endangered or threatened species. Species that are candidates for listing receive no formal regulatory protection under the Act. The BLM and the Forest Service (FS) manage lands occupied by *Lupinus sulphureus* ssp. *kincaidii*. This species on BLM properties is given some protection through a general conservation agreement that applies to all Federal candidate species. The population of *L. sulphureus* ssp. *kincaidii* that occurs in the Umpqua National Forest is not covered under any conservation agreement and receives no official protection under the Act.

On Corps lands, discretion for the protection and management of State-



listed and Federal candidate species lies at the local level. Funds may be available in some years to proactively manage these species. *Lupinus sulphureus* ssp. *kincaidii*, *Erigeron decumbens* var. *decumbens*, and Fender's blue butterfly have received habitat protection, as well as support for research activity from the Corps through allocation of personnel and supplies to these projects. This protection and cooperation is voluntary for candidate species and is dependent on continuation of sufficient funding.

Populations of *Erigeron decumbens* var. *decumbens* occur in seasonally flooded wet prairies with hydric soils (Clark *et al.* 1993). Under section 404 of the Clean Water Act, the Corps regulates the discharge of fill into waters of the United States, including navigable waters, wetlands (e.g., wet prairies), and other waters (33 CFR parts 320–330). The Clean Water Act requires project proponents to obtain a permit from the Corps prior to undertaking many activities (e.g., grading, discharge of soil or other fill material, etc.) that would result in the filling of wetlands subject to the Corps' jurisdiction. The Corps promulgated nationwide permit number 26 (NWP 26) to address fill of isolated or headwater wetlands. Under the 1996 reauthorized NWP 26 (61 FR 65873), project proposals that involve the fill of wetlands less than one third of an acre are considered authorized. Fill areas between 0.33 acre and 1 acre require only notification to the Corps. When placement of fill would adversely modify between 1 to 3 acres of wetland, the Corps circulates a pre-discharge notification to the Service and other interested parties for comment to determine whether or not an individual permit should be required for the proposed fill activity and associated impacts.

Individual Corps permits are required for discharge of material that would fill or adversely modify greater than 3 acres of wetlands. The review process for individual permits is more rigorous than for nationwide permits. Unlike nationwide permits, an analysis of cumulative wetland impacts is required for individual permit applications. Resulting permits may include special conditions that require potential avoidance or mitigation for environmental impacts. On nationwide permits, the Corps has discretionary authority to instead require an individual permit if the Corps believes that resources are sufficiently important, regardless of the wetland's size. In practice, however, the Corps generally does not require an individual permit when a project qualifies for a

nationwide permit, unless a threatened or endangered species or other significant resources would be adversely affected by the proposed activity. In such cases, conferencing and consultation requirements of section 7 of the Act do pertain to the Corps' regulatory process.

Disking and some other farming, ranching and silviculture practices can degrade or destroy wetland habitat without a permit from the Corps because these activities are exempt from regulation under the Clean Water Act (33 CFR 323.4 (a)). The discontinuous configuration of the existing wet prairies further obscures these wetland losses. Occurrences of *Lupinus sulphureus* ssp. *kincaidii*, and Fender's blue butterfly in upland (non-wetland) areas receive no protection under section 404 of the Clean Water Act.

The primary inadequacies in existing regulations pertain to populations of Fender's blue butterfly, *Lupinus sulphureus* ssp. *kincaidii*, and *Erigeron decumbens* var. *decumbens* that occur on private lands that currently have no connection to Federal authority or funding. Privately owned lands where populations of these species occur constitute a significant portion of the range of these species and play a substantial role in their continued existence.

#### *E. Other Natural or Manmade Factors Affecting its Continued Existence*

Larger sites (greater than 10 ha (25 ac)) currently support relatively stable populations of Fender's blue butterfly, *Lupinus sulphureus* ssp. *kincaidii*, and *Erigeron decumbens* var. *decumbens* and provide the greatest potential for long-term persistence of the species if their current condition can be sustained or improved. However, few of these larger sites are secure from threats due to habitat loss. The only large site occupied by each of the species that is considered relatively secure from habitat loss is Baskett Slough National Wildlife Refuge in Polk County, although the habitat condition is declining from invasion by alien plants (Hammond 1996, Hammond 1994, Hammond and Wilson 1993). The two remaining large butterfly sites (Coburg Ridge area—1 and 2, and McDonald State Forest 1) and the one remaining large lupine site (McDonald State Forest 1) are not considered secure because these sites face loss or degradation of habitat through adjacent silviculture operations, ecological succession to shrub and forest, and competition from alien species (Hammond 1994, Kuykendall and Kaye 1993a).

*Erigeron decumbens* var. *decumbens* occupies three large sites. Two of those sites, one occurring on Corps property and the other on land owned by TNC, are being managed to benefit native prairie species and are relatively secure. The third site on private land is not managed for native prairie species and is not protected from habitat loss.

