

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

RIN 1018-AU34

**Endangered and Threatened Wildlife and Plants; Proposed Designation of Critical Habitat for *Piperia yadonii* (Yadon's Piperia)****AGENCY:** Fish and Wildlife Service, Interior.**ACTION:** Proposed rule.

**SUMMARY:** We, the U.S. Fish and Wildlife Service (Service), propose to designate critical habitat for the endangered *Piperia yadonii* (Yadon's piperia) pursuant to the Endangered Species Act of 1973, as amended (Act). In total, approximately 2,306 acres (ac) (930 hectares (ha)) fall within the boundaries of the proposed critical habitat designation. The proposed critical habitat is located in Monterey County, California.

**DATES:** We will accept comments from all interested parties until December 18, 2006. We must receive requests for public hearings, in writing, at the address shown in the **ADDRESSES** section by December 4, 2006.

**ADDRESSES:** If you wish to comment, you may submit your comments and materials concerning this proposal by any one of several methods:

1. You may submit written comments and information to the Field Supervisor, U.S. Fish and Wildlife Service, Ventura Fish and Wildlife Office (VFWO), 2493 Portola Road, Suite B, Ventura, California 93003.

2. You may hand-deliver written comments to our Ventura Fish and Wildlife Office, at the above address.

3. You may send comments by electronic mail (e-mail) to [fw8piya@fws.gov](mailto:fw8piya@fws.gov). Please see the Public Comments Solicited section below for file format and other information about electronic filing.

4. You may fax your comments to (805) 644-3958.

5. You may go to the Federal eRulemaking Portal: <http://www.regulations.gov>.

Comments and materials received, as well as supporting documentation used in the preparation of this proposed rule, will be available for public inspection, by appointment, during normal business hours at our VFWO, at the above address (telephone (805) 644-1766).

**FOR FURTHER INFORMATION CONTACT:** Diane Noda, Field Supervisor, VFWO, at the above address (telephone (805) 644-

1766, ext. 319; facsimile (805) 644-3958).

**SUPPLEMENTARY INFORMATION:****Public Comments Solicited**

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

(1) The reasons any habitat should or should not be determined to be critical habitat as provided by section 4 of the Act, including whether the benefit of designation will outweigh any threats to the species due to designation;

(2) Specific information on the amount and distribution of *Piperia yadonii* habitat, what areas should be included in the designations that were occupied at the time of listing and contain the features that are essential for the conservation of the species and why, and what areas that were not occupied at the listing are essential to the conservation of the species and why;

(3) Our mapping methodology and criteria used for determining critical habitat as well as any additional information on features essential for the conservation of the species;

(4) Land use designations and current or planned activities in the subject areas and their possible impacts on proposed critical habitat;

(5) The existence of conservation agreements, management plans, or strategies that should be considered in determining whether to exclude lands from the designation. If the Secretary determines the benefits of excluding lands outweigh the benefits of including them, lands will be excluded from the final critical habitat designation;

(6) Any foreseeable economic, national security, or other potential impacts resulting from the proposed designation and, in particular, any impacts on small entities; and

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

If you wish to comment, you may submit your comments and materials concerning this proposal by any one of several methods (see **ADDRESSES** section). Please submit electronic comments to [fw8piya@fws.gov](mailto:fw8piya@fws.gov) in ASCII

file format and avoid the use of special characters or any form of encryption. Please also include "Attn: Yadon's piperia" in your e-mail subject header and your name and return address in the body of your message. If you do not receive a confirmation from the system that we have received your e-mail message, contact us directly by calling our VFWO at phone number (805) 644-1766, ext. 333. Please note that the e-mail address [fw8piya@fws.gov](mailto:fw8piya@fws.gov) will be closed out at the termination of the public comment period.

Our practice is to make comments, including names and home addresses of respondents, available for public review during regular business hours. Individual respondents may request that we withhold their names and/or home addresses, etc. but if you wish us to consider withholding this information you must state this prominently at the beginning of your comments. In addition, you must present a rationale for withholding this information. This rationale must demonstrate that disclosure would constitute a clearly unwarranted invasion of privacy. Unsupported assertions will not meet this burden. In the absence of exceptional, documentable circumstances, this information will be released. We will always make submissions from organizations or businesses, and from individuals identifying themselves as representatives of or officials of organizations or businesses, available for public inspection in their entirety. Comments and materials received will be available for public inspection, by appointment, during normal business hours at the U.S. Fish and Wildlife Service Office at the above address.

**Role of Critical Habitat in Actual Practice of Administering and Implementing the Act**

Attention to and protection of habitat is paramount to successful conservation actions. The role that designation of critical habitat plays in protecting habitat of listed species, however, is often misunderstood. As discussed in more detail below in the discussion of exclusions under section 4(b)(2) of the Act, there are significant limitations on the regulatory effect of designation under section 7(a)(2) of the Act. In brief, (1) designation provides additional protection to habitat only where there is a federal nexus; (2) the protection is relevant only when, in the absence of designation, destruction or adverse modification of the critical habitat would in fact take place (in other words, other statutory or regulatory protections, policies, or other factors relevant to

agency decision-making would not prevent the destruction or adverse modification); and (3) designation of critical habitat triggers the prohibition of destruction or adverse modification of that habitat, but it does not require specific actions to restore or improve habitat.

Currently, only 475 species, or 36 percent of the 1,311 listed species in the U.S. under the jurisdiction of the Service, have designated critical habitat. We address the habitat needs of all 1,311 listed species through conservation mechanisms such as listing, section 7 consultations, the section 4 recovery planning process, the section 9 protective prohibitions of unauthorized take, section 6 funding to the States, the section 10 incidental take permit process, and cooperative, nonregulatory efforts with private landowners. The Service believes that it is these measures that may make the difference between extinction and survival for many species.

In considering exclusions of areas proposed for designation, we evaluated the benefits of designation in light of *Gifford Pinchot Task Force v. U.S. Fish and Wildlife Service*, 378 F.3d 1059 (9th Cir 2004) (hereinafter *Gifford Pinchot*). In that case, the Ninth Circuit invalidated the Service's regulation defining "destruction or adverse modification of critical habitat." In response, on December 9, 2004, the Director issued guidance to be considered in making section 7 adverse modification determinations. This proposed critical habitat designation does not use the invalidated regulation in our consideration of the benefits of including areas in this proposed designation. The Service will carefully manage future consultations that analyze impacts to designated critical habitat, particularly those that appear to be resulting in an adverse modification determination. Such consultations will be reviewed by the Regional Office prior to finalizing to ensure that an adequate analysis has been conducted that is informed by the Director's guidance.

On the other hand, to the extent that designation of critical habitat provides protection, that protection can come at significant social and economic cost. In addition, the mere administrative process of designation of critical habitat is expensive, time-consuming, and controversial. The current statutory framework of critical habitat, combined with past judicial interpretations of the statute, make critical habitat the subject of excessive litigation. As a result, critical habitat designations are driven by litigation and courts rather than biology, and made at a time and under

a timeframe that limits our ability to obtain and evaluate the scientific and other information required to make the designation most meaningful.

In light of these circumstances, the Service believes that additional agency discretion would allow our focus to return to those actions that provide the greatest benefit to the species most in need of protection.

#### **Procedural and Resource Difficulties in Designating Critical Habitat**

We have been inundated with lawsuits for our failure to designate critical habitat, and we face a growing number of lawsuits challenging critical habitat determinations once they are made. These lawsuits have subjected the Service to an increasing series of court orders and court-approved settlement agreements, which complying with now consumes nearly the entire listing program budget. This leaves the Service with little ability to prioritize its activities to direct scarce listing resources to the listing program actions with the most biologically urgent species conservation needs.

The consequence of the critical habitat litigation activity is that limited listing funds are used to defend active lawsuits, to respond to Notices of Intent (NOIs) to sue relative to critical habitat, and to comply with the growing number of adverse court orders. As a result, listing petition responses, the Service's own proposals to list critically imperiled species, and final listing determinations on existing proposals are all significantly delayed.

The accelerated schedules of court-ordered designations have left the Service with limited ability to provide for public participation or to ensure a defect-free rulemaking process before making decisions on listing and critical habitat proposals, due to the risks associated with noncompliance with judicially imposed deadlines. This in turn fosters a second round of litigation in which those who fear adverse impacts from critical habitat designations challenge those designations. The cycle of litigation appears endless, and is very expensive, thus diverting resources from conservation actions that may provide relatively more benefit to imperiled species.

The costs resulting from the designation include legal costs, the cost of preparation and publication of the designation, the analysis of the economic effects and the cost of requesting and responding to public comment, and in some cases the costs of compliance with the National Environmental Policy Act (NEPA).

These costs, which are not required for many other conservation actions, directly reduce the funds available for direct and tangible conservation actions.

#### **Background**

It is our intent to discuss only those topics directly relevant to the designation of critical habitat in this proposed rule and that clarify the species description and biology provided in the final listing rule. For more information on *Piperia yadonii*, refer to the final listing rule published in the **Federal Register** on August 12, 1998 (63 FR 43100).

*Piperia yadonii* is a perennial herb in the Orchidaceae (Orchid family), which produces one or two basal strap-shaped leaves that grow from an underground tuber (the storage organ which persists when the species is not present aboveground). *P. yadonii* leaves emerge in late fall or winter, after the soils are saturated by the onset of California's wet season rains. Small tubers produce a single leaf, which may resemble a grass blade when small (Graff 2006, p. 12). Larger tubers produce two basal leaves, often 4 to 6 inches (10 to 15 centimeters (cm)) long and about 1 inch (2 to 3 cm) wide, at maturity. Emergence of the single flowering stalk above ground typically begins in April (Doak and Graff 2001, p. 2). As the inflorescence grows to its full height, usually 8 to 20 inches (20 to 50 cm) tall, the plant's basal leaves wither (Morgan and Ackerman 1990, p. 209). Flowering occurs in the summer, typically from June to August. The average number of flowers recorded on inflorescences in a recent study was 56 (Doak and Graff 2001, p. 3). Similar to other orchid species, only a small proportion of the plants that produce leaves in a given year will produce an inflorescence. Recorded flowering rates for *P. yadonii* plants that have one or more leaves range from 0.4 to 22 percent, and vary by site and year (Allen 1996, unpaginated; Doak and Graff 2001, pp. 14–15; EcoSystems West Consulting Group (Ecosystems West) 2006, pp. 71–72). Like other orchid species, the ability to produce flowering stalks may be a function of tuber size (indicative of energy reserves), rather than age (Wells 1981, pp. 291–293; Rasmussen 1995, pp. 197–200). Consequently, an individual that flowers in one year may not be able to flower in subsequent years.

*Piperia yadonii* requires pollinators to produce seeds. Flowers that are not visited by pollinators do not produce seed. Flowers that are visited by pollinators and receive self pollen from other flowers on the same plant will produce seeds, although they produce

significantly fewer seeds than result from cross pollinations between plants. This is an expression of inbreeding depression in seed set (Doak and Graff 2001, pp. 12–15). The presence of inbreeding depression in later stages, such as seed germination and establishment, has not been studied in *P. yadonii*. In Monterey pine (*Pinus radiata*) forest habitats, the most abundant insects that have been collected and observed visiting *P. yadonii* flowers are nocturnal short-tongued moths in the families Pyralidae, Geometridae, Noctuidae, and Pterophoridae. Six moth species in these families had *Piperia yadonii* pollen attached to their bodies, confirming that they transport, and can potentially transfer, pollen between flowers (Doak and Graff 2001, pp. 8–25). Nocturnal moths are a commonly reported pollinator of other *Piperia* species (Ackerman 1977a, pp. 256–257). None of the nocturnal moth visitors are thought to be rare. Of the moths carrying *P. yadonii* pollen, two species are known to be generalist feeders in the larval stage and are found on a variety of native plants and agricultural crops. Three species have more exclusive larval feeding habits, having been recorded on native shrubs (e.g., coyote brush (*Baccharis pilularis*); California lilac (*Ceanothus spp.*)) and members of the mint family (*Lamiaceae*) (Doak and Graff 2001, pp. 8–25; Graff 2005). A bumble bee (*Bombus sp.*) and one mosquito (species unknown) were also collected among *P. yadonii* flowering plants and had pollen attached to their bodies (Doak and Graff 2001, pp. 8–25; Graff 2005). Bumblebees have been identified as a diurnal visitor by other observers, as well (Yadon 2001, unpaginated). In maritime chaparral, rates of insect visitation to *Piperia yadonii* populations were so low that no pollinator data was collected (Doak and Graff 2001, pp. 8–37). Nonnative earwigs (*Forficula auricularia*) have been documented to consume substantial amounts of pollen from *P. yadonii* flowers in several populations found in Monterey pine forest (Doak and Graff 2001, p. 9). It is not known if this pollen theft results in depressed seed set.

Each successfully maturing seed capsule of *Piperia yadonii* can contain hundreds of seeds, so a single plant can produce several thousand seeds (Doak and Graff 2001, pp. 13–31). Orchid seeds are typically minute, with a large volume of air compared to the size of the embryo. These attributes make the seeds particularly buoyant, promoting wind dispersal (Healey et al. 1980, pp.

508, 516; Rasmussen 1995, pp. 7–10). The distance seeds routinely travel is unknown. In a study of an epiphytic (tree growing) orchid, most seeds landed within meters of the plant (Ackerman et al. 1996, pp. 195–197). However, others have noted that orchids may be one of the earliest colonizers of new island habitats hundreds of kilometers from other land masses, suggesting that occasional very long distance dispersal can occur (Healy et al. 1980, p. 516). Data on many terrestrial orchids indicates low genetic differentiation between populations, suggesting that either seeds or pollen are moving between populations (Ackerman 1997b).

In general, orchid seeds lack a sufficient internal food source to sustain a germinating seedling. Instead, their nutritional needs are fulfilled by an association with a soil fungus (a mycorrhizal association) (Hadley 1982, pp. 96–101). Nothing specific has been published on the mycorrhizal fungal symbionts of *Piperia yadonii*, nor their distribution in the forest and maritime chaparral soils where this orchid grows. In other temperate North American orchid species, the primary fungal associates are described as belonging to the genus *Rhizoctonia* or being *Rhizoctonia*-like fungi (Hadley 1982, pp. 96–99; Hadley and Pegg 1989, pp. 61–63). The specificity of the association between orchids and their mycorrhizal fungi is a field of active study (e.g., Otero et al. 2002, pp. 1852–1858). No broad consensus is apparent on whether or not the distributions of temperate North American orchids might be limited by their dependence on specific fungal symbionts. Once the mycorrhizal association between the orchid seed and its fungal partner is established, the orchid tuber continues to develop underground. If not established, orchid seeds typically fail to germinate or seedlings die at an early subterranean phase of development (Rasmussen and Whigham 1998, pp. 61–63). The length of time needed for the subterranean *P. yadonii* tuber to develop, prior to the emergence of the first leaf above ground, is unknown. In other orchid species, this subterranean phase lasts from 1 to 15 years, with 2 to 4 years the most common among those reported (Wells 1981, pp. 282–283; Rasmussen 1995, pp. 197–200; Rasmussen and Whigham 1998, p. 50).

In addition to its essential mycorrhizal fungal associates, *Piperia yadonii* is also affected by other fungal infections (tentatively identified as *Rhizoctonia spp.*) that can result in reproductive failure. In a study of several populations, fewer of the diseased plants set seed, compared to

healthy plants, and diseased plants set significantly fewer seed than healthy plants (Doak and Graff 2001, p. 14). Populations differed in their disease incidence. In 2003 at Manzanita County Park, of the 100 flowering individuals sampled, 94 percent appeared affected by disease and consequently set no to little fruit (2 to 4 small seed capsules) (Graff 2003). Of 90 *P. yadonii* plants that flowered and were examined on the Monterey Peninsula, about 9 percent exhibited tip wilt and complete reproductive failure (EcoSystems West 2006, p. 57).

Orchid seeds are not known to have any physical dormancy mechanisms (Baskin and Baskin 1998, pp. 146–147; 482–484) and are thought to be relatively short-lived, although recent research indicates that some species may form persistent soil seedbanks (Whigham et al. 2006, pp. 24–30). After seed production, mature *Piperia yadonii* plants persist as dormant tubers in the soil through the late summer and early fall. The tuber is the primary form of persistence from year to year and it likely regenerates annually during the growing season, as in related orchids (USFWS 1996, p. 7). Leaves emerge again above ground after the first significant fall rains saturate the soil. No evidence of asexual reproduction through tuber division has been reported or was present in an examination of 13 excavated tubers (Doak and Graff 2001, pp. 12–17).

Following emergence of the first leaf above ground, an unknown number of years are required before the tubers are large enough to flower. Annually, a proportion of the tubers in any given population remain dormant underground, producing neither leaves nor flowers. This prolonged dormancy appears to be fairly common among orchids, and in some species, individuals remain dormant for multiple years before appearing again above ground (Hutchings 1987, pp. 715–716; Kery et al. 2005, pp. 311–319). We have no demographic data on the proportion of plants that actually reach flowering size in their lifetime or the average number of years an individual may flower in a life time. The lifespan of *Piperia yadonii* has not been studied. Few studies of other temperate terrestrial orchids have tracked populations for a decade or more; those that have, note that some individuals continued to appear above ground for the duration of the 8 to 15 years of study (Wells 1981, pp. 289–292; Hutchings 1987, pp. 719–720; USFWS 1996, p. 9).

