number 1018–0094. An agency may not conduct or sponsor, and a person is not required to respond to a collection of information, unless it displays a currently valid control number. For additional information concerning permit and associated requirements for endangered species, see 50 CFR 17.62.

References Cited

A complete list of all references cited herein is available upon request from the Oregon State Fish and Wildlife Office (see **ADDRESSES** section).

Author

The primary author of this final rule is Dr. Andrew F. Robinson, Jr., U.S. Fish and Wildlife Service, Oregon State Office (see **ADDRESSES** section).

List of Subjects in 50 CFR Part 17

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

Regulation Promulgation

Accordingly, we amend part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, as follows:

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 § 17.12(h) by adding the following, in alphabetical order under FLOWERING PLANTS, to the List of Endangered and Threatened Plants:

§ 17.12 Endangered and threatened plants.

* * * * *

(h) * * *

Species		Historic range	Family	Status	When listed	Critical habitat	Special rules
Scientific name	Common name						
*	*	*	*	*	*		*
Flowering plants							
*	*	*	*	*	*		*
Plagiobothrys hirtus.	Rough popcornflower	U.S.A. (OR)	Boraginaceae	E	678	NA	NA
*	*	*	*	*	*		*

Dated: November 30, 1999.

Jamie Rappaport Clark,

Director, Fish and Wildlife Service.

[FR Doc. 00–1562 Filed 1–24–00; 8:45 am]

BILLING CODE 4310–55–P

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

RIN 1018–AE53

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

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Final rule.

SUMMARY: The U.S. Fish and Wildlife Service (''Service'' or ''we'') determines 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 determines threatened status for a plant, *Lupinus sulphureus* ssp. *kincaidii* (Kincaid's lupine). These species are restricted primarily to native prairie in the Willamette Valley of Oregon and are known currently from a few small remnants of a formerly widespread distribution. In addition to its Oregon occurrences, *L. sulphureus* ssp. *kincaidii* is known also from two small sites in southern Washington. Commercial and/or residential development, agriculture, silvicultural practices, road improvement, over-collection, herbicide use, and naturally occurring demographic and random environmental events threaten these three taxa. This final rule invokes the Federal protection and recovery provisions of the Act, as applicable for these plant and butterfly species.

EFFECTIVE DATES: February 24, 2000.

ADDRESSES: You may inspect the complete file for this rule, by appointment, during normal business hours at the U.S. Fish and Wildlife Service, Oregon State Office, 2600 SE 98th Ave, Suite 100, Portland, Oregon 97266.

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 or telephone 503–231–6179, Facsimile 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 primarily to the Willamette Valley of Oregon. The valley is a 209-kilometer (km) (130 miles (mi)) long and 32–64-km (20–40-mi) wide alluvial floodplain 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. We know of four sites containing *L. sulphureus* ssp. *kincaidii* approximately 60 km (38 mi) south of the Willamette Valley and within the Umpqua Valley of Douglas County, Oregon. In addition to its Oregon occurrences, *L. sulphureus* ssp. *kincaidii* is known from two small sites in Lewis County, southern Washington, 70 km (40 mi) north of the Willamette Valley.

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, most Willamette Valley grasslands are early seral (one stage in a sequential

progression) habitats, requiring natural or human-induced disturbance for their maintenance (Franklin and Dryness 1973). The vast majority of Willamette Valley grasslands would likely be forested if left undisturbed (Johannessen *et al.* 1971). Important exceptions to this successional pattern are grass balds on valley hillsides that may be climax grasslands due to the presence of deep, fine-textured, self-mulching soils or xeric (very dry) lithosoils (Franklin and Dryness 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 check-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 are 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, two populations of *E. decumbens* var. *decumbens* occur on top of a dry, stony butte in an upland prairie.

The impact of humans on the botanical communities of the Willamette Valley dates 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 resulted in the maintenance of extensive wet and dry prairie grasslands (Johannessen *et al.* 1971). 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 Lang (1885) estimated to consist of one-sixth prairie and five-sixths forest. We can analyze the extent of the prairie component through historical information from land survey records. Natural grasslands described by Federal land surveyors in the 1850s 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 European settlement. Within 30 years of passage of the Donation Land Act of 1850, European-American settlers, who quickly subdivided their original land grants to accommodate the rapid increase in population, occupied most prairie lands (Lang 1885). Settlers first plowed the level, open tracts of prairie (Lang 1885) and only boggy, flood-prone areas prevented complete conversion of the native grassland community to cropped monocultures. After 1936, the U.S. Army Corps of Engineers (Corps) overcame limitations on development that had been imposed by seasonal flooding and a high water table by initiating 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. Native prairie vegetation in the Willamette Valley was decimated by the rapid expansion of agriculture during the 140-year period from the 1850s to the present. Humans also began suppressing the fire disturbance regime on native prairie habitat. 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). Fence rows and intervening strips of land along agricultural fields and roadsides served as the only refugia from these forces of change.

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, often dominated by nonnative species, also 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 are less than 400 ha (988 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 and *Lupinus sulphureus* ssp. *kincaidii*. Fender's blue butterfly and/or *L. sulphureus* ssp. *kincaidii* and/or *Erigeron decumbens* var. *decumbens* currently occupy slightly more than one-half of this upland prairie habitat (62 sites, 210 ha (112.8 ac)). Within the remnant prairie habitat, *E. decumbens* var. *decumbens* occupies 28 sites across 116 ha (286 ac), *L. sulphureus* ssp. *kincaidii* occupies 54 sites across 158 ha (370 ac), while Fender's blue butterfly occupies 32 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 icariodes*). *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 *icaricia* 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. Nagano 1997). Some researchers considered subspecies *fenderi* 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). We consider Fender's blue butterfly as 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. Nagano 1997).

Fender's blue butterfly is small with a wingspan of approximately 2.5 centimeters (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 male Fender's blue butterflies are small. In contrast, the dark spots on the underwings of the pembina blue butterfly (*Icaricia icariodes pembina*) are surrounded with wide white haloes, and the underside of the hindwings of Boisduval's blue butterfly (*Icaricia icariodes*) is very pale whitish gray with broad haloes around the black spots.

We do not know the precise historic distribution of Fender's blue butterfly due to the limited information collected on this subspecies prior to its description in 1931 (Macy 1931). Although Ralph W. Macy collected the type specimens for this butterfly in 1929, only a limited number of collections were made between the time of the subspecies' discovery and Macy'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 Macy's collections. As a result, no Fender's blue butterflies were observed during 20 years of widespread investigation. Finally, Dr. Paul Hammond rediscovered Fender's blue butterfly in 1989 at McDonald Forest, Benton County, Oregon, on an uncommon species of lupine, *Lupinus sulphureus* ssp. *kincaidii*. Recent surveys have indicated that the insect is confined to the Willamette Valley and currently occupies 32 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. Fender's blue butterflies occupy sites located almost exclusively on the western side of the valley, within 33 km (21 mi) of the Willamette River.

Although researchers have made only limited observations 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 food plant 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 may 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). A Fender's blue butterfly may complete its life cycle in 1 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 ants tend other subspecies of Boisduval's blue butterfly 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 situation may be due to the nocturnal activity patterns of the *Icaricia icarioides* larvae, because it appears that this species has an obligate relationship with ants (G. Pratt, pers. comm. to C. Nagano 1997). Schultz (pers. comm. 1994) has observed nonnative Argentine ants (*Iridomyrmex humilis*) tending Fender's blue butterfly larvae during indoor rearing trials.

Of the 32 sites where Fender's blue butterfly occurs, *Lupinus sulphureus* ssp. *kincaidii* co-occurs as a larval host plant at 27 of these. The near absence of the Fender's blue butterfly at sites without *Lupinus sulphureus* ssp. *kincaidii* suggests that *L. laxiflorus* (spurred lupine) and *L. albicaulis* (sickle keeled lupine) may be secondary food plants used by the insect (Hammond and Wilson 1993). Occurrences where Fender's blue butterfly apparently does not rely on *L. sulphureus* ssp. *kincaidii* as its primary host plant have been noted at Coburg Ridge where *L. laxiflorus* is the sole host plant across greater than 95 percent of the site (Schultz in litt. 1998), two other sites where *L. laxiflorus* is the primary food plant (Schultz 1996), and an additional two sites where *L. laxiflorus* co-occurs with *L. sulphureus* ssp. *kincaidii* (Hammond and Wilson 1993). Fender's blue butterfly also occupies six sites where *L. albicaulis* is the primary food plant; however, the butterfly is declining at two of these sites.