The small occurrences of the three taxa in this proposed rule, predominantly roadside and fence line/boundary sites, face an immediate threat of destruction from a variety of activities including development, agriculture, silvicultural practices, roadside maintenance, and herbicide application. The degree to which habitat loss threatens Fender's blue butterfly, *Lupinus sulphureus* ssp. *kincaidii*, and *Erigeron decumbens* var. *decumbens* becomes evident when the size of the populations is examined. Of the 51 sites occupied by *L. sulphureus* ssp. *kincaidii*, 40 consist of small area occurrences, less than 3.4 ha (8.3 ac) in size. The Fender's blue butterfly, occupying a subset of the lupine sites, shows a similar pattern with 23 of its 31 populations found on parcels of 3.4 ha (8.3 ac) or less. All of the small site occurrences of the Fender's blue butterfly are likely to be extirpated within the next five years because habitat may not be large enough to support viable populations. Of the 28 sites occupied by *E. decumbens* var. *decumbens*, 17 are less than 3.4 ha (8.3 ac) in size. These small occurrences account for a majority of the known populations for all three species.

Given the impact of such habitat losses on these small habitat patches, the extirpation of most of the small Fender's blue butterfly populations is anticipated within five years. *Lupinus sulphureus* ssp. *kincaidii* may survive for a time in these small sites; nonetheless, extirpation of *L. sulphureus* ssp. *kincaidii* at most, if not all, of their 40 small sites is also anticipated in the future. Similarly, these habitat losses are expected to also cause extirpation of the 17 small populations of *Erigeron decumbens* var. *decumbens*. Should these smaller populations disappear, only 8 habitat areas of Fender's blue butterfly (a 75 percent reduction in number of sites), 11 habitat areas of *L. sulphureus* ssp. *kincaidii* (a 78 percent reduction in number of sites), and 11 habitat areas of *E. decumbens* var. *decumbens* (a 61 percent reduction of sites) will remain.

The importance of these sites, particularly for the Fender's blue butterfly, lies in their potential to serve as corridors among larger, neighboring populations. The loss of these sites and

the loss of accompanying potential habitat, severely compromises the ability of any of the species to disperse from larger sites (Hammond and Wilson 1993, Schultz 1996). Larger populations will remain isolated, with no opportunities for migration and/or recolonization if local conditions become unfavorable. Thus, the status of the species as a whole declines.

A less visible threat to the smaller occurrences is the decrease in vigor and viability experienced by populations of few individuals. For the Fender's blue butterfly, small numbers and localized populations increase the risk of loss through random genetic or demographic factors. (Gilpin and Soule' 1986, Kuykendall and Kaye 1993b, Lacy 1992). Eighteen of the 31 Fender's blue butterfly sites contain 50 or fewer individuals. The threat of extinction due to naturally occurring genetic or demographic events can play a significant role in the instability of the species as a whole. The isolation of these small populations due to habitat fragmentation precludes recolonization from larger populations and could result in the permanent loss of occurrences once populations fall below a critical level.

This pattern of extinction and recolonization of connected colonies of butterflies has been disrupted by the extensive fragmentation of remaining habitat and the disruption of the disturbance regimes that have maintained them. The remnant populations, now small in numbers, are either unconnected or exchange individuals to a very limited degree. With their limited dispersal abilities, low numbers and dwindling habitat, a majority of the remaining populations of Fender's blue butterfly likely face permanent extirpation. The small population sizes at several sites pose their own threat to the survival of Fender's blue butterfly as demographic and genetic problems can push a population to extinction (Hammond and Wilson 1993).

Random human and environmental events may also affect the small populations of these species and cause future extirpations. The impact of such events are magnified by the size of the populations. It is much easier to cause the extirpation of a population occupying a small area than one occupying a larger area. Due to the small area occupied by many of the remaining populations, randomly occurring natural events can play a role in extirpation. One small population of *Erigeron decumbens* var. *decumbens* previously found on Finley National Wildlife Refuge was recently lost due to

erosion (Meincke 1980). A natural change in a waterway course was apparently responsible. Shultz (1996) stated that large fluctuations in populations evident in her 3-year study from 1993 to 1995 indicate that Fender's blue butterfly populations are strongly influenced by random variation in weather conditions from year to year; these large fluctuations make Fender's blue butterfly extremely susceptible to loss of habitat and host plants due to human-caused events or invasive alien plants.

A serious long-term threat to all Fender's blue butterfly, *Lupinus sulphureus* ssp. *kincaidii*, and *Erigeron decumbens* var. *decumbens* occurrences is the change in community structure due to succession. Currently, succession has been documented for 70 of the 84 relic prairie sites occupied by one or more of these species proposed for listing. Invasion by alien plant species has been documented at 36 of these 84 prairie sites. The natural transition of grassland to forest in the absence of disturbance means that prairie sites left unmanaged likely will eventually be lost (Clark *et al.* 1993; Franklin and Dyrness 1973; Hammond and Wilson 1993; Johannsen *et al.* 1971; Kuykendall and Kaye 1993). In addition, the presence of tall, fast-growing alien species speeds the conversion of open upland prairie to dense, rank grasslands and shrublands. Invasive woody species of concern include the alien plants *Rubus discolor* (Himalayan blackberry) and *Cytisus scoparius* (Scotch broom), and the native *Toxicodendron diversiloba* (poison oak). Non-native grass species aggressive enough to suppress *L. sulphureus* ssp. *kincaidii* and *E. decumbens* var. *decumbens* include *Holcus lanatus* (velvet grass), *Dactylis glomerata* (orchard grass), *Brachypodium sylvaticum* (false-brome), and *Arrhenatherum elatius* (tall oat-grass) (Hammond 1996).