Within occurrences, *Piperia yadonii* plants often grow in dense clusters, sometimes containing hundreds of

plants. Up to 70 plants per square meter were recorded during a habitat characterization in Monterey pine forest (EcoSystems West 2006, p. 55). Allen (1996, unpaginated) noted that the continuous canopy of Monterey pine forest enables more continuous plant aggregations than maritime chaparral, where the chaparral shrubs are separated by bare ground.

The recorded range of *Piperia yadonii* extends from the hills around Prunedale and in the Elkhorn Slough watershed, south to the Palo Colorado Canyon area of the Big Sur coast, in northern Monterey County, California. This is the same geographic range known at the time of listing eight years ago (63 FR 43100). Surveys conducted within this range since that time have provided more detailed information on the distribution of plants at specific locations and about annual variability in plant expression above ground.

Allen (1996, unpaginated) estimated that about 70 percent of the total known population of *Piperia yadonii* is found near the center of this range in the Monterey pine forest of the Monterey Peninsula. Recent surveys on the Monterey Peninsula identified greater concentrations of *P. yadonii* in forested areas of the Monterey Peninsula (Zander Associates and WWD Corporation 2004, all pp.; EcoSystems West 2005, p. 3), so the proportion of plants in that area may be greater. While censuses of comparable detail to those recently conducted on the Monterey Peninsula have not been completed in maritime chaparral, Allen's estimate is not likely to have overestimated the importance of the Monterey Peninsula forests to this species. *P. yadonii* is primarily found in two habitat types, central maritime chaparral and Monterey pine forest. It also grows in the Bishop Pine—Gowen cypress (*Pinus muricata*—*Cupressus goveniana* ssp. *goveniana*) forest community which occurs within the Monterey pine forest on the Monterey Peninsula and at Point Lobos Ranch.

*Piperia yadonii* is present in some locations where disturbance has occurred previously, such as abandoned dirt roads, old trails or trail margins, and cut slopes created by past road construction (Allen 1996, unpaginated; Doak and Graff 2001, pp. 4–5; Graff et al. 2003), but that are not affected by ongoing foot and vehicle traffic. Graff (2006, p. 5) has noted that when surrounding forest canopies or undergrowth is dense, *P. yadonii* may be primarily found along trails and abandoned roads, presumably in response to greater available light levels.

The primary threats to *Piperia yadonii* are loss and fragmentation of habitat

from commercial, agricultural, residential, and intensive recreational development (e.g., golf courses, manicured ball fields). The historical distribution of *P. yadonii* prior to being described in 1990 is unknown, but it likely included much of the historical extent of the Monterey pine forest where the species is presently known to occur. Logging of the Monterey pine forest began in the late 1700s with the arrival of the Spanish in the Monterey Bay area; over the last 200 years, the forest continued to be logged and converted to agriculture and other human uses. Recent estimates of the historical and current extent of Monterey pine forest indicate that 37 to 50 percent of the Monterey pine forest once found in the Monterey region has been eliminated (Huffman and Associates 1994, p. iii; Jones and Stokes Associates 1994a, pp. 8–14; Monterey County Planning and Building Inspection Department (Monterey County) 2005, p. 3–72). On the Monterey Peninsula, the proportion of Monterey pine forest eliminated is greater. On those marine terraces and old dune soils that underlie most of the Peninsula, less than 20 percent of the historical extent of Monterey pine forest is estimated to remain, much of it in fragmented and increasingly isolated stands (Jones and Stokes Associates 1994a, pp. 14, 34–37).

Although no comparable acreage estimates have been made for maritime chaparral habitats in the northern distribution of *P. yadonii*, these shrublands have been reduced and fragmented by rural residential development and conversion of native vegetation to row crops on deeper valley soils. The extent of maritime chaparral destruction in the Monterey Bay area was recognized and discussed 30 years ago (Griffin 1978, p. 78). To the west of Prunedale, most development is apparent in the valleys, leaving the vegetation on the shallow soils of ridgelines relatively intact, but isolated (aerial photography; Van Dyke et al. 2001, pp. 221, 226–227). North and east of Prunedale, greater amounts of residential development appear to have occurred on the ridgetops. Consequently, maritime chaparral patches exist there as smaller fragments than they do to the west (mapping by Van Dyke and Holl 2003).

Maritime chaparral in the Elkhorn-Prunedale region of Monterey County is also changing as a result of plant succession and an absence of fire. A recent study of maritime chaparral sites first sampled 30 years ago found that changes in community composition, seedling abundance, and canopy cover are occurring after a 70-year absence of

fire. Shrub diversity appears to be declining and canopy cover is increasing as coast live oak (*Quercus agrifolia*) or large canopied manzanitas become dominant (Van Dyke et al. 2001, pp. 225–227). This conversion is likely to be slower in the shallow ridgetop soils where *Piperia yadonii* occurs than it is on slopes and more mesic (moist) sites, but coast live oak are present now even on these ridgelines (Van Dyke et al. 2001, pp. 226–227). Continued fragmentation and isolation of ridgetop maritime chaparral habitats in a matrix of residential development will reduce the likelihood that fire can be used as a management tool in these habitats in the future.

Other threats that have been identified include invasive nonnative plant species and factors that reduce reproduction, such as herbivory, disease, and mowing for fuel reduction purposes. The most common invasive plant species found in *Piperia yadonii* habitat throughout its range are jubata or pampass grass (*Cortaderia jubata*) and French broom (*Genista monspessulana*). These are large plants that can form high dense canopies, reducing light and space. Jubata grass invades openings in maritime chaparral in the Elkhorn-Prunedale region and the Huckleberry Hill Reserve on the Monterey Peninsula. French broom is more common in Monterey pine forest habitats and was dense in *Piperia yadonii* occurrences at the Naval Postgraduate School and Point Lobos Ranch, when abatement was initiated (Graff 2006, appendices IV, VI; Greening Associates 1999, p. 4). Other invasive nonnative plants documented from occurrences of *P. yadonii* include rattlesnake grass (*Brizia maxima*) and iceplant (*Carpobrotus edulis*) (Allen 1996; Doak and Graff 2001, pp. 4–5). Approximately 20 invasive nonnative plant species have been identified spreading in the Monterey pine forests in Monterey County (Rogers 2002, pp. 58–59).

Herbivory of *Piperia yadonii* leaves and flowering stalks by deer and rabbits has been frequently reported (Allen 1996, unpaginated; Yadon 1997; Doak and Graff 2001, pp. 10–17). Deer are abundant on the Monterey Peninsula and reports from a decade ago estimated that herbivory removed about 85 percent of the flowering stalks of uncaged plants (Allen 1996, unpaginated). In a study of reproduction in seven occurrences, herbivory and disease combined caused reproductive failure in about 73 percent of monitored plants (Doak and Graff 2001, p. 17). More recent herbivory estimates from both maritime chaparral and Monterey pine forest range from 0 percent to 78

percent, with the highest herbivory rates (73 percent in 2003, 78 percent in 2005) in the Monterey pine forest (Graff 2006, p. 11, Appendix VI). EcoSystems West (2006, pp. 54–58) reported that about 26 percent of vegetative *P. yadonii* and about 62 to 70 percent of flowering stalks were browsed in Monterey pine forest on the Monterey Peninsula.

Mowing for fuel reduction purposes has repeatedly removed the flowering stalks of some *Piperia yadonii* occurrences in the Monterey Peninsula region (Yadon 1997, 2000, unpaginated; Environmental Science Associates 2004, pp. 3–14, 3–15, 3–16). Expanded fuel breaks are planned for the maritime chaparral in which one occurrence is found at Manzanita Park.

### Previous Federal Actions

For more information on previous Federal actions concerning *Piperia yadonii*, refer to the final listing rule published in the **Federal Register** on August 12, 1998 (63 FR 43100). At the time of listing, we found the designation of critical habitat for *P. yadonii* to be not prudent because: (1) There would be no additional benefit beyond listing from doing so, and (2) it would increase the risk of overcollection. In August 2004, we published a recovery plan for *P. yadonii* and four other plant taxa from Monterey County, California (USFWS 2004).

On August 13, 2004, our decision not to designate critical habitat for *Piperia yadonii* was challenged in *Center for Biological Diversity and the California Native Plant Society v. Norton* (Case No. C 04–3240 (N.D.Cal.)). On December 21, 2004, the Court issued a settlement agreement, in which the Service agreed to submit for publication a proposal to withdraw the existing “not prudent” determination together with a new proposed critical habitat determination for *P. yadonii* by October 5, 2006.

### Prudency Determination

Section 4(a)(3) of the Act and its implementing regulations (50 CFR 424.12) require that, to the maximum extent prudent and determinable, we designate critical habitat at the time a species is listed as endangered or threatened. Our regulations at 50 CFR 424.12(a)(1) state that the designation of critical habitat is not prudent when one or both of the following situations exist: (1) The species is threatened by taking or other activity and the 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 our August 12, 1998 final rule (63 FR 43100), we determined

that designation of critical habitat for *P. yadonii* was not prudent based on both reasons. Specifically, we stated that *P. yadonii* occurs predominantly on private lands where Federal involvement is unlikely. Furthermore, we stated that a majority of *P. yadonii* individuals are on lands of a single private landowner, who commissioned the studies that documented the species’ range and population status; because this landowner is well aware of the presence and location of the species on its property, there would be no additional benefit to the species from providing the same location information to the landowner.

In addition, we stated that publication of precise maps and descriptions of critical habitat would make these plants more vulnerable to incidents of vandalism which could contribute to the decline of the species and therefore such designation would provide little conservation benefit over that provided by listing. However, in the past few years, several of our determinations that the designation of critical habitat would not be prudent have been overturned by court decisions. For example, in *Conservation Council for Hawaii v. Babbitt*, the United States District Court for the District of Hawaii ruled that the Service could not rely on the “increased threat” rationale for a “not prudent” determination without specific evidence of the threat to the species at issue (2 F. Supp. 2d 1280 [D. Hawaii 1998]).

Additionally, in *Natural Resources Defense Council v. U.S. Department of the Interior*, the United States Court of Appeals for the Ninth Circuit ruled that the Service must balance, in order to invoke the “increased threat rationale,” the threat against the benefit to the species of designating critical habitat (113 F. 3d 1121, 1125 [9th Cir. 1997]).

We have reconsidered our evaluation of the threats posed by vandalism and overcollection in the prudency determination. Since the time of listing in 1998, we have gathered information indicating that populations of *Piperia yadonii* continue to be directly and indirectly affected by destruction and alteration of habitat due to residential development. However, we have no credible information that this species has been threatened from vandalism and overcollection, nor can we say that critical habitat would not be a benefit to the species. Accordingly, we withdraw our previous determination that the designation of critical habitat is not prudent for *P. yadonii*, and determine that the designation of critical habitat is prudent for *P. yadonii*. At this time, we have sufficient information necessary to identify specific areas that contain

features essential to the conservation of the species and are, therefore, proposing critical habitat (see “Methods” sections below for a discussion of information used in our reevaluation).

### 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 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, as defined under section 3 of the Act means to use and the use of all methods and procedures that are necessary to bring any endangered species or threatened species to the point when measures provided pursuant to the Act are no longer necessary. Such methods and procedures include, but are not limited to, all activities associated with scientific resources management such as research, census, law enforcement, habitat acquisition and maintenance, propagation, live trapping, and transplantation, and, in the extraordinary case where population pressures within a given ecosystem cannot be otherwise relieved, may include regulated taking.

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

To be included in a critical habitat designation, the habitat within the area occupied by the species must first have features that are essential to the conservation of the species. Critical habitat designations identify, to the extent known using the best scientific data available, habitat areas that provide essential life cycle needs of the species (*i.e.*, areas on which are found the

primary constituent elements, as defined at 50 CFR 424.12(b)).

Habitat occupied at the time of listing may be included in critical habitat only if the essential features thereon may require special management or protection. Thus, we do not include areas where existing management is sufficient to conserve the species. (As discussed below, such areas may also be excluded from critical habitat pursuant to section 4(b)(2).) Areas outside the geographic area occupied by the species at the time of listing may only be included in critical habitat if they are essential for the conservation of the species. Accordingly, when the best available scientific data do not demonstrate that the conservation needs of the species require additional areas, we will not designate critical habitat in areas outside the geographical area occupied by the species at the time of listing. An area currently occupied by the species but was not known to be occupied at the time of listing will likely, but not always, be essential to the conservation of the species and, therefore, typically included in the critical habitat designation.

The Service's Policy on Information Standards Under the Endangered Species Act, published in the **Federal Register** on July 1, 1994 (59 FR 34271), and Section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001 (Pub. L. 106-554; H.R. 5658) and the associated Information Quality Guidelines issued by the Service, provide criteria, establish procedures, and provide guidance to ensure that decisions made by the Service represent the best scientific data available. They require Service biologists to the extent consistent with the Act and with the use of the best scientific data available, to use primary and original sources of information as the basis for recommendations to designate critical habitat. When determining which areas are critical habitat a primary source of information is generally the listing package for the species. Additional information sources include the recovery plan for the species, articles in peer-reviewed journals, conservation plans developed by States and counties, scientific status surveys and studies, biological assessments, and other unpublished materials and expert opinion or personal knowledge. All information is used in accordance with the provisions of Section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001 (Pub. L. 106-554; H.R. 5658) and the associated Information Quality Guidelines issued by the Service.

Section 4 of the Act requires that we designate critical habitat on the basis of the best scientific data available. Habitat is often dynamic, and species may move from one area to another over time. Furthermore, we recognize that designation of critical habitat may not include all of the habitat areas that may eventually be determined to be necessary for the recovery of the species. For these reasons, critical habitat designations do not signal that habitat outside the designation is unimportant or may not be required for recovery.

Areas that support populations, but are outside the critical habitat designation, will continue to be subject to conservation actions implemented under section 7(a)(1) of the Act and to the regulatory protections afforded by the section 7(a)(2) jeopardy standard, as determined on the basis of the best available information at the time of the action. Federally funded or permitted projects affecting listed species outside their designated critical habitat areas may still result in jeopardy findings in some cases. Similarly, critical habitat designations made on the basis of the best available information at the time of designation will not control the direction and substance of future recovery plans, habitat conservation plans, or other species conservation planning efforts if new information available to these planning efforts calls for a different outcome.

#### Methods

As required by section 4(b)(2) of the Act, we use the best scientific data available in determining areas that contain features that are essential to the conservation of *Piperia yadonii*. This includes information from the final listing rule; data from research and survey observations published in peer-reviewed articles; reports and survey forms prepared for Federal, state, local agencies, and private corporations; site visits; regional Geographic Information System (GIS) layers, including soil and species coverages; and data submitted to the California Natural Diversity Database (CNDDB). We have also reviewed available information that pertains to the ecology, life history, and habitat requirements of this species. This material included information and data in peer-reviewed articles, reports of monitoring and habitat characterizations, reports submitted during section 7 consultations, our recovery plan, and information received from local species experts. We are not proposing to designate as critical habitat any areas outside the geographical area presently occupied by the species.

The range of *Piperia yadonii* extends from the Los Lomos area near the Santa Cruz County border in the north to approximately 15 miles (25 kilometers) south of the Monterey Peninsula near Palo Colorado Canyon (Morgan and Ackerman 1990, 208-210; Allen 1996, unpaginated). This range has been divided into the following 5 geographic areas for the purposes of recovery planning efforts: (1) The Monterey Peninsula, (2) the area interior of the Monterey Peninsula, (3) northern Monterey County-Prunedale-Elkhorn, (4) the Point Lobos Ranch area, and (5) the Palo Colorado Canyon area (USFWS 2004, pp. 16-26, 50-52). We make reference to these geographic areas when describing the locations of *P. yadonii* populations and lands proposed for critical habitat designation.

#### Primary Constituent Elements

In accordance with section 3(5)(A)(i) of the Act and regulations at 50 CFR 424.12, in determining which areas to propose as critical habitat, we consider those physical and biological features (PCEs) that are essential to the conservation of the species, and within areas occupied by the species at the time of listing, that may require special management considerations and protection. These include, but are not limited to space for individual and population growth and for normal behavior; food, water, air, light, minerals, or other nutritional or physiological requirements; cover or shelter; sites for breeding, reproduction, and rearing (or development) of offspring; and habitats that are protected from disturbance or are representative of the historic geographical and ecological distributions of a species.

The specific PCEs required for *Piperia yadonii* are derived from the biological needs of *P. yadonii* as described in the Background section of this proposal and below.

#### *Space for Individual and Population Growth, Including Sites for Seed Dispersal and Germination*

*Piperia yadonii* depends on adequate space for growth, reproduction between near and far neighbors, and for movement of seeds via wind to unoccupied microsites within populations, to population boundaries, and to new sites. Once dispersed, seeds must settle into sites with characteristics appropriate for germination, including the presence of fungal associates necessary for post-germination development. Maritime chaparral and pine forest communities in which *P. yadonii* and its fungal symbionts occur, exhibit considerable

variability in vegetation density, species composition, and unvegetated gaps such that microsites appropriate for germination and growth are distributed unevenly throughout this mosaic.

