

## DEPARTMENT OF THE INTERIOR

## Fish and Wildlife Service

## 50 CFR Part 17

RIN 1080-A117

**Endangered and Threatened Wildlife and Plants; Emergency Rule To List the Columbia Basin Distinct Population Segment of the Pygmy Rabbit (*Brachylagus idahoensis*) as Endangered****AGENCY:** Fish and Wildlife Service, Interior.**ACTION:** Emergency rule.

**SUMMARY:** We, the U.S. Fish and Wildlife Service (Service), exercise our authority under the Endangered Species Act of 1973, as amended (Act), to emergency list the Columbia Basin distinct population segment of the pygmy rabbit (*Brachylagus idahoensis*) as endangered. This population segment consists of a single, wild colony totaling fewer than 50 individuals in Douglas County, central Washington, and a small captive population.

The Columbia Basin pygmy rabbit is imminently threatened by a recent significant decrease in population that has caused it to be susceptible to the combined influence of catastrophic environmental events, habitat or resource failure, disease, predation, and loss of genetic heterogeneity. We find that these threats constitute an immediate and significant risk to the well-being of the Columbia Basin pygmy rabbit. Because of the need to make protective measures afforded by the Act immediately available to this species, we find that an emergency rule action is justified. This emergency rule provides Federal protection pursuant to the Act for a period of 240 days. A proposed rule to list the Columbia Basin pygmy rabbit as endangered is published concurrently with this emergency rule in the proposed rule section of this issue of the **Federal Register**.

**DATES:** This emergency rule becomes effective immediately on November 30, 2001, and expires July 29, 2002.

**ADDRESSES:** The complete file for this emergency rule is available for inspection, by appointment, during normal business hours at the U.S. Fish and Wildlife Service, Upper Columbia Fish and Wildlife Office, 11103 East Montgomery Drive, Spokane, Washington 99206.

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

The pygmy rabbit (*Brachylagus idahoensis*) is a member of the family Leporidae, which includes hares and rabbits. The species has been placed in a number of genera since it was first described in 1891 (Washington Department of Fish and Wildlife (WDFW) 1995), when it was classified as *Lepus idahoensis*. In 1904, it was reclassified and placed in the genus *Brachylagus*, and in 1930, it was again reclassified and placed in the genus *Sylvilagus* (WDFW 1995). More recent examination of dentition (Hibbard 1963) and analysis of blood proteins (Johnson 1968) suggests that the pygmy rabbit differs significantly from species within either the *Lepus* or *Sylvilagus* genera. The pygmy rabbit is now generally considered to be within the monotypic genus *Brachylagus*, and again classified as *B. idahoensis* (Green and Flinders 1980a; WDFW 1995). There are no recognized subspecies of the pygmy rabbit (Dalquest 1948; Green and Flinders 1980a).

The pygmy rabbit is the smallest Leporid in North America, with mean adult weights from 375 to 462 grams (0.83 to 1.02 pounds), and lengths from 23.5 to 29.5 centimeters (cm) (9.3 to 11.6 inches (in)) (Orr 1940; Janson 1946; Wilde 1978; Gahr 1993; WDFW 1995). Females tend to be slightly larger than males. The overall color of pygmy rabbits is slate-gray tipped with brown. Their legs, chest, and nape are tawny cinnamon-brown, their bellies are whitish, and the entire edges of their ears are pale buff. Their ears are short (3.5 to 5.2 cm (1.4 to 2.0 in)), rounded, and thickly furred inside and out. Their tails are small (1.5 to 2.4 cm (0.6 to 0.9 in)), uniform in color, and nearly unnoticeable in the wild (Orr 1940; Janson 1946; WDFW 1995). The pygmy rabbit is distinguishable from other Leporids by its small size, short ears, gray color, small hind legs, and lack of white on the tail.

Pygmy rabbits typically are found in areas of tall, dense sagebrush (*Artemisia* spp.) cover, and are highly dependent on sagebrush to provide both food and shelter throughout the year (Orr 1940; Green and Flinders 1980a; WDFW 1995). The winter diet of pygmy rabbits is composed of up to 99 percent sagebrush (Wilde 1978), which is unique among Leporids (White *et al.* 1982). During spring and summer, their diet consists of roughly 51 percent sagebrush, 39 percent grasses (particularly native bunch-grasses, such

as *Agropyron* spp. and *Poa* spp.), and 10 percent forbs (Green and Flinders 1980b). There is evidence that pygmy rabbits preferentially select native grasses as forage during this period in comparison to other available foods. In addition, total grass cover relative to forbs and shrubs may be reduced within pygmy rabbit colonies as a result of its use as a food source during spring and summer (Green and Flinders 1980b).

The pygmy rabbit is believed to be one of only two Leporids in North America that digs its own burrows (Nelson 2009; Green and Flinders 1980a; WDFW 1995), the other being the volcano rabbit (*Romerolagus diazi*) found in central Mexico (Durrell and Mallinson 1970). Pygmy rabbit burrows typically are found in relatively deep, loose soils of wind-borne (*i.e.*, loess) or water-borne (*e.g.*, alluvial fan) origin. Pygmy rabbits occasionally make use of burrows abandoned by other species, such as the yellow-bellied marmot (*Marmota flaviventris*) or badger (*Taxidea taxus*) (Wilde 1978; Green and Flinders 1980a; WDFW 1995) and may occur in areas of shallower or more compact soils that support sufficient shrub cover (Bradfield 1974). During winter, pygmy rabbits make extensive use of snow burrows to access sagebrush forage (Bradfield 1974; Katzner and Parker 1997).

Pygmy rabbits, especially juveniles, likely use their burrows as protection from predators and inclement weather (Bailey 1936; Bradfield 1974). The burrows frequently have multiple entrances, some of which are concealed at the base of larger sagebrush plants (WDFW 1995). Burrows are relatively simple and shallow, often no more than 2 meters (m) (6.6 feet (ft)) in length and usually less than 1 m (3.3 ft) deep with no distinct chambers (Bradfield 1974; Green and Flinders 1980a; Gahr 1993). Burrows typically are dug into gentle slopes or mound/inter-mound areas of more level or dissected topography (Wilde 1978; Kehne 1991; Gahr 1993). In general, the number of active burrows in a colony increases over the summer as the number of juveniles increases. However, the number of active burrows may not be directly related to the number of individuals in a given colony because some individual pygmy rabbits appear to maintain multiple burrows, while some individual burrows are used by multiple individuals (Gahr 1993; WDFW 1995).

Pygmy rabbits begin breeding in their second year and, in Washington, breeding occurs from February through July (WDFW 1995). Females may have up to three litters per year and average six young per litter (Green 1978; Wilde

1978). Breeding appears to be highly synchronous in a colony, and juveniles are often identifiable to cohorts (Wilde 1978). No evidence of nests, nesting material, or lactating females with young has been found in burrows (Bradfield 1974; Gahr 1993; WDFW 1995). Individual juveniles have been found under clumps of sagebrush, although it is not known precisely where the young are born in the wild or if they may be routinely hidden at the bases of scattered shrubs or within burrows (Wilde 1978).

Recent information on captive pygmy rabbits indicates that females may excavate specialized "natal" burrows for their litters in the vicinity of their regular burrows (P. Swenson, Oregon Zoo, pers. comm., 2001; L. Shipley, Washington State University (WSU), pers. comm., 2001). Apparently, females begin to dig and supply nesting material (e.g., grass clippings) to these burrows several days prior to giving birth and may give birth and nurse their young at the ground surface in a small depression near the burrow's entrance. After nursing, the young return to the burrow and the female refills the burrow entrance with loose soil and otherwise disguises the immediate area to avoid detection. Other "dead-end" burrows that females construct nearby apparently are associated with the natal burrows. Females may also alter their defecation and latrine habits while pregnant and nursing (P. Swenson, pers. comm., 2001). Further work with captive and wild pygmy rabbits should shed additional light on the details of their reproductive strategy.

Pygmy rabbits may be active at any time of the day or night and appear to be most active during mid-morning

(Bradfield 1974; Green and Flinders 1980a; Gahr 1993). Pygmy rabbits maintain a low stance, have a deliberate gait, and are relatively slow and vulnerable in more open areas. They can evade predators by maneuvering through the dense shrub cover of their preferred habitats, often along established trails, or by escaping into their burrows (Bailey 1936; Severaid 1950; Bradfield 1974).

Pygmy rabbits tend to have relatively small home ranges during winter, remaining within roughly 30 m (98 ft) of their burrows (Orr 1940; Janson 1946; Gahr 1993; Katzner and Parker 1997), although some snow burrows may extend outward up to 100 m (328 ft) (Bradfield 1974). They have larger home ranges during spring and summer (Orr 1940; Janson 1946; Gahr 1993; Katzner and Parker 1997). During the breeding season in Washington, females tend to make relatively short movements within a small core area and have home ranges covering roughly 2.7 hectares (ha) (6.7 acres (ac)); males tend to make longer movements, traveling among a number of females, resulting in home ranges covering roughly 20.2 ha (49.9 ac) (Gahr 1993). These home range estimates in Washington are considerably larger than for pygmy rabbit populations in other areas of their historic range (WDFW 1995; Katzner and Parker 1997). Pygmy rabbits may travel up to 1.2 kilometers (km) (0.75 miles (mi)) from their burrows (Gahr 1993), and there are a few records of apparently dispersing individuals moving up to 3.5 km (2.17 mi) (Green and Flinders 1979; Katzner and Parker 1998).

The annual mortality rate of adult pygmy rabbits may be as high as 88 percent, while over 50 percent of

juveniles apparently die within roughly 5 weeks of their emergence (Wilde 1978; WDFW 1995). However, the mortality rates of adult and juvenile pygmy rabbits can vary considerably between years, and even between juvenile cohorts within years (Wilde 1978). Predation is the main cause of pygmy rabbit mortality (Green 1979). Potential predators include badgers (*Taxidea taxus*), long-tailed weasels (*Mustela frenata*), coyotes (*Canis latrans*), bobcats (*Felis rufus*), great horned owls (*Bubo virginianus*), long-eared owls (*Asio otus*), ferruginous hawks (*Buteo regalis*), and northern harriers (*Circus cyaneus*) (Janson 1946; Gashwiler *et al.* 1960; Green 1978; Wilde 1978; WDFW 1995).