The degree of the threat of succession at roadside sites varies considerably depending on the vegetation control employed by each County at each site. Fender's blue butterfly populations at small roadside sites are weak (low numbers) and are close to extinction either through degradation of habitat from invasion of alien grasses, succession by shrubs and trees, or through development activities (Hammond 1996). One roadside site at Oak Ridge that was previously considered stable has declined since 1992, and is being invaded by large thickets of *Rubus* ssp. (blackberry) and *Cytisus scoparius* (Hammond 1996).

Non-roadside sites in general face the greatest threat from succession/weed

expansion and invasion due to a lack of disturbance that disrupts successional progress. Otherwise secure habitat on Corps lands is being heavily invaded by the alien plant *Arrhenatherum elatius*, and the butterfly population is alarmingly small (Schultz 1996). Prime habitat occupied by *Erigeron decumbens* var. *decumbens* at Baskett Butte is rapidly being overgrown with alien grass and trees (Hammond 1996). About 25 percent of the large Coburg Ridge site occupied by Fender's blue butterfly and *Lupinus sulphureus* ssp. *kincaidii* is threatened by the profuse shrub growth of *Cytisus scoparius* (Hammond 1996). Regardless of the size of the site, invasion by non-native plants is a threat at all of the sites occupied by any of the three species proposed for listing in this rule.

The application of pesticides and biological control agents to control insect pests, such as gypsy moths, is also a threat to Fender's blue butterfly. Although the sensitivity of Fender's blue butterfly larvae to specific insecticides is not known, the potential result from use of gypsy moth control agents on habitats occupied by the Fender's blue butterfly should not be dismissed (Hammond 1994). The use of microbial insecticides, such as *Bacillus thuringiensis* (Bt) has been shown to have significant residual toxic impacts on native butterflies under field conditions even with heavy rain and ultraviolet light exposure (Schriber and Gage 1995).

Taken together as a category, other natural and manmade factors have a profound effect on the remaining populations of Fender's blue butterflies, *Lupinus sulphureus* ssp. *kincaidii*, and *Erigeron decumbens* var. *decumbens*. Nearly all of the populations are threatened by either alien species, successional transition of habitat, or demographic and genetic factors as a result of small population size. Populations of Fender's blue butterfly at all of the 31 sites are currently threatened by one of these factors. The same holds true for all 28 sites of *E. decumbens* var. *decumbens* and for all 51 sites of *L. sulphureus* ssp. *kincaidii*. Although progressing on a slower time scale, the encroachment of alien plants, the successional advance of tree and shrub species and other naturally occurring random events will, if unchecked, lead to reductions in population size, reductions in population viability and, ultimately, the extinction of these native prairie species.

The Service has carefully assessed the best scientific and commercial information available regarding the past,

present, and future threats faced by these species in determining to propose this rule. Threats to Fender's blue butterfly are more imminent than threats to *Lupinus sulphureus kincaidii* since the butterfly, with its biology and shorter life span, will exhibit more rapid declines in numbers and in the face of threats will be extirpated more quickly at any one location. Because of its longer life span, small numbers of *L. sulphureus* ssp. *kincaidii* plants are likely to persist longer in any given habitat area than are small numbers of butterflies. Threats to *Erigeron decumbens* var. *decumbens* are also more imminent than threats to *L. sulphureus* ssp. *kincaidii* because of the fewer populations of *E. decumbens* var. *decumbens*. Secondly, many of the populations of *E. decumbens* var. *decumbens* grow along roadsides adjacent to agricultural activities (especially grass seed farms) where herbicide spraying to create bare soil is common practice. Based on this evaluation, Fender's blue butterfly and *E. decumbens* var. *decumbens* are in danger of extinction throughout all or a significant portion of their respective ranges, while *L. sulphureus* ssp. *kincaidii* is likely to become endangered within the foreseeable future. Therefore, the Service proposes to list Fender's blue butterfly (*Icaricia icarioides fenderi*) and *E. decumbens* var. *decumbens* (Willamette daisy) as endangered and to list *L. sulphureus* ssp. *kincaidii* (Kincaid's lupine) as threatened.

### Critical Habitat

Critical habitat is defined in section 3(5)(A) of the Act as (i) 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 (i) essential to the conservation of the species and (II) that may require special management considerations or protection; and (ii) 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. The term "conservation" means the use of all methods and procedures needed to bring the species to the point at which listing under the Act is no longer necessary.