Plant communities such as maritime chaparral, Monterey pine forest, and coast live oak woodland are dynamic; in the absence of fire, maritime chaparral succeeds to oak woodland in mesic sites and to low-diversity stands of large old-age manzanitas in drier sites (Van Dyke et al. 2001). The patchy distribution of *P. yadonii* in a given forest or chaparral site in a single year is a reflection of the habitat conditions at that particular time. Habitat sites that contain the same soil characteristics and plant community may become suitable and occupied in future decades as vegetation structure changes due to shrub or tree death and growth or herbivore population sizes or movements. In the same manner, a currently occupied location may diminish in value due to these changing conditions. The mosaic of vegetation height, density, and species composition in a given area provides opportunities for gene flow between occurrences of *P. yadonii* through seed dispersal on prevailing winds, and promotes continuation of ecosystem processes, such as the biological interactions necessary to maintain forest canopy and dominant manzanita species, and pollinator assemblages.

Maintaining large and small populations of *Piperia yadonii* is essential for the long-term conservation of the species. Large occurrences of plants and those with higher densities of individuals, are more likely to attract insect pollinators necessary for the production of viable seed and promote gene flow (Kunin 1997, p. 232–233), to withstand periodic extreme environmental stresses (e.g., drought, disease), and may act as important “source” populations to allow recolonization of surrounding areas following periodic extreme environmental stresses. Small populations of plants may serve as corridors for gene flow between larger populations, and may harbor greater levels of genetic diversity than predicted for their size (Lesica and Allendorf 1995, pp. 172–175).

#### *Nutritional and Physiological Requirements, Including Light and Soil Requirements*

*Piperia yadonii* occurs in maritime chaparral, a coastal shrub association dominated by endemic species of manzanitas. It is most often found on ridges where exposed sandstone or decomposed granitic soils are shallow

and where the dominant manzanita species are low-growing (preliminary measurements indicate an average of 6 inches (15 cm) tall (Graff 2006, pp. 5–6)), allowing *P. yadonii* leaves to receive filtered sun and the inflorescence to extend above the decumbent manzanita branches. In the Elkhorn-Prunedale area, the transition from the low-growing manzanitas of the ridgetops to the surrounding slopes that support deeper soils and higher vegetation canopies is often abrupt (Van Dyke et al. 2001, p. 222).

Although *Piperia yadonii* grows among manzanitas, the specific manzanita species vary among the geographic areas within the species range. Hooker's manzanita (*Arctostaphylos hookeri* ssp. *hookeri*) is the manzanita species with which *P. yadonii* most commonly grows at its most northern distribution in the hills around Prunedale. Pajaro manzanita (*Arctostaphylos pajaroensis*) and chamise (*Adenostoma fasciculatum*) are other dominant shrubs in maritime chaparral there. On and south of the Monterey Peninsula, several manzanitas (*A. hookeri*, *A. tomentosa*, and *A. glandulosa* ssp. *zacaensis*) are reportedly the dominant shrubs among which it grows (Graff 2006, p. 4; EcoSystems West 2006, p. 64). Other species of manzanitas (*A. glandulosa*) and manzanita hybrids are the dominant low-growing forms at the southernmost occurrence of *P. yadonii* near Palo Colorado Canyon, where Hooker's manzanita is absent (Norman 1995, Graff 2006, p. 4).

In Monterey pine forest, *Piperia yadonii* grows through pine needle duff where the native herbaceous vegetation cover is typically sparse, but diverse, and the Monterey pine canopy is of moderate density (20 to 70 percent, on the Monterey Peninsula), providing filtered sunlight to the forest floor (EcoSystems West 2006, pp. 43, 62–68). The understory plant species most frequently associated with *P. yadonii* in the Monterey pine forest are the perennial herb common sanicle (*Sanicula laciniata*), leafy bent grass (*Agrostis pallens*), and spindly forms of bush monkey flower (*Mimulus aurantiacus*). In a habitat characterization of *P. yadonii* on the Monterey Peninsula, microsites occupied by *P. yadonii* had five times greater cover by other native geophytes (perennial plants with underground storage organs, such as bulbs, tubers or corms), such as golden brodiaea (*Tritelia ixiodes*), blue dicks (*Dichelostemma capitatum*), and mariposa lilies (*Calochortus* spp.) than did microsites lacking *P. yadonii*. Where a maritime

chaparral understory exists with scattered pines, *P. yadonii* occurs with other native herbs in gaps between the shrubs. It occurs in similar gaps associated with trails and fire roads in the Bishop pine—Gowen cypress forest stand within the Monterey pine forest on the Monterey Peninsula. It is not typically found in areas with a coast live oak canopy or those with high understory cover of shrubs or vines (EcoSystems West 2006, pp. 50–51, 62–68).

It is likely that in some areas the composition and cover of the Monterey pine herbaceous understory may remain relatively stable for decades due to abiotic factors (e.g., soils, hydrology) and in others these appropriate microhabitats may be ephemeral, disappearing as shrubs establish or increase in size and appearing elsewhere when understory fire; burrowing, trailing, and browsing animals; or shrub death, create new gaps. Areas should be of sufficient size to sustain the plant communities in which *Piperia yadonii* grows, and have appropriate soil moisture, and mycorrhizal associates (Perry et al. 1990, pp. 266–274; Field et al. 1999, pp. 1–3; Noss 2001, pp. 581–586).

Although soils supporting native mycorrhizal symbionts are believed to be a requirement for successful growth in *Piperia yadonii*, this is not a habitat feature easily observable in the field or about which we have specific information. Therefore, we have not included it as a primary constituent element of critical habitat, but assume that mycorrhizal associates will be represented in areas which encompass appropriate vegetation and soils.

*Piperia yadonii* occupies soils that are primarily characterized as sands, fine sands, and sandy loams by the Soil Conservation Service mapping (United States Department of Agriculture (USDA) 1978, maps; EcoSystems West 2006, pp. 23–26). Soils where *P. yadonii* occurs in the Monterey pine forest are typically characterized as sands, rather than loams and, on the Monterey Peninsula, soils are frequently underlain by a claypan that is 1 to 5 feet (0.3 to 1.5 m) below the surface (USDA 1978, pp. 53–54; Jones and Stokes Associates 1994b, pp. 16–21; EcoSystems West 2006, pp. 23–26). In a comparison of Monterey pine forest sites on and east of the Monterey Peninsula, *P. yadonii* was present in soils that tended to have lower organic matter, lower nutrient levels, and lower summer soil moisture levels than areas where it was absent (EcoSystems West 2006, pp. 43, 59–61). It is not known if *P. yadonii* actually prefers nutrient-poor soils or if it is

unable to compete with the denser understory vegetation found on more nutrient-rich soils. *P. yadonii* presence is correlated with the drier of the forest soils. It is not found in riparian areas or wetlands on the Monterey Peninsula (Allen, unpaginated; EcoSystems West 2006, pp. 59–61, 64–65).

In the maritime chaparral at its northern distributional limit, *Piperia yadonii* occurs on ridges supporting shallow, weathered, sandy soils with sandstone outcrops, where shrubs are small-statured (USDA 1978, pp. 10–11; Allen 1996 unpaginated; Graff 2006, p. 4). The average shrub canopy height in areas where *P. yadonii* occurs on these ridges is about 6 inches, according to preliminary sampling (Graff 2006, pp 5–6). Soils in this region are typically derived from weathered marine deposits. These sites often support cryptogamic soil crusts (soil surface communities primarily composed of cyanobacteria, lichens, mosses, and algae) (Graff 2006, p. 4). Cryptogamic crusts have been found to increase nutrient availability to plants, reduce erosion, improve plant-water relations, and provide germination and seedling growth sites (USDA 1997, pp. 8–11).

#### Pollinators

*Piperia yadonii* also requires pollinators for the production of viable seeds (PCE 2) (Doak and Graff 2001, p. 15). Size and configuration of plant populations, and associated flowering species, may influence the degree to which pollinators are attracted to an area (Sipes and Tepedino 1995, p. 937). The abundance of pollinators may affect reproductive success and persistence of small plant populations (Groom 1998, pp. 487–495). As a group, the reproductive output of orchids is limited by pollinator availability or activity (Tremblay et al. 2005, p. 24) and *P. yadonii* had reduced seed set under natural pollination as compared to manual pollination (Doak and Graff 2001, p. 12–13), an indication that seed set in this species may be pollinator limited. When populations of flowering individuals are small or flowering is restricted to a specific season, the individual plant population may not be able to sustain a population of insect pollinators by itself (Groom 1998, pp. 493–495); therefore, habitats that support a variety of other flowering plant species that provide nectar and pollen sources throughout spring and summer for pollinator populations are likely needed to sustain *P. yadonii* populations.

Doak and Graff (2001, p. 13) found that pollinators of *Piperia yadonii* are predominantly nocturnal, short-tongued

moths e.g., in the families Pyralidae, Geometridae, Noctuidae, Pterophoridae) that are most active between the hours of 8:30 p.m. and 10:00 p.m. Some of these pollinator species (e.g., *Agrotis ipsilon*, *Udea profundalis*) are generalists regarding larval host plants, but others (e.g., *Elpiste marcescens*, *Drepanulatrix baueraia*) feed on specific host plants in the larval stage (e.g., coyote bush, wild lilac, respectively). *P. yadonii* exists within several plant communities which sustain insect pollinators. They do so by supporting those flowering plant species needed by pollinators as larval hosts or nectar sources (e.g., coyotebush, wild lilac, and species in the mint family).

#### Primary Constituent Elements for *Piperia yadonii*

Pursuant to our regulations, we are required to identify the known physical and biological features (Primary Constituent Elements; PCEs) essential to the conservation of *Piperia yadonii*. All areas proposed as critical habitat for *P. yadonii* are occupied, within the species' historic geographic range, and contain sufficient PCEs to support life history functions for this species.

Based on our current knowledge of the life history, biology, and ecology of the species and the requirements of the habitat to sustain the essential life history functions of the species, we have determined that the *Piperia yadonii* PCEs are:

1. A vegetation structure providing filtered sunlight on sandy soils:
  - a. Pine forest (primarily Monterey pine) with a canopy cover of 20 to 70 percent, and a sparse herbaceous understory on Baywood sands, Narlon loamy fine sands, Sheridan coarse sandy loams, Tangair fine sands, Santa Lucia shaly clay loams and Chamise shaley clay loams underlain by a hardpan.
  - b. Maritime chaparral ridges with dwarfed shrub (primarily Hooker's manzanita) on Reliz shaly clay loams, Sheridan sandy loams, Narlon sandy loams, Arnold loamy sands and soils in the Junipero-Sur complex, Rock Outcrop-Xerorthents Association, and Arnold-Santa Ynez complex often underlain by rock outcroppings.
2. Presence of nocturnal, short-tongued moths in the families Pyralidae, Geometridae, Noctuidae, and Pterophoridae.

This proposed designation is designed for the conservation of those areas containing PCEs necessary to support the life history functions that were the basis for the proposal. Because not all life history functions require all the PCEs, not all proposed critical habitat will contain all the PCEs.

Units are designated based on sufficient PCEs being present to support one or more of the species's life history functions. Some units contain all PCEs and support multiple life processes, while some units contain only a portion of the PCEs necessary to support the species' particular use of that habitat. Where a subset of the PCEs is present at the time of designation, this rule protects those PCEs and thus the conservation function of the habitat.

#### Criteria Used To Identify Critical Habitat

As required by section 4(b)(2) of the Act, we use the best scientific data available in determining areas that contain features that are essential to the conservation of *Piperia yadonii*. This includes information from the final listing rule; data from research and survey observations published in peer-reviewed articles; reports and survey forms prepared for Federal, state, and local agencies, and private corporations; site visits; regional Geographic Information System (GIS) layers, including soil and species coverages; and data submitted to the California Natural Diversity Database (CNDDDB). We are not proposing to designate as critical habitat any areas outside the geographical area presently occupied by the species.

We have also reviewed available information that pertains to the ecology, life history, and habitat requirements of this species. This material included information and data in peer-reviewed articles, reports of monitoring and habitat characterizations, reports submitted during section 7 consultations, our recovery plan, and information received from local species experts.

We are proposing to designate critical habitat on lands within the geographic area occupied by the species at the time of listing and continue to be occupied to date. All proposed units contain habitat with features essential to the conservation of *Piperia yadonii*. We are not proposing any units that are unoccupied.

We used a multi-step process to identify and delineate proposed critical habitat units. First, we mapped and reviewed all known occurrences of *Piperia yadonii*, using the best available information. To be meaningful for the purposes of determining proposed critical habitat units, survey information had to be evaluated in light of the species' life history. Not all individuals produce leaves or flower every year. A below-ground *P. yadonii* tuber can do one of four things in any given year: die, remain dormant, send up leaves but not



flower, or leaf out and flower (Graff 2006, pp. 7 and 8). The length of tuber dormancy is not known, but may be from 1 to 4 years based upon data from other orchid species with a similar life history. The *P. yadonii* flower is diagnostic (with regard to other *Piperia* species), and the proportion of vegetative plants that flower in any given year has been estimated to be from 0.4 percent to 22 percent (Graff 2006, p. 8), with the lowest estimates coming from the chaparral community. Thus it is difficult to precisely determine the extent and abundance of the species both within individual occurrences and throughout its geographic range. Because a positive identification requires a flowering individual, we did not include any occurrences in this proposed designation that had not been identified during the flowering season as *Piperia yadonii*.

Occurrence information included the results of several different types of surveys for the species in various locations within its range. Allen (1996, unpaginated) conducted a two consecutive year survey to better understand the extent of the range, distribution, and overall population size of the species. The Allen (1996) study estimated populations of *Piperia yadonii* within polygons overlaid on topographic maps, but did not indicate areas where the author looked for, but did not find occurrences. Graff (2006, (e.g., pp. 14 and 15) developed a long-term monitoring program for *P. yadonii*, using specific test plots in several areas featuring known occurrences, and georeferenced individual patches of *P. yadonii*. Various other surveys were designed and conducted for specific purposes, including assessing potential land subdivisions/development projects and potential state highway realignment. In the case of Pebble Beach Company lands on the Monterey Peninsula and areas inland from the peninsula, intensive surveys have been conducted in multiple years to aid in planning their Del Monte Forest Preservation and Development Plan.

Next, we evaluated which occupied areas were most likely to contribute to the long-term persistence of the species. We focused on locations with larger occurrences in larger areas of contiguous native habitat (greater than 5 acres (2 ha), see below) that are more likely to support intact ecosystem processes and biotic assemblages, provide areas for population growth, and opportunities for colonization of adjacent areas. These areas also have the highest likelihood of persisting through the environmental extremes that characterize California's climate and of

retaining the genetic variability to withstand future introduced stressors (e.g., new diseases, pathogens, or climate change). We believe that areas less than 5 acres in size that are surrounded by high-density development (e.g., office parks, residential neighborhoods, commercial buildings, and parking lots) and have become isolated as a result of development may contribute to the conservation of the species through educational, research, and other mechanisms, but overall have a lower potential for long-term preservation and lesser conservation value to the species. Therefore, we did not further consider these areas in the proposal. Although we have not included these areas within the proposed critical habitat designation, because they are, occupied they may still receive indirect protection under the Act.

We then selected sites from among the data set resulting from the above evaluation that contain the features essential to the conservation of *Piperia yadonii*, need special management, and would result in a designation that: (a) Represents the geographic range of the species; (b) captures peripheral populations; (c) includes the range of plant communities and soil types in which *P. yadonii* is found; (d) encompasses the elevation range over which the species occurs; and (e) maintains the connectivity of occurrences that grow on a continuous ridgeline.

Species and plant communities that are protected across their ranges are expected to have lower likelihoods of extinction (Soule and Simberloff 1986; Scott et al. 2001, p. 1297–1300); therefore, essential habitat should include multiple locations across the entire range of the species to prevent range collapse. Protecting peripheral or isolated populations is highly desirable because they may contain genetic variation not found in core populations. The genetic variation results from the effects of population isolation and adaptation to locally distinct environments (Lesica and Allendorf 1995, pp. 754–757; Fraser 2000, pp. 49–51; Hamrick and Godt, pp. 291–295). We also sought to include the range of plant communities, soil types, and elevational gradients in which *P. yadonii* is found to preserve the genetic variation that may result from adaptation to local environmental conditions, documented in other plant species (e.g. see Hamrick and Godt pp. 299–301; Millar and Libby 1991 pp. 150, 152–155). Finally, habitat fragmentation can result in loss of genetic variation (Young et al. 1996, pp. 413–417);

therefore, we sought to maintain connectivity between patches of plants distributed along ridgetops.

In determining the extent of lands necessary to ensure the conservation and persistence of this species, we identified all areas which contain those biological and physical features essential to the conservation of the species and are either already protected, managed, or otherwise unencumbered by conflicting use (e.g. undeveloped County or City parks, proposed preservation areas). These populations are most likely to persist into the future and to contribute to the species' survival and recovery. We added ownership categories to the proposed designation in the following manner: First we included undeveloped Federal and State lands, then local agency and private lands with recognized resource conservation emphasis (e.g., lands owned by a conservation-oriented organization, undeveloped County or City parks), and finally other agency and private lands.