Population cycles are not known in pygmy rabbits, although local, relatively rapid population declines have been noted in several States (Bradfield 1974; Weiss and Verts 1984; WDFW 1995). After initial declines, pygmy rabbit populations may not have the same capacity for rapid increases in numbers as other Leporids due to their close association with specific components of sagebrush ecosystems (Wilde 1978; Green and Flinders 1980b; WDFW 1995).

#### Distribution and Status

The historic distribution of the pygmy rabbit included much of the semi-arid, shrub steppe region of the Great Basin and adjacent intermountain zones of the conterminous western United States (Green and Flinders 1980a), and likely included portions of Montana, Idaho, Wyoming, Utah, Nevada, California, Oregon, and Washington (Figure 1).

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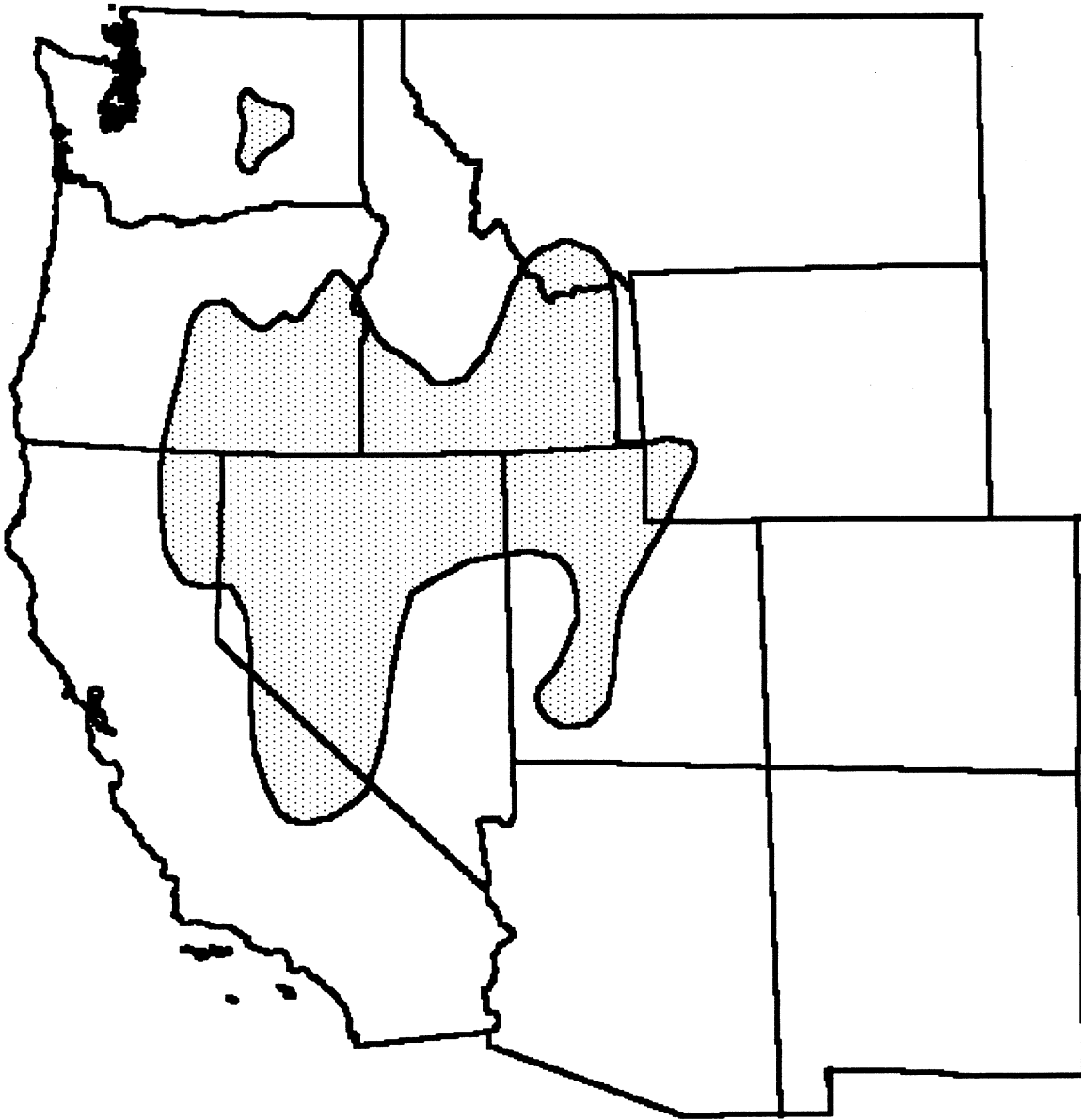


Figure 1. The approximate historic range-wide distribution of the pygmy rabbit (after Weiss and Verts 1984 and WDFW 1995).

Currently, pygmy rabbits are not distributed continuously across their range, nor were they historically. Rather, they are found in areas within their broader distribution where sagebrush cover is sufficiently tall and dense, and where soils are sufficiently deep and loose to allow burrowing (Bailey 1936; Green and Flinders 1980a; Weiss and Verts 1984; WDFW 1995). The local distribution of these habitat patches, and thus pygmy rabbits, likely shifts across the landscape in response to various sources of disturbance (*e.g.*, fire, flooding, grazing, and crop production) combined with long- and short-term weather patterns. Historically, more dense vegetation along permanent and intermittent stream corridors, alluvial fans, and sagebrush plains probably provided travel corridors or dispersal habitat for pygmy rabbits between appropriate use areas (Green and Flinders 1980a; Weiss and Verts 1984; WDFW 1995). Since European settlement of the western United States, more dense vegetation associated with human activities (*e.g.*, fence rows, roadway shoulders, crop margins, and abandoned fields) also may have acted as avenues of dispersal between local populations of pygmy

rabbits (Green and Flinders 1980a; Pritchett *et al.* 1987).

#### *Prehistoric Distribution*

The population segment of the pygmy rabbit within the Columbia Basin, a geographic area that extends from northern Oregon through eastern Washington (Quigley *et al.* 1997), is believed to have been disjunct from the remainder of the species' range since at least the early Holocene (10,000 to 7,000 years before present (BP)), as suggested by fossil records (Grayson 1987; Lyman 1991). This separation is in contrast to the relatively short-term, local patterns of isolation, extirpation, and recolonization that likely occur throughout pygmy rabbit range (above). The pygmy rabbit has been present in the Columbia Basin for at least 100,000 years and had a broader distribution during the mid-Holocene (roughly 7,000 to 3,000 years BP) (Lyman 1991). Gradual climate change affecting the distribution and composition of sagebrush communities is thought to have resulted in a reduction of pygmy rabbit range within the Columbia Basin during the late Holocene (3,000 years BP to present) (Grayson 1987; Lyman 1991).

#### *Historic and Current Distribution*

Pygmy rabbits have been considered rare for many years, with local areas of occurrence in Washington (Dalquest 1948), although there is little comprehensive information available regarding their historic distribution and abundance in the State (WDFW 1995). Museum specimens and reliable sight records indicate that, during the first half of the 1900s, pygmy rabbits probably occurred in at least five Washington counties, including Douglas, Grant, Lincoln, Adams, and Benton (Figure 2). Once thought to be extirpated from the State, pygmy rabbits were again located in Washington in 1979. Intensive surveys in 1987 and 1988 discovered five small colonies of pygmy rabbits in southern Douglas County; three occurred on State lands and two on private lands (WDFW 1995). With the exception of a single site record from Benton County in 1979, pygmy rabbits have been found only in southern Douglas and northern Grant Counties since 1956 (WDFW 2000a). The Washington Wildlife Commission designated the pygmy rabbit as a State threatened species in 1990 and reclassified it as endangered in 1993 (WDFW 1995).