At this time we have no information to suggest that *Lupinus albicaulis* and/or *L. laxiflorus* are inferior host plants either physically or biochemically, or that the oviposition behavior of the Fender's blue butterfly prefers *L. sulphureus* ssp. *kincaidii.* It is possible that the co-occurrence of these two species is due to environmental factors favoring *L. sulphureus* ssp. *kincaidii* that also favor Fender's blue butterfly. However, this phenomenon of food plant specificity has been documented in other species of butterflies and moths (Longcore *et al.* 1997). We may say, however, that at the majority of sites where Fender's blue butterfly occurs, *L. sulphureus* ssp. *kincaidii* serves as the sole source for larval food and oviposition sites and native wildflowers for adult nectar. Research in collaboration with Katrina Dlugosh (Schultz *in litt.* 1998) indicates that native wildflowers in the Willamette

Valley prairies provide more nectar than nonnative flowers and that Fender's blue butterfly population density is positively correlated with the density of native wildflowers. In Lane County, key native flowers include *Allium amplectans*, *Calachortus tolmiei*, *Camassia quamash*, *Eriophyllum lanatum*, and *Sidalcea virgata* (Schultz *in litt.* 1998).

Lupinus Sulphureus ssp. Kincaidii

In 1924, C.P. Smith first described *Lupinus sulphureus* ssp. *kincaidii* as *L. oreganus* 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 48 sites throughout the Willamette Valley. Four sites are in the Umpqua Valley of Douglas County, Oregon, and two sites are in southern Washington. The latitudinal range of the 54 sites of *L. sulphureus* ssp. *kincaidii* spans from Lewis County, Washington, south to Douglas County, Oregon, and a distance of 400 km (320 mi). This distribution implies a close association with native upland prairie sites that are characterized by heavier soils with 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).

Lupinus sulphureus ssp. *kincaidii* is easily distinguished from other sympatric members of the genus *Lupinus* with its low-growing habit and unbranched inflorescence. 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 not obscured by the reflexed banner when viewed from above. The leaflets tend to a deep green with an upper surface that is often glabrous (smooth). The plants are 4 to 8 decimeters (dm) (16 to 32 in) tall, with single to multiple unbranched flowering stems and basal leaves that remain after flowering (Kuykendall and Kaye 1993a).

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 (horizontal stems), producing clumps of plants exceeding 20 meters (m) (66 feet (ft)) in diameter (P. Hammond, independent consultant, pers. comm. 1994). The long rhizomes do not produce adventitious roots (secondary roots growing from stem tissue), 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). *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 and the morphologically similar *E. decumbens* var. *robustior* is restricted 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.*

Clark *et al.* (1993) reviewed herbarium specimens and found a historical distribution of *Erigeron decumbens* var. *decumbens* throughout the Willamette Valley. He found frequent collections from the period between 1881 and 1934, yet no collections or observations from 1934 to 1980 (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 only 28 occurrences and 116 ha (286 ac) of occupied habitat, *E. decumbens* var. *decumbens* has the most restricted range of the species being listed herein.

Erigeron decumbens var. *decumbens* is a perennial herb, 15 to 60 mm (0.6 to 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 to 12 cm (2 to 5 in) long and 3 to 4 mm (0.1 to 0.2 in) wide. Flowering stems produce two to five 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. In its vegetative state, *Erigeron decumbens* var. *decumbens* can be confused with *A. hallii*, 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 syphrid flies and solitary bees. Seeds are released in July and August. Although the seeds are wind-dispersed, the short stature of this species likely prevents 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 (NOR) published by us on December 15, 1980 (45 FR 82506). At that time, category 2 candidates were those species for which we had information 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, we published an NOR upgrading this species to category 1 status (48 FR 53649). At that time, category 1 taxa were those for which we had sufficient data to support preparation of listing proposals. Subsequently, *E. decumbens* var. *decumbens* was reassigned category 2 candidacy in an NOR published on September 27, 1985 (50 FR 39527). On February 21, 1990, we published an NOR (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). We published an NOR on February 28, 1996 (61 FR 7596), which updated the candidate species list and discontinued the use of categories. *Erigeron decumbens* var. *decumbens* was retained as a candidate species (a candidate was defined as any taxa meeting the definition of former category 1 species). *Lupinus sulphureus* ssp. *kincaidii* and other former category 2 candidates were not retained as

candidates. Since that NOR was published, we have reevaluated the available information and determined that listing is warranted for *L. sulphureus* ssp. *kincaidii.*

Fender's blue butterfly was initially assigned to category 3A taxa in the NOR published on January 6, 1989 (54 FR 572). The best available information at that time indicated that this butterfly was likely extinct because the subspecies had last been observed in 1937. Category 3A taxa were taxa for which we had pervasive evidence of extinction, however, if rediscovered, such taxa might be reconsidered for listing. The rediscovery of this butterfly in May 1989 prompted us to change the status of the subspecies to a category 2 candidate in the NOR published on November 21, 1991 (56 FR 58830). In the NOR published on February 28, 1996 (61 FR 7596), we retained Fender's blue butterfly as a candidate for listing. On January 27, 1998, we published a proposed rule (63 FR 3863) to list the Fender's blue butterfly (*Icaricia icarioides fenderi*), *Lupinus sulphureus* ssp. *kincaidii* (Kincaid's lupine), and *Erigeron decumbens* var. *decumbens* (Willamette daisy) under the Act.

The processing of this final rule conforms with our Listing Priority Guidance published in the **Federal Register** on October 22, 1999 (64 FR 57114). The guidance clarifies the order in which we will process rulemakings. Highest priority is processing emergency listing rules for any species determined to face a significant and imminent risk to its well-being (Priority 1). Second priority (Priority 2) is processing final determinations on proposed additions to the lists of endangered and threatened wildlife and plants. Third priority is processing new proposals to add species to the lists. The processing of administrative petition findings (petitions filed under section 4 of the Act) is the fourth priority. The processing of critical habitat determinations (prudency and determinability decisions) and proposed or final designations of critical habitat will no longer be subject to prioritization under the Listing Priority Guidance. This final rule is a Priority 2 action and is being completed in accordance with the current Listing Priority Guidance.

Summary of Comments and Recommendations

In the January 27, 1998, proposed rule (63 FR 3863) and associated notifications, all interested parties were requested to submit factual reports or information that might contribute to the development of a final listing decision. Appropriate State agencies, county governments, city governments, Federal agencies, scientific organizations, private landowners, industrial landowners and other interested parties were contacted and requested to comment. Newspaper notices inviting public comments were published in the *Oregonian* on February 25–27, 1998, and the *Eugene Register Guard* on February 26–27, 1998. Following the publication of the proposed rule, we received 29 written comments during the comment period.

Five commenters opposed, and 24 favored the listing of *Erigeron decumbens* var. *decumbens* and *Icaricia icarioides fenderi* as endangered and *Lupinus sulphureus* ssp. *kincaidii* as threatened. Several commenters provided information on the status of, and threats to, various populations of *Erigeron decumbens* var. *decumbens*, *Icaricia icarioides fenderi*, and *Lupinus sulphureus* ssp. *kincaidii* that updated the information presented in the proposed rule. We incorporated that information into the Background and Summary of Factors Affecting the Species sections of this final rule, and we took it into consideration in the listing determination. We grouped comments questioning or opposing the proposed rule into issues that are discussed below.

Issue 1: One commenter stated that the information presented in the proposed rule was not accurate for his area and raised questions regarding the accuracy of data in other areas.