As a result of the above process, we did not include all occupied areas in proposed critical habitat. About 13 occurrences or parts of occurrences, beyond those in the Pebble Beach Company's proposed development areas, are known to the Service and are not included in proposed critical habitat: two of these are in the Elkhorn-Prunedale area, 10 are on the Monterey Peninsula or interior of the Monterey Peninsula, and one is in the Point Lobos Ranch area. These were not included in the designation due to the above discussed reasons of small size, lack of surrounding native or appropriate habitat, or because we lacked evidence that they are extant or accurately identified.

### Mapping

To map the proposed units of critical habitat, we overlaid *Piperia yadonii* records on soil series data, topographic contours and, where available, vegetation data (e.g., maritime chaparral mapped by Van Dyke and Holl (2003)). Although *P. yadonii* occurs predominately on soils with a substantial sand component (e.g., Arnold and Narlon series), the mapped distribution of such soils extends well beyond the species' range. *Piperia yadonii* also frequently occurs in areas of relatively low relief (typically less than 30 percent slope) along ridge tops or in patches of low relief amid steeper slopes. Using digital elevation data, we mapped the distribution of *P. yadonii* relative to areas with low relief and found that topographic relief, when combined with soils and plant

community data, is a more accurate predictor of the species distribution. Therefore, as a first step, we tailored proposed unit boundaries using geomorphologic features, vegetation data, and soil series data.

In areas dominated by maritime chaparral, such as the Elkhorn-Prunedale area, *Piperia yadonii* occurs primarily among low-growing manzanitas on ridgelines underlain by sandstone. In areas with this geomorphic setting, we determined that digitizing the centerline of the ridgetops where *P. yadonii* occurs and adding 150 meters (492 feet) on either side of the centerline most consistently encompassed known *P. yadonii* occurrences, appropriate soils, and suitable habitat contiguous with known occurrences. The resulting 300 meter- (984 foot-) wide area encompasses the flat or gently sloping ridgetops with low-growing manzanitas and the adjacent slopes supporting maritime chaparral. These ridgetops support the *P. yadonii* occurrences, areas for population expansion, germination sites for wind-dispersed seeds, and appropriate soils. When maritime chaparral did not extend 150 meters from the centerline of the ridgetop, we used closer geographic (e.g., streams) and manmade features (e.g., roads, development boundaries, farmed land) to constrain and more accurately delineate a unit area boundary.

In areas dominated by Monterey pine forest, particularly on the Monterey Peninsula, topographic features are less distinct, and consequently less useful for mapping purposes than in the chaparral-covered hills of northern Monterey County. The Monterey Peninsula's Monterey pine and Gowen cypress-Bishop pine forest stands exist in an expanse of residential and recreational development. Additional residential and recreational development is proposed. As a consequence, on the Monterey Peninsula, we began by delineating the occurrences as defined by the most recent set of comprehensive surveys. We then encompassed the forested stands and fragments that were within existing or proposed conservation or open space areas. In two locations where forest connections still existed between forest stands, we included these to help

maintain continued gene flow between Yadon's piperia occurrences. We also used landscape features such as streams, roads, and developed areas to delineate unit boundaries on appropriate soils.

Using the above criteria we identified 8 units that contain features essential to the conservation of *Piperia yadonii*: Three units are in north Monterey County in the Elkhorn-Prunedale area; one is on the Monterey Peninsula; two units are interior from the Monterey Peninsula; one unit is at Point Lobos Ranch; and the most southerly unit is near Palo Colorado Canyon.

When determining proposed critical habitat boundaries, we made every effort to avoid including within the boundaries of the maps contained within this proposed rule developed areas, tilled fields, row crops, golf course turfgrass, buildings, paved areas, and other areas that lack PCEs for *Piperia yadonii*. The scale of the maps prepared under the parameters for publication within the Code of Federal Regulations may not reflect the exclusion of all such developed areas. Any such structures and the land under them inadvertently left inside critical habitat boundaries shown on the maps of this proposed rule have been excluded by text in the proposed rule and are not proposed for designation as critical habitat. Therefore, Federal actions limited to these structures and underlying lands would not trigger section 7 consultation, unless they affect the species and/or primary constituent elements in adjacent critical habitat.

We are proposing to designate critical habitat in areas that we have determined were occupied at the time of listing, and that contain sufficient primary constituent elements (PCEs) to support life history functions essential for the conservation of the species. Lands are proposed for designation based on sufficient PCEs being present to support the life processes of the species. Some lands contain all PCEs and support multiple life processes. Some lands contain only a portion of the PCEs necessary to support the particular use of that habitat.

#### **Special Management Considerations or Protections**

When designating critical habitat, we assess whether the areas determined to

be occupied at the time of listing and to contain the primary constituent elements may require special management considerations or protections. Many of the known occurrences of *Piperia yadonii* are threatened by one or a combination of the following: Habitat fragmentation or loss due to residential, commercial, or recreational development; competition with nonnative plants for light, space, or water; deer and rabbit herbivory; vegetation cutting for fire prevention; changes in light, space, and soil moisture availability due to loss or alteration of adjacent vegetation or forest canopy; changes in fecundity (number and viability of offspring) or genetic variability resulting from loss and fragmentation of populations or potentially low pollinator abundance or activity; disease; and trampling. In maritime chaparral associations of the Prunedale-Elkhorn region where fire has not occurred in many decades, shrub diversity appears to be declining as coast live oak or large canopied manzanitas become dominant (Van Dyke et al. 2001, pp. 225–227). This conversion may be slow in the shallow ridgetop soils where *P. yadonii* occurs, but increasing development surrounding these ridgetops reduces the opportunity to use fire as a management tool should it be deemed necessary to maintain the open, low canopy conditions of *P. yadonii*'s preferred habitat. These threats may require special management and are addressed under the critical habitat unit descriptions below.

#### **Proposed Critical Habitat Designation**

We are proposing 8 units as critical habitat for *Piperia yadonii*. The critical habitat areas described below constitute our best assessment at this time of areas determined to be occupied at the time of listing, that contain the primary constituent elements, and that may require special management. Table 1, below, identifies the approximate area exempt from proposed critical habitat for *P. yadonii* pursuant to section 4(a)(3) of the Act. Exemptions are discussed later in this proposed rule under the section *Application of Section 4(a)(3) and Exclusions Under Section 4(b)(2) of the Act*.

TABLE 1.—APPROXIMATE AREA EXEMPT FROM PROPOSED CRITICAL HABITAT FOR PIPERIA YADONII PURSUANT TO SECTION 4(A)(3) OF THE ACT

Location (unit)	Definitional area (acres/hectares)	Proposed exemption area (acres/hectares)
Presidio of Monterey, Monterey Peninsula .....	121 ac (49 ha)	121 ac (49 ha)

The approximate area encompassed within each proposed critical habitat unit is shown in Table 2.

TABLE 2.—CRITICAL HABITAT UNITS PROPOSED FOR PIPERIA YADONII  
[Area estimates reflect all land within critical habitat unit boundaries in ac (ha)]

Critical habitat unit and subunit	State	Local agency	Private		Total
			Conservation-oriented NGO	Other private	
Unit 1: Blohm Ranch .....					128 (52)
subunit 1a .....	0	0	72 (29)	0	72 (29)
subunit 1b .....	0	0	56 (23)	0	56 (23)
Unit 2: Manzanita Park .....					498 (201)
subunit 2a .....	0	0	231 (93)	0	231 (93)
subunit 2b .....	0	0	0	83 (34)	83 (34)
subunit 2c .....	0	183 (74)	0	0	183 (74)
Unit 3: Vierra Canyon .....					50 (20)
subunit 3a .....	0	0	0	17 (7)	17 (7)
subunit 3b .....	12 (5)	0	0	0	12 (5)
subunit 3c .....	21 (8)	0	0	0	21 (8)
Unit 4: Aguajito .....					157 (64)
subunit 4a .....	0	0	0	77 (31)	77 (31)
subunit 4b .....	0	0	0	80 (32)	80 (32)
Unit 5: Old Capitol .....	0	0	0	16 (6)	16 (6)
Unit 6: Monterey Peninsula .....					1059 (428)
subunit 6a .....	0	0	17 (7)	888 (359)	905 (366)
subunit 6b .....	0	0	0	9 (4)	9 (4)
subunit 6c .....	0	0	23 (9)	47 (19)	70 (28)
subunit 6d .....	0	0	12 (5)	0	12 (5)
subunit 6e .....	0	19 (7)	29 (12)	15 (6)	63 (25)
Unit 7: Point Lobos .....	228 (93)	0	97 (39)	0	325 (131)
Unit 8: Palo Colorado .....	0	0	0	73 (29)	73 (29)
Total .....	261 (105)	202 (81)	537 (217)	1305 (527)	2306 (931)

We present brief descriptions of all units, and reasons why they meet the definition of critical habitat for *Piperia yadonii*, below.

Unit 1: Blohm Ranch

Unit 1 consists of 128 ac (52 ha) of private lands in northern Monterey County in the Elkhorn Slough watershed. It is divided into two ridgeline subunits, separated by intervening agricultural fields. The two subunits support similar plant communities and need similar types of special management; therefore, we discuss them as a unit, except to differentiate land ownership. Unit 1 was known to be occupied at the time of listing (Service 1998) and is currently occupied. It supports one of the two largest occurrences of *Piperia yadonii* plants in the Prunedale-Elkhorn area (several thousand plants (Allen 1996

unpaginated)) and the northernmost occurrences in the known range of the species. This unit contains features that are essential for the conservation of *P. yadonii*, including soils from weathered marine sediments that are classified as an Arnold-Santa Ynez complex on the ridgetops and as Arnold series soils on the slopes (PCE 1). Vegetation is primarily high quality maritime chaparral, with ridgetops dominated by low-growing Hooker's manzanita. This unit provides habitat that supports germination, growth, and reproduction of *P. yadonii*. It contains ridgetop habitat openings, between and among patches of *P. yadonii*, to allow for population expansion and for shifts in population location, should successional vegetation or other changes occur that alter microhabitat conditions. Threats that may require special

management in this unit are: the growth and spread of invasive plant species (such as jubata grass); erosion from old roadbeds or past earth-moving activities; removal of the *P. yadonii* occurrence or its associated natural community to accommodate road construction, agricultural, or other facilities (reservoirs, housing sites); and herbivory. Herbivory of flowering stalks was 36 percent in 1999, although predators (mountain lion (*Puma concolor*)) of herbivores were recently sighted on these lands. Jubata grass is present on surrounding properties and continued colonization of these lands by this species is likely. Given that pollen deposition rates and seed production were low for the one site studied in this unit, special management may also be needed to ensure that the abundance of

potential pollinators, such as moths or bees, are maintained or enhanced.

*Subunit 1a:* This subunit consists of 72 ac (29 ha) of private land owned by the Elkhorn Slough Foundation and The Nature Conservancy. Although restoration and removal of nonnative invasive plant populations are ongoing, a management plan specifically addressing *Piperia yadonii* on properties owned by the Elkhorn Slough Foundation and The Nature Conservancy has not yet been developed (Hayes 2006).

*Subunit 1b:* This subunit consists of 56 ac (23 ha) of land owned by The Nature Conservancy and managed by the Elkhorn Slough Foundation, or owned and managed by the Elkhorn Slough Foundation. A management plan specifically addressing *Piperia yadonii* has not yet been developed.

#### *Unit 2: Manzanita Park*

Unit 2 consists of 498 ac (201 ha) of Monterey County lands north of Prunedale. It is divided into 3 subunits that support similar soils and vegetation communities and need similar types of special management; therefore, we discuss these characteristics for the whole unit. Unit 2 was known to be occupied at the time of listing (Service 1998) and is currently occupied. The lands in this unit support several thousand *Piperia yadonii* plants scattered along the ridges, separated by intervening lower elevation areas of oak woodland, farmed lands, and residential development (Allen 1996 unpaginated; Environmental Science Associates 2003; CNDDDB 2005; Graff 2006 appendix IV). This unit contains features that are essential for the conservation of *P. yadonii*, including soils from weathered marine sediments that are classified as an Arnold-Santa Ynez complex on the ridgetops and as Arnold series soils on the slopes and on more undulating topography within Manzanita County Park (PCE 1). Vegetation within the subunits is primarily maritime chaparral, with some coast live oak woodland at the lower elevations. The ridgetops are dominated by low-growing Hooker's manzanita. This unit contains the PCEs for *P. yadonii* that promote germination, growth, and reproduction. This unit encompasses a cluster of three ridgetops primarily oriented east-west that rise in elevation from west to east, and which support *P. yadonii* and which may be close enough for genetic exchange via wind-dispersed seed. In conjunction with the Blohm Ranch unit, this unit will encompass the majority of the *P. yadonii* plants known in the northern half of the range of *P. yadonii*. The ridgetop habitat openings, between

and among patches of *P. yadonii*, allow for population expansion and for shifts in population location, should successional vegetation or other changes occur that alter microhabitat conditions. This unit is the central of the three in the Elkhorn-Prunedale geographic area. This unit supports one of the two largest occurrences in the species northern range and they include the largest occupied ridgetops relatively unfragmented by residential development in the heart of the species northern distribution. Due to their relatively unfragmented condition, lands in this unit may support dormant plants among the patches of recorded *P. yadonii*. Threats that may require special management in this unit are: the growth and spread of invasive plant species, such as jubata grass, French broom, and eucalyptus; elimination or further fragmentation of habitat from residential, recreational, or agricultural development; vegetation removal for fuel reduction purposes; disease; and herbivory. Special management may also be needed to ensure the abundance of potential pollinators, such as moths or bees, are maintained or enhanced, to ensure the production of sufficient viable seed.

*Subunit 2a:* This subunit consists of 231 ac (93 ha) of land owned and managed by the Elkhorn Slough Foundation.

*Subunit 2b:* This subunit consists of 83 ac (34 ha) of private lands. Some of the lands in this subunit were proposed for a 10 lot subdivision, residential development, and open space designation in 2000 (Mercurio 2000, p. 2); this project may be moving forward in the near future (Schubert 2006).

*Subunit 2c:* This subunit consists of 183 ac (74 ha) within Manzanita County Park, owned and managed by the County of Monterey. Part of the park has been developed into a sports complex and is not part of the proposed designation. A portion of the park within the proposed unit is used for hiking and equestrian use. Although volunteers have recently begun removing nonnative invasive plants from the park, we are not aware of the existence of any management plan that specifically addresses *Piperia yadonii* on properties owned by Monterey County.

#### *Unit 3: Vierra Canyon*

Unit 3 consists of 50 ac (20 ha) consisting primarily of State lands in northern Monterey County north of Prunedale. It is divided into 3 subunits with similarities in vegetation and special management needs. Unit 3 was

known to be occupied at the time of listing (Service 1998) and is currently occupied (Childs 2004). The easternmost *Piperia yadonii* occurrences in unit 3 (subunit 3b and 3c) are reported to be small, with fewer than 10 flowering individuals; this likely represents up to several hundred individuals, based on the observed proportion of flowering to vegetative individuals (Doak and Graff 2001). This unit contains features that are essential for the conservation of *P. yadonii*, including the following: lands in this unit support soils from weathered marine sediments that are classified as an Arnold-Santa Ynez complex on the ridgetops and the Arnold series on the slopes (PCE 1). Vegetation is primarily maritime chaparral, with coast live oak woodland in the lower elevation areas. The ridgetops are dominated by low-growing Hooker's manzanita. The lands surrounding these subunits are more extensively developed for residential use, than are those to the west, severing the once continuous maritime chaparral that dominated the ridges. Consequently the subunits are smaller and lack the additional habitat for population expansion found in the other northern units. This unit contains the PCEs for *P. yadonii* that promote germination, growth, and reproduction. It supports the easternmost occurrences of *P. yadonii* in the Elkhorn-Prunedale region, on the northeast periphery of the species' range. Lands in these units have the features that are essential to the conservation of the species. Threats that may require special management in this unit are elimination or further fragmentation of habitat from development; grading or other vegetation removal (e.g., for fuel reduction purposes or roads); and the spread of invasive plant species.

*Subunit 3a:* This subunit consists of 17 ac (7 ha) of private lands that are overlain by a Pacific Gas and Electric Company easement. The occurrence in this subunit is the largest documented in the unit, numbering several thousand plants (Childs 2004).

*Subunit 3b:* This subunit consists of 12 ac (5 ha) of State lands (California Department of Transportation (Caltrans)). The lands in this subunit and in subunit 3c were part of a previous study area for a highway alignment. This alignment was eventually excluded from further consideration and the State retains the lands (Robison 2006). We are not aware of any management plan that addresses *Piperia yadonii* on these State properties.

*Subunit 3c:* This subunit consists of 21 ac (8 ha) of State lands.