Section 4(a)(3) of the Act, as amended, requires that to the maximum extent prudent and determinable, the Secretary propose critical habitat at the time a species is determined to be threatened or endangered. The Service finds that designation of critical habitat is not prudent for *Erigeron decumbens*

var. *decumbens*, *Lupinus sulphureus* ssp. *kincaidii*, or Fender's blue butterfly at this time. Service regulations (50 CFR 424.12(a)(1)) 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.

The listing of *Lupinus sulphureus* ssp. *kincaidii* and *Erigeron decumbens* var. *decumbens* in and of itself contributes to a certain level of risk from over-collection. This is because listing acknowledges the rarity of a species, which then creates a certain level of demand by collectors. Easily accessible roadside populations with few individuals would be particularly susceptible to indiscriminate collection by persons interested in rare plants and/or butterflies if not for the fact that location information is not readily available.

Designation of critical habitat for *Lupinus sulphureus* ssp. *kincaidii*, *Erigeron decumbens* var. *decumbens*, and Fender's blue butterfly is not considered prudent, because the disclosure of precise maps and descriptions of critical habitat in the **Federal Register** would likely subject these populations to loss of individuals and over-collection, resulting in the further decline of the species. The Fender's blue butterfly is also vulnerable to acts of vandalism, which may damage or eliminate populations of this animal.

In the case of Fender's blue butterfly, both criteria apply. As discussed under "Summary of Factors Affecting the Species," this animal and its habitat are vulnerable to several activities, especially the removal of specimens for scientific or personal collections. The Service is concerned about the impacts of the illicit commercial trade on Fender's blue butterfly. Specimens of this species are known to have recently been offered for trade by a butterfly collector. Unauthorized collecting is an activity that can be difficult to control because it can be done in an inconspicuous and discreet manner. The international trade of butterflies, including listed species, is an established practice and the value of a specimen is commensurate with the quality of the specimen and its rarity. High prices for prized specimens can provide an incentive for illegal take and trade. Listing in itself increases the publicity and interest in a species' rarity, and thus may directly increase

the value and demand for specimens. Trade of illegally captured or held butterflies and other invertebrates has led to several arrests and convictions for violations of the Lacey Act (Claiborne 1997; Hoekwater 1997; Mendoza 1995; U. S. Department of Justice 1993, 1994, 1995a, 1995b; Williams 1996). However, with the designation of critical habitat, precise pinpointing of localities would result from publication of critical habitat descriptions and maps in the **Federal Register**. Since the access to many sites is not actively protected, managed or monitored closely enough to prevent trespass or restrict access, the disclosure of critical location information on rare species increases collection activities on the animal, even for butterflies that have been designated as endangered or threatened species.

Since many of the extant populations of Fender's blue butterfly are comprised of a small number of individuals (less than a few hundred individuals, and at seven sites only five individuals), one person seeking to augment a private or scientific collection could extirpate a population with the removal of a few individuals. Several populations are along roadsides, which make them particularly accessible. Therefore, designation of critical habitat would increase the vulnerability of smaller sites, thereby increasing the risk of extinction at these smaller sites from collection.

In addition to the threat of over-collection, critical habitat designation may also make Fender's blue butterfly and its habitat prone to visitation and impact by non-collectors curious about any of the three species discussed in this proposed rule. Curiosity seekers may inadvertently trample host plants and crush eggs, larvae or adult butterflies. Fender's blue butterfly co-occurs with *Lupinus sulphureus* ssp. *kincaidii* at 14 sites and also occurs with *Erigeron decumbens* var. *decumbens* at 1 site. Publication of critical habitat descriptions and maps for *L. sulphureus* ssp. *kincaidii*, *E. decumbens* var. *decumbens*, or Fender's blue butterfly would place all three species at an increased risk of harm from trampling or habitat destruction. For example, in the spring of 1997, naturalists intent on observing the endangered Palos Verdes blue butterfly (*Glaucopsyche lygdamus palosverdesensis*) trampled and damaged its habitat in their quest to obtain photographs of the animal (C. Nagano, pers. obs. 1997).

Designation of critical habitat could also increase the vulnerability of Fender's blue butterfly habitat to intentional destruction by landowners

who do not want a protected species on their property. In the mid-1980's, a landowner disked the habitat of the now endangered Quino checkerspot butterfly (*Euphydryas editha quino*) and eliminated the species from the site after being informed about its presence (C. Nagano, pers. obs.).