Our Response: We reviewed all the data concerning information regarding the area in question. On March 10, 1998, we sent three detailed maps depicting the location of *Lupinus sulphureus* ssp. *kincaidii* at the site and information we had on this locality to the commenter. These maps showed the historical locations of butterflies and *L. sulphureus* ssp. *kincaidii* in the area in question.

In our letter to the landowner, we sought clarification on the status of the population that is/was apparently on the commenter's land. Upon receipt of the letter, the landowner called us and informed us that he did not know the status of the population in question but could check later that summer.

On November 24, 1998, we contacted the landowner. The landowner informed us that a fence in the area where *Lupinus sulphureus* ssp. *kincaidii* occurred had been moved approximately 15 feet north. The area between the old fence and the new fence where *L. sulphureus* ssp. *kincaidii* had occurred was plowed. However, he thought that a couple *L. sulphureus* ssp. *kincaidii* plants occurred along the new fenceline but that the tall grass would probably eliminate them very shortly.

Issue 2: Two commenters opposed listing the Fender's blue butterfly because the butterfly has 360 acres to live on and all food they need if *Lupinus sulphureus* ssp. *kincaidii* is protected by listing.

Our Response: About 30 percent of the Fender's blue butterfly occurs at seven sites across 52 ha (128 ac) of habitat where *Lupinus sulphureus* ssp. *kincaidii* is not present and thus a substantial portion of the butterflies would not be protected by listing the plant. Although one purpose of the Act is to conserve ecosystems upon which endangered and threatened species depend, its listing provisions apply only to species rather than ecosystems (16 U.S.C. 1533).

Issue 3: Two commenters opposed the listing of the three species because it was not stated how much of the 2,600,000 ha (6,400,000 ac) of the Willamette Basin would be affected by this listing action. Commenters expressed concern that farm acreage would be taken out of production through this listing action and farm profits would be lost.

Our Response: The listing of the two plants and the butterfly will impact only those habitat hectares (acres) currently occupied by the species. Within this available habitat, *Erigeron decumbens* var. *decumbens* occupies 28 sites across 116 ha (286 ac), *L. sulphureus* ssp. *kincaidii* occupies 54 sites across 158 ha (370 ac), while Fender's blue butterfly occupies 32 sites across 165 ha (408 ac). The Fender's blue butterfly and *L. sulphureus* ssp. *kincaidii* co-occur at 25 sites across 113 ha (279 ac), and the *E. decumbens* var. *decumbens* co-occurs with both the butterfly and *L. sulphureus* ssp. *kincaidii* on 1 upland site across 49.5 ha (122 ac). Thus, the total area that would be impacted by the listing of these three species is 276 ha (684 ac), not 2,600,000 ha (6,400,000 ac).

Recovery planning for the species may include recommendations for land acquisition or easements involving private landowners. Some of these areas may be unoccupied prairie habitat. These efforts would be undertaken only with the voluntary cooperation of the landowner. In the majority of cases, private landowners are not prevented from using their land in the manner originally intended. Within the Willamette Valley wetland prairies, there are 26 sites across 116 ha (286 ac) where *Erigeron decumbens* var. *decumbens* occurs and that would require Federal regulatory agencies,

primarily the Corps, to ensure that certain actions on these sites, including the issuance of wetland permits under section 404 of the Clean Water Act, are not likely to jeopardize the continued existence of this species. In some cases, the Corps may require that private landowners who apply for permits reduce the scope or extent of their proposed fill project if the fill would adversely affect *E. decumbens* var. *decumbens.*

Landowners will be able to use occupied Fender's blue butterfly habitat (165 ha (407 ac)) as long as the use does not involve the take of the butterfly. The Act and its implementing regulations set forth a series of prohibitions and exceptions that apply to endangered wildlife, including prohibition of take (16 U.S.C. 1538). Take includes harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect; or to attempt any of these (16 U.S.C. 1532). Permits may be issued to carry out otherwise prohibited activities involving endangered wildlife under certain circumstances. If certain requirements are met, these permits are available for incidental take in connection with otherwise lawful activities.

Executive Order 12630, Government Actions and Interference with Constitutionally Protected Property Rights, require that a Taking Implication Assessment (TIA) be conducted ''as a part of the final rulemaking to evaluate the risk of and strategies for avoidance of the taking of private property.'' However, the Attorney General's guidelines state that TIAs used to analyze the potential for Fifth Amendment ''taking claims'' are to be prepared after, rather than before, an agency makes a restricted discretionary decision. In enacting the Act, Congress required the Department to list a species based solely upon scientific and commercial data indicating whether or not the species is in danger of extinction. We may not withhold a listing based upon economic concerns. Therefore, even though a TIA may be required, a TIA for a listing action is finalized only after the final determination is made regarding whether to list the species.

Peer Review

In accordance with interagency policy published on July 1, 1994 (59 FR 34270), we solicited the expert opinions of appropriate and independent specialists regarding pertinent scientific or commercial biological and ecological data for *Erigeron decumbens* var. *decumbens,* Fenders blue butterfly, and *Lupinus sulphureus* ssp. *kincaidii.* We solicit such a review to ensure that listing decisions are based upon scientifically sound data, assumptions, and analyses, including input of appropriate experts and specialists.

Comments provided by Cathy L. Maxwell, Dr. Robert Michael Pyle, Cheryl B. Schultz, and Dr. Mark Wilson, Associate Professor of Botany and Plant Pathology at Oregon State University were incorporated into the final rule. Cathy L. Maxwell; Dr. Robert Michael Pyle; Cheryl B. Schultz; Dr. Mark Wilson; David Brittell, Assistant Director, Wildlife Management Program, Washington Department of Fish and Wildlife; and Diane S. Doss, Conservation Chair, Washington Native Plant Society, supported our position that *Erigeron decumbens* var. *decumbens* and Fender's blue butterfly were endangered and *Lupinus sulphureus* ssp. *kincaidii* was threatened throughout their limited range in the Willamette Valley of western Oregon and Boistfort Valley, Lewis County, Washington.

Summary of Factors Affecting the Species

Section 4 of the Endangered Species Act and regulations (50 CFR Part 424) issued 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* ssp. *kincaidii* (Kincaid's lupine), and *Erigeron decumbens* var. *decumbens* (Willamette daisy) are as follows:

A. *The present or threatened destruction, modification, or curtailment of its habitat or range.* Over the last 140 years, humans have extensively altered native prairie in the Willamette Valley (see Background section of this final rule), which has resulted in a loss of greater than 99 percent of the only known habitat area for the Fender's blue butterfly, *Lupinus sulphureus* ssp. *kincaidii,* and *Erigeron decumbens* var. *decumbens* (E. Alverson, pers. comm. 1994).

Within the 88 remnants of native prairie occupied by these species in the Willamette Valley, the Fender's blue butterfly occurs at 32 sites (Hammond and Wilson 1993, Schultz 1996), *Lupinus sulphureus* ssp. *kincaidii* occurs at 54 sites (Kuykendall and Kaye 1993a), and *Erigeron decumbens* var. *decumbens* occurs at 28 sites (Clark *et al.* 1993). Fender's blue butterfly and *L. sulphureus* ssp. *kincaidii* are found in close association, occurring together at a total of 26 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 88 remnants of native prairie occupied by these species has been well documented. Habitat at 80 percent of the sites (68 sites) is rapidly disappearing due to agriculture practices, development activities, forestry practices, grazing, roadside maintenance, and commercial Christmas tree farming.