*Unit 4: Aguajito*

Unit 4 consists of 157 ac (64 ha) of private land east of the Monterey Peninsula and north of Jack's Peak County Park. It is divided into 2 subunits separated by lower elevation lands. Unit 4 was known to be occupied at the time of listing (Service 1998) and is currently occupied. *Piperia yadonii* occurs in these subunits on ridgetops, where it grows with Hooker's manzanita (EcoSystems West 2006, p. 61). This unit contains features that are essential for the conservation of *P. yadonii*, including the following: soils in this unit are classified as the Santa Lucia—Reliz Association, where Reliz series soils occur on the ridgetops and Santa Lucia series soils on surrounding slopes (PCE 1). Reliz series soils are characterized as excessively drained shaley clay loams underlain by shale or sandstone (USDA 1978, p. 64). The vegetation in the unit is a mix of Monterey pine forest and maritime chaparral. Griffin (1978, p. 69) commented that this area was one of the only ones in the Monterey Bay area where maritime chaparral grows on shale. He also noted that sandstones exist within the shale beds and produce sandy loam soils. A related species, *Piperia elegans* is more abundant in the surrounding Monterey pine forest (EcoSystems West 2005b, p. 7). This unit provides habitat that support germination, growth, and reproduction. Unit 4 represents one of only two units proposed in the region interior to the Monterey Peninsula. It supports the largest undeveloped easternmost occurrence of *P. yadonii* in the central and southern half of the species range. Its preservation would help avoid range collapse. Threats that may require special management in this unit are fragmentation of habitat from development and the colonization and spread of invasive plant species.

*Subunit 4a:* This subunit consists of 77 ac (31 ha) of private lands (owned by the Pebble Beach Company). Lands in and/or adjacent to this subunit and subunit 4b are proposed for preservation in the Pebble Beach Company's recent development plan, but the configuration of the preservation areas is not yet determined (Monterey County 2005, pp. 2–89, 2–90).

*Subunit 4b:* This subunit consists of 80 ac (32 ha) of private lands (owned by the Pebble Beach Company) and proposed for preservation (see above), and 3 ac (1ha) of Monterey County road right-of-way.

*Unit 5: Old Capitol*

Unit 5 consists of 16 ac (7 ha) of private land (owned by the Pebble Beach Company) east of the Monterey Peninsula. Unit 5 was known to be occupied at the time of listing (Service 1998) and is currently occupied. Surveys in 2005 revealed that the dominant *Piperia* species at this location is *P. elegans*, which number in the thousands; however, several hundred *P. yadonii* co-occur with *P. elegans* throughout the unit (EcoSystems West 2005b, pp. 5–7). This unit contains features that are essential for the conservation of *P. yadonii*, including the Chamise shaley clay loam (PCE 1) soil type. The vegetation is Monterey pine forest and coast live oak woodland. This unit provides habitat that supports germination, growth, and reproduction of *P. yadonii*. It is the only unit proposed between the Monterey Peninsula (Unit 6) and Aguajito (Unit 4) to the east, and therefore provides connectivity between these other two units. Threats that may require special management in this unit are fragmentation or loss of habitat from development, habitat degradation by motorized vehicles and encampments, debris dumping, and competition from nonnative invasive plants. The land in Unit 5 is proposed for preservation in the Pebble Beach Company's recent development plan (Monterey County 2005, pp. 2–89, 2–90).

*Unit 6: Monterey Peninsula*

Unit 6 consists of 1,058 ac (428 ha) of private and City lands on the Monterey Peninsula. This unit is divided into 5 subunits due to intervening development. Most of the lands surrounding this unit are developed for residential and recreational (golf) use. The similarities among the subunits in soils and vegetation community are discussed here; subunit specific details are discussed below. Unit 6 was known to be occupied at the time of listing (Service 1998) and is currently occupied. It supports the greatest abundance and largest aerial extent of *Piperia yadonii* in the species' range, with close to 100,000 vegetative plants (Zander Associates and WWD Corporation 2004 all pp.; EcoSystems West 2004, pp. 1–9; EcoSystems West 2005a, 2005b all pp.). This unit contains features that are essential for the conservation of *P. yadonii* including sands or sandy loam soils that belong to at least 5 soil series on the Monterey Peninsula unit (Baywood sands, Narlon loamy fine sands, Sheridan coarse sandy loams, Tangair fine sands, and Santa Lucia shaley clay loam). Vegetation in

this unit is primarily Monterey pine forest, with maritime chaparral, and Bishop pine/Gowen cypress forest in two subunits (PCE 1). Pollinator observations and collections were made on lands in this unit (PCE 2) (Doak and Graff 2001). This unit provides habitat that supports germination, growth, reproduction, and space for shifts in the location of *P. yadonii*, as microhabitat conditions change. Threats that may require special management in this unit are: Adverse effects from adjacent existing and future development, including the loss of adjacent forest canopy, increased trampling, potential hydrologic changes, overspray of pesticides, the introduction of pathogens or disease, mowing, and the introduction and spread of invasive plant species; continuing high and/or increasing deer populations resulting in high herbivory levels; and increased growth of understory vegetation due to exclusion of wildfire.

*Subunit 6a:* This subunit consists of 904 ac (366 ha) of private lands owned by the Pebble Beach Company and other private owners, including 80 ac (33 ha) owned by the Del Monte Forest Foundation (DMFF). Protected lands in this subunit include the SFB Morse Botanical Reserve (owned by the DMFF) and the Huckleberry Hill Natural Reserve (easement held by the DMFF). It also includes lands identified in the Pebble Beach Company's most recent development proposal for preservation or conservation: Areas PQR, G, H, I, the Corporate Yard Preservation Area, and Area D (Monterey County 2005). The Department of the Army's Presidio of Monterey is contiguous with the northeastern edge of this subunit; those lands are exempted from this proposed designation, as described later in this rule. Plant communities in the Huckleberry Hill Natural Area and SFB Morse Botanical Reserve are Gowen cypress/Bishop pine forest, maritime chaparral, and Monterey pine forest. The remaining lands support primarily Monterey pine forest. Lands in this subunit support about 90,000 vegetative *Piperia yadonii* plants (Zander Associates and WWD Corporation 2004 all pp.; EcoSystems West 2004, pp. 1–9; EcoSystems West 2005a, 2005b all pp.). Although the DMFF conducts some monitoring and removal of nonnative invasive plant populations, a management plan specifically addressing *P. yadonii* on properties owned by the DMFF has not been developed.

*Subunit 6b:* This subunit consists of 9 ac (4 ha) of private lands. It is identified in the Pebble Beach Company's most recent development proposal as the

Bristol Curve Conservation Area (Monterey County 2005 Fig. ES-2). Vegetation in this subunit is Monterey pine forest with an herbaceous understory.

**Subunit 6c:** This subunit consists of 70 ac (28 ha) of private lands, of which about 23 acres (9 ha) are owned by the Del Monte Forest Foundation (DMFF). Lands within this unit are referred to as Indian Village (owned by the DMFF) and, in the Pebble Beach Company's recent development proposal, as Conservation Area K and Preservation Areas J and L (Monterey County 2005 Fig. ES-2). Adjacent lands that are proposed for development are not included in this subunit. The vegetation in this subunit is primarily Monterey pine forest. This subunit supports several thousand *Piperia yadonii* plants. Along with subunit 6b and 6d, it encompasses lands in the westernmost region of the Monterey Peninsula.

**Subunit 6d:** This subunit consists of 13 ac (5 ha) of private lands owned by the Del Monte Forest Foundation. It encompasses the Crocker Grove, an area of Monterey cypress forest with some adjacent Monterey pine forest (PCE 1). This is the westernmost subunit on the peninsula, closest to the ocean, and lands it occurs on are mapped as marine terrace 2 (Jones and Stokes 1994b, p. 11). It has been documented to support about 50 flowering *Piperia yadonii* plants, which typically equates to several hundred vegetative plants.

**Subunit 6e:** This subunit consists of 44 ac (18 ha) of private lands and 19 ac (7 ha) owned by the City of Pacific Grove. About 29 ac (12 ha) of the private lands are owned by the Del Monte Forest Foundation. Lands within this unit are referred to as the Navajo tract and as Preservation Area B in the Pebble Beach Company's most recent development proposal (Monterey County 2005 Fig. ES-2). The vegetation in this subunit is a mix of coast live oak and Monterey pine forest (PCE 1). It is the northernmost unit we are proposing on the Peninsula. It supports several hundred plants of *Piperia yadonii*.

#### **Unit 7: Point Lobos Ranch**

Unit 7 consists of 228 ac (92 ha) of State land south of the Monterey Peninsula on the Big Sur coast, and 97 ac (39 ha) owned by the Big Sur Land Trust that are intended to be added to the State Parks system in the future. Unit 7 was known to be occupied at the time of listing (Service 1998) and is currently occupied. The lands in this unit support several thousand *Piperia yadonii* plants (Graff *et al.* 2003, Nedeff *et al.* 2003). This unit contains features that are essential for the conservation of

*P. yadonii*, including the sandy loam soils in the Sheridan, Narlon, Junipero-Sur complex series, underlain by granitic substrates from which terrace sands have been eroded (Griffin 1978, p. 69, USDA 1978 map no. 35). Vegetation is a composite of Monterey pine forest, maritime chaparral, Gowen cypress-Bishop pine forest, with some redwood forest. *Piperia yadonii* occurs in this unit in Monterey pine forest; on exposed granitic soils in maritime chaparral dominated by Hooker's manzanita; and under a canopy of Monterey pine, Gowen cypress, and redwood (*Sequoia sempervirens*) (PCE 1). This unit provides habitat that supports germination, growth, and reproduction of *P. yadonii*, as well as population expansion and shifts in population location. This unit supports *P. yadonii* growing on soils not found in other units and in association with a varied mix of forest tree species. This is the second highest unit in elevation and supports the largest occurrence of *P. yadonii* south of the Monterey Peninsula. Threats that may require special management in this unit are: The growth and spread of invasive plant species, such as French broom; loss of habitat from residential development; and erosion. Access by park visitors may need to be managed to avoid trailing in Monterey pine forest populations and use of herbicides should be controlled to avoid or minimize effects to *P. yadonii*.

#### **Unit 8: Palo Colorado**

Unit 8 consists of 73 ac (29 ha) of private land on the Big Sur coast. Unit 8 was known to be occupied at the time of listing (Service 1998) and is currently occupied. The lands in this unit were reported to support 38 flowering *Piperia yadonii* plants (Norman 1995) which likely represents a population of several hundred to several thousand vegetative individuals, based on the observed proportions of flowering to vegetative individuals (Doak and Graff 2001). This unit contains features that are essential for the conservation of *P. yadonii* including the following: A mix of sandy loam soils, shallow soils less than 20 inches deep, and rock outcrops classified as the Junipero-Sur complex and Rock Outcrop-Xerorthents Association (PCE 1) (USDA 1978, p. 38). Vegetation in this unit has been described as a unique association of maritime chaparral, with low-growing hybrid *Arctostaphylos glandulosa* as the dominant manzanita under which *P. yadonii* occurs (Norman 1995). This unit provides habitat that supports germination, growth, and reproduction of *P. yadonii*. This unit supports the

most southern and highest elevation (1000 to 1400 feet (300 to 430 m)) occurrence in the species' range. Threats that may require special management in this unit are habitat fragmentation and habitat degradation from road and trail grading and from future development, such as the introduction and spread of nonnative plants, removal of native vegetation, erosion, and hydrologic changes.

### **Effects of Critical Habitat Designation**

#### **Section 7 Consultation**

Section 7 of the Act requires Federal agencies, including the Service, to ensure that actions they fund, authorize, or carry out are not likely to destroy or adversely modify critical habitat. In our regulations at 50 CFR 402.02, we define destruction or adverse modification as "a direct or indirect alteration that appreciably diminishes the value of critical habitat for both the survival and recovery of a listed species. Such alterations include, but are not limited to, alterations adversely modifying any of those physical or biological features that were the basis for determining the habitat to be critical." However, recent decisions by the 5th and 9th Circuit Court of Appeals have invalidated this definition (see *Gifford Pinchot Task Force v. U.S. Fish and Wildlife Service*, 378 F. 3d 1059 (9th Cir 2004) and *Sierra Club v. U.S. Fish and Wildlife Service et al.*, 245 F.3d 434, 442F (5th Cir 2001)). Pursuant to current national policy and the statutory provisions of the Act, destruction or adverse modification is determined on the basis of whether, with implementation of the proposed Federal action, the affected critical habitat would remain functional (or retain the current ability for the primary constituent elements to be functionally established) to serve the intended conservation role for the species.

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

Section 7(a)(4) of the Act requires Federal agencies to confer with 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. This is a procedural requirement only. However, once a proposed species becomes listed, or proposed critical habitat is designated

as final, the full prohibitions of section 7(a)(2) apply to any Federal action. The primary utility of the conference procedures is to maximize the opportunity for a Federal agency to adequately consider proposed species and critical habitat and avoid potential delays in implementing a proposed action as a result of the section 7(a)(2) compliance process, should those species be listed or the critical habitat designated.

Under conference procedures, the Service may provide advisory conservation recommendations to assist the agency in eliminating conflicts that may be caused by the proposed action. The Service may conduct either informal or formal conferences. Informal conferences are typically used if the proposed action is not likely to have any adverse effects to the proposed species or proposed critical habitat. Formal conferences are typically used when the Federal agency or the Service believes the proposed action is likely to cause adverse effects to proposed species or critical habitat, inclusive of those that may cause jeopardy or adverse modification.

The results of an informal conference are typically transmitted in a conference report; while the results of a formal conference are typically transmitted in a conference opinion. Conference opinions on proposed critical habitat are typically prepared according to 50 CFR 402.14, as if the proposed critical habitat were designated. We may adopt the conference opinion as the biological opinion when the critical habitat is designated, if no substantial new information or changes in the action alter the content of the opinion (see 50 CFR 402.10(d)). As noted above, any conservation recommendations in a conference report or opinion are strictly advisory.

If a species is listed or critical habitat is designated, section 7(a)(2) of the Act requires Federal agencies to ensure that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of such a species or to destroy or adversely modify its critical habitat. If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency (action agency) must enter into consultation with us. As a result of this consultation, compliance with the requirements of section 7(a)(2) will be documented through the Service's issuance of: (1) A concurrence letter for Federal actions that may affect, but are not likely to adversely affect, listed species or critical habitat; or (2) a biological opinion for Federal actions that may affect, but are likely to

adversely affect, listed species or its critical habitat.

When we issue a biological opinion concluding that a project is likely to result in jeopardy to a listed species or the destruction or adverse modification of critical habitat, we also provide reasonable and prudent alternatives to the project, if any are identifiable. "Reasonable and prudent alternatives" are defined at 50 CFR 402.02 as alternative actions identified during consultation that can be implemented in a manner consistent with the intended purpose of the action, that are consistent with the scope of the Federal agency's legal authority and jurisdiction, that are economically and technologically feasible, and that the Director believes would avoid jeopardy to the listed species or destruction or adverse modification of critical habitat. Reasonable and prudent alternatives can vary from slight project modifications to extensive redesign or relocation of the project. Costs associated with implementing a reasonable and prudent alternative are similarly variable.

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

Federal activities that may affect *Piperia yadonii* or its designated critical habitat will require section 7 consultation under the Act. Activities on State, tribal, local or private lands requiring a Federal permit (such as a permit from the U.S. Army Corps of Engineers (Corps) under section 404 of the Clean Water Act or a permit under section 10(a)(1)(B) of the Act from the Service) or involving some other Federal action (such as funding from the Federal Highway Administration, Federal Aviation Administration, or the Federal Emergency Management Agency) will also be subject to the section 7 consultation process. Federal actions not affecting listed species or critical habitat, and actions on State, tribal, local or private lands that are not federally-funded, authorized, or

permitted, do not require section 7 consultations.

#### *Application of the Jeopardy and Adverse Modification Standards for Actions Involving Effects to Piperia yadonii and Its Critical Habitat*

##### Jeopardy Standard

The Service has applied an analytical framework for *Piperia yadonii* jeopardy analyses that relies heavily on the importance of core area populations to the survival and recovery of *P. yadonii*. The section 7(a)(2) analysis is focused not only on these populations but also on the habitat conditions necessary to support them.

The jeopardy analysis usually expresses the survival and recovery needs of *Piperia yadonii* in a qualitative fashion without making distinctions between what is necessary for survival and what is necessary for recovery. Generally, if a proposed Federal action is incompatible with the viability of the affected core area population(s), inclusive of associated habitat conditions, a jeopardy finding is considered to be warranted, because of the relationship of each core area population to the survival and recovery of the species as a whole.

##### Adverse Modification Standard

For the reasons described in the Director's December 9, 2004 memorandum, the key factor related to the adverse modification determination is whether, with implementation of the proposed Federal action, the affected critical habitat would remain functional (or retain the current ability for the primary constituent elements to be functionally established) to serve the intended conservation role for the species. Generally, the conservation role of *P. yadonii* critical habitat units is to support viable core area populations.

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

Activities that may destroy or adversely modify critical habitat are those that alter the PCEs to an extent that the conservation value of critical habitat for *Piperia yadonii* is appreciably reduced. Activities that, when carried out, funded, or authorized by a Federal agency, may affect critical habitat and therefore result in

consultation for *P. yadonii* include, but are not limited to:

(1) Actions that would remove or destroy *Piperia yadonii* plants or remove flowering stalks. Such activities could include, but are not limited to, grading, plowing, mowing, burning during the growing or flowering season, driving over plants, unrestricted creation of trails through occurrences, unrestricted mechanical weed control, and/or unlimited use of herbicides.

(2) Actions that would increase the establishment and spread of invasive nonnative species in *Piperia yadonii* habitat or increase the invasability of the plant community within which *P. yadonii* occurs. Such activities could include, but are not limited to: grading; plowing; road building and maintenance; introducing seeds or other propagules of invasive species during erosion-control practices and/or landscaping practices; isolating habitat patches within a matrix of residential or other development; off road vehicle traffic; and/or livestock grazing. These activities could encourage the establishment and spread species such as French broom or jubata grass, which can compete with *P. yadonii* for light and other resources.