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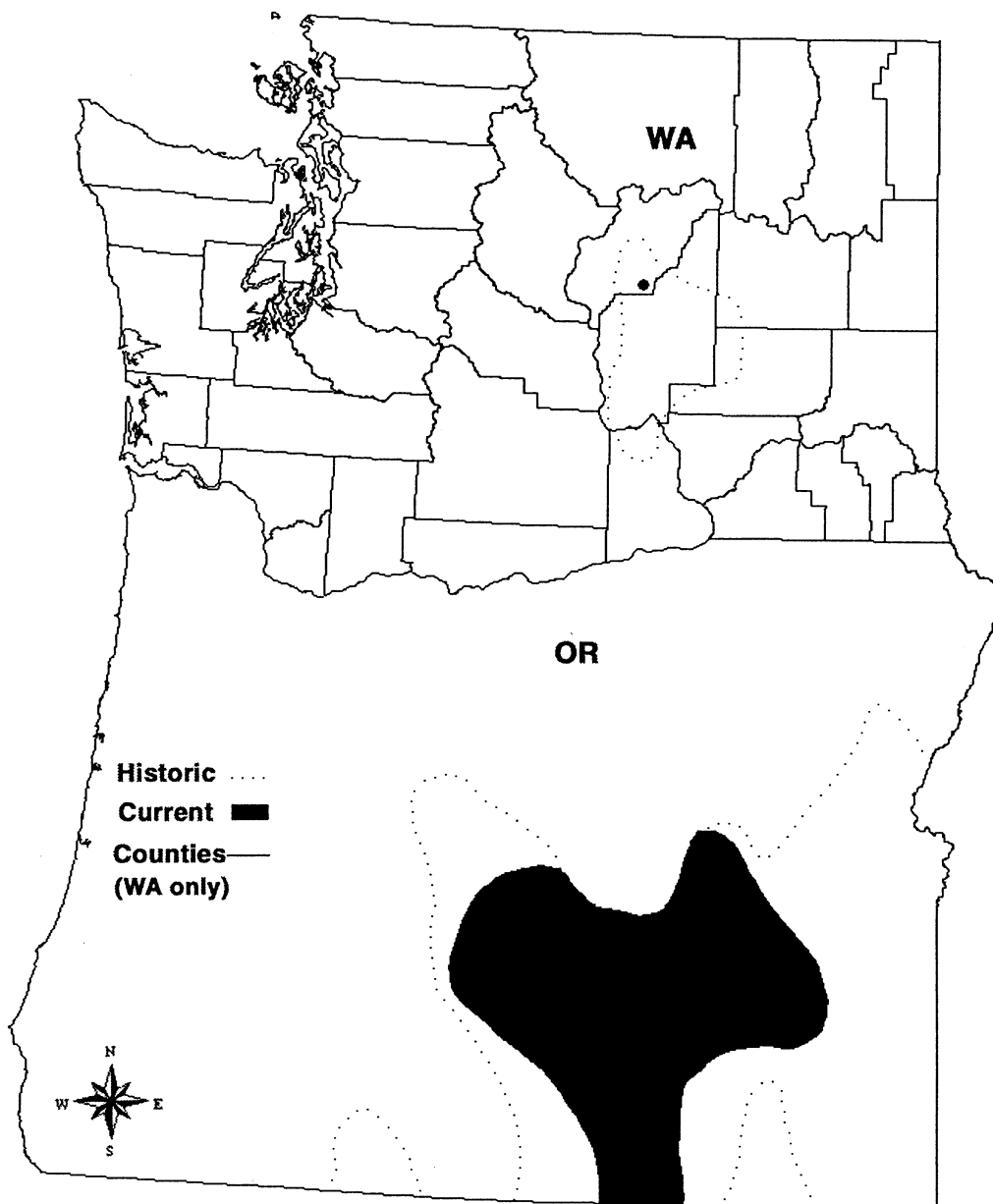


Figure 2. The approximate historic and current distribution of the pygmy rabbit in Washington and Oregon (after Weiss and Verts 1984, WDFW 1995).

The number of pygmy rabbit colonies and active burrows in Washington has declined over the past decade (WDFW 2001a). Four of the five colonies located in 1987 and 1988 were very small, with fewer than 100 active burrows (WDFW 1995); the largest colony (at the State-owned Sagebrush Flat site in Douglas County) contained roughly 588 active burrows in 1993, when it was estimated to support fewer than 150 rabbits (Gahr 1993). While an additional colony was discovered on private land in northern Grant County in 1997, three of the small colonies originally located became extirpated during the 1990s, leaving just three known colonies in 1999 (WDFW 2001a).

One of the three remaining sites experienced a catastrophic fire in 1999 and declined to three active burrows, while the newly discovered site declined for unknown reasons to two active burrows following the winter of 1999–2000 (WDFW 2001a). These two colonies are now thought to be extirpated (WDFW 2001b; D. Hays and T. McCall, WDFW, pers. comm., 2001). In addition, during the winter of 1997–1998, the number of active pygmy rabbit burrows at Sagebrush Flat declined by approximately 50 percent, and has continued to decline each year since (WDFW 2001a). The entire wild pygmy rabbit population in Washington is now considered to consist of fewer than 50 individuals, possibly from just one known colony at Sagebrush Flat in Douglas County (T. McCall, pers. comm., 2001).

Although habitat loss and fragmentation likely have played a primary role in the long-term prehistoric and historic decline of the pygmy rabbit in Washington, it is unlikely that these factors have directly influenced the post-1995 declines at Sagebrush Flat and the extirpations of some of the smaller populations (WDFW 2001a). Once populations decrease below a certain threshold, they become at risk of extirpation from a number of sources, including disease, predation, catastrophic event (*e.g.*, fire), and random environmental events (*e.g.* extreme weather) (WDFW 2001a). The remaining wild population of pygmy rabbits in Washington is currently at such risk and without immediate intervention, it likely will become extirpated within the near future.

#### Previous Federal Action

We added the pygmy rabbit to our candidate species list on November 21, 1991, as a category 2 species (56 FR 58804). A category 2 species was one for which we possessed information indicating that a proposal to list it as

threatened or endangered under the Act was possibly appropriate, but for which conclusive data on biological vulnerability and threats was not available to support a proposed rule. On February 28, 1996, we discontinued the designation of category 2 species as candidates for listing under the Act (61 FR 7596). Species that were formerly category 2 candidates currently are watched, managed, and protected by the States they occupy and by the Service field offices in those States, but have no Federal regulatory status. We are currently planning a status review of the pygmy rabbit range-wide to determine if further Federal regulatory protection for the species is appropriate.

The processing of this emergency rule conforms with our updated Listing Priority Guidance, published in the **Federal Register** on October 22, 1999 (64 FR 57114). The guidance clarifies the order in which we process rule-makings. Highest priority is given to processing emergency listing rules for any species determined to face a significant risk to its well-being. Second priority is the processing of 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.

#### Current Management Actions

The WDFW has undertaken a variety of conservation actions for pygmy rabbits in Washington since 1979 (WDFW 1995; WDFW 2001a). These actions have included population surveys, habitat inventories, land acquisitions, habitat restoration, land management agreements, initiation of studies on the effects of grazing, and emergency predator control. Some of these efforts have been partially funded by the Bonneville Power Administration. As funding sources and staffing levels allow, WDFW efforts to conserve pygmy rabbits in the wild will continue (D. Hays, pers. comm., 2001).

During the fall of 2000, in cooperation with the Oregon Zoo, the WDFW initiated a study of husbandry techniques for pygmy rabbits (WDFW 2001a). This study used five pygmy rabbits captured in Idaho and was undertaken to improve the information base for proposed captive rearing and release efforts for Washington's pygmy rabbits. Due to the continuing decline of pygmy rabbit colonies and active burrows in Washington, the WDFW, in cooperation with WSU, expedited their captive rearing efforts for pygmy rabbits

in Washington during the spring of 2001 (WDFW 2001b; D. Hays, pers. comm., 2001).

The immediate goal of the effort for pygmy rabbits in Washington is to capture up to 20 animals to establish a captive breeding stock. The actual number and type (gender, age, family unit) of pygmy rabbits taken from the wild will be based partly on information from the ongoing husbandry study, and partly on estimates of what is needed to allow for appropriate manipulation of genetic lineages to better manage this population's unique genetic profile. Pygmy rabbits that are not considered essential to the captive rearing effort will be left in the wild, and ongoing management to protect this wild portion of the population will continue.

During the spring and early summer of 2001, eleven pygmy rabbits (seven female, four male) were captured from the Washington population as an initial source for captive breeding efforts (D. Hays, pers. comm., 2001). One male subsequently died, and the cause of its death is being investigated. The ten remaining rabbits appear to have adjusted well to the captive-rearing facilities and reproductive behavior has been observed, including the birth of a litter of five offspring (two female, three male) that was conceived in the wild (L. Shipley, pers. comm., 2001; D. Hays, pers. comm., 2001). The intent is to capture additional animals this year that will complement the genetic profiles and potential breeding scenarios of those already in captivity (D. Hays, pers. comm., 2001).

Ultimately, the goal of the captive rearing effort is to release Washington's pygmy rabbits back into wild habitats within the State where viable colonies can become re-established and the wild population can be recovered (WDFW 2001b; D. Hays, pers. comm., 2001). The number and size of the wild colonies necessary for recovery is yet to be determined. Pygmy rabbits within captive propagation facilities will not be counted toward recovery of the species; the captive propagation program affords an opportunity to protect and maintain the Columbia Basin pygmy rabbit until environmental conditions become more favorable to the survival of the species in the wild through natural cycles and as a result of habitat protection and enhancement. The timing and objectives for the release phase of the program will be further developed as the captive-rearing effort becomes established. The WDFW will remain the lead agency for these efforts, and has developed a Science Advisory Group to provide recommendations and technical oversight for the conservation program.

The group currently comprises State and Federal agency personnel, public zoo and university experts, representatives from non-governmental organizations, and private individuals with interests in the conservation of Washington's pygmy rabbits.

The Nature Conservancy (TNC), a non-governmental natural resource advocacy organization, has acquired, or obtained easements on, portions of the remaining shrub steppe habitat in southern Douglas and northern Grant Counties, including a recent acquisition of approximately 6,900 ha (17,000 ac) adjacent to the WDFW's Sagebrush Flat site. As appropriate, TNC lands in central Washington will be managed to support the conservation efforts for pygmy rabbits (C. Warner, TNC, pers. comm., 2001).

Portions of the remaining shrub steppe habitat in southern Douglas and northern Grant Counties are under the jurisdiction of the U.S. Bureau of Land Management (BLM) and the Washington Department of Natural Resources. Conservation measures for pygmy rabbits are also considered in the management of these agency lands (N. Hedges, BLM, pers. comm., 2001; D. Hays, pers. comm., 2001). Many of the existing and future land acquisitions and management actions of the TNC, BLM, and State agencies in this area are targeted at sites recently used by pygmy rabbits and at providing connectivity of appropriate habitats between these sites.

Large areas of privately owned lands in Douglas County are currently withdrawn from crop production and, under the 1985 Federal Conservation Reserve Program (CRP) (U.S. Department of Agriculture 1998), are planted to native and non-native vegetation. These lands, some of which have been set aside since the late 1980s, provide grass and shrub cover that may improve the habitat conditions of areas potentially occupied or used as dispersal corridors by pygmy rabbits. New and re-signed program contracts completed in 1998 increased the acreage of CRP lands in Douglas County. However, contracts extend for just 10 years and new standards for CRP lands are being implemented that require replanting of significant acreage under existing contracts (USDA 1998; Schroeder, WDFW, pers. comm., 2001). Presently, it is unclear what effects the CRP lands and recent changes to the program may have on pygmy rabbits in Washington.