Agricultural Activities

Agricultural activities likely impact at least 12 prairie remnants. Five of these remnants are wetland prairies occupied by *Erigeron decumbens* var. *decumbens,* seven are upland prairies of which six are occupied by *Lupinus sulphureus* ssp. *kincaidii,* and two are occupied by Fender's blue butterfly. In one case, a wheat field boundary adjustment near Buell in Polk County (Mill Creek Road South) 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. No Fender's blue butterflies, however, 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, such as 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. In past decades, many roadside habitats were less disturbed, but 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. obs. 1997). Grass seed farms commonly use herbicide spraying to create bare soil to prevent the spread of weeds from roadsides into the grass seed fields. Many of these roadside areas are inhabited by populations of *E. decumbens* var. *decumbens.*

Development

Urban development has caused additional loss of prairie habitat (Clark *et al.* 1993; Hammond and Wilson 1992a, 1992b 1992c, 1994, 1996; Kuykendall and Kaye 1993a; 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. Future losses for 47 prairie remnants are projected as a result of urban development (Hammond 1994, 1996), which 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 28 are upland prairie remnants supporting populations of Fender's blue butterfly and/or *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 *Lupinus sulphureus* ssp. *kincaidii* near the town of Dallas in Polk County. These sites are expected to be lost due to planned housing development (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 *Erigeron 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 *E. decumbens* var. *decumbens* located in a highway expansion corridor in Lane County (USFWS 1994). The populations of Fender's blue butterfly and *L. sulphureus* ssp. *kincaidii* at Wren in Benton County occur at 2 sites and cover about 9 ha (22 ac). Only a portion of the populations (7.4 ha) (18 ac) occur 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, owned by TNC, 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 high-voltage power-line 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).

Forestry Practices

Silvicultural activities for timber production have threatened 6 percent (5 sites) of the remaining 88 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 4 ha (10 ac) were 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 threaten to alter a different portion of the grassland in area-2, which has displayed the highest levels of butterfly activity on Coburg Ridge 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 *Lupinus sulphureus* ssp. *kincaidii* population on Bureau of Land Management (BLM) properties. At the BLM Letitia Creek Site, *L. sulphureus* ssp. *kincaidii* is located within a timber sale unit proposed for future harvest at the beginning of year 2020. The Callahan Ridge BLM site is located on the boundary between timber available for harvest and a non-commercial rocky area that has been withdrawn from the timber base. No timber harvest has been scheduled for the timber portion of this site for the next 30 years. The Letitia Creek area, where plants of *L. sulphureus* ssp. *kincaidii* are located, was impacted when the jeep trail running along the ridge was renovated and the surrounding forest selectively logged. Renovation of the jeep road destroyed most of the plants along the road and only a small portion of the original population remains. The other large occurrence of the butterfly and *L. sulphureus* ssp. *kincaidii* is in Benton County on McDonald State Forest and adjacent private lands that could be similarly affected by surrounding silvicultural operations.

Grazing

Grazing currently impacts 13 of the occupied habitat patches, with 5 of these being wetlands occupied by *Erigeron decumbens* var. *decumbens.* Most of the habitat at the Oak Ridge south site, in Yamhill County, occupied by Fender's blue butterfly and *Lupinus sulphureus* ssp. *kincaidii,* 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. At Boistfort Cemetery, cattle grazing remains as a threat to the *L. sulphureus* ssp. *kincaidii* population on the cemetery hill. Cattle at the Boistfort site had full access to the cemetery hill in the mid-1980s when cattle trails criss-crossed the hill and few lupines were observed (Maxwell *in litt.* 1998). In 1986, Maxwell estimated the plants on the cemetery hill to be 50 to 60 individuals (Maxwell *in litt.* 1998). In 1991, after cattle were removed from the site, Maxwell inventoried the cemetery hill and estimated 1,685 individuals of *L. sulphureus* ssp. *kincaidii*, with 58 plants located on the west-facing side of the hill where there was no evidence of cattle grazing, but where horses occurred (Maxwell *in litt.* 1998). Subsequent inventories at the cemetery site recorded similar numbers of individuals as the 1991 data, with minimal increases and decreases that could be accounted for by sampling error and environmental fluctuation. These data suggest that the removal of cattle from the hillside has helped to

increase the size of the *L. sulphureus* ssp. *kincaidii* population (Maxwell *in litt.* 1998). *Lupinus sulphureus* ssp. *kincaidii* on the west-facing part of the hill where horses continue to occur, however, show evidence of trampling, and populations have not experienced a similar upward trend (Maxwell *in litt.* 1998).

Roadside Maintenance

Another common threat to these species is roadside maintenance activities. At least 34 sites occur along roadsides and are impacted by maintenance activities. Five of these are wetland areas supporting *Erigeron decumbens* var. *decumbens.* Twenty-nine are upland sites (*Lupinus sulphureus* ssp. *kincaidii* occurs at 27 sites and Fender's blue butterfly occurs at 11 sites). Populations of Fender's blue butterfly and *L. sulpheureus* ssp. *kincaidii* were recently lost due to road maintenance activities at the Oak Ridge north site. 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 are also impacted by maintenance activities. 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, *Lupinus sulphureus* ssp. *kincaidii*, and *Erigeron decumbens* var. *decumbens* are unlikely to persist. For example, another sensitive species, *Delphinium leucophaeum,* in Boistfort Valley, Lewis County, Washington, has been damaged by roadside herbicide spraying by the County. The spraying swath is sometimes 0.9 to 1.2 m (3 to 4 ft.) wide. Several *D. leucophaeum* plants were damaged by spray in 1991 (Maxwell *in litt.* 1998). Botanists met with the roadside management crew in May of 1991 to point-out and discuss no-spray zones where *D. leucophaeum* occur. Since then, *D. leucophaeum* plants have been lost twice because of landowners spraying the roadsides to control weedy nonnative species that invade their pastures and fields (Maxwell *in litt.* 1998). The *L. sulphureus* ssp. *kincaidii* population within the Boistfort Valley does not occur along the roadsides, but along a path that leads up to a pioneer cemetery. Since monitoring began in 1991, a 3-m (1-ft) wide strip has been sprayed with herbicides along the path and steps leading up to the cemetery. Some of the *Lupinus sulphureus* ssp. *kincaidii* plants are damaged by the annual spraying (Maxwell *in litt.* 1998).

Between 1994 and 1996, Fender's blue butterfly populations disappeared from (or were 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 *L. 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. We do not know if the two roadside occurrences still exist, but if they do, they are not expected to persist for more than a few additional years (Hammond 1994).

In summary, habitat loss from a wide variety of causes (e.g., 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 occupied sites. Land development and alteration in the Willamette Valley has been so extensive that almost all of the occurrences of the three species on the valley floor have essentially been relegated to small patches of habitat. Agricultural and urban development activities occurring on the valley floor have not affected three hilltop areas (Baskett Slough National Wildlife Refuge, Coburg Ridge, and McDonald State Forest) because of their topography. Only 20 of the 88 remnant prairie sites that are occupied by 1 or more of these species are currently not threatened with habitat destruction. However, these 20 sites are threatened by herbivory, competition by nonnative weedy species, and/or plant succession (see Factor E of this final rule for additional discussion). As habitat loss continues on these prairie remnants, populations of all 3 species in these 68 areas are likely to be extirpated. At least 14 of 32 sites occupied by Fender's blue butterfly, 49 of 54 sites occupied by *L. sulphureus* ssp. *kincaidii,* and 24 of 28 sites occupied by *E. decumbens* var. *decumbens* occur on private lands and are expected to be lost in the near future unless conservation actions are implemented. The threat of extinction for these species is high, given the expected continuing extirpation of small populations, the continued habitat loss on moderate and large sites, and the continuing degradation of habitat, even on secure sites.

B. *Overutilization for commercial, recreational, scientific, or educational purposes.* Rare butterflies, such as Fender's blue butterfly are highly prized by insect collectors. We know of no studies of the impact of such removal of individuals from natural populations of Fender's blue butterfly. However, studies of another lycaenid butterfly (Duffey 1968) and an endangered nymphalid butterfly (Gall, 1984a and 1984b) suggest it is likely that Fender's blue butterfly could be adversely affected by collection because of its small and isolated populations. An international commercial trade of butterfly species that are proposed for listing, as well as other imperiled or rare butterflies, exists (C. Nagano, J. Mendoza, and C. Schroeder, USFWS, pers. obs., 1992–1997), and we know of specimens of Fender's blue butterfly that have recently been offered for trade (C. Nagano, pers. obs.). Some collectors and dealers closely monitor our listing activities, and have stockpiled rare butterflies in anticipation of their designation 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. Butterfly 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).