(3) Actions that would directly remove or destroy the low-growing maritime chaparral and Monterey pine forest plant communities on which *Piperia yadonii* depends. Such activities could include, but are not limited to: road construction; grading; development; plowing; burning out-of-season or too frequently; and/or off-road vehicle traffic. These activities could reduce or eliminate space and the appropriate light and hydrologic conditions for *P. yadonii* germination, growth, and reproduction.

(4) Actions that would indirectly reduce the presence of low-growing manzanitas in maritime chaparral, openings in maritime chaparral, or forested areas with a diverse assemblage (but low cover) of native herbs. Such activities could include, but are not limited to: those that isolate or fragment habitat through development; road construction that promotes such development; exclusion of fire; reduced opportunity for prescribed burns during the fall season; and/or increased potential for human-caused fire during the growing season of *Piperia yadonii*. These activities could result in less diverse, consistently old-age maritime chaparral stands with fewer openings or areas that support low-growing manzanitas and reduced abundance of forest patches with filtered light canopies and low cover by vines and shrubs.

(5) Actions that would alter the soil hydrology in *Piperia yadonii* habitat. Such activities could include, but are not limited to: grading or excavation that disrupts subsurface hardpan layers that influence soil saturation; conversion to agricultural lands; development of golf courses, ball fields, or other areas that require irrigation; and/or development which increases impermeable surfaces. These activities could result in soils that do not retain sufficient moisture through the growing season, excessive irrigation that influences *P. yadonii* through altered water availability or indirectly through changes in associated vegetation, and changes in drainage patterns which influence soil saturation during the growing season.

(6) Actions that would increase the abundance of herbivores of *Piperia yadonii* leaves and flowers (such as deer and rabbits) or encourage the spread and abundance of nonnative species that consume pollen (e.g., nonnative earwigs). Such activities could include, but are not limited to: residential or commercial development that introduces landscaping that favors nonnative garden invertebrates but not their predators (e.g., lizards); and/or fencing that excludes predators, but not herbivores. These actions could result in increased levels of herbivory of *P. yadonii* leaves and flowers and correspondingly reduced levels of reproduction.

(7) Actions that would diminish the variety or abundance of pollinators needed for seed set in *Piperia yadonii*. Such actions could include, but are not limited to: removal of the native maritime chaparral and forest plant communities within which *P. yadonii* grows, night-lighting adjacent to areas supporting *P. yadonii*, and/or unlimited pesticide applications. These actions could indirectly reduce reproduction in *P. yadonii* through reduced pollen transfer and could alter gene flow between occurrences through changes in pollinator composition.

All of the units proposed as critical habitat, as well as that portion of one which has been exempted under 4(a)(3) of the Act contain features essential to the conservation of *Piperia yadonii*. All units are within the geographic range of the species and all units were occupied by the species at the time of listing. In some cases, the level of detail regarding the precise location of plants within the units was not documented until after the listing. All units are occupied by *P. yadonii*. Because all proposed critical habitat units are occupied, Federal agencies already consult with us on activities in areas currently occupied by

*P. yadonii*, or if the species may be affected by their actions, to ensure that their actions do not jeopardize the continued existence of *P. yadonii*.

*Application of Section 4(a)(3) and Exclusions Under Section 4(b)(2) of the Act*

Section 4(a)(3)

The Sikes Act Improvement Act of 1997 (Sikes Act) (16 U.S.C. 670a) required each military installation that includes land and water suitable for the conservation and management of natural resources to complete, by November 17, 2001, an Integrated Natural Resource Management Plan (INRMP). An INRMP integrates implementation of the military mission of the installation with stewardship of the natural resources found on the base. Each INRMP includes an assessment of the ecological needs on the installation, including the need to provide for the conservation of listed species; a statement of goals and priorities; a detailed description of management actions to be implemented to provide for these ecological needs; and a monitoring and adaptive management plan. Among other things, each INRMP must, to the extent appropriate and applicable, provide for fish and wildlife management, fish and wildlife habitat enhancement or modification, wetland protection, enhancement, and restoration where necessary to support fish and wildlife and enforcement of applicable natural resource laws.

The National Defense Authorization Act for Fiscal Year 2004 (Pub. L. 108–136) amended the Act to limit areas eligible for designation as critical habitat. Specifically, section 4(a)(3)(B)(i) of the Act (16 U.S.C. 1533(a)(3)(B)(i)) now provides: “The Secretary shall not designate as critical habitat any lands or other geographical areas owned or controlled by the Department of Defense, or designated for its use, that are subject to an integrated natural resources management plan prepared under section 101 of the Sikes Act (16 U.S.C. 670a), if the Secretary determines in writing that such plan provides a benefit to the species for which critical habitat is proposed for designation.

We consult with the military on the development and implementation of INRMPs for installations with listed species. INRMPs developed by military installations located within the range of the proposed critical habitat designation for *Piperia yadonii* were analyzed for exemption under the authority of 4(a)(3) of the Act.

The Presidio of Monterey (POM) has an INRMP and Endangered Species



Management Plan (ESMP) in place that provides a benefit for *Piperia yadonii*. The ESMP and INRMP were completed, and the Army began implementing each of them, in 1999 and 2001, respectively (Harding ESE 1999; Harding ESE 2001; Cairns 2006). The conservation goal of the ESMP that addresses *P. yadonii* is to maintain the two occurrences on POM lands and protect them from impacts during use of the nearby obstacle/orienteering course. The plan identifies the following actions that will benefit *P. yadonii*: Monitoring; protecting the populations from foot traffic by installing signs and by other means; removing nonnative plant species from documented and potential habitat; monitoring deer browsing and providing caging, if necessary; and establishing a propagation program, if necessary. The POM has carried out the following in the past 5 years: Annual population monitoring since 2000, installation and maintenance of educational signs, creation of an educational brochure highlighting *P. yadonii*, construction and installation of outdoor bulletin boards on which the brochures are posted, and removal of infestations of nonnative French broom in over 13 acres of Monterey pine forest habitat (Cairns 2006).

Based on the above considerations, and in accordance with section 4(a)(3)(B)(i) of the Act, we have determined that conservation efforts identified in the ESMP and INRMP will provide benefits to *Piperia yadonii* occurring in habitats within the POM. Therefore, we are not including approximately 121 acres (49 ha) of habitat for *P. yadonii* within the POM in this proposed critical habitat designation pursuant to section 4(a)(3) of the Act.

#### Section 4(b)(2)

Section 4(b)(2) of the Act states that critical habitat shall be designated, and revised, on the basis of the best available scientific data after taking into consideration the economic impact, national security impact, and any other relevant impact, of specifying any particular area as critical habitat. The Secretary may exclude an area from critical habitat if he determines that the benefits of such exclusion outweigh the benefits of specifying such area as part of the critical habitat, unless he determines, based on the best scientific data available, that the failure to designate such area as critical habitat will result in the extinction of the species. In making that determination, the Secretary is afforded broad discretion and the Congressional record is clear that in making a determination

under the section the Secretary has discretion as to which factors and how much weight will be given to any factor.

Under section 4(b)(2), in considering whether to exclude a particular area from the designation, we must identify the benefits of including the area in the designation, identify the benefits of excluding the area from the designation, and determine whether the benefits of exclusion outweigh the benefits of inclusion. If an exclusion is contemplated, then we must determine whether excluding the area would result in the extinction of the species. The Service is conducting an economic analysis of the impacts of the proposed critical habitat designation and related factors, which will be available for public review and comment. Based on public comment on that document, the proposed designation itself, and the information in the final economic analysis, areas may be excluded from critical habitat by the Secretary under the provisions of section 4(b)(2) of the Act. This is provided for in the Act, and in our implementing regulations at 50 CFR 424.19.

#### Conservation Partnerships on Non-Federal Lands

Most federally listed species in the United States will not recover without the cooperation of non-Federal landowners. More than 60% of the United States is privately owned (National Wilderness Institute 1995) and at least 80% of endangered or threatened species occur either partially or solely on private lands (Crouse et al. 2002). Stein et al. (1995) found that only about 12% of listed species were found almost exclusively on Federal lands (90–100% of their known occurrences restricted to Federal lands) and that 50% of federally listed species are not known to occur on Federal lands at all.

Given the distribution of listed species with respect to land ownership, conservation of listed species in many parts of the United States is dependent upon working partnerships with a wide variety of entities and the voluntary cooperation of many non-federal landowners (Wilcove and Chen 1998, Crouse et al. 2002, James 2002). Building partnerships and promoting voluntary cooperation of landowners is essential to understanding the status of species on non-federal lands and is necessary to implement recovery actions such as reintroducing listed species, habitat restoration, and habitat protection.

Many non-Federal landowners derive satisfaction in contributing to endangered species recovery. The Service promotes these private-sector

efforts through the Four Cs philosophy—conservation through communication, consultation, and cooperation. This philosophy is evident in Service programs such as HCPs, Safe Harbors, CCAs, CCAAs, and conservation challenge cost-share. Many private landowners, however, are wary of the possible consequences of encouraging endangered species on their property, and there is mounting evidence that some regulatory actions by the Federal Government, while well-intentioned and required by law, can under certain circumstances have unintended negative consequences for the conservation of species on private lands (Wilcove et al. 1996, Bean 2002, Conner and Mathews 2002, James 2002, Koch 2002, Brook et al. 2003). Many landowners fear a decline in their property value due to real or perceived restrictions on land-use options where threatened or endangered species are found. Consequently, harboring endangered species is viewed by many landowners as a liability, resulting in anti-conservation incentives because maintaining habitats that harbor endangered species represents a risk to future economic opportunities (Main et al. 1999, Brook et al. 2003).

The purpose of designating critical habitat is to contribute to the conservation of threatened and endangered species and the ecosystems upon which they depend. The outcome of the designation, triggering regulatory requirements for actions funded, authorized, or carried out by Federal agencies under section 7 of the Act, can sometimes be counterproductive to its intended purpose on non-Federal lands. According to some researchers, the designation of critical habitat on private lands significantly reduces the likelihood that landowners will support and carry out conservation actions (Main et al. 1999, Bean 2002, Brook et al. 2003). The magnitude of this negative outcome is greatly amplified in situations where active management measures (e.g., reintroduction, fire management, control of invasive species) are necessary for species conservation (Bean 2002).

The Department of the Interior's "4Cs" philosophy—conservation through communication, consultation, and cooperation—is the foundation for developing the tools of conservation. These tools include conservation grants, funding for Partners for Fish and Wildlife Program, the Coastal Program, and cooperative-conservation challenge cost-share grants. Our Private Stewardship Grant program and Landowner Incentive Program provide assistance to private landowners in their

voluntary efforts to protect threatened, imperiled, and endangered species, including the development and implementation of HCPs.

Conservation agreements with non-Federal landowners (e.g., Habitat Conservation Plans (HCPs), contractual conservation agreements, easements, and stakeholder-negotiated State regulations) enhance species conservation by extending species protections beyond those available through section 7 consultations. In the past decade we have encouraged non-Federal landowners to enter into conservation agreements, based on a view that we can achieve greater species conservation on non-Federal land through such partnerships than we can through coercive methods (61 FR 63854; December 2, 1996).

There are currently no conservation plans for lands supporting *Piperia yadonii* that we have determined contain the features essential for its conservation.

The Pebble Beach Company has submitted a draft conservation strategy for some of its lands that are within *P. yadonii* proposed critical habitat units on the Monterey Peninsula (Unit 6), and interior to the Monterey Peninsula (Unit 4 and Unit 5). We are continuing to work with the Pebble Beach Company to refine that strategy. We also invite discussion with other landowners within proposed Critical Habitat that have an interest in developing conservation strategies that we would evaluate to determine if they provide a greater benefit to Yadon's piperia than could be achieved through the final designation of critical habitat. See more on the section 4(b)(2) balancing process, described below.

We anticipate no impact to national security, Tribal lands, or habitat conservation plans from this proposed critical habitat designation. The information provided in the section below provides the framework for our consideration of Exclusions under 4(b)(2) of the Act.

#### **General Principles of Section 7 Consultation Used in the 4(b)(2) Balancing Process**

The most direct, and potentially largest, regulatory benefit of critical habitat is that federally authorized, funded, or carried out activities require consultation pursuant to section 7 of the Act to ensure that they are not likely to destroy or adversely modify critical habitat. There are two limitations to this regulatory effect. First, it only applies where there is a Federal nexus—if there is no Federal nexus, designation itself does not restrict actions that destroy or

adversely modify critical habitat. Second, it only limits destruction or adverse modification. By its nature, the prohibition on adverse modification is designed to ensure those areas that contain the physical and biological features essential to the conservation of the species or unoccupied areas that are essential to the conservation of the species are not eroded. Critical habitat designation alone, however, does not require specific steps toward recovery.

Once consultation under section 7 of the Act is triggered, the process may conclude informally when the Service concurs in writing that the proposed Federal action is not likely to adversely affect the listed species or its critical habitat. However, if the Service determines through informal consultation that adverse impacts are likely to occur, then formal consultation would be initiated. Formal consultation concludes with a biological opinion issued by the Service on whether the proposed Federal action is likely to jeopardize the continued existence of a listed species or result in destruction or adverse modification of critical habitat, with separate analyses being made under both the jeopardy and the adverse modification standards. For critical habitat, a biological opinion that concludes in a determination of no destruction or adverse modification may contain discretionary conservation recommendations to minimize adverse effects to primary constituent elements, but it would not contain any mandatory reasonable and prudent measures or terms and conditions. Mandatory measures and terms and conditions to implement such measures are only specified when the proposed action would result in the incidental take of a listed animal species. Reasonable and prudent alternatives to the proposed Federal action would only be suggested when the biological opinion results in a jeopardy or adverse modification conclusion.

We also note that for 30 years prior to the Ninth Circuit Court's decision in *Gifford Pinchot Task Force v. U.S. Fish and Wildlife Service*, 378 F.3d 1059 (9th Cir 2004) (hereinafter *Gifford Pinchot*), the Service conflated the jeopardy standard with the standard for destruction or adverse modification of critical habitat when evaluating federal actions that affect currently occupied critical habitat. The Court ruled that the two standards are distinct and that adverse modification evaluations require consideration of impacts on the recovery of species. Thus, under the *Gifford Pinchot* decision, critical habitat designations may provide greater benefits to the recovery of a species.

However, we believe the conservation achieved through implementing habitat conservation plans (HCPs) or other habitat management plans is typically greater than would be achieved through multiple site-by-site, project-by-project, section 7 consultations involving consideration of critical habitat. Management plans commit resources to implement long-term management and protection to particular habitat for at least one and possibly other listed or sensitive species. Section 7 consultations only commit Federal agencies to prevent adverse modification to critical habitat caused by the particular project, and they are not committed to provide conservation or long-term benefits to areas not affected by the proposed project. Thus, any HCP or management plan which considers enhancement or recovery as the management standard will often provide as much or more benefit than a consultation for critical habitat designation conducted under the standards required by the Ninth Circuit in the *Gifford Pinchot* decision.

The information provided in this section applies to all the discussions below that discuss the benefits of inclusion and exclusion of critical habitat in that it provides the framework for the consultation process.

#### **Educational Benefits of Critical Habitat**

A benefit of including lands in critical habitat is that the designation of critical habitat serves to educate landowners, State and local governments, and the public regarding the potential conservation value of an area. This helps focus and promote conservation efforts by other parties by clearly delineating areas of high conservation value for *Piperia yadonii*. In general the educational benefit of a critical habitat designation always exists, although in some cases it may be redundant with other educational effects. For example, HCPs have significant public input and may largely duplicate the educational benefit of a critical habitat designation. This benefit is closely related to a second, more indirect benefit: that designation of critical habitat would inform State agencies and local governments about areas that could be conserved under State laws or local ordinances.

#### **Benefits of Excluding Lands With HCPs or Other Approved Management Plans From Critical Habitat**

The benefits of excluding lands with HCPs or other approved management plans from critical habitat designation include relieving landowners, communities, and counties of any

additional regulatory burden that might be imposed by a critical habitat designation. Most HCPs and other conservation plans take many years to develop and, upon completion, are consistent with the recovery objectives for listed species that are covered within the plan area. In fact, designating critical habitat in areas covered by a pending HCP or conservation plan could result in the loss of some species' benefits if participants abandon the planning process, in part because of the strength of the perceived additional regulatory compliance that such designation would entail. Although plants are not subject to the prohibition on take in Section 9 of the Act, the Service encourages applicants to include them as covered species in HCPs by incorporating measures to protect them and their habitat under the plans. If as a result of the federal nexus created by such inclusion, plants are subjected to increased numbers of consultations under Section 7 due to designation of critical habitat, applicants will likely be discouraged from incorporating conservation measures for plants in their HCPs. The time and cost of regulatory compliance for a critical habitat designation do not have to be quantified for them to be perceived as additional Federal regulatory burden sufficient to discourage continued participation in plans targeting listed species' conservation.