Currently, we are assisting private landowners and their conservation districts with development of a county-wide Habitat Conservation Plan (HCP) for agricultural lands in Douglas

County, Washington. When completed, the Foster Creek HCP will include measures to protect pygmy rabbits and will complement other, ongoing conservation efforts in Douglas County.

#### **Distinct Vertebrate Population Segment**

Pursuant to the Act, we must consider for listing any species, subspecies, or, for vertebrates, any distinct population segment (DPS) of these taxa if there is sufficient information to indicate that such action may be warranted. To implement the measures prescribed by the Act and Congressional guidance, the Service and National Marine Fisheries Service developed a joint policy in 1996 that addresses the recognition of DPSs for potential listing actions (61 FR 4722). The policy allows for more refined application of the Act that better reflects the biological needs of the taxon being considered, and avoids the inclusion of entities that do not require its protective measures.

Under our DPS policy, three elements are considered in a decision regarding the status of a possible DPS as endangered or threatened under the Act. Two of these elements are used to assess whether a population segment under consideration for listing constitutes a DPS; these elements are (1) the population segment's discreteness from the remainder of the taxon, and (2) the population segment's significance to the taxon to which it belongs. A systematic application of the above elements is appropriate, with discreteness criteria applied first, followed by significance analysis. If we determine that a population segment being considered for listing represents a DPS, then the third element, the status of the population in relation to the Act's standards for listing (*i.e.*, is the population segment, when treated as if it were a species, endangered or threatened), is evaluated based on the five listing factors established by the Act.

#### **Discreteness**

Discreteness may be demonstrated by either, or both, of the following: (1) Physical, physiological, ecological, behavioral, morphological, or genetic discontinuity between population segments, or (2) international governmental boundaries between which differences in regulatory mechanisms exist that are significant with regard to conservation of the taxon. The pygmy rabbit does not occur outside of the lower 48 conterminous United States and, therefore, the international boundary criterion does not apply to this emergency rule.

The population segment of the pygmy rabbit occupying the Columbia Basin has been physically discrete from the remainder of the taxon for several millennia (see Distribution and Status, above). In addition, there is recent evidence that the Columbia Basin population segment is ecologically and genetically discrete from the remainder of the taxon (see Significance, below). Based on this information, we find that the population segment of the pygmy rabbit within the Columbia Basin is discrete from the remainder of the taxon pursuant to the Act. Behavior, morphological, or physiological differences between pygmy rabbits of the Columbia Basin DPS and those from the remainder of the range are not known at this time, but given the genetic distinction and length of temporal separation, such differences would not be considered anomalous.

#### **Significance**

Our DPS policy provides several examples of the types of information that may demonstrate the significance of a discrete population segment to the remainder of its taxon, including, but not limited to (1) persistence of the population segment in an ecological setting unusual or unique for the taxon; (2) evidence that the population segment differs markedly from other population segments in its genetic characteristics; and (3) evidence that loss of the population segment would result in a significant gap in the range of the taxon. The following significance factors, presented in order of their significance, have bearing on the population segment of the pygmy rabbit that remains in central Washington.

**Markedly different genetic characteristics.** Several studies have been initiated to investigate the pygmy rabbit's genetic profile (WDFW 2000c; WDFW 2001a; Cegelski and Waits, undated). To date, the genetics analyses include recent (c. 1990 to present) samples from Washington, Idaho, and Montana, and museum specimens (c. 1900s to 1970s) from Washington, Montana, Idaho, Oregon, with a median date of 1949 (K. Warheit, WDFW, pers. comm., 2001; WDFW 2001c). Analyses have included both mitochondrial DNA and nuclear DNA markers (WDFW 2001c).

Results from recent genetic analyses indicate that the Washington population of the pygmy rabbit (the Columbia Basin population segment) is distinct and only distantly related to the other pygmy rabbit populations (WDFW 2001c; K. Warheit, pers. comm., 2001). In analyses of both mitochondrial and nuclear DNA indices, a single haplotype found to be

present in Washington pygmy rabbits was also found to be distinct from the three haplotypes shared by Oregon, Idaho, and Montana pygmy rabbits. These differences are consistent between recent (WA versus ID and MT) and museum (WA versus OR, ID, and MT) samples. The data also indicate that the Washington pygmy rabbit population diverged (*i.e.*, was genetically isolated) from the Montana and Idaho populations approximately 40,000 to 115,000 years ago, although a more conservative estimate would indicate 10,000 to 25,000 years of isolation (WDFW 2001c). These genetic differences more likely than not are similar to subspecific differences recognized in other mammals; exact taxonomic resolution will require additional study (WDFW 2001c).

The Columbia Basin population segment also exhibits significantly less genetic diversity compared to the other pygmy rabbit populations—a likely result of long-term isolation. Peripheral and isolated populations may experience increased directional selection due to marginal or varied habitats or species compositions at range peripheries, exhibit adaptations specific to these differing selective pressures, demonstrate genetic consequences of reduced gene flow dependent on varying levels of isolation, or have different responses to anthropogenic influences (Levin 1970; MacArthur 1972; Morain 1984; Lacy

1987; Hengeveld 1990; Saunders *et al.* 1991; Hoffmann and Blows 1994; Furlow and Armijo-Prewitt 1995; Garcia-Ramos and Kirkpatrick 1997). In addition, the level of genetic diversity found in tissue samples collected in Washington in the 1990s showed a continued and accelerated reduction in genetic variability, which may be associated with a recent rapid decline in population size and health (WDFW 2001c). Data showing a reduced within-individual genetic diversity suggest that the Washington population segment also may be experiencing a small degree of inbreeding (WDFW 2001c).

Based upon the above results of genetic analyses, it is clear that (1) the unique characteristics of the Columbia Basin population segment of pygmy rabbits represent an important component in the evolutionary legacy of the species and, therefore, a genetic resource worthy of conservation; and (2) efforts should be undertaken to address the recent decline in genetic diversity within this population segment (K. Warheit, pers. comm., 2001).

*Persistence in an unusual or unique ecological setting.* With regard to the historic distribution of the pygmy rabbit, several studies have defined and mapped landscape-level ecosystem components of Washington and Oregon and, to varying degrees, address the management of natural resources within these regional ecosystems (Daubenmire 1988; Franklin and Dyrness 1988; Keane

*et al.* 1996; Quigley *et al.* 1997; Wisdom *et al.* 1998). There are a number of differences between these studies, however, the ecosystem mapping units that result are relatively consistent. This landscape level approach is important in determining if the population segment of the pygmy rabbit that remains in central Washington may occupy an unusual or unique ecological setting. In addition, its utility is valuable for determining the bounds of any potential DPS in the region, as required by our DPS policy.

During the early 1900s, the pygmy rabbit populations in Washington and Oregon (Figure 2) occurred in five ecosystems identified by the above studies. For the purposes of this DPS analysis, we refer to these ecosystems as the Columbia Basin, High Lava Plains, Northern Great Basin, Owyhee Uplands, and Modoc Plateau (after Quigley *et al.* 1997). The Columbia Basin occurs in Washington and northern Oregon; the other four ecosystems occur in central and southern Oregon (Figure 3). These ecosystems are interspersed to varying degrees with forested habitats of the Southern and Eastern Cascades ecosystems to the west, Okanogan Highlands to the north, and the Bitterroot and Blue Mountains to the east; and steppe (grassland) habitats of the Palouse Prairie to the east.

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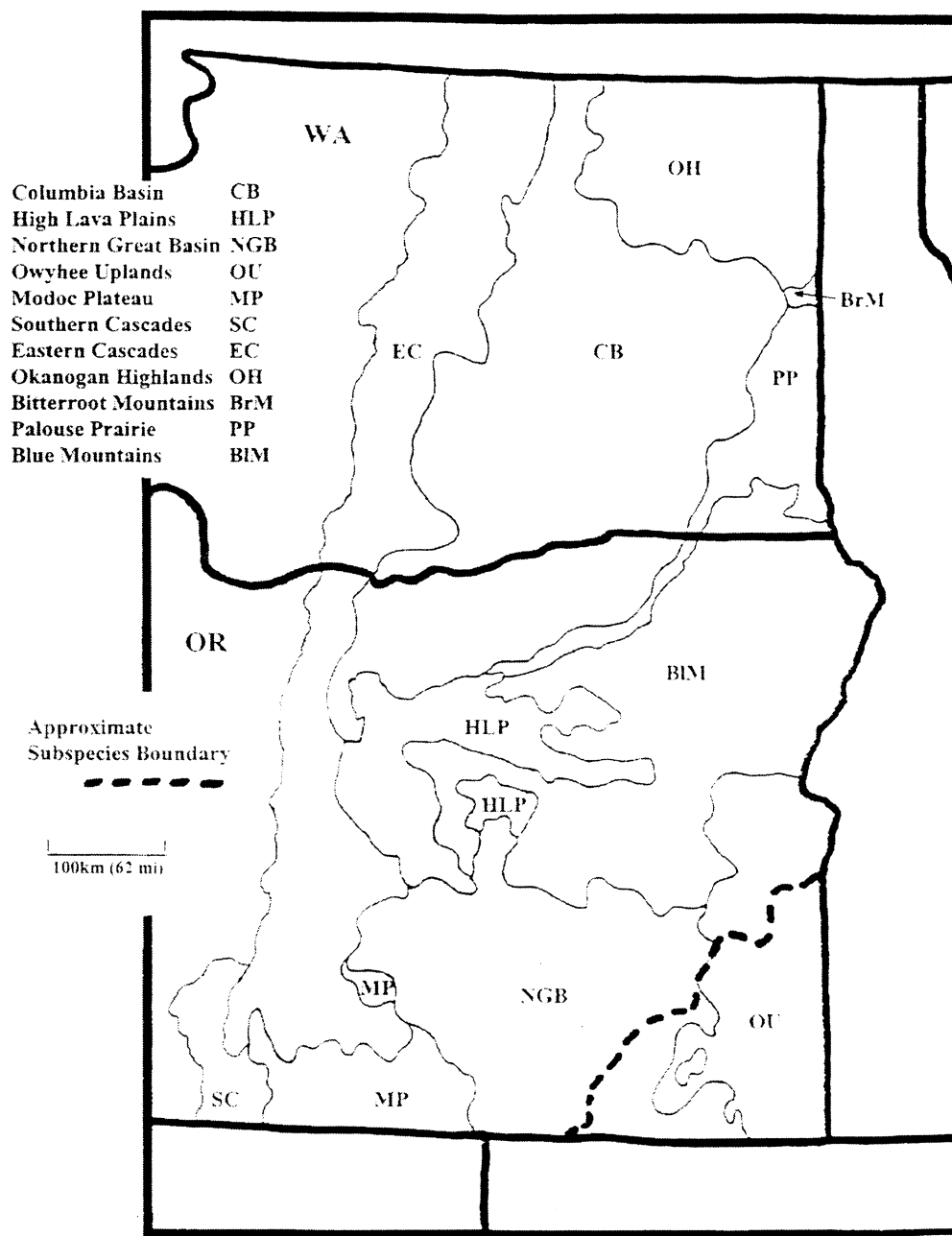