The 1989 rediscovery of this insect generated a great deal of publicity and interest, which in turn increased demand by collectors. Therefore, remaining populations of Fender's blue butterfly face strong pressure from some members of the collecting community. Collectors who highly prize rare butterflies often take all wild specimens obtainable for use in trade (U.S. Department of Justice, *in litt.* 1993). Because many of the Fender's blue butterfly populations occur along public roadsides, the species is easily acquired. The extremely limited numbers and distribution of many of the remaining populations makes this species vulnerable to extinction due to collection.

No current evidence exists of horticultural collection or other overutilization for scientific purposes for either *Erigeron decumbens* var. *decumbens* or *Lupinus sulphureus* ssp. *kincaidii.* However, the potential threat posed by collecting for personal herbarium specimens may be significant, particularly where populations are small, due to the species' 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 and Wilson 1993) or disease (R.H.T. Mattoni, pers. comm. to C. Nagano 1997) have been documented for Fender's blue butterfly. Predation of adult Fender's blue butterflies by crab spiders has been observed on at least two occasions (Schultz *in litt.* 1998). The white and/or yellow crab spiders hide in the flowers of *Lupinus sulphureus* ssp. *kincaidii,* and in a variety of species that the Fender's blue butterfly uses for nectar, such as *Allium amplectans* (Schultz *in litt.* 1998). Under normal circumstances, predation likely was not a significant threat, but because the species has been reduced to such low levels, predation may significantly impact the persistence of remaining populations.

Lupinus sulphureus ssp. *kincaidii* evidently hosts a number of herbivorous and parasitic insect 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. At the Fir Butte site, silvery blue butterfly larvae cause significant seed damage, as well as pollen damage to *L. sulphureus* ssp. *kincaidii*. They often chew through maturing pods, devour some or all of the seeds, then move on to the next pod (Schultz *in litt.* 1998). 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). On July 14, 1991, at the Boistfort Prairie site, pods of *L. sulphureus* ssp. *kincaidii* were observed with larvae feeding on them, and ants were feeding on the juices excreted from the larvae (Maxwell *in litt.* 1998). In a sample of 10 *L. sulphureus* ssp. *kincaidii* plants, 5 damaged pods were observed (Maxwell *in litt.* 1998). In 1992, adult silvery blue butterflies were positively identified as being present, and the caterpillars of the blues were observed feeding on *L. sulphureus* ssp. *kincaidii*. In 1993, damage to *L. sulphureus* ssp. *kincaidii* pods was observed again, but less than in the previous 2 years (Maxwell *in litt.* 1998). Under normal circumstances, insect herbivory likely was not a significant threat, but because the species has been reduced to such low levels, herbivory may significantly impact the persistence of remaining populations.

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. However, 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. We doubt that this law is effective in protecting *Lupinus sulphureus* ssp. *kincaidii* and *Erigeron decumbens* var. *decumbens* populations.

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 (ODA) for plant species (ORS 564.105) and the Oregon Department of Fish and Wildlife (ODFW) for ''wildlife'' species (ORS 496.172). As re-authorized 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 that are threatened or endangered throughout their 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).

The Oregon Endangered Species Act directs the ODA 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 ODA is able to regulate the import, export, or trafficking of State-listed plant species when they are in transit (under ORS 564.1200). The ODA's ability to protect plant populations, by 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 their 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 on this State-managed land. In conjunction with Oregon State University researchers and the Native Plant Society of Oregon, ODOT has responded by providing road crews with maps of these areas and instructions to avoid herbicide use in these areas.

Lupinus sulphureus ssp. *kincaidii, Erigeron decumbens* var. *decumbens*, and Fender's blue butterflies receive protection within the boundaries of the Service's National Wildlife Refuges. All three species occur together only at Baskett Slough National Wildlife Refuge, where habitat for the benefit of these species is actively managed.

The BLM and the Forest Service (FS) manage lands occupied by *Lupinus sulphureus* ssp. *kincaidii*. On lands managed by the BLM, this species receives some protection through a general conservation agreement that applies to all Federal candidate species on BLM properties. The population of *L. sulphureus* ssp. *kincaidii* that occurs in the Umpqua National Forest is not covered under any conservation agreement.

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 the 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 (CWA), 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 CWA 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) that would result in the filling of wetlands subject to the Corps' jurisdiction. The Corps published nationwide permit number 26 (NWP 26) to address fill of isolated or headwater wetlands. Under the 1996 reauthorization of NWP 26 (61 FR 65873), the Corps may automatically approve project proposals that involve the fill of wetlands less than 0.13 ha (0.33 ac) in size. Filling areas between 0.13 ha and 0.4 ha (0.33–1 ac) requires only notification to the Corps. When placement of fill would adversely modify between 0.4 and 1.2 ha (1 and 3 ac) of wetland, the Corps circulates a pre-discharge notification to us and other interested parties for comment to determine whether 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 1.2 ha (3 ac) of wetlands. The review process for individual permits is more rigorous than for nationwide permits. Unlike nationwide permits, a cumulative analysis of 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 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. When a listed species may be affected, consultation requirements of section 7 of the Act do pertain to the Corps' regulatory process.

Disking and some other farming, ranching, and silvicultural practices can degrade or destroy wetland habitat without a permit from the Corps because these activities are exempt from regulation under the CWA (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 CWA.

The primary inadequacies in existing regulatory mechanisms pertain to populations of Fender's blue butterflies, *Lupinus sulphureus* ssp. *kincaidii*, and *Erigeron decumbens* var. *decumbens* that occur on private lands. 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.* The small and fragmented populations characteristic of the remaining Fender's blue butterfly, *Lupinus sulphureus* ssp. *kincaidii*, and *Erigeron decumbens* var. *decumbens* constitute a factor in affecting the continued existence of these taxa. Small populations are more vulnerable to all the natural and manmade factors that would not likely negatively influence relatively large and contiguous populations. Generally, the direct and indirect effects of small population size on most species, plant and animal, include loss of connectivity for dispersal, a decrease in genetic exchange, a resultant loss of population viability and vigor, and a hastening towards extinction (Gilpin and Soule 1986).

Although few large sites (greater than 10 ha (25 ac)) are secure from habitat loss, large sites currently support relatively stable populations of Fender's blue butterflies, *Lupinus sulphureus* ssp. *kincaidii*, and *Erigeron decumbens* var. *decumbens* and provide the greatest potential for long-term persistence of the species if the current condition of these sites can be sustained or improved. The only large site occupied

by all of the species and 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 nonnative weedy species (Hammond 1994, 1996; Hammond and Wilson 1993; Schultz 1994). The two remaining large butterfly sites (Coburg Ridge area-1 and 2, and McDonald State Forest 1) and the one remaining large *L. sulphureus* ssp. *kincaidii* 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 nonnative weedy species (Hammond 1994, Kuykendall and Kaye 1993a).

Erigeron decumbens var. *decumbens* occupies three large sites. One site on Corps property and another on TNC property are being managed to benefit native prairie species and are relatively secure. The third site occurs on private land and is not managed for native prairie species and is not protected from habitat loss.

The sites with small acreage where these three taxa occur, such as roadside and fence line/boundaries, face an immediate threat of destruction from a variety of disturbances. These disturbances include development, agriculture, silvicultural practices, roadside maintenance, and herbicide application. Of the 54 sites occupied by *Lupinus sulphureus* ssp. *kincaidii,* 45 occur on less than 3.4 ha (8.3 ac). On sites where Fender's blue butterflies are found to co-occur with *L. sulphureus* ssp. *kincaidii,* a similar pattern is suggested, with 24 of the 32 populations occurring on parcels of 3.4 ha (8.3 ac) or less. Of the 28 sites occupied by *Erigeron decumbens* var. *decumbens,* 20 are less than 3.4 ha (8.3 ac).