Furthermore, the designation of critical habitat provides limited benefit in addition to the protection and awareness that these three taxa will receive by virtue of their listing. Section 7(a)(2) of the Act requires Federal agencies in consultation with the Service, to ensure that any action authorized, funded, or carried out by such agency, does not jeopardize the continued existence of a federally listed species, or does not destroy or adversely modify designated critical habitat. The occurrences of these three species are so closely associated to their habitat year-round that any designated critical habitat areas would overlap areas of species' presence and occurrence. Therefore, when a species is listed, an analysis to determine jeopardy under section 7(a)(2) would consider take associated with habitat impacts. Such an analysis would closely parallel any analysis of habitat impacts conducted to determine adverse modification of critical habitat. As a result, a determination of adverse modification of critical habitat for Fender's blue butterfly or *Lupinus sulfureus* ssp. *kincaidii* or *Erigeron decumbens* ssp. *decumbens* is highly likely to be accompanied with a determination of jeopardy. Listing of these species will ensure that section 7 consultation occurs and potential impacts to the species and its habitat are considered for any Federal action that may affect these species. In the case of Fender's blue butterfly, the listing of *L. sulfureus* ssp. *kincaidii* will also ensure that Federal agencies consult even when Federal actions may affect unoccupied potentially suitable habitat for the butterfly.

It is the intent of critical habitat designation to provide additional benefits to the species through increased awareness and management activities. Benefits resulting from designation of critical habitat are anticipated to be limited because Federal, State, and conservation group land managers with moderate and larger extant populations of Fender's blue butterfly and *Erigeron decumbens* ssp. *decumbens* have known of the occurrence of these species and have initiated management activities in several cases. The largest populations of the Fender's blue butterfly occur at Baskett Slough National Wildlife Refuge (1,400 individuals on 50 ha) and the

second largest is at Willow Creek Main managed by TNC (764 individuals on 3.8 ha). The largest population of *Erigeron decumbens* ssp. *decumbens* occurs at Willow Creek Preserve managed by TNC (2,080 individual plants on 20.3 ha) and the second and third occur on Corps land (Fisher Butte has 1,500 plants on 20.3 ha and Fisher Butte Dike has 1,000 plants on 4.1 ha). All of the large populations of *Lupinus sulphureus* ssp. *kincaidii* occur on private lands and designating critical habitat for *L. sulphureus* ssp. *kincaidii* would reveal locations of the Fender's blue butterfly.

The BLM, FS, Corps, and the Service are aware of the presence and locations of the three species on their properties. The Corps and Service are managing the lands that are under their jurisdiction to restore habitat for the three species and are monitoring the existing populations.

Extant populations of Fender's blue butterfly and *Lupinus sulphureus* ssp. *kincaidii* occur on State lands managed by ODOT and Oregon State University (OSU) College of Forestry. The ODOT is aware of locations of Fender's blue butterfly, *L. sulfureus* ssp. *kincaidii*, and *Erigeron decumbens* ssp. *decumbens* sites, and are currently managing these sites to avoid impacts from State road maintenance activities. The ODOT is a non-Federal representative of the Federal Highway Administration (FHA) for the purposes of section 7 consultation. Therefore, any ODOT activities funded by the FHA that may affect listed species would require section 7 consultation. The OSU Department of Botany and Plant Pathology has been working cooperatively with OSU College of Forestry to conserve habitats at McDonald State Forest where *L. sulphureus* ssp. *kincaidii* and Fender's blue butterfly occur in butterfly meadows on OSU lands (Mark Wilson, pers. comm. 1997).

Other Federal agencies will be notified with this proposed rule. Therefore, agencies such as the Department of Housing and Urban Development (HUD) would be subject to section 7 consultation under the Act. Agencies, such as HUD, with any actions that may impact listed species whether occurring on Federal, State, or private lands, would be subject to section 7 consultation under the Act. Since activities on Federal lands and federally funded activities would be subject to section 7 consultation and recovery planning with listing, protection of habitat will be addressed through the consultation and recovery processes.

Aside from consideration under section 7, the Act does not provide any additional protection to lands designated as critical habitat. Designating critical habitat does not create a management plan for the areas where the listed species occurs; does not establish numerical population goals or prescribe specific management actions (inside or outside of critical habitat); and does not have a direct effect on areas not designated as critical habitat.

Critical habitat designation would provide limited benefit on private lands. The primary reasons are that critical habitat designation provides protection only on Federal lands or on private lands if there is Federal involvement through authorization or funding of, or participation in, a project or activity. In other words, a designation of critical habitat on private lands does not compel or require private landowners to undertake recovery or active management for the species. Also, Federal actions on private lands are likely to be limited, but nevertheless would require section 7 consultation if such actions may affect listed species. In addition, private landowners with sizeable or significant populations of the Fender's blue butterfly, *Lupinus sulfureus* ssp. *kincaidii*, and *Erigeron decumbens* var. *decumbens* are aware of the populations of the species on their lands. Landowners and managers of smaller sites will be notified with publication of the proposed rule. In the case of The Nature Conservancy, management and conservation activities have been implemented.

Smaller roadside sites may benefit from critical habitat designation by increasing awareness of locations to County road maintenance crews. However, the benefit of critical habitat designation of these smaller sites would be small to negligible when compared to the increased risks and vulnerability these smaller sites may face from collection or vandalism with disclosure of their locations.