Figure 3. The ecosystems of eastern Washington and Oregon (as modified from Daubenmire 1988, Franklin and Dyrness 1988, Keane et al. 1996, and Quigley et al. 1997).

The population segment of the pygmy rabbit in central Washington occurs entirely within the Columbia Basin, and has been the only representation of the taxon within this ecosystem for thousands of years. During the early 1900s, the population segment of the pygmy rabbit in central and southern Oregon was apparently locally dispersed across the High Lava Plains, Northern Great Basin, Owyhee Uplands, and Modoc Plateau (cf. Figures 2 and 3). The distribution of the pygmy rabbit in Oregon has likely declined during the

last century (Weiss and Verts 1984; WDFW 2000b) and, currently, occurs primarily within the Northern Great Basin ecosystem.

A number of significant differences are found between the Columbia Basin and the balance of pygmy rabbit range in central and southern Oregon (Table 1). In general, the Columbia Basin is lower in elevation, contains soils of varying origin, and has been influenced by different geological processes. These structural differences, combined with regional climatic conditions, significantly influence the broad plant

associations found within each ecosystem (Daubenmire 1988; Franklin and Dyrness 1988). Historically, transitional steppe habitats were much more prevalent in the Columbia Basin than in the ecosystems of central and southern Oregon. In contrast, juniper (*Juniperus* spp) woodlands and salt-desert shrub habitats were much more common in central and southern Oregon. Finally, there are significant differences in the type and distribution of sagebrush taxa among the ecosystems (Table 1).

TABLE 1.—DIFFERENCES IN ECOSYSTEM ELEMENTS BETWEEN REGIONS OCCUPIED BY THE EXTANT POPULATION SEGMENTS OF THE PYGMY RABBIT IN WASHINGTON AND OREGON (AFTER WINWARD 1980, DAUBENMIRE 1988, FRANKLIN AND DYRNESS 1988, MCNAB AND AVERS 1994, DOBLER ET AL. 1996, AND QUIGLEY ET AL. 1997).

#### ECOSYSTEM ELEMENTS: GEOLOGIC, EDAPHIC, AND TRANSITIONAL HABITATS

Population segment	Elevations	Soils	Channeled scablands	Internally-drained playas	Steppe	Juniper woodland	Salt-desert shrub
Columbia Basin	<3,000 ft .....	Deep/Loamy Glacial/Eolian.	Prominent (north).	Rare/Absent ....	Abundant (east)	Rare/Absent ....	Rare/Absent.
Central/Southern Oregon.	>3,500 ft .....	Thin/Rocky Volcanic (HLP) Deep/Alluvial (NGB, OU) <sup>1</sup> .	Rare/Absent ....	Prominent (NGB, OU).	Rare/Absent ....	Abundant (HLP) Present (NGB, OU).	Abundant (NGB, OU).

#### ECOSYSTEM ELEMENTS: SAGEBRUSH (ARTEMISIA) TAXA<sup>2</sup>

Population segment	Basin ssp	Wyoming ssp	Mountain ssp	Low	Three-tip	Stiff	Early	Silver	Black
Columbia Basin.	Dominant .....	Present (west)	Rare/Absent ..	Rare/Absent ..	Abundant (north).	Abundant .....	Rare/Absent ..	Rare/Absent ..	Rare/Absent.
Central/Southern Oregon.	Rare/Absent ..	Dominant .....	Abundant .....	Abundant .....	Present (OU)	Present .....	Present (HLP)	Present (NGB, OU).	Present (NGB, OU).

<sup>1</sup> Element primarily applies to the ecosystems noted: HLP—High Lava Plains; NGB—Northern Great Basin; OU—Owyhee Uplands.

<sup>2</sup> Big Sagebrush (*A. tridentata*) Subspecies (ssp): Basin—*A. tridentata*, Wyoming—*A. t. wyomingensis*, Mountain—*A. t. vaseyana*; Low—*A. arbuscula*; Three-tip—*A. tripartita*; Stiff—*A. rigida*; Early—*A. longiloba*; Silver—*A. cana*; Black—*A. nova*.

There are a number of broad habitat associations in common between the Columbia Basin and the ecosystems of central and southern Oregon (Daubenmire 1988; Franklin and Dyrness 1988). However, even within these common habitat associations, notable differences exist. In general, the composition of forb species differs considerably between the Columbia Basin and the ecosystems in central and southern Oregon (cf. Daubenmire 1988 and Franklin and Dyrness 1988). Even when the same forb species may be present, the two regions typically support different subspecies or varieties of these taxa (Hitchcock and Cronquist 1973).

Currently, it is unclear if pygmy rabbits occupying the Columbia Basin are different behaviorally or morphologically from other pygmy rabbits throughout the remainder of their historic range. However, based on the above information and the pygmy

rabbit's close association with sagebrush ecosystems, we conclude that the Columbia Basin represents a unique ecological setting for the taxon due to its different geologic, climatic, edaphic (soil), and plant community components. The unique elements of the Columbia Basin respectively hold unique management implications for pygmy rabbits within this ecosystem (see Table 1).

**Conclusion of DPS Evaluation.** Based on the above consideration of the Washington population of the pygmy rabbit's discreteness and significance to the remainder of the species, we find that the population segment does represent a DPS. The population's discreteness is due to both its spatial and temporal separation from the remainder of the species. These separations are translated into ecological, physical, and genetic differences that account for the population's discreteness. The

population segment's significance to the remainder of the taxon is due to (1) The unique genetic characteristics it possesses, (2) the significant gap in the historic range of the taxon that its loss would represent, and (3) the unique ecological setting of the Columbia Basin in which it persists.

As required by our DPS policy, we have determined that the bounds of this DPS are coterminous with the historic distribution of the pygmy rabbit within the Columbia Basin ecosystem (Figure 2). We refer to this population segment as the Columbia Basin pygmy rabbit for the remainder of this emergency rule and the accompanying proposed rule.

#### Status

After a thorough review and consideration of all available information, we have determined that the Columbia Basin pygmy rabbit is a DPS. To determine if the DPS should be listed as threatened or endangered, we

evaluate on the five factors described in section 4(a)(1) of the Act. These factors and their application to the Columbia Basin pygmy rabbit follows.

#### Summary of Factors Affecting the Species

After a thorough review and consideration of all available information, we have determined that the Columbia Basin pygmy rabbit warrants classification as an endangered species. We followed procedures found in section 4 of the Act and regulations promulgated to implement the listing provisions of the Act (50 CFR part 424). We may determine a species to be endangered or threatened due to one or more of the five factors described in section 4(a)(1). These factors and their application to the Columbia Basin pygmy rabbit follows.

A. *Present or threatened destruction, modification, or curtailment of habitat or range.* Reduction of the shrub steppe habitat of the Columbia Basin that is required by the pygmy rabbit began in the historic past and currently threatens extant populations of the species. During the first half of the 1900s, large portions of more mesic (moist) shrub steppe habitats on deeper soils within the Columbia Basin were converted for dryland crop production (Daubenmire 1988; Franklin and Dyrness 1988; WDFW 1995). During the mid-1900s, large-scale irrigation projects led to further conversion of more xeric (dry) shrub steppe habitats on deeper soils within the Columbia Basin for irrigated agriculture (WDFW 1995; Franklin and Dyrness 1988; U.S. Department of Interior (USDI) 1998). While currently at reduced levels, conversion of shrub steppe habitats to both dryland and irrigated crop production within the Columbia Basin continues. In addition, urban and rural developments (e.g., housing, industrial facilities, transportation corridors) in central Washington permanently remove native shrub steppe habitats.

In 1994, it was estimated that approximately 60 percent of the original shrub steppe habitat in Washington had been converted for human uses (Dobler 1994). The Columbia Basin pygmy rabbit can not occupy these converted sites. Due to the small home ranges and relatively restricted movements of pygmy rabbits, conversion of native habitats in the Columbia Basin also removes or severely limits their dispersal corridors between suitable habitats.

A number of other, often interacting, influences affect the remaining native shrub steppe habitat within the Columbia Basin, including altered fire

frequencies, invasion by non-native species, recreational activities, and grazing. Sagebrush is easily killed by fire and, when it occurs at increased frequencies, can remove sagebrush from the vegetation assemblage (Daubenmire 1988). In the absence of a sufficient seed source, sagebrush can not readily reinvade sites where it has been removed, and it may be many years before it can become reestablished (WDFW 1995). Due to a variety of factors (see below), the fire frequency has increased over portions of the remaining shrub steppe habitat within the Columbia Basin. Because of their close association with tall, dense stands of sage brush, pygmy rabbits are precluded from occupying frequently burned areas.