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 the next 5 years. *Lupinus sulphureus* ssp. *kincaidii* may, however, survive for a longer time in these small sites. Nonetheless, because of the extensive habitat loss caused by development and agriculture, the extirpation of *L. sulphureus* ssp. *kincaidii* on the 45 small sites is also anticipated in the future. Similarly, these habitat losses are expected to also cause the extirpation of the 20 small populations of *Erigeron decumbens* var. *decumbens.* Should these smaller populations disappear, only large habitat sites will be left. Only eight sites of Fender's blue butterfly (75 percent reduction), nine sites of *L. sulphureus* ssp. *kincaidii* (74 percent reduction), and eight sites of *E. decumbens* var. *decumbens* (72 percent reduction) will remain.

The importance of these small populations, particularly for the Fender's blue butterfly, lies in their potential to serve as stepping stones between larger neighboring populations. The loss of these populations and the accompanying potential habitat would severely compromise the ability of *Lupinus sulphureus* ssp. *kincaidii* and *Erigeron decumbens* var. *decumbens* or the Fender's blue butterfly to disperse from larger sites (Hammond and Wilson 1993, Schultz 1996). Larger populations would become more isolated and extinction-prone as opportunities for migration and/or recolonization are limited.

A less visible threat to the smaller populations is a decrease in vigor and viability. 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, Hammond and Wilson 1993). Nineteen of the 32 Fender's blue butterfly sites contain an estimated 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 limits the potential for dispersal and migration and the resultant exchange of genetic material. Small, isolated populations with no opportunity of rescue from neighboring populations more easily become non-viable and/or extirpated.

This pattern of extinction and re-colonization 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 effects of random environmental events are magnified in small populations. For instance, one small population of *Erigeron decumbens* var. *decumbens* previously found on Finley National Wildlife Refuge was lost due to erosion from a natural change in a waterway course (Meinke 1980). Large fluctuations in Fender's blue butterfly populations have been correlated with random variations in weather conditions from year to year (Shultz 1996). These large fluctuations make Fender's blue butterfly extremely susceptible to loss of habitat and host plants due to human-caused disturbance or invasive nonnative plants. Maxwell (*in litt.* 1998) observed fluctuations in the inventory counts for both *Lupinus sulphureus* ssp. *kincaidii* and *Delphinium leucophacum* over a 4-year period on the Boistfort Prairie. *Lupinus sulphureus* ssp. *kincaidii* counts ranged from 742 to 2,266 plants and strong evidence existed that these fluctuations in numbers were closely tied to weather patterns (Maxwell *in litt.* 1998). The timing of spring rains is very critical for production of above-ground biomass for these two species. In years with lower than average precipitation, these plant species may not even appear.

A serious long-term threat to all Fender's blue butterfly, *Lupinus sulphureus* ssp. *kincaidii,* and *Erigeron decumbens* var. *decumbens* sites is the change in community structure due to plant succession. Continuing plant succession has been documented on 70 of the 88 relic prairie sites occupied by 1 or more of these species. Invasion by alien plant species has been documented at 37 of these 88 prairie sites. The natural transition of grassland to forest in the absence of disturbance such as fire will lead to the eventual loss of these prairie sites unless they are actively managed (Clark *et al.* 1993; Franklin and Dyrness 1973; Hammond and Wilson 1993; Johannsesen *et al.* 1971; Kuykendall and Kaye 1993a). The presence of tall, fast-growing nonnative species speeds the conversion of upland native prairie to dense, rank grasslands and shrub lands. Invasive woody species of concern include nonnative plants such as *Rubus discolor* (Himalayan blackberry) and *Cytisus scoparius* (Scotch broom), and the native species *Toxicodendron diversiloba* (poison oak). Nonnative weedy herbaceous species include *Cirsium arvense* (Canada thistle). Nonnative 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).

At prairie remnant roadside sites, the degree of the threat of succession varies, depending on the vegetation control employed by each county. Many Fender's blue butterfly populations are close to local extinction at small

roadside sites. Populations along the roadside generally have low numbers of individuals because habitat, often degraded, can be invaded by nonnative grasses. This situation usually leads to succession by shrubs and trees (Hammond 1996). For instance, one roadside site at Oak Ridge previously considered stable has declined since 1992 because large thickets of *Rubus* ssp. (blackberry) and *Cytisus scoparius* have invaded the site (Hammond 1996).

Non-roadside prairie remnant sites in general face the greatest threat from succession/weed expansion and invasion due to a lack of disturbance that disrupts successional progress. For instance, otherwise secure habitat on one Corps site has been heavily invaded by the nonnative plant *Arrhenatherum elatius.* The Fender's blue butterfly population on this site is becoming extremely small (Schultz 1996). Prime habitat occupied by *Erigeron decumbens* var. *decumbens* at the Baskett Butte site is rapidly being overtaken by native woody plants, nonnative grasses and trees (Hammond 1996). Approximately 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 nonnative plants is a threat at all sites occupied by any of the three species addressed in this rule.

Compounding the threat of nonnative plant species is the control of weedy nonnative species by herbicides. Twenty-three *Lupinus sulphureus* ssp. *kincaidii* plants on the west side of the Boistfort Cemetery hill site were damaged by herbicide spray applied by a helicopter to eradicate Scotch broom and Canada thistle (Maxwell *in litt.* 1998). 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. The potential threat from use of gypsy moth control agents on habitats occupied by the Fender's blue butterfly should not be dismissed even though the sensitivity of Fender's blue butterfly larvae to specific insecticides is not known (Hammond 1994). The use of microbial insecticides, such as *Bacillus thuringiensis* (Bt), has been shown to have significant residual toxic impacts on native butterflies. This negative impact is evident under field conditions, even with heavy rain and ultraviolet light exposure (Scriber and Gage 1995).

Summary

Natural and human-caused factors threaten the remaining populations of Fender's blue butterflies, *Lupinus sulphureus* ssp. *kincaidii,* and *Erigeron decumbens* var. *decumbens.* As a result of their small size, nearly all of the populations are threatened by either nonnative species, natural succession, or demographic and genetic factors. Populations of Fender's blue butterfly at all 32 sites currently are threatened by at least 1 of these factors. All 28 sites of *E. decumbens* var. *decumbens* and all 54 sites of *L. sulphureus* ssp. *kincaidii* are threatened by these factors. The encroachment of nonnative plants, the successional advance of tree and shrub species, and other naturally occurring random events will, if unchecked, lead to further reductions in population size and number leading to reduced population viability and, ultimately, the extinction of these three native prairie species.

We have carefully assessed the best scientific and commercial information available regarding the past, present, and future threats faced by these species in developing this final rule. Threats to Fender's blue butterfly are more imminent than threats to *Lupinus sulphureus kincaidii* because the butterfly has a unique biology and shorter lifespan. Fender's blue butterfly will exhibit more rapid declines in numbers and in the face of threats will be extirpated more quickly at any one location than either of the two plant species. Because of the longer lifespan of a perennial plant, small numbers of *L. sulphureus* ssp. *kincaidii* plants are likely to persist longer in any given habitat than are small numbers of butterflies. The threats to *Erigeron decumbens* var. *decumbens* are more imminent than threats to *L. sulphureus* ssp. *kincaidii* because of the small number of *E. decumbens* var. *decumbens* populations. Also, many of the *E. decumbens* var. *decumbens* populations grow along roadsides adjacent to agricultural development (especially grass seed farms) where herbicide spraying to create bare soil is common practice. Based on our evaluation of all the available information, Fender's blue butterfly and *E. decumbens* var. *decumbens* are presently 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, we find that listing of Fender's blue butterfly (*Icaricia icarioides fenderi*) and *E. decumbens* var. *decumbens* (Willamette daisy) as endangered is appropriate, and listing of *L. sulphureus* ssp. *kincaidii* (Kincaid's lupine) as threatened is appropriate.

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 (16 U.S.C. 1532(3)(5)(A)).

Our regulations (50 CFR 424.12(a)(1)) state that 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.