In summary, the Service believes that any benefit potentially provided by designation of critical habitat for Fender's blue butterfly, *Lupinus sulphureus* ssp. *kincaidii*, or *Erigeron decumbens* var. *decumbens* would be outweighed by the increase in threats to the species and their habitat from illegal collecting and vandalism caused by such designation. Therefore, the Service has determined that designation of critical habitat for Fender's blue butterfly, *Lupinus sulphureus* ssp. *kincaidii*, or *Erigeron decumbens* var. *decumbens* is not prudent. Protection of Fender's blue butterfly habitat, *Lupinus*

*sulphureus* ssp. *kincaidii*, and *Erigeron decumbens* var. *decumbens* will be addressed through the section 7 consultation process and through recovery actions.

#### Available Conservation Measures

Conservation measures provided to species listed as endangered or threatened under the Act include recognition, recovery actions, requirements for Federal protection, and prohibitions against certain activities. Recognition through listing encourages and results in conservation actions by Federal, State, and private agencies, groups, and individuals. The Act provides for possible land acquisition and cooperation with the States and requires that recovery actions be carried out for all listed species. The protection required of Federal agencies and the prohibitions against taking and harm of animals and certain activities involving listed plants are discussed, in part, below.

Section 7(a) of the Act, as amended, requires Federal agencies 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 being designated. Regulations implementing this interagency cooperation provision of the Act are codified at 50 CFR Part 402. Section 7(a)(4) requires Federal agencies to confer informally with the Service on any action that is likely to jeopardize the continued existence of a proposed species or result in destruction or adverse modification of proposed critical habitat. If a species is listed subsequently, section 7(a)(2) 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. If a Federal action is likely to adversely affect a listed species or its critical habitat, the responsible Federal agency must enter into formal consultation with the Service.

As a result of the occupation of roadside habitat by *Erigeron decumbens* var. *decumbens*, *Lupinus sulphureus* ssp. *kincaidii*, and Fender's blue butterfly, the FHA would become involved with these species in the event of full or partial funding of state highway maintenance by the Federal government. Such maintenance activities would be subject to review under the Act. Additionally, sites supporting occurrences of *E. decumbens* var. *decumbens*, *L. sulphureus* ssp. *kincaidii*, and Fender's blue butterfly on private holdings would be subject to review under section 7 of the Act if

HUD is involved in the issuance of housing loans. The BLM, FS, and Corps manage lands known to contain extant populations of the three species in this proposed rule. In all of these cases, the consultation and conservation requirements placed upon Federal agencies by the Act would be initiated. Furthermore, opportunities for land acquisition, conservation agreements and other recovery strategies would be bolstered by listing these species as endangered or threatened.

The Act and its implementing regulations set forth a series of general prohibitions and exceptions that apply to all endangered and threatened plants. All prohibitions of section 9(a)(2) of the Act, implemented by 50 CFR 17.61 for endangered plants and 50 CFR 17.71 for threatened plants, apply. These prohibitions, in part, make it illegal for any person subject to the jurisdiction of the United States to import or export, transport in interstate or foreign commerce in the course of a commercial activity, sell or offer for sale in interstate or foreign commerce, or remove and reduce the species to possession from areas under Federal jurisdiction. In addition, for plants listed as endangered, the Act prohibits the malicious damage or destruction of areas under Federal jurisdiction and the removal, cutting, digging up, or damaging or destroying of such plants in knowing violation of any State law or regulation, including State criminal trespass law (see 16 U.S.C. § 1538 (a)(2)(B)). Section 4(d) of the Act allows for the provision of such protection to threatened species through regulation. This protection may apply to *Lupinus sulphureus* ssp. *kincaidii* in the future if a special regulation is promulgated after opportunity for public notice and comment. Seeds from cultivated specimens of threatened plants are exempt from these prohibitions provided that their containers are marked "Of Cultivated Origin." Certain exceptions to the prohibitions apply to agents of the Service and State conservation agencies.

The Act and 50 CFR 17.62, 17.63, and 17.72 also provide for the issuance of permits to carry out otherwise prohibited activities involving endangered and threatened plants under certain circumstances. Such permits are available for scientific purposes and to enhance the propagation or survival of the species. For threatened plants, permits also are available for botanical or horticultural exhibition, educational purposes, or special purposes consistent with the purposes of the Act. It is anticipated that few trade permits would ever be sought or issued because

*Lupinus sulphureus* ssp. *kincaidii* and *Erigeron decumbens* var. *decumbens* are not common in cultivation or in the wild.

The Act and implementing regulations also set forth a series of general prohibitions and exceptions that apply to all endangered wildlife. These prohibitions, codified at 50 CFR 17.21, in part, make it illegal for any person subject to the jurisdiction of the United States to take (includes harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect; or to attempt any of these), import or export, ship in interstate commerce in the course of commercial activity, or sell or offer for sale in interstate or foreign commerce any listed species. It also is illegal to possess, sell, deliver, carry, transport, or ship any such wildlife that has been taken illegally. Certain exceptions apply to agents of the Service and State conservation agencies.