Various non-native, invasive plant species, such as cheatgrass and knapweed (*Centaurea* spp), have become well established throughout the Columbia Basin (Daubenmire 1988; Franklin and Dyrness 1988). Areas with dense cover of cheatgrass are apparently avoided by pygmy rabbits (Weiss and Vert 1984). In addition, these newly established plant communities often provide fine fuels that can carry a fire. Combined with widespread unimproved road access and informal recreational activities that provide multiple sources of ignition, the establishment of non-native species increases the risk of fire and further reduces the security of areas that could potentially support the Columbia Basin pygmy rabbit (WDFW 1995).

Land managed for grazing is often cleared of sagebrush to increase the production of grasses and forbs as forage for cattle (WDFW 1995; Rauscher 1997). Clearing large areas of sagebrush cover removes habitat patches potentially used by the Columbia Basin pygmy rabbit. In addition, it can reduce the value of more marginal stands of sagebrush that may act as dispersal corridors for pygmy rabbits, further fragmenting the remaining suitable habitats. Cattle may also damage pygmy rabbit burrow systems through trampling (Rauscher 1997; N. Siegel, WSU, pers. comm., 2001). Much of the remaining shrub steppe habitat in the Columbia Basin is managed for livestock grazing (WDFW 1995; N. Hedges, pers. comm., 2001).

Excessive grazing removes current herbaceous growth and residual cover of native grasses and forbs, and can increase the density of various non-native, invasive species and young sagebrush stands (Daubenmire 1988; WDFW 1995). In some instances, this disturbance may eventually result in the growth of the tall, dense stands of

sagebrush (Ellison 1960), potentially improving cover conditions for pygmy rabbits. However, grazing at these levels potentially reduces the forage base of grasses and forbs for Columbia Basin pygmy rabbits during spring and summer (Green and Flinders 1980b; Rauscher 1997). Excessive grazing may also cause structural damage to dense stands of older sagebrush due to trampling. This acts to open the canopies of these sites and potentially makes them less suitable as cover for Columbia Basin pygmy rabbits (Gahr 1993; Rauscher 1997). Currently, it is unclear if light or moderate levels of grazing may be compatible with pygmy rabbit conservation efforts, or, due to the current threat of extirpation, if any grazing is appropriate at this time. However, there are several ongoing studies investigating the effects of different grazing strategies on Columbia Basin pygmy rabbits and their habitat (WDFW 1995; Sayler *et al.* 2001; L. Shipley, pers. comm., 2001).

Due to the above combined influences, Washington's native shrub steppe habitats, including those considered essential to the long-term security of the Columbia Basin pygmy rabbit, are considered among the least-protected areas in the State (Cassidy 1997). Although many factors are affecting the decline of the Columbia Basin pygmy rabbit, the current population crisis is indirectly due to a lack of good, quality habitat that offers a balance of nutritional forage to maintain a healthy, disease-free, and growing population (see factor C) and cover for protection from predators and extreme weather conditions (see factors C and E).

B. *Over-utilization for commercial, recreational, scientific, or educational purposes.* Pygmy rabbits are often difficult to distinguish from species of cottontail rabbits (*Sylvilagus* spp.) (Garber 1993; WDFW 1995). Because of this, accidental shooting of Columbia Basin pygmy rabbits may occur in association with hunting of other small game species in Washington (WDFW 1979). Due to their extremely low numbers, restricted distribution, and preference for dense habitats, combined with relatively few visitors to the Sagebrush Flat site, the risk from incidental shooting of Columbia Basin pygmy rabbits is nominal (WDFW 1995; D. Hays, pers. comm., 2001). However, in such reduced populations, this possible source of mortality could lead to extirpation, if it is not controlled.

Investigations that require trapping, handling, and captivity of pygmy rabbits can result in mortality from several causes, including exposure (due to

excessively high or low temperatures), direct injury from entanglement in traps, trap predation, intra-specific fighting, and capture stress (Bailey 1936; Severaid 1950; Wilde 1978; Gahr 1993; Rauscher 1997). Capture-related mortality rates (including recaptures) reported for pygmy rabbits are roughly 3 percent (Gahr 1993), 5 percent (Wilde 1978), and 13 percent (Rauscher 1997). The mortality rate for one study approached 20 percent when the total number of captured animals was considered (11 deaths of 58 individuals). All of the mortalities in this study occurred in just one portion of the study area (Rauscher 1997). Trapping methods, daily and seasonal timing, study location, holding facilities, and husbandry techniques may all affect the level of capture-related mortality incurred.

Some pygmy rabbit burrows are relatively shallow and may collapse when walked on by humans or any similarly large animal (Wilde 1978). In addition, investigations of pygmy rabbits often entail the destruction of individual burrows, measuring of the vegetation community and other site characteristics immediately surrounding burrow systems, and/or disturbance to the general area occupied by colonies (Janson 1946; Bradfield 1974; Green 1978; Wilde 1978; Gahr 1993; Gabler 1997; Rauscher 1997).

It is unlikely that any of the above activities alone have played a significant role in the long-term population decline and range reduction of the Columbia Basin pygmy rabbit. However, due to the vulnerability of the extant population, any source of mortality that does not contribute directly to efforts to conserve the remaining wild and captive portions of the Columbia Basin pygmy rabbit population may contribute to its extirpation.

**C. Disease or predation.** Pygmy rabbits often harbor a high parasite load (Gahr 1993; WDFW 1995). Some of the parasites of pygmy rabbits, including ticks, fleas, and lice, can be vectors of disease. Episodes of plague and tularemia from these vectors have been reported in populations of a number of other Leporid species and are often rapidly spreading and fatal (Quan 1993). Severe disease epidemics have not been reported in pygmy rabbits, and parasites have not been viewed as a significant threat to the species (Davis 1939; Gahr 1993). However, recent evidence of plague found in a coyote in Sagebrush Flat has raised concern (WDFW 2001a). The potential for disease outbreaks within the remaining wild and captive portions of the Columbia Basin pygmy rabbit population remain, particularly

where the population is stressed by predation and lack of adequate nutrition. The level of risk from disease to the Columbia Basin population segment is currently being investigated (WDFW 2001a).

Predation is thought to be a major cause of mortality among pygmy rabbits (Green 1979; Wilde 1978). While pygmy rabbits have adapted to the presence of a wide variety of predators that occur throughout their historic distribution (Janson 1946; Gashwiler *et al.* 1960; Green 1978; Wilde 1978; WDFW 1995), the threat of predation on the single extant population is great. Predation is not likely to represent a significant threat to relatively large, well-distributed pygmy rabbit populations. However, due to the extremely small size and localized occurrence of the Columbia Basin pygmy rabbit population, reducing or eliminating predation may play a significant role in conservation efforts for the remaining wild and captive portions of this population segment.

**D. Inadequacy of existing regulatory mechanisms.** The Washington State classification of the Columbia Basin pygmy rabbit as endangered makes it illegal to attempt to kill, injure, capture, harass, possess, or control individuals of the species (WDFW 1995). However, illegal or incidental shooting of pygmy rabbits may occur in association with hunting seasons for other small game species (see factor C above). In addition, State designation does not provide regulatory protection of the habitats considered essential to the long-term security of the Columbia Basin pygmy rabbit.

Currently, we are assisting private landowners with development of a county-wide HCP to protect important plant and animal species on agricultural lands in Douglas County. However, there are no regulatory protections for unlisted species during development of HCPs, and recovery of listed species may not be assured through management actions undertaken solely on private lands.

Revegetation standards under the CRP promote the improvement of habitats potentially used by the Columbia Basin pygmy rabbit, and the CRP restricts livestock grazing on contract lands except under severe drought conditions (M. Ruud, Farm Service Agency, pers. comm., 2001). However, these measures are not specifically promulgated for the protection of the Columbia Basin pygmy rabbit, and there are few other mechanisms that regulate grazing practices or the conversion of native habitats on privately owned lands.

**E. Other natural or human-caused factors affecting the species continued existence.** Presently, the primary threats to the Columbia Basin pygmy rabbit population are associated with its extremely small size, limited distribution, and level of fragmentation (see Reasons for Emergency Determination). Small populations are susceptible to random weather events (e.g., severe storms, drought, and extended cold spells), changes in cover and food resources, disease outbreaks, altered predation or parasite populations, and fire. Small populations are also more susceptible to demographic and genetic problems (Caughly and Gunn 1996). These threat factors, which may act in concert, include natural variation in survival and reproductive success of individuals, chance imbalance of sex ratios, changes in gene frequencies due to genetic drift, and lack of genetic diversity caused by inbreeding. Due to these combined influences, and its inability to be "rescued" by nearby populations should it become extirpated, the Columbia Basin pygmy rabbit population is currently believed to be below the level necessary to ensure its long-term viability (WDFW 1995).

**Conclusion of Status Evaluation.** Based upon our evaluation of the above five factors that may threaten the Columbia Basin DPS of the pygmy rabbit, using the best scientific and commercial data available, we have determined the DPS to be in danger of extinction. The recent loss of populations within the DPS, the very small number of individuals within the remaining single wild population, and the threats to this population concerned us to the extent that we decided to further evaluate the status of this DPS and to consider an emergency listing, as an endangered species. This further evaluation of the DPS's status is discussed below.

### Reasons for Emergency Determination

Under section 4(b)(7) of the Act, we must consider development of an emergency rule to list a species if threats to the species constitute an emergency posing a significant risk to its well-being. Such an emergency listing expires 240 days following its publication in the **Federal Register** unless, during the 240-day period, we develop a final rule to list the species under our normal listing procedures. Below, we discuss the reasons why emergency listing of the Columbia Basin pygmy rabbit as endangered is necessary. In accordance with the Act, we will withdraw this emergency rule

if, at any time after its publication, we determine that substantial evidence does not exist to warrant such a rule.