In the proposed rule, we indicated that designation of critical habitat was not prudent for Fender's blue butterfly (*Icaricia icarioides fenderi*), *Lupinus sulphureus* ssp. *kincaidii* (Kincaid's lupine), and *Erigeron decumbens* var. *decumbens* (Willamette daisy) because of a concern that publication of precise maps and descriptions of critical habitat in the **Federal Register** could increase the vulnerability of these species to incidents of collection and/or vandalism. We also indicated that designation of critical habitat was not prudent because we believed the limited benefit provided by designation was outweighed by the increase in threats from collection and/or vandalism.

In the last few years, a series of court decisions have overturned our determinations regarding a variety of species that designation of critical habitat would not be prudent (e.g., *Natural Resources Defense Council* v. *U.S. Department of the Interior* 113 F. 3d 1121 (9th Cir. 1997); *Conservation Council for Hawaii* v. *Babbitt*, 2 F. Supp. 2d 1280 (D. Hawaii 1998)). Based on the standards applied in those judicial opinions, we have reexamined the question of whether critical habitat for Fender's blue butterfly (*Icaricia*

icarioides fenderi), *Lupinus sulphureus* ssp. *kincaidii* (Kincaid's lupine), and *Erigeron decumbens* var. *decumbens* (Willamette daisy) would be prudent.

Due to the small number of populations, Fender's blue butterfly (*Icaricia icarioides fenderi*), *Lupinus sulphureus* ssp. *kincaidii* (Kincaid's lupine), and *Erigeron decumbens* var. *decumbens* (Willamette daisy) are vulnerable to unrestricted collection, vandalism, or other disturbance. We remain concerned that these threats might be exacerbated by the publication of critical habitat maps and further dissemination of locational information. However, we have examined the evidence available for Fender's blue butterfly (*Icaricia icarioides fenderi*), *Lupinus sulphureus* ssp. *kincaidii* (Kincaid's lupine), and *Erigeron decumbens* var. *decumbens* (Willamette daisy) and have not found specific evidence of taking, vandalism, collection, or trade of these species or any similarly situated species. Consequently, consistent with applicable regulations (50 CFR 424.12(a)(1)(i)) and recent case law, we do not expect that the identification of critical habitat will increase the degree of threat to these species of taking or other human activity.

In the absence of a finding that critical habitat would increase threats to a species, if there are any benefits to critical habitat designation, then a prudent finding is warranted. In the case of these species, there may be some benefits to designation of critical habitat. The primary regulatory effect of critical habitat is the section 7 requirement that Federal agencies refrain from taking any action that destroys or adversely modifies critical habitat. While a critical habitat designation for habitat currently occupied by these species would not be likely to change the section 7 consultation outcome because an action that destroys or adversely modifies such critical habitat would also be likely to result in jeopardy to the species, there may be instances where section 7 consultation would be triggered only if critical habitat is designated. Examples could include unoccupied habitat or occupied habitat that may become unoccupied in the future. There may also be some educational or informational benefits to designating critical habitat. Therefore, we find that critical habitat designation is prudent for Fender's blue butterfly (*Icaricia icarioides fenderi*), *Lupinus sulphureus* ssp. *kincaidii* (Kincaid's lupine), and *Erigeron decumbens* var. *decumbens* (Willamette daisy).

The Final Listing Priority Guidance for FY 2000 (64 FR 57114) states that the processing of critical habitat determinations (prudency and determinability decisions) and proposed or final designations of critical habitat will no longer be subject to prioritization under the Listing Priority Guidance. Critical habitat determinations, which were previously included in final listing rules published in the **Federal Register**, may now be processed separately, in which case stand-alone critical habitat determinations will be published as notices in the **Federal Register**. We will undertake critical habitat determinations and designations during FY 2000 as allowed by our funding allocation for that year. As explained in detail in the Listing Priority Guidance, our listing budget is currently insufficient to allow us to immediately complete all of the listing actions required by the Act. Deferral of the critical habitat designation for Fender's blue butterfly (*Icaricia icarioides fenderi*), *Lupinus sulphureus* ssp. *kincaidii* (Kincaid's lupine), and *Erigeron decumbens* var. *decumbens* (Willamette daisy) will allow us to concentrate our limited resources on higher priority critical habitat and other listing actions, while allowing us to put in place protections needed for the conservation of Fender's blue butterfly (*Icaricia icarioides fenderi*), *Lupinus sulphureus* ssp. *kincaidii* (Kincaid's lupine), and *Erigeron decumbens* var. *decumbens* (Willamette daisy) without further delay. However, because we have successfully reduced, although not eliminated, the backlog of other listing actions, we anticipate in FY 2000 and beyond giving higher priority to critical habitat designation, including designations deferred pursuant to the Listing Priority Guidance, such as the designation for these species, than we have in recent fiscal years.

We plan to employ a priority system for deciding which outstanding critical habitat designations should be addressed first. We will focus our efforts on those designations that will provide the most conservation benefit, taking into consideration the efficacy of critical habitat designation in addressing the threats to the species, and the magnitude and immediacy of those threats. We will develop a proposal to designate critical habitat for the Fender's blue butterfly (*Icaricia icarioides fenderi*), *Lupinus sulphureus* ssp. *kincaidii* (Kincaid's lupine), and *Erigeron decumbens* var. *decumbens* (Willamette daisy) as soon as feasible, considering our workload priorities. Unfortunately, for the immediate future, most of Region 1's listing budget must be directed to complying with numerous court orders and settlement agreements, as well as due and overdue final listing determinations (like the one at issue in this case).

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)(2) 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. If a species is listed, 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 us.

The Federal Highway Administration provides partial funding for State highway maintenance. Therefore, any roadside habitat supporting *Erigeron decumbens* var. *decumbens, Lupinus sulphureus* ssp. *kincaidii*, and/or Fender's blue butterfly populations would be subject to section 7 consultation on any federally funded maintenance activities. Also, if the U.S. Department of Housing and Urban Development, a Federal agency, is involved in the issuance of housing loans on private property supporting occurrences of *E. decumbens* var. *decumbens, L. sulphureus* ssp. *kincaidii*, or Fender's blue butterfly, such loans would be subject to review under section 7 of the Act. The BLM, FS, and Corps manage lands that are

known to contain existing populations of *E. decumbens* var. *decumbens, L. sulphureus* ssp. *kincaidii*, and Fender's blue butterfly. In these cases, consultation requirements placed upon Federal agencies by the Act would be required for actions that may affect these species. Furthermore, opportunities for land acquisition, conservation agreements, and other recovery strategies would be bolstered by listing these species as endangered or threatened.

Active management of native prairie remnants is being carried out by the Portland District Corps, our Western Oregon National Wildlife Refuge complex, Eugene District BLM, and the Washington and Oregon field offices of TNC. In 1997, the Corps initiated an attempt to create two new *Lupinus sulphureus* ssp. *kincaidii* populations from seed collected from five areas around Fern Ridge Reservoir. One site was adjacent to the Green Oaks site at Fern Ridge, and the other is at Row Point at Dorena Reservoir. Both are on Corps lands and both are protected. Thirty-nine seedlings resulted at Row Point and 200 seedlings survived at Green Oak in 1998.

We have conducted research at Baskett Slough National Wildlife Refuge on the effects of prescribed fire, fire suppression, mowing, and herbicide on native and nonnative prairie species including *Lupinus sulphureus* ssp. *kincaidii* and *Erigeron decumbens* var. *decumbens* and Fender's blue butterflies. We have also controlled tall oatgrass in Fender's blue butterfly habitat and completed demographic studies of *E. decumbens* var. *decumbens*. In addition to efforts directed at managing and rehabilitating the remnant prairie habitat on Baskett Butte, we have been involved in projects to restore prairie habitat in former farm fields on Baskett Slough and William L. Finley National Wildlife Refuges. At the William L. Finley Refuge, the population of *E. decumbens* var. *decumbens* that was lost to erosion during the 1980s along a cut bank of Muddy Creek was located less than 0.5 km (0.3 mi) from a field that was retired from cultivation for the purpose of a prairie restoration project. The current intent is to reestablish *Erigeron decumbens* var. *decumbens* on this restored prairie. Also, Bald Top Knoll of the William L. Finley National Wildlife Refuge has been identified as a potential restoration site for the Willamette Valley dry prairie ecotype.