Permits may be issued to carry out otherwise prohibited activities involving endangered wildlife under certain circumstances. Regulations governing permits are codified at 50 CFR 17.22 and 17.23. Such permits are available for scientific purposes, to enhance the propagation or survival of the species, and/or for incidental take in connection with otherwise lawful activities.

It is the policy of the Service, as published in the **Federal Register** on July 1, 1994 (59 FR 34272), to identify to the maximum extent practicable at the time a species is listed, those activities that would or would not constitute a violation of section 9 of the Act. The intent of this policy is to increase public awareness of the effect of the listing on proposed and ongoing activities within the range of a species. *Erigeron decumbens* var. *decumbens*, and *Lupinus sulphureus* ssp. *kincaidii* are known to occur on Federal lands under the jurisdiction of the Service, Corps, BLM, or FS. In the event of listing, occurrences of these species on Federal lands would be protected from collection, damage or destruction under section 9 of the Act. State law provides some protection to populations on State-owned lands as discussed previously. In appropriate cases, collection of these species could be allowed through the issuance of a Federal endangered species permit. The Service is not aware of any otherwise lawful activities being conducted or proposed by the public that will be affected by this listing and result in a violation of Section 9.

As a listed wildlife species, Fender's blue butterfly would receive more extensive protection under the Act than described for the plant species above.

Section 9 prohibits the take of any listed wildlife species by any person subject to the jurisdiction of the United States. The Service believes that, based on the best available information, the following actions would not be violations of section 9:

(1) Possession, delivery, or movement, including interstate transport and import or export from the United States, involving no commercial activity, of dead specimens of Fender's blue butterfly that were collected prior to the date of publication in the **Federal Register** of a final regulation adding this taxon to the list of endangered species;

(2) Actions that may affect Fender's blue butterfly and are authorized, funded, or carried out by a Federal agency when the action is conducted in accordance with section 7 of the Act;

(3) Land actions or management carried out under a habitat conservation plan approved by the Service pursuant to section 10(a)(1)(B) of the Act, or an approved conservation agreement; and,

(4) Scientific research carried out under a recovery permit issued by the Service pursuant to section 10(a)(1)(A) of the Act.

Potential activities involving Fender's blue butterfly that the Service will likely consider a violation of section 9 include, but are not limited to, the following:

(1) Take of Fender's blue butterfly without a recovery permit pursuant to section 10(a)(1)(A) or an incidental take permit pursuant to section 10(a)(1)(B) of the Act (this includes harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting, or attempting any of these actions);

(2) Possess, sell, deliver, carry, transport, or ship illegally taken specimens of Fender's blue butterfly, except for properly documented antique specimens of this taxon at least 100 years old, as defined by section 10(h)(1) of the Act;

(3) The unauthorized release of biological control agents that attack, damage, or kill any stage of this taxa;

(4) The removal or destruction of the foodplants being utilized by Fender's blue butterfly, defined as *Lupinus sulphureus* ssp. *kincaidii*, *L. albicaulis*, and *L. laxiflorus*; and,

(5) Destruction or alteration of Fender's blue butterfly habitat by grading, leveling, plowing, mowing, burning, herbicide or pesticide spraying, intensively grazing, or otherwise disturbing grasslands that result in the death or injury of adult butterflies and/or their larvae or eggs, or that impair the species' essential breeding, foraging, or sheltering.

Questions regarding whether specific activities will constitute a violation of section 9 should be directed to the State Supervisor of the Service's Oregon State Office (see **ADDRESSES** section). Requests for copies of the regulations concerning listed plant and animal species and general inquiries regarding prohibitions and permits may be addressed to the U.S. Fish and Wildlife Service, Endangered Species Permits, 911 N.E. 11th Avenue, Portland, Oregon 97232-4181 (telephone 503-231-2063; FAX 503-231-6243).

#### Public Comments Solicited

The Service intends 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. Comments particularly are sought concerning:

(1) Biological, commercial trade, or other relevant data concerning any threat (or lack thereof) to these species;

(2) The location of any additional populations of these species and the reasons why any habitat should or should not be determined to be critical habitat pursuant to section 4 of the Act;

(3) Additional information concerning the range, distribution, and population size of these species; and

(4) Current or planned activities in the subject area and their possible impacts on *Erigeron decumbens* var. *decumbens*, *Lupinus sulphureus* ssp. *kincaidii*, and Fender's blue butterfly.

Final promulgation of the regulation on these species will take into consideration the comments and any additional information received by the Service. Such communications may lead to a final regulation that differs from this proposal.

The Endangered Species Act provides for one or more public hearings on this proposal, if requested. Requests must be received within 45 days of the date of publication of the proposal in the **Federal Register**. Such requests must be made in writing and addressed to State Supervisor, U.S. Fish and Wildlife Service, Oregon State Office (see **ADDRESSES** above).