The immediate concerns for the Columbia Basin pygmy rabbit are associated with the population's extremely small size, history of fragmentation and extirpation, and the recent, dramatic decline in its distribution and abundance. In addition to the relatively large-scale impacts to native shrub steppe habitats, various other human-caused and naturally occurring impacts of lesser magnitude now pose significant and imminent risks to this population segment. Due to the combined influence of the following threats—environmental stochasticity and catastrophe, predation, disease, and reduced genetic fitness—extirpation of the Columbia Basin pygmy rabbit from the wild may occur at any time (WDFW 2001b). In addition, the risks to the captive portion of the population and the potential for extinction of the Columbia Basin pygmy rabbit remain high.

#### *Environmental Stochasticity and Catastrophes*

Environmental stochasticities (random events) include the bad winters, resource failures, plagues of predators, and such that deliver shocks to populations. If a population is large enough, then such a shock can be withstood, although mortality within the population may be high. Often the population can rebound over time and recover its population numbers, either through birth or immigration from nearby populations. In the case of the Columbia pygmy rabbit, however, the size of the extant population is too small to withstand shock, even a small one, and be able to rebound; moreover, no neighboring population exists to “rescue” it through immigration.

While there are numerous examples of possible stochastic events that could affect the Columbia pygmy rabbit, fire has already had a catastrophic effect on the species and remains a real threat to the last remaining population. Fire was implicated in the loss of the only pygmy rabbit colony ever recorded in Benton County, Washington, in 1979 (WDFW 1995), and was directly associated with the recent loss of one of the few remaining colonies in Douglas County in 1999 (WDFW 2001b). The WDFW has taken measures to reduce the risk from fire at the Sagebrush Flat site (e.g., constructing firebreaks). However, unimproved road access and informal recreational activities provide continuing sources (e.g., people and vehicles) of uncontrolled fires at Sagebrush Flat (WDFW 1995). Due to

the population's small size, restriction to one known site in the wild, and reliance on relatively tall, dense stands of sagebrush, natural and human-caused fire represents a significant threat to the Columbia Basin pygmy rabbit in the wild.

While plague is common in other Leporid species, it is not known in pygmy rabbits. However, evidence of plague was reported in a coyote taken from the site of one of the recently extirpated pygmy rabbit colonies (WDFW 2001a). The potential occurrence of plague in this colony is currently being investigated using blood samples obtained prior to its extirpation (D. Hays, pers. comm., 2001). Additional studies have been proposed to investigate the occurrence of diseases and their possible control in wild and captive populations of pygmy rabbits (C. Brand, National Wildlife Health Center, pers. comm., 2001). Because so few Columbia Basin pygmy rabbits remain, disease epidemic remains a significant threat to both the wild and captive portions of this population segment.

Emergency listing the Columbia Basin pygmy rabbit will increase regulatory efficiency in favor of protection for the species from stochasticity and the funding to support immediate recovery activities necessary for the species' survival. Protections could include increased population numbers and distribution in the wild to withstand catastrophe, and control of the sources of stochasticity and catastrophe where possible.

#### *Predation*

Populations of pygmy rabbits have coexisted with various levels of grazing throughout their historic range for many years (WDFW 1995). However, due to the extremely low number and restricted distribution of Columbia Basin pygmy rabbits, any additional mortality or population stress associated with grazing practices potentially represents a significant threat to the security of the wild portion of this population segment. The effects of different grazing strategies on Columbia Basin pygmy rabbits are not well understood (WDFW 1995). However, Gahr (1993) found that male pygmy rabbits at the Sagebrush Flat site made longer movements, resulting in larger home ranges, during the breeding season in recently grazed areas as opposed to areas that had not been grazed for nearly 40 years. In addition, relative to unit size, there are more pygmy rabbit burrows in the ungrazed areas of Sagebrush Flat than the recently grazed areas (L. Shipley and N. Siegel, pers. comm., 2001). These results

suggest that Columbia Basin pygmy rabbits may be more susceptible to predation in areas used for livestock grazing due to the necessarily longer movements away from cover and fewer burrows available for escape.

Due to recent, confirmed evidence of coyote predation on pygmy rabbits, the WDFW implemented an emergency coyote control program during the fall-winter periods of 1998–1999 and 1999–2000 (WDFW 2000a). Coyotes were removed, by shooting, traps, and snares, over roughly 20 square miles around and including the Sagebrush Flat site. The level of effort to control coyotes varied in different years and areas, and the efficacy of this program to protect the Columbia Basin pygmy rabbit is unknown. A variety of other avian and terrestrial predators may occur on sites currently occupied by the Columbia Basin pygmy rabbit. Because of the relatively restricted distribution of this population segment, combined with potential impacts from livestock grazing (above), predators may have a reduced search area or increased success rate for pygmy rabbits at these sites.

Within the captive breeding population sites of the Columbia Basin pygmy rabbit, several measures (e.g., double fencing and monitoring) have been taken to reduce the risk of predation (L. Shipley and R. Sayler, WSU, pers. comm., 2001). However, while the risk has been reduced, currently only a single captive-rearing facility is in operation and the potential for predators to access some of the outdoor cages at this facility remains.

Even low levels of predation represent a significant risk to the immediate security of both the wild and captive portions of this species. Emergency listing of the Columbia Basin pygmy rabbit as endangered will increase the regulatory protections and resources for predator control and other forms of range management until this population can withstand “normal” predation pressure.

#### *Viability, Fitness*

Genetic indices indicate that the Columbia Basin pygmy rabbit has significantly less genetic diversity than the remainder of the taxon. In addition, this population segment has undergone an accelerated loss of genetic diversity since the mid-1900s. Severe loss of genetic diversity may make the Columbia Basin pygmy rabbit more susceptible to extinction due to inbreeding depression. Reduced genetic diversity and the relatively few family lineages remaining in the Columbia Basin pygmy rabbit population also may complicate captive breeding strategies

conducted to reestablish a minimum effective population size (*i.e.*, the number of individuals contributing to reproduction). Ultimately, an appropriate effective population size will help to ensure the maintenance and enhancement of the genetic heterogeneity still present within this population segment (K. Warheit, pers. comm., 2001).

Reproductive fitness is not only a function of genetic health, however; nutritional stress also may have a devastating effect on reproductive fitness and the overall viability of a population, particularly in the defense of diseases and plagues; animal populations are ultimately limited by the capacity of the environment to support them. The preliminary results of an ongoing study indicate that pygmy rabbits occupying sites where cattle grazing occurs may have a greater proportion of their spring and summer diets composed of sagebrush as opposed to the grasses that they require at this time of year, which is usually as much as 40 percent (L. Shipley and N. Siegel, pers. comm., 2001). This result provides support for the contention that livestock may compete directly with pygmy rabbits for available forage (Green and Flinders 1980b; Rauscher 1997), thus causing the rabbits to become nutritionally stressed at a time when they require grass in their diet or the population level to become lower than the land would support without the influence of livestock.

#### *Summary of Emergency Determination*

Due to the extremely small size of the Columbia Basin pygmy rabbit population, even a low level of mortality due to stochastic events, disease, nutritional stress, and predation represents a significant risk to the immediate security of both the wild and captive portions of the species. Emergency listing of the Columbia Basin pygmy rabbit as endangered will increase the regulatory protections and resources available to the species in predator control and other forms of range management that are designed to improve the nutritional capacity of the habitat in favor of the pygmy rabbit. Recovery of the Columbia Basin pygmy rabbit is dependent upon a self-sustaining wild population that can withstand the threats that could lead to extinction. Reestablishment, therefore, of a wild population through the use of a rigorous captive propagation program is a necessary step towards recovery.

#### **Critical Habitat**

Critical habitat is defined in section 3 of the Act as—(i) the specific area

within the geographical area occupied by a species, at the time it is listed in accordance with the Act, on which are found those 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. “Conservation” means the use of all methods and procedures needed to bring the species to the point at which listing under the Act is no longer necessary.

Section 4(a)(3) of the Act and its implementing regulations (50 CFR 424.12) require that, to the maximum extent prudent and determinable, the Secretary of the Interior (Secretary) designate critical habitat at the time the species is determined to be endangered or threatened. The implementing regulations state that critical habitat is not determinable if information sufficient to perform the required analyses of impacts of the designation is lacking, or if the biological needs of the species are not sufficiently well known to permit identification of an area as critical habitat. Section 4(b)(2) of the Act requires us to consider economic and other relevant impacts of designating a particular area as critical habitat on the basis of the best scientific data available. The Secretary may exclude any area from critical habitat if she determines that the benefits of such exclusion outweigh the conservation benefits, unless to do so would result in the extinction of the species.

We find that designation of critical habitat for the Columbia Basin pygmy rabbit is not determinable at this time because information sufficient to perform the required analyses of the impacts of the designation is lacking. We specifically solicit this information in the proposed rule (see Public Comments Solicited section), published in this same issue of the **Federal Register**. When a “not determinable” finding is made, we must, within 2 years of the publication date of the original proposed rule, designate critical habitat, unless the designation is found to be not prudent. We will protect the Columbia Basin pygmy rabbit and its habitat through section 7 consultations to determine whether Federal actions are likely to jeopardize the continued existence of the species, through the recovery process, through enforcement of take prohibitions under section 9 of the Act, and through the section 10 process for activities on non-Federal lands with no Federal nexus.

#### **Available Conservation Measures**

Conservation measures provided to species listed as endangered or threatened under the Act include recognition, requirements for Federal protection, prohibitions against certain activities, and development of recovery plans. Recognition through listing encourages conservation actions by Federal, State, and tribal agencies, non-governmental conservation groups, and private individuals. The Act provides for potential land acquisition and cooperation with the States and requires that recovery actions be carried out for listed species. Below, we discuss the requirements of Federal agencies, considerations for protection and conservation actions, and the prohibitions against taking and harm for the Columbia Basin pygmy rabbit.