Management of the six prairie remnants in the west Eugene wetlands of Lane County on BLM lands includes control of nonnative invasive species, primarily blackberry, tansy ragwort, meadow knapweed, and Scotch broom. BLM will use methods such as tractor mowing, hand pulling or cutting, and will remove native hardwoods and/or conifers needed to maintain these prairie remnants. As part of the West Eugene Wetlands Acquisition Program, BLM will acquire additional habitat supporting sensitive Willamette Valley prairie species as opportunities occur.

At the Boistfort Cemetery, extensive Canada thistle patches at the base of the south side of the hill near *Lupinus sulphureus* ssp. *kincaidii* were pulled by TNC volunteers in 1993. On June 25, 1994, TNC volunteers pulled Canada thistle and cut scotch broom on the north side of the hill. Volunteers did weed control by hand at this private site to aid the landowner and in turn reduce herbicide use thus helping to preserve rare plant populations.

On the TNC Willow Creek Natural Area, seedlings of *Lupinus sulphureus* ssp. *kincaidii* were introduced initially in 1995, then again in the fall of 1996, the spring of 1997, and the spring of 1998. TNC plans to continue monitoring through the year 2000 to evaluate how successful these efforts were.

The Act and its implementing regulations set forth a series of general prohibitions and exceptions that apply to all endangered and threatened plants. The 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 the plants on 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, or in the course of a violation of 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 issued 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, 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.

Our policy, as published in the **Federal Register** on July 1, 1994 (59 FR 34272), is 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. With issuance of this final rule, these species

on Federal lands are protected from collection. *Erigeron decumbens* var. *decumbens* is protected from malicious damage or destruction on Federal land under section 9 of the Act. In appropriate cases, collection of these species could be allowed through the issuance of a Federal permit. We are not aware of any otherwise lawful activities being conducted or proposed on private land that will be affected by this listing and result in a violation of section 9 for these plants.

With issuance of this final rule, Fender's blue butterfly receives more extensive protection under the Act than described for *Erigeron decumbens* var. *decumbens*, and *Lupinus sulphureus* ssp. *kincaidii*. Section 9 prohibits the take of any listed wildlife species by any person subject to the jurisdiction of the United States. We believe 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 involving no commercial activity, dead specimens of Fender's blue butterfly that were collected prior to the date of publication in the **Federal Register** of this 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 incidental take statements included in biological opinions issued under section 7 of the Act;

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

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

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

(1) Take of Fender's blue butterfly without a 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) Possessing, selling, delivering, carrying, transporting, or shipping illegally taken specimens of Fender's blue butterfly;

(3) Release of chemical or biological control agents that attack, damage, or kill any stage of this taxon, if not approved through section 7 consultation;

(4) In areas where Fender's blue butterfly occurs, the removal or destruction of the food plants being utilized by Fender's blue butterfly, defined as *Lupinus sulphureus* ssp. *kincaidii, Erigeron decumbens* var. *decumbens, Lupinus. albicaulis*, and *Lupinus. 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 Fender's blue butterflies and/or their larvae or eggs, through significant impairment of the species' essential breeding, foraging, sheltering, or other essential life functions.

You may direct questions regarding whether specific activities risk a violation of section 9 to the State Supervisor of our 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).

National Environmental Policy Act

We have determined that Environmental 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 our reasons for this determination was published in the **Federal Register** on October 25, 1983 (48 FR 49244).

Paperwork Reduction Act

This rule does not contain any new collections of information other than those already approved under the Paperwork Reduction Act, 44 U.S.C. 3501 *et seq.*, and assigned Office of Management and Budget clearance number 1018–0094. An agency may not conduct or sponsor, and a person is not required to respond to, collection of information, unless it displays a currently valid control number. For additional information concerning permit and associated requirements for endangered plant species, see 50 CFR 17.62 and 17.63.

Executive Order 12866

This rule has not been reviewed by the Office of Management and Budget under Executive Order 12866.

References Cited

You may request a complete list of all references cited herein, as well as others, from the Oregon State Office (see **ADDRESSES** above).

Author

The primary author of this final rule is Dr. Andrew F. Robinson, Jr., Fish and Wildlife Biologist (see **ADDRESSES** section).

List of Subjects in 50 CFR Part 17

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

Final Regulation Promulgation

For the reasons outlined in the preamble, we 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 § 17.11(h) by adding the following, in alphabetical order under INSECTS, to the List of Endangered and Threatened Wildlife:

§ 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							

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

3. Amend § 17.12(h) by adding the following, in alphabetical order, under FLOWERING PLANTS, to the List of Endangered and Threatened Plants:

§ 17.12 Endangered and threatened plants.

* * * * *

(h) * * *

Species		Historic range	Family	Status	When listed	Critical habitat	Special rules
Scientific name	Common name						
FLOWERING PLANTS							
*	*	*	*	*	*	*	
Erigeron decumbens var. decumbens.	Willamette daisy	U.S.A. (OR)	Asteraceae	E		NA	NA
*	*	*	*	*	*	*	
Lupinus sulphureus ssp. kincaidii. *Lupinus oreganus var. kincaidii = synonym. Lupinus sulphureus var. kincaidii = synonym.*	Kincaid's lupine	U.S.A. (OR, WA)	Fabaceae	T		NA	NA
*	*	*	*	*	*	*	

Dated: January 5, 2000.

Rowan W. Gould,

Acting Director, Fish and Wildlife Service.

[FR Doc. 00–1561 Filed 1–24–00; 8:45 am]

BILLING CODE 4310–55–P

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Part 660

[Docket No. 991229356–9356–01; 121799F]

RIN 0648–AN36

Fisheries off West Coast States and in the Western Pacific; Coastal Pelagic Species Fisheries; Annual Specifications

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Final harvest guidelines.

SUMMARY: NMFS announces the annual harvest guidelines for Pacific sardine and Pacific mackerel in the exclusive economic zone (EEZ) off the Pacific coast. The Coastal Pelagic Species Fishery Management Plan (FMP) and its implementing regulations require NMFS to establish annual harvest guidelines for Pacific sardine and Pacific mackerel based on a formulas appearing in the FMP. The intended effect of this action is to establish allowable harvest levels for coastal pelagic species off the Pacific coast.

DATES: Effective January 1, 2000. Comments are invited until February 24, 2000.

ADDRESSES: Submit comments on the annual specifications to Rodney R. McInnis, Acting Regional Administrator, Southwest Region, (Regional Administrator), NMFS, 501 West Ocean Blvd., Suite 4200, Long Beach, CA 90802–4213. The reports *Stock Assessment of Sardine for 1999 with Management Recommendations for 2000* and *Status of the Pacific Mackerel Resource and Fishery in 1999* are available from this same address.

FOR FURTHER INFORMATION CONTACT: James J. Morgan, Southwest Region, NMFS, (562) 980–4030.

SUPPLEMENTARY INFORMATION: The FMP, which was partially approved by the Secretary of Commerce on June 10, 1999, and implemented by publication of a final rule in the **Federal Register** on December 15, 1999 (64 FR 69888), divides managed species into the categories of *actively managed* and *monitored*. Harvest guidelines of actively managed species (Pacific sardine and Pacific mackerel) are based on formulas applied to current biomass estimates. Harvest guidelines for monitored species (jack mackerel, northern anchovy, and market squid), which are underutilized or managed primarily by California, are not based on current biomass estimates. Nonetheless, the FMP includes a constant allowable biological catch (ABC) for each monitored species based on long-term yields. If an ABC for a monitored species is reached, it would be designated an actively managed species; at that time, the Pacific Fishery Management (Council) would review the condition of the resource and recommend necessary management action. Except for northern anchovy, this is the first year of managing coastal pelagic species under this FMP.

At a public meeting each year, the biomass for each actively managed species is presented by the Council's Coastal Pelagic Species Management Team (Team) to the Council's Coastal Pelagic Species Advisory Subpanel (Subpanel). At that time, the biomass,