The benefits of excluding lands within approved management plans from critical habitat designation include relieving landowners, communities, and counties of any additional regulatory burden that might be imposed by critical habitat. Many conservation plans provide conservation benefits to unlisted sensitive species. Imposing an additional regulatory review as a result of the designation of critical habitat may undermine conservation efforts and partnerships in many areas. Designation of critical habitat within the boundaries of management plans that provide conservation measures for a species could be viewed as a disincentive to those entities currently developing these plans or contemplating them in the future, because one of the incentives for undertaking conservation is greater ease of permitting where listed species are affected. Addition of a new regulatory requirement would remove a significant incentive for undertaking the time and expense of management planning.

A related benefit of excluding lands within management plans from critical habitat designation is the unhindered continued ability to seek new partnerships with future plan

participants including States, counties, local jurisdictions, conservation organizations, and private landowners, which together can implement conservation actions that we would be unable to accomplish otherwise. If lands within approved management plan areas are designated as critical habitat, it would likely have a negative effect on our ability to establish new partnerships to develop these plans, particularly plans that address landscape-level conservation of species and habitats. By preemptively excluding these lands, we preserve our current partnerships and encourage additional conservation actions in the future.

As noted above, there are currently no approved HCPs or management plans in place that provide conservation benefits to *P. yadonii*. However, The Pebble Beach Company has submitted a draft conservation strategy for some of its lands that are within *P. yadonii* proposed critical habitat units on the Monterey Peninsula (Unit 6), and interior to the Monterey Peninsula (Unit 4 and Unit 5), and we are continuing to work with the Pebble Beach Company to refine that strategy. If the strategy is finalized and assured of implementation prior to final critical habitat designation, we will evaluate it to determine whether it provides a greater benefit to Yadon's piperia than could be achieved through the final designation of critical habitat.

#### Economic Analysis

An analysis of the economic impacts of proposing critical habitat for *Piperia yadonii* is being prepared. We will announce the availability of the draft economic analysis as soon as it is completed, at which time we will seek public review and comment. At that time, copies of the draft economic analysis will be available for downloading from the Internet at <http://www.fws.gov/ventura/>, or by contacting the Ventura Fish and Wildlife Office directly (see **ADDRESSES** section).

#### Peer Review

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

conclusions regarding the proposed designation of critical habitat.

We will consider all comments and information received during the comment period on this proposed rule during preparation of a final rulemaking. Accordingly, the final decision may differ from this proposal.

#### Public Hearings

The Act provides for one or more public hearings on this proposal, if requested. Requests for public hearings must be made in writing at least 15 days prior to the close of the public comment period. We will schedule public hearings on this proposal, if any are requested, and announce the dates, times, and places of those hearings in the **Federal Register** and local newspapers at least 15 days prior to the first hearing.

#### Clarity of the Rule

Executive Order 12866 requires each agency to write regulations and notices that are easy to understand. We invite your comments on how to make this proposed rule easier to understand, including answers to questions such as the following: (1) Are the requirements in the proposed rule clearly stated? (2) Does the proposed rule contain technical jargon that interferes with the clarity? (3) Does the format of the proposed rule (grouping and order of the sections, use of headings, paragraphing, and so forth) aid or reduce its clarity? (4) Is the description of the notice in the **SUPPLEMENTARY INFORMATION** section of the preamble helpful in understanding the proposed rule? (5) What else could we do to make this proposed rule easier to understand?

Send a copy of any comments on how we could make this proposed rule easier to understand to: Office of Regulatory Affairs, Department of the Interior, Room 7229, 1849 C Street, NW., Washington, DC 20240. You may e-mail your comments to this address: [Exsec@ios.doi.gov](mailto:Exsec@ios.doi.gov).

#### Required Determinations

##### *Regulatory Planning and Review*

In accordance with Executive Order 12866, this document is a significant rule in that it may raise novel legal and policy issues, but it is not anticipated to have an annual effect on the economy of \$100 million or more or affect the economy in a material way. Due to the tight timeline for publication in the **Federal Register**, the Office of Management and Budget (OMB) has not formally reviewed this rule. We are preparing a draft economic analysis of this proposed action, which will be

available for public comment, to determine the economic consequences of designating the specific area as critical habitat. This economic analysis also will be used to determine compliance with Executive Order 12866, Regulatory Flexibility Act, Small Business Regulatory Enforcement Fairness Act, and Executive Order 12630.

Within these areas, the types of Federal actions or authorized activities that we have identified as potential concerns are listed above in the section on Section 7 Consultation. The availability of the draft economic analysis will be announced in the **Federal Register** and in local newspapers, so that it is available for public review and comments. The draft economic analysis can be obtained from the Internet Web site at <http://www.fws.gov/ventura/> or by contacting the Ventura Fish and Wildlife Office directly (see **ADDRESSES** section).

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

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

At this time, the Service lacks the available economic information necessary to provide an adequate factual basis for the required RFA finding. Therefore, the RFA finding is deferred until completion of the draft economic analysis prepared pursuant to section 4(b)(2) of the Act and E.O. 12866. This draft economic analysis will provide the required factual basis for the RFA finding. Upon completion of the draft economic analysis, the Service will publish a notice of availability of the draft economic analysis of the proposed designation and reopen the public comment period for the proposed designation for an additional 60 days.

The Service will include with the notice of availability, as appropriate, an initial regulatory flexibility analysis or a certification that the rule will not have a significant economic impact on a substantial number of small entities accompanied by the factual basis for that determination. The Service has concluded that deferring the RFA finding until completion of the draft economic analysis is necessary to meet the purposes and requirements of the RFA. Deferring the RFA finding in this manner will ensure that the Service makes a sufficiently informed determination based on adequate economic information and provides the necessary opportunity for public comment.

#### *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 proposed rule to designate critical habitat for *Piperia yadonii* is not a significant regulatory action under Executive Order 12866, and 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.

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

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

(a) This rule will not produce a Federal mandate. In general, a Federal mandate is a provision in legislation, statute or regulation that would impose an enforceable duty upon State, local, tribal governments, or the private sector and includes both "Federal intergovernmental mandates" and "Federal private sector mandates." These terms are defined in 2 U.S.C. 658(5)-(7). "Federal intergovernmental mandate" includes a regulation that "would impose an enforceable duty upon State, local, or tribal governments" with two exceptions. It excludes "a condition of Federal assistance." It also excludes "a duty arising from participation in a voluntary Federal program," unless the regulation "relates to a then-existing Federal program under which \$500,000,000 or more is provided annually to State, local, and tribal governments under entitlement authority," if the provision would "increase the stringency of conditions of

assistance" or "place caps upon, or otherwise decrease, the Federal Government's responsibility to provide funding," and the State, local, or tribal governments "lack authority" to adjust accordingly. At the time of enactment, these entitlement programs were: Medicaid; AFDC work programs; Child Nutrition; Food Stamps; Social Services Block Grants; Vocational Rehabilitation State Grants; Foster Care, Adoption Assistance, and Independent Living; Family Support Welfare Services; and Child Support Enforcement. "Federal private sector mandate" includes a regulation that "would impose an enforceable duty upon the private sector, except (i) a condition of Federal assistance or (ii) a duty arising from participation in a voluntary Federal program."

The designation of critical habitat does not impose a legally binding duty on non-Federal Government entities or private parties. Under the Act, the only regulatory effect is that Federal agencies must ensure that their actions do not destroy or adversely modify critical habitat under section 7. While non-Federal entities that receive Federal funding, assistance, or permits, or that otherwise require approval or authorization from a Federal agency for an action, may be indirectly impacted by the designation of critical habitat, the legally binding duty to avoid destruction or adverse modification of critical habitat rests squarely on the Federal agency. Furthermore, to the extent that non-Federal entities are indirectly impacted because they receive Federal assistance or participate in a voluntary Federal aid program, the Unfunded Mandates Reform Act would not apply; nor would critical habitat shift the costs of the large entitlement programs listed above on to State governments.

(b) We do not believe that this rule will significantly or uniquely affect small governments because only 7 percent (209 ac/84 ha) of the total proposed critical habitat designation for *Piperia yadonii* is owned by small government entities; these entities include the City of Pacific Grove and Monterey County. Furthermore, a large portion of these lands are designated as parks or open space and managed at least in part for conservation of natural resources. As such, Small Government Agency Plan is not required. We will, however, further evaluate this issue as we conduct our economic analysis and revise this assessment if appropriate.

#### *Federalism*

In accordance with Executive Order 13132, the rule does not have significant

Federalism effects. A Federalism assessment is not required. In keeping with DOI policy, we requested information from, and coordinated development of, this proposed critical habitat designation with appropriate State resource agencies in California. The designation of critical habitat in areas currently occupied by *Piperia yadonii* imposes no additional restrictions to those currently in place and, therefore, has little incremental impact on State and local governments and their activities. The designation may have some benefit to these governments in that the areas that contain the features essential to the conservation of the species are more clearly defined, and the primary constituent elements of the habitat necessary to the conservation of the species are specifically identified. While making this definition and identification does not alter where and what federally sponsored activities may occur, it may assist these local governments in long-range planning (rather than waiting for case-by-case section 7 consultations to occur).

*Civil Justice Reform*

In accordance with Executive Order 12988, the Office of the Solicitor has determined that the rule does not unduly burden the judicial system and meets the requirements of sections 3(a) and 3(b)(2) of the Order. We have proposed designating critical habitat in accordance with the provisions of the Endangered Species Act. This proposed rule uses standard property descriptions and identifies the primary constituent elements within the designated areas to assist the public in understanding the habitat needs of *Piperia yadonii*.

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

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

*National Environmental Policy Act*

It is our position that, outside the Tenth Circuit, we do not need to prepare environmental analyses as defined by the NEPA in connection with designating critical habitat under 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). This assertion was upheld in the courts of the Ninth Circuit (*Douglas County v. Babbitt*, 48 F. 3d 1495 (9th Cir. Ore. 1995), cert. denied 116 S. Ct. 698 (1996)).

*Government-to-Government Relationship With Tribes*

In accordance with the President's memorandum of April 29, 1994, "Government-to-Government Relations with Native American Tribal Governments" (59 FR 22951), Executive Order 13175, and the Department of Interior's manual at 512 DM 2, we readily acknowledge our responsibility to communicate meaningfully with recognized Federal Tribes on a government-to-government basis. We have determined that there are no tribal lands occupied at the time of listing or

currently that contain the features essential for the conservation of *Piperia yadonii* and no tribal lands that are unoccupied that are essential for the conservation of *Piperia yadonii*. Therefore, critical habitat for *Piperia yadonii* has not been proposed for designation on Tribal lands.

**References Cited**

A complete list of all references cited in this rulemaking is available upon request from the Field Supervisor, Ventura Fish and Wildlife Office (see **ADDRESSES** section).

**Author(s)**

The primary author of this package is the Ventura 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.

**Proposed Regulation Promulgation**

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

**PART 17—[AMENDED]**

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

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

2. In § 17.12(h), revise the entry for "*Piperia yadonii*" under "FLOWERING PLANTS" to read as follows:

**§ 17.12 Endangered and threatened plants.**  
 \* \* \* \* \*  
 (h) \* \* \*

Species		Historic range	Family	Status	When listed	Critical habitat	Special rules
Scientific name	Common name						
FLOWERING PLANTS							
* <i>Piperia yadonii</i> .....	* Yadon's piperia .....	* U.S.A. (CA) .....	* Orchidaceae (Orchid).	* E	* 1998	* 17.96(a)	* NA
*	*	*	*	*	*	*	*

3. In § 17.96(a), add an entry for *Piperia yadonii* under family Orchidaceae" in alphabetical order to read as follows:

**§ 17.96 Critical habitat—plants.**

(a) *Flowering plants.*  
 \* \* \* \* \*

Family Orchidaceae:

*Piperia yadonii* (Yadon's piperia)  
 (1) Critical habitat units are depicted for Monterey County, California, on the maps below.  
 (2) The primary constituent elements of critical habitat for *Piperia yadonii* are the habitat components that provide:  
 (i) A vegetation structure providing filtered sunlight on sandy soils.

(A) Pine forest (primarily Monterey pine) with an open canopy and sparse herbaceous understory on Baywood sands, Narlon loamy fine sands, Sheridan coarse sandy loams, Tangair fine sands, Santa Lucia shaly clay loams, and Chamise shaley clay loams underlain by a hardpan; and

(B) Maritime chaparral ridges with dwarfed shrubs (primarily Hooker's manzanita) on Reliz shaly clay loams, Sheridan sandy loams, Narlon sandy loams, Arnold loamy sands and soils in the Junipero-Sur complex, Rock Outcrop-Xerorthents Association, and Arnold-Santa Ynez complex often underlain by rock outcroppings.

(ii) Presence of nocturnal, short-tongued moths in the families Pyralidae,

Geometridae, Noctuidae, and Pterophoridae.

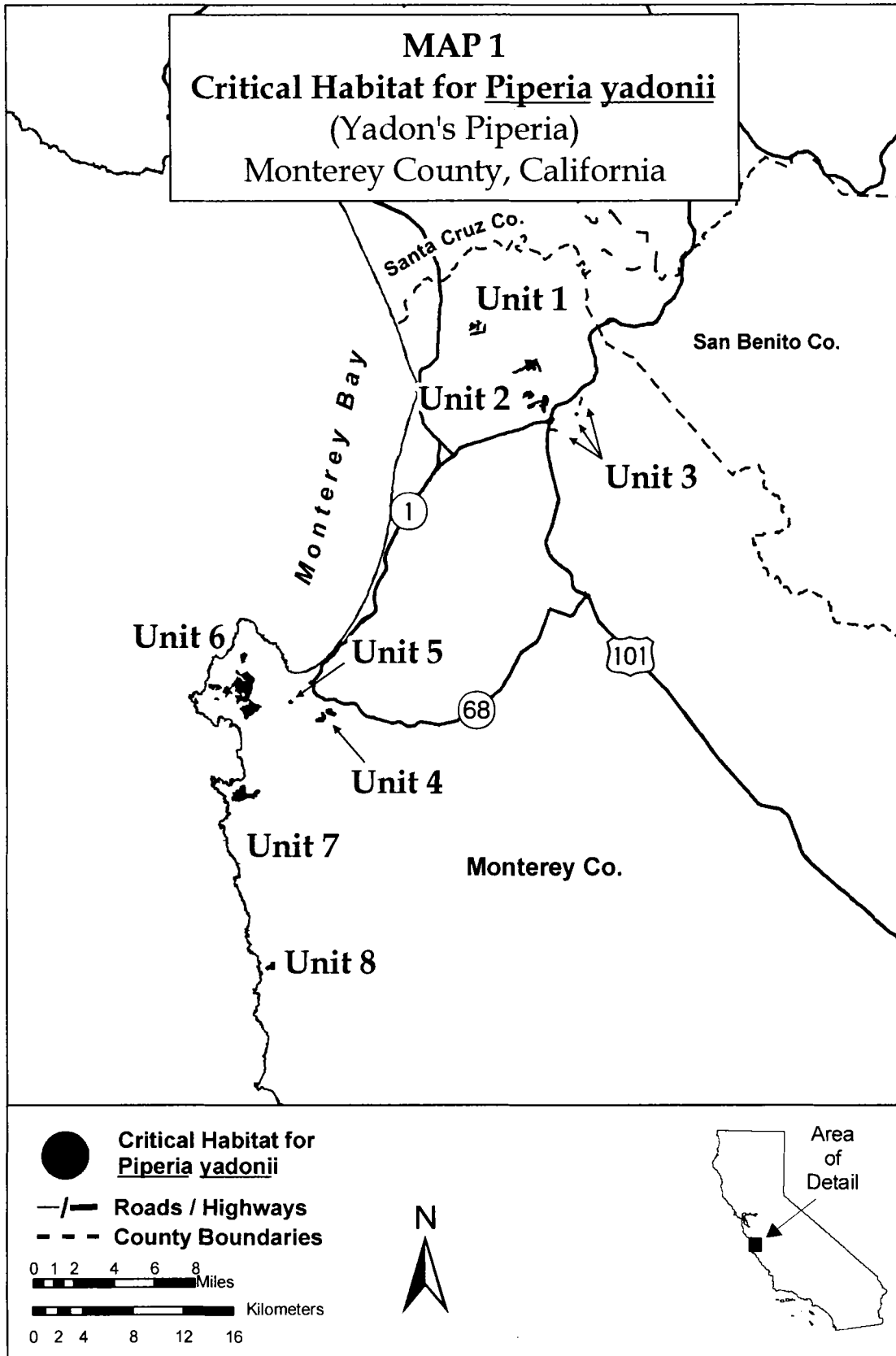
(3) Critical habitat does not include man-made structures existing on the effective date of this rule and not containing one or more of the primary constituent elements. Such structures include buildings, aqueducts, airports, and roads, and the land on which they are located.

(4) Critical Habitat Map Units—Data layers defining map units were created

on base maps using aerial imagery from the National Agricultural Imagery Program; aerial imagery captured June 2005. Data were project to Universal Transverse Mercator (UTM) zone 11, North American Datum (NAD) 1983.