Section 7(a) of the Act 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 when it is designated. Federal agencies are required to confer with us on any action that is likely to jeopardize the continued existence of a proposed species or result in destruction or adverse modification of proposed critical habitat. When a species is listed as threatened or endangered, Federal agencies must ensure that the 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 may affect a listed species or its critical habitat, the responsible Federal agency must enter into consultation with us. Federal agency actions that may require consultation for the Columbia Basin pygmy rabbit include, but are not limited to, those within the jurisdictions of the U.S. Fish and Wildlife Service, Bureau of Land Management, Bureau of Reclamation, Natural Resources Conservation Service, and Farm Service Agency.

We believe that protection and recovery of the Columbia Basin pygmy rabbit, in both wild and in captive breeding populations, will require reduction of the threats from uncontrolled fire, excessive livestock grazing, altered predation patterns, disease, and loss of genetic viability. These threats should be considered for management actions in habitats currently and potentially occupied by the Columbia Basin pygmy rabbit, and those deemed important for dispersal between their appropriate use areas. Monitoring should also be undertaken

for any management actions or scientific investigations designed to address these threats or their potential impacts.

Listing the Columbia Basin pygmy rabbit provides for the development and implementation of a recovery plan for the species. This plan will bring together Federal, State, and local efforts for conservation of the species. A recovery plan will establish a framework for agencies to coordinate their recovery efforts. The plan will set recovery priorities and estimate the costs of the tasks necessary to accomplish the priorities. It will also describe the site-specific management actions necessary to achieve conservation and survival of the species.

Listing will require us to review and provide direction or guidance on any actions that may affect the Columbia Basin pygmy rabbit on lands or activities under Federal jurisdiction, State plans developed pursuant to section 6 of the Act, scientific investigations and efforts to enhance the propagation or survival of the population segment pursuant to section 10(a)(1)(A) of the Act, and Conservation Plans developed for non-Federal lands and activities pursuant to section 10(a)(1)(B) of the Act.

Considerations for management actions and scientific investigations to address the above threats to the Columbia Basin pygmy rabbit include, but are not limited to:

(1) *Fire*: Implementation of agreements between fire-fighting districts to provide adequate coverage, construction of fire breaks, availability of fire-fighting equipment, fire-fighting techniques, weed control, use of prescribed fire, and removal or restriction of unimproved road access and informal recreational activities;

(2) *Livestock Grazing*: Season(s) of use, stocking rate(s) and type(s), location of supplemental watering and salting, loading and transport facilities, exclusion fencing, and removal;

(3) *Predation*: Identification of primary predators and predation patterns, development of protocols for fence removal and/or new fence construction, and predator deterrents and/or lethal control of predators to protect the wild and captive portions of the population;

(4) *Disease*: Identification and control of potential disease and disease vectors in wild and captive portions of the population;

(5) *Capture, Husbandry, and Release*: Development of protocols for capture and handling, establishment of multiple holding facilities for captive stock, inventory and evaluation of appropriate

release sites, and development of release protocols;

(6) *Genetics*: Identification of additional genetic markers, implementation of an appropriate breeding scenario, and establishment of a minimum effective population for captive breeding and release efforts.

The Act sets forth a series of general prohibitions and exceptions that apply to all endangered wildlife species. The prohibitions make it illegal for any person subject to the jurisdiction of the United States to take (including harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt any such conduct), import or export, transport in interstate or foreign commerce in the course of commercial activity, or sell or offer for sale in interstate or foreign commerce any endangered wildlife species. It is also illegal to possess, sell, deliver, carry, transport, or ship any such wildlife that has been taken illegally. Certain exceptions apply to our agents and State conservation agencies. Permits may be issued to carry out otherwise prohibited activities involving listed species. Such permits are available for scientific purposes, to enhance the propagation or survival of the species, or for incidental take in connection with otherwise lawful activities.

It is our policy, published in the **Federal Register** on July 1, 1994 (59 FR 34272), to identify, to the maximum extent practical 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 a listing on proposed and ongoing activities within a species' range. For the Columbia Basin pygmy rabbit, activities that we believe are unlikely to result in a violation of section 9 include:

(1) Possession, delivery, or movement, including interstate transport and import into or export from the United States of dead specimens of Columbia Basin pygmy rabbits that were collected prior to the date of publication of this emergency listing rule in the **Federal Register**;

(2) Any action authorized, funded, or carried out by a Federal agency that may affect the Columbia Basin pygmy rabbit when the action is conducted in accordance with incidental take statement issued under section 7 of the Act;

(3) Any action carried out for scientific research or to enhance the propagation or survival of the Columbia Basin pygmy rabbit that is conducted in accordance with the conditions of a section 10(a)(1)(A) permit; and

(4) Any incidental take of the Columbia Basin pygmy rabbit resulting from an otherwise lawful activity conducted in accordance with the conditions of an incidental take permit issued under section 10(a)(1)(B) of the Act. Non-Federal applicants design a conservation plan (HCP) for the species and apply for an incidental take permit. These are developed for listed species and are designed to minimize and mitigate impacts to the species to the greatest extent practicable.

Activities that we believe could potentially result in a violation of section 9 include, but are not limited to:

(1) Activities authorized, funded, or carried out by Federal agencies (e.g., land exchanges, land clearing, prescribed burning, grazing, pest control, utility line or pipeline construction, mineral and housing development, off-road vehicle use, recreational trail and campground development, and road construction) that may affect the Columbia Basin pygmy rabbit or its critical habitat when such activities are not conducted in accordance with an incidental take statement issued under section 7 of the Act;

(2) Unauthorized possession, trapping, handling, collecting, or release of pygmy rabbits within the historic range of the Columbia Basin pygmy rabbit. Research efforts involving these activities will require a permit under section 10(a)(1)(A) of the Act;

(3) Activities that directly or indirectly result in the death or injury of Columbia Basin pygmy rabbits, or that modify occupied habitat and kill or injure them by significantly impairing their essential behavioral patterns (e.g., shooting, poisoning, habitat conversion, grazing, road and trail construction, water development and impoundment, mineral extraction or processing, off-road vehicle use, and unauthorized application of herbicides or pesticides in violation of label restrictions). Otherwise lawful activities that incidentally take Columbia Basin pygmy rabbits will require a permit under section 10(a)(1)(B) of the Act.

Questions regarding specific activities should be directed to our Upper Columbia Fish and Wildlife Office (see **ADDRESSES** section). Requests for copies of the regulations regarding listed wildlife, including prohibitions and issuance of permits under the Act, may be addressed to the U.S. Fish and Wildlife Service, Ecological Services, Endangered Species Permits, 911 Northeast 11th Avenue, Portland, Oregon 97232-4181 (telephone (503) 231-2063; facsimile (503) 231-6243).

**National Environmental Policy Act**

We have determined that environmental assessments and environmental impact statements, as defined in 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. We published a notice outlining our reasons for this determination 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, 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 17.21 and 17.22.

**Executive Order 13211**

On May 18, 2001, the President issued an Executive Order (E.O. 13211) on regulations that significantly affect energy supply, distribution, and use. Executive Order 13211 requires agencies to prepare Statements of Energy Effects when undertaking certain actions. This rule is not expected to significantly affect energy supplies, distribution, or use. Although this rule is a significant regulatory action under Executive Order 12866, it is not expected to significantly affect energy supplies, distribution, or use. Therefore, this action is not a significant energy action and no Statement of Energy Effects is required.

**References Cited**

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

**Author**

The primary author of this emergency rule is Christopher Warren of the Upper Columbia Fish and Wildlife 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 set forth below:

**PART 17—[AMENDED]**

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

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

2. In § 17.11(h), add the following to the List of Endangered and Threatened Wildlife in alphabetical order under MAMMALS:

**§ 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						
MAMMALS							
*	*	*	*	*	*	*	*
Rabbit, Columbia Basin pygmy.	<i>Brachylagus idahoensis</i> .	U.S.A. (Western conterminous States).	U.S.A. (WA—Douglas, Grant, Lincoln, Adams, Benton Counties).	E	.....	NA	NA
*	*	*	*	*	*	*	*

Dated: November 21, 2001.

**Marshall P. Jones, Jr.,**

*Acting Director, Fish and Wildlife Service.*

[FR Doc. 01-29615 Filed 11-29-01; 8:45 am]

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**DEPARTMENT OF COMMERCE****National Oceanic and Atmospheric Administration****50 CFR Parts 223 and 224**

[I.D. 111901A]

**Exemption to No-entry Zone Around Chirikof Island, AK**

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

**ACTION:** Notification of authorized exemption to the 3-nautical mile (nm) no-entry zone around Chirikof Island, AK.

**SUMMARY:** Pursuant to regulations under the Endangered Species Act, the Regional Administrator, Alaska Region, NMFS, is authorizing an exemption to the 3-nm, no-entry zone around Chirikof Island for the sole purpose of livestock removal by the U.S. Fish and Wildlife Service. Regulations allow an exemption to the no-entry zone, provided that the activity is authorized by the Regional Administrator, Alaska Region, NMFS, that the activity will not have a significant adverse effect on Steller sea lions, and that no readily available and acceptable alternative site exists for the activity.

**SUPPLEMENTARY INFORMATION:** On October 4, 2001, the U.S. Fish And

Wildlife Service (USFWS) requested an exemption under Federal regulations for the management of the Steller sea lions (at 50 CFR parts 223 and 224) to allow for passage through the 3-nm no-entry zone in the Southwest Anchorage of Chirikof Island to facilitate livestock removal. Chirikof Island is part of the Alaska Maritime National Wildlife Refuge. The USFWS is working cooperatively with a private consortium to remove unauthorized livestock from refuge lands on Chirikof Island to facilitate the natural recovery of the ecosystem health of the island after more than a century of livestock grazing. This activity is part of an overall effort to remove introduced animals, including cattle and feral foxes, from the island.

USFWS proposes to remove livestock over a 2-year period beginning in October 2001. All activities will occur