#### Required Determinations

This rule does not contain collections of information that require approval by the Office of Management and Budget under 44 U.S.C. 3501 *et seq.*

#### National Environmental Policy Act

The Fish and Wildlife Service has determined that Environmental Impact Assessments and Environmental Impact Statements, as defined under the authority of the National Environmental Policy Act of 1969, need not be prepared in connection with regulations adopted pursuant to section 4(a) of the Endangered Species Act of 1973, as amended. A notice outlining the Service's reasons for this determination was published in the **Federal Register** on October 25, 1983 (48 FR 49244).

#### Required Determinations

This rule does not contain collections of information that require approval by the Office of Management and Budget under 44 U.S.C. 3501 *et seq.*

#### References Cited

A complete list of all references cited herein, as well as others, is available upon request from the Oregon State Office (see **ADDRESSES** above).

Author: The primary author of this proposed rule is Richard VanBuskirk, Fish and Wildlife Biologist (see **ADDRESSEES** section). Assistance with the portions of this proposed rule dealing with Fender's blue butterfly were completed by Chris Nagano, staff entomologist, U.S. Fish and Wildlife Service, Carlsbad Field Office, 2730 Loker Avenue West, Carlsbad, California 92008.

#### List of Subjects in 50 CFR Part 17

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

#### Proposed Regulation Promulgation

Accordingly, the Service hereby proposes 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. Amend section 17.11(h) by adding the following, in alphabetical order, under INSECTS, to the List of Endangered and Threatened Wildlife to read as follows:

#### § 17.11 Endangered and threatened wildlife.

\* \* \* \* \*

(h) \* \* \*

Species		Historic range	Vertebrate population where endangered or threatened	Status	When listed	Critical habitat	Special rules
Common name	Scientific name						
* INSECTS *		*	*	*	*		*
Fender's blue butterfly.	<i>Icaricia icarioides fenderi.</i>	U.S.A. (OR) .....	NA .....	E	.....	NA	NA
* * * * *		*	*	*	*		*

3. Amend section 17.12(h) by adding the following, in alphabetical order, under FLOWERING PLANTS, to 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 *		*	*	*	*		*
<i>Erigeron decumbens</i> var. <i>decumbens.</i>	Willamette daisy .....	U.S.A. (OR) .....	Asteraceae .....	E	.....	NA	NA
<i>Lupinus sulphureus</i> ssp. <i>kincaidii.</i>	Kincaid's lupine .....	U.S.A. (OR, WA) .....	Fabaceae .....	T	.....	NA	NA
* * * * *		*	*	*	*		*

Dated: December 30, 1997.  
**Jamie Rappaport Clark,**  
Director, Fish and Wildlife Service.  
[FR Doc. 98-1851 Filed 1-26-98; 8:45 am]  
BILLING CODE 4310-55-P

**DEPARTMENT OF THE INTERIOR**  
**Fish and Wildlife Service**  
**50 CFR Part 17**  
**RIN 1018-AE59**  
**Endangered and Threatened Wildlife and Plants; Proposed Rule to List the San Bernardino Kangaroo Rat as Endangered; and Notice of Public Hearing**  
**AGENCY:** Fish and Wildlife Service, Interior.  
**ACTION:** Proposed rule.

**SUMMARY:** The U.S. Fish and Wildlife Service (Service) proposes to make the provisions of the emergency rule listing the San Bernardino kangaroo rat (*Dipodomys merriami parvus*) as an endangered species pursuant to the Endangered Species Act of 1973, as amended (Act), permanent. The historic range of the San Bernardino kangaroo

rat has been reduced by approximately 96 percent due to agricultural and urban development. Of the remaining occupied habitat, a minimum of 90 percent is threatened by habitat loss, degradation, and fragmentation due to sand and gravel mining operations, flood control projects, and urban development. In addition, all of the remaining populations of San Bernardino kangaroo rat are threatened by seasonal flood events due to current restriction of the subspecies to these active flood plain habitats. Additional data and information on the status of this animal, which may assist the Service in making a final decision on this proposed action, is solicited.  
**DATES:** Comments from all interested parties must be received by March 30, 1998. A public hearing has been scheduled for Tuesday, March 3, 1998, from 2-4 P.M. and 6-8 P.M.  
**ADDRESSES:** Comments and materials concerning this proposal should be submitted to the Field Supervisor, U.S. Fish and Wildlife Service, Carlsbad Field Office, 2730 Loker Avenue West, Carlsbad, California 92008. Comments and materials received will be available for public inspection, by appointment, during normal business hours at the

above address. The public hearing will be held at the San Bernardino Hilton, 285 E. Hospitality Lane, San Bernardino, California.  
**FOR FURTHER INFORMATION CONTACT:** Field Supervisor, Carlsbad Field Office, at the address listed above (telephone 760/431-9440).  
**SUPPLEMENTARY INFORMATION:**  
**Background**  
For a thorough discussion of biological information, previous Federal action, a summary of the factors affecting the species, the reasons why critical habitat is not being proposed, and conservation measures available to listed and proposed species, consult the emergency rule on the San Bernardino kangaroo rat published in this same **Federal Register**, separate part.  
**Public Comments Solicited**  
The Service intends 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.