

and Havlik 1987b). Currently, EBRPD is reducing the amount of flammable dead plant material in the Huckleberry Ridge population (E. Leong, EBRPD, pers. comm. 1994). The reduction in plant litter, in turn, has helped to stimulate germination of the species (D. Amme, pers. comm. 1994).

E. *Other natural or manmade factors affecting their continued existence.* Fragmentation of *Arctostaphylos pallida* habitat caused by residential development at Huckleberry Ridge has also resulted in introduced exotic landscape and weedy plant species that compete with the remnant population (Amme and Havlik 1987b). Although no current residential construction threatens the remaining Huckleberry Ridge populations of *A. pallida*, the populations of fewer than 10 plants in this area are threatened by stochastic events due to the small number of plants in combination with competition with aggressive plant species and loss of habitat from past urbanization. These small populations are threatened by shading from planted eucalyptus (*Eucalyptus* sp.), Monterey pines (*Pinus radiata*), and cypresses (*Cupressus* sp.) and by competition with aggressive non-native plant species including French broom (*Cytisus monspessulanus*), periwinkle (*Vinca major*), and German ivy (*Senecio mikanoides*) (Amme *et al.* no date).

The genetic integrity of *Arctostaphylos pallida* is threatened by hybridization resulting from the introduction of other species of *Arctostaphylos* into the vicinity of *A. pallida* populations (D. Amme, pers. comm. 1994). At least three other species of *Arctostaphylos* have been used for landscaping on Manzanita Way, a road that borders the Huckleberry Ridge Preserve. Hybridization of *A. pallida* with at least two other species is known to have occurred (Amme and Havlik 1987a). Hybridization could result in a hybrid manzanita swarm taking the place of *A. pallida* (Amme and Havlik 1987b, Amme *et al.* no date).

Alteration of the natural fire regime threatens *Arctostaphylos pallida* by inhibiting seed germination and nutrient recycling that occurs naturally after fires. Fires are currently suppressed on Huckleberry Ridge and Sobrante Ridge to protect the surrounding residential areas (D. Amme, pers. comm. 1994; A. Olivera, Park Supervisor, Sobrante Ridge Preserve, EBRPD, pers. comm. 1994). For non-burl-forming manzanitas such as *A. pallida*, fire is a necessary part of reproduction (Keeley 1992). Following

fire or other disturbance, regeneration occurs from seed rather than from burls.

The accumulated leaf and bark litter, fallen fruits, and roots of *Arctostaphylos* species, however, have a self-inhibitory effect on seed germination (Amme and Havlik 1987b). Fire is believed to remove these toxic materials and promote subsequent germination of *Arctostaphylos* and other herbs and shrubs (Amme *et al.* no date). Fire also is necessary to the species to recycle limited nutrients in the soil (Amme and Havlik 1987b).

The roadside spraying of herbicides has had negative effects on regeneration of *Arctostaphylos pallida* along Skyline Boulevard (Amme and Havlik 1987a). Unauthorized tree cutting also poses a threat to *A. pallida*. At least two mature *A. pallida* plants have been killed by unauthorized cutting of eucalyptus trees, for unknown purposes, that subsequently fell on the *A. pallida* plants (Amme and Havlik 1987b).

The Service has carefully assessed the best scientific and commercial information available regarding the past, present, and future threats faced by *Arctostaphylos pallida* in determining to propose this rule. This species is not now in immediate danger of extinction throughout all or a significant portion of its range. *Arctostaphylos pallida* exists as 2 major and 11 small occurrences and is located almost entirely on EBRPD property. The largest occurrences of *A. pallida* are protected from habitat loss resulting from urbanization or land use conversion. However, *A. pallida* is threatened by shading and competition from native and non-native plant species, fire suppression, hybridization, herbicide spraying, disease, tree cutting, habitat fragmentation resulting from past urbanization, stochastic events, and inadequate regulatory mechanisms.

Although not in immediate danger of extinction at this time, *Arctostaphylos pallida* is likely to become an endangered species in the foreseeable future if the present threats persist and population declines continue. As a result, the preferred action is to list *Arctostaphylos pallida* as a threatened species. Critical habitat is not being proposed for this taxon at this time, as discussed below.

Critical Habitat

Critical habitat is defined in section 3 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 consideration 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 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, as amended, and implementing regulations (50 CFR 424.12) require that, to the maximum extent prudent and determinable, the Secretary designate critical habitat at the time the species is listed. The Service finds that designation of critical habitat is not prudent for this species at this time. Service 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.

Arctostaphylos pallida faces anthropogenic threats (see Factors A and E in "Summary of Factors Affecting the Species") and occurs entirely on non-Federal land. All of the 13 occurrences of *A. pallida* are located near or adjacent to residential areas and public roads. The publication of precise maps and descriptions of critical habitat in the **Federal Register** would make this plant vulnerable to incidents of vandalism and, therefore, could contribute to the decline of the species. Although this species is not known to be sought after by collectors, *A. pallida* is commercially cultivated (Wells 1993). Many members of this genus are considered desirable for landscape use and are collected for cultivation. The desirability and accessibility of the species, therefore, could make the plants subject to collection if their precise location was publicized.

In addition, critical habitat designation for the species is not prudent due to lack of benefit. At present, all known populations occur on non-Federal land, with no Federal action, authorization, licensing, or funding currently occurring on these lands. Due to the small, fragmented populations of this species, any future Federal actions, authorizations, or funded projects that would appreciably diminish the value of the known habitat for the survival and recovery of the species may also jeopardize its continued existence. A jeopardy opinion would require formal agency