(5) **Note:** (Index map) of critical habitat for *Piperia yadonii* (Map 1) follows:

**BILLING CODE 4310-55-P**



(6) Unit 1: Blohm Ranch, Monterey County, California

(i) Subunit 1a: From USGS 1:24,000 scale quadrangle Prunedale. Land bounded by the following UTM Zone 10, NAD83 coordinates (E, N): 611901, 4079098; 611902, 4079137; 611917, 4079156; 611974, 4079198; 612002, 4079216; 612037, 4079247; 612049, 4079272; 612042, 4079293; 611982, 4079311; 611952, 4079324; 611943, 4079354; 611929, 4079419; 611930, 4079454; 611972, 4079486; 611987, 4079543; 612012, 4079583; 612011, 4079594; 612038, 4079619; 612190, 4079608; 612190, 4079539; 612216, 4079511; 612324, 4079491; 612343, 4079504; 612387, 4079471; 612456, 4079471; 612514, 4079509; 612558, 4079614; 612558, 4079724; 612489, 4079761; 612455, 4079807; 612459, 4079821; 612511, 4079847; 612550, 4079852; 612589, 4079847; 612625, 4079832; 612654, 4079812; 612673, 4079796; 612655, 4079782; 612630, 4079752; 612603, 4079744; 612647, 4079619; 612734, 4079691; 612754, 4079691; 612762, 4079710; 612785, 4079745; 612846, 4079723; 612827, 4079702; 612815, 4079690; 612804, 4079670; 612797, 4079645; 612795, 4079611; 612746, 4079599; 612716, 4079588; 612674, 4079586; 612655, 4079569; 612683, 4079496; 612666, 4079450; 612629, 4079411; 612638, 4079375; 612651, 4079353; 612661,

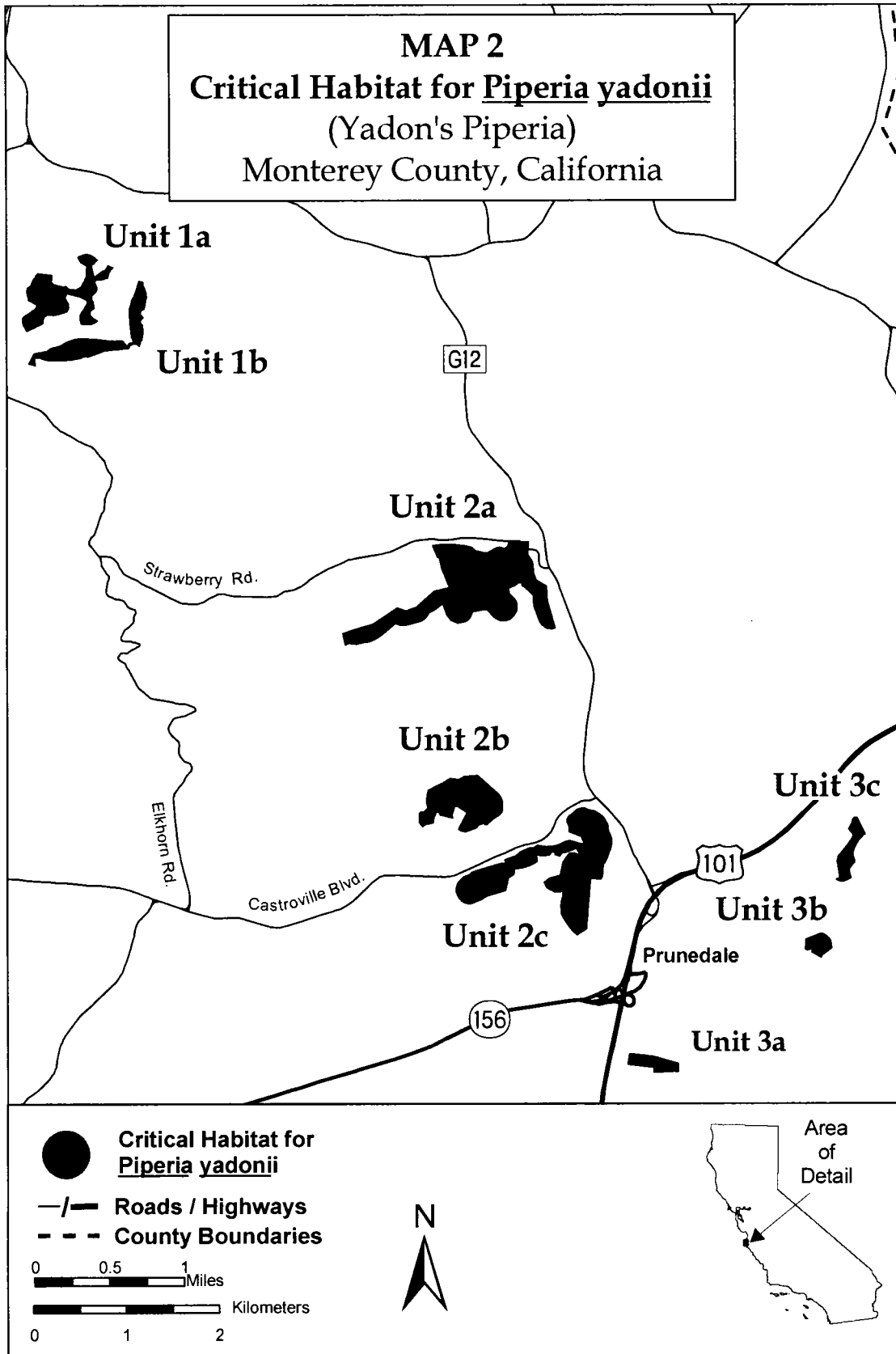
4079323; 612665, 4079286; 612624, 4079249; 612624, 4079222; 612635, 4079209; 612646, 4079194; 612662, 4079183; 612713, 4079155; 612682, 4079133; 612642, 4079112; 612585, 4079109; 612530, 4079112; 612521, 4079147; 612509, 4079197; 612576, 4079313; 612588, 4079337; 612589, 4079337; 612580, 4079358; 612579, 4079358; 612563, 4079371; 612537, 4079381; 612497, 4079398; 612474, 4079403; 612398, 4079417; 612367, 4079417; 612350, 4079399; 612346, 4079383; 612357, 4079360; 612369, 4079340; 612383, 4079316; 612395, 4079275; 612390, 4079255; 612380, 4079233; 612350, 4079218; 612286, 4079200; 612233, 4079178; 612196, 4079184; 612165, 4079184; 612143, 4079168; 612128, 4079150; 612128, 4079119; 612127, 4079094; 611959, 4078999; 611958, 4078999; 611931, 4079027; 611911, 4079061; returning to 611901, 4079098.

(ii) Subunit 1b: From USGS 1:24,000 scale quadrangle Prunedale. Land bounded by the following UTM Zone 10, NAD83 coordinates (E, N): 611998, 4078651; 611999, 4078664; 611999, 4078665; 612044, 4078765; 612187, 4078803; 612213, 4078825; 612254, 4078844; 612284, 4078853; 612336, 4078871; 612385, 4078907; 612423, 4078925; 612458, 4078940; 612479, 4078947; 612520, 4078956; 612604, 4078959; 612662, 4078959; 612704,

4078960; 612812, 4078958; 612850, 4078951; 612897, 4078953; 612988, 4078967; 613045, 4078913; 613060, 4078936; 613099, 4078949; 613101, 4078961; 613094, 4078978; 613084, 4079005; 613073, 4079060; 613062, 4079129; 613051, 4079222; 613044, 4079306; 613056, 4079376; 613064, 4079397; 613082, 4079431; 613099, 4079501; 613130, 4079602; 613168, 4079601; 613177, 4079580; 613180, 4079551; 613198, 4079533; 613212, 4079488; 613220, 4079438; 613212, 4079355; 613203, 4079303; 613176, 4079297; 613165, 4079281; 613166, 4079253; 613195, 4079224; 613195, 4079212; 613176, 4079198; 613174, 4079174; 613177, 4079155; 613196, 4079139; 613205, 4079091; 613208, 4079041; 613195, 4078982; 613186, 4078964; 613182, 4078941; 613177, 4078906; 613172, 4078906; 613162, 4078914; 613153, 4078927; 613130, 4078938; 613103, 4078930; 613086, 4078918; 613073, 4078906; 613061, 4078885; 613061, 4078882; 612802, 4078842; 612765, 4078826; 612627, 4078767; 612606, 4078767; 612578, 4078759; 612552, 4078744; 612445, 4078722; 612278, 4078704; 612253, 4078701; 612170, 4078702; 612124, 4078719; 612110, 4078724; 612055, 4078722; 612071, 4078638; returning to 611998, 4078651.

(7) **Note:** Map of Units 1, 2, and 3 (Map 2) follows:





(8) Unit 2: Manzanita Park, Monterey County, California.

(i) Subunit 2a: From USGS 1:24,000 scale quadrangle Prunedale. Land bounded by the following UTM Zone 10, NAD83 coordinates (E, N): 615541, 4076005; 615651, 4076047; 615859, 4076125; 616111, 4076311; 616209, 4076287; 616278, 4076318; 616316, 4076335; 616416, 4076435; 616503, 4076520; 616659, 4076565; 616566, 4076763; 616534, 4076874; 616515, 4076874; 616454, 4077003; 616562, 4077020; 616677, 4077028; 616820, 4077021; 616876, 4077008; 616925, 4076975; 617013, 4076959; 617053, 4076962; 617137, 4077017; 617176, 4077025; 617224, 4077020; 617259, 4077038; 617271, 4077094; 617286, 4077095; 617333, 4077097; 617481, 4077105; 617482, 4077105; 617488, 4076972; 617540, 4076890; 617565, 4076771; 617594, 4076701; 617703, 4076645; 617728, 4076486; 617830, 4076204; 617787, 4076190; 617729, 4076197; 617671, 4076233; 617643, 4076273; 617579, 4076433; 617565, 4076533; 617468, 4076615; 617445, 4076631; 617435, 4076657; 617402, 4076656; 617361, 4076620; 617305, 4076601; 617309, 4076551; 617377, 4076484; 617396, 4076450; 617407, 4076402; 617403, 4076354; 617377, 4076301; 617341, 4076268; 617287, 4076245; 617229, 4076245; 617167, 4076273; 617079, 4076356; 616934, 4076322; 616910, 4076259; 616884, 4076229; 616851, 4076207; 616814, 4076195; 616775, 4076192; 616737, 4076200; 616702, 4076217; 616655, 4076267; 616599, 4076383; 616511, 4076307; 616465, 4076283; 616430, 4076225; 616388, 4076189; 616213, 4076130; 616160, 4076127; 616111, 4076139; 616092, 4076133; 615967, 4076012; 615897, 4075959; 615835, 4075931; 615776, 4075922; 615706, 4075898; 615620, 4075896; 615575, 4075879; returning to 615541, 4076005.

(ii) Subunit 2b: From USGS 1:24,000 scale quadrangle Prunedale. Land bounded by the following UTM Zone 10, NAD83 coordinates (E, N): 616488, 4074150; 616505, 4074167; 616533, 4074172; 616573, 4074209; 616573, 4074219; 616555, 4074267; 616557, 4074347; 616567, 4074401; 616736, 4074502; 616746, 4074512; 616760, 4074521; 616779, 4074536; 616804, 4074543; 616826, 4074543; 616853, 4074543; 616876, 4074540; 616890, 4074537; 616915, 4074552; 616943, 4074575; 617092, 4074595; 617327, 4074410; 617348, 4074387; 617367, 4074354; 617374, 4074335; 617379, 4074301; 617380, 4074258; 617379, 4074219; 617379, 4074218; 617346, 4074185; 617298, 4074145; 617219, 4074073; 617199, 4074072; 617186,

4074083; 617159, 4074076; 617134, 4074069; 617131, 4074058; 617114, 4074034; 616994, 4073984; 616944, 4073991; 616918, 4074001; 616981, 4074157; 617003, 4074188; 616891, 4074250; 616860, 4074246; 616845, 4074178; 616845, 4074160; 616853, 4074117; 616747, 4074137; 616712, 4074146; 616701, 4074171; 616673, 4074179; 616646, 4074104; 616652, 4074081; 616642, 4074056; 616620, 4074046; 616591, 4074041; 616568, 4074035; 616546, 4074023; 616532, 4074006; 616531, 4074006; 616490, 4074054; returning to 616488, 4074150.

(iii) Subunit 2c: From USGS 1:24,000 scale quadrangle Prunedale. Land bounded by the following UTM Zone 10, NAD83 coordinates (E, N): 616931, 4073371; 616936, 4073410; 616951, 4073446; 616975, 4073477; 617003, 4073500; 617077, 4073542; 617094, 4073556; 617142, 4073581; 617382, 4073670; 617411, 4073676; 617450, 4073676; 617435, 4073712; 617512, 4073743; 617549, 4073763; 617598, 4073810; 617636, 4073830; 617694, 4073860; 617739, 4073865; 617774, 4073887; 617847, 4073880; 617879, 4073885; 617960, 4073894; 618016, 4073916; 618064, 4073947; 618117, 4073965; 618279, 4073927; 618244, 4074007; 618138, 4074038; 618106, 4074053; 618104, 4074059; 618103, 4074108; 618076, 4074150; 618071, 4074184; 618081, 4074204; 618095, 4074224; 618117, 4074247; 618176, 4074299; 618229, 4074318; 618261, 4074316; 618307, 4074300; 618370, 4074293; 618407, 4074278; 618448, 4074248; 618468, 4074227; 618507, 4074173; 618519, 4074146; 618533, 4074088; 618553, 4074051; 618566, 4074011; 618572, 4073986; 618574, 4073952; 618568, 4073913; 618533, 4073788; 618521, 4073761; 618495, 4073722; 618496, 4073601; 618482, 4073567; 618369, 4073570; 618365, 4073277; 618364, 4073029; 618261, 4072958; 618212, 4072996; 618157, 4073061; 618131, 4073086; 618090, 4073147; 618078, 4073173; 618064, 4073256; 618067, 4073314; 618081, 4073377; 618072, 4073413; 618044, 4073404; 618015, 4073401; 617985, 4073404; 617957, 4073413; 617931, 4073426; 617902, 4073452; 617885, 4073476; 617873, 4073501; 617927, 4073549; 618040, 4073586; 618063, 4073730; 618123, 4073826; 618134, 4073831; 618168, 4073834; 618228, 4073818; 618235, 4073822; 618191, 4073875; 618082, 4073823; 618062, 4073827; 618042, 4073815; 618025, 4073781; 617967, 4073798; 617970, 4073818; 617934, 4073823; 617913, 4073790; 617874, 4073780; 617778, 4073781; 617786, 4073711; 617701,

4073663; 617644, 4073637; 617551, 4073622; 617545, 4073563; 617491, 4073517; 617470, 4073382; 617262, 4073305; 617237, 4073287; 617138, 4073233; 617100, 4073222; 617071, 4073221; 617032, 4073229; 616997, 4073246; 616968, 4073272; 616946, 4073305; 616934, 4073342; returning to 616931, 4073371.

(9) Unit 3: Vierra Canyon, Monterey County, California.

(i) Subunit 3a: From USGS 1:24,000 scale quadrangle Prunedale. Land bounded by the following UTM Zone 10, NAD83 coordinates (E, N): 618886, 4071622; 618896, 4071742; 619157, 4071722; 619431, 4071664; 619441, 4071576; 619441, 4071573; 619385, 4071569; 619171, 4071553; 619166, 4071601; 618901, 4071615; 618892, 4071615; returning to 618886, 4071622.

(ii) Subunit 3b: From USGS 1:24,000 scale quadrangle Prunedale. Land bounded by the following UTM Zone 10, NAD83 coordinates (E, N): 620707, 4073069; 620865, 4073146; 620890, 4073140; 620917, 4073128; 620941, 4073111; 620961, 4073089; 620977, 4073064; 620987, 4073037; 620992, 4072992; 620897, 4072908; 620886, 4072879; 620778, 4072930; 620784, 4072971; 620736, 4072950; 620709, 4072963; returning to 620707, 4073069.

(iii) Subunit Unit 3c: From USGS 1:24,000 scale quadrangle Prunedale. Land bounded by the following UTM Zone 10, NAD83 coordinates (E, N): 620984, 4073724; 621030, 4073752; 620987, 4073916; 620997, 4073968; 620996, 4073974; 621079, 4074094; 621133, 4074174; 621144, 4074209; 621084, 4074270; 621123, 4074335; 621127, 4074380; 621146, 4074396; 621173, 4074395; 621273, 4074227; 621256, 4074215; 621246, 4074203; 621206, 4074150; 621177, 4074089; 621151, 4074025; 621163, 4073968; 621171, 4073965; 621179, 4073920; 621159, 4073901; 621160, 4073898; 621124, 4073845; 621131, 4073829; 621129, 4073827; 621153, 4073753; 621073, 4073708; 621025, 4073710; returning to 620984, 4073724.

(10) Unit 4: Aguajito, Monterey County, California

(i) Subunit 4a: From USGS 1:24,000 scale quadrangle Seaside. Land bounded by the following UTM Zone 10, NAD83 coordinates (E, N): 602332, 4048354; 602347, 4048427; 602354, 4048439; 602362, 4048452; 602366, 4048456; 602401, 4048489; 602508, 4048576; 602697, 4048582; 602735, 4048574; 602762, 4048562; 602786, 4048545; 602817, 4048507; 602832, 4048471; 602858, 4048345; 603034, 4048312; 603069, 4048294; 603115, 4048262; 603136, 4048241; 603158, 4048209; 603171, 4048172; 603173, 4048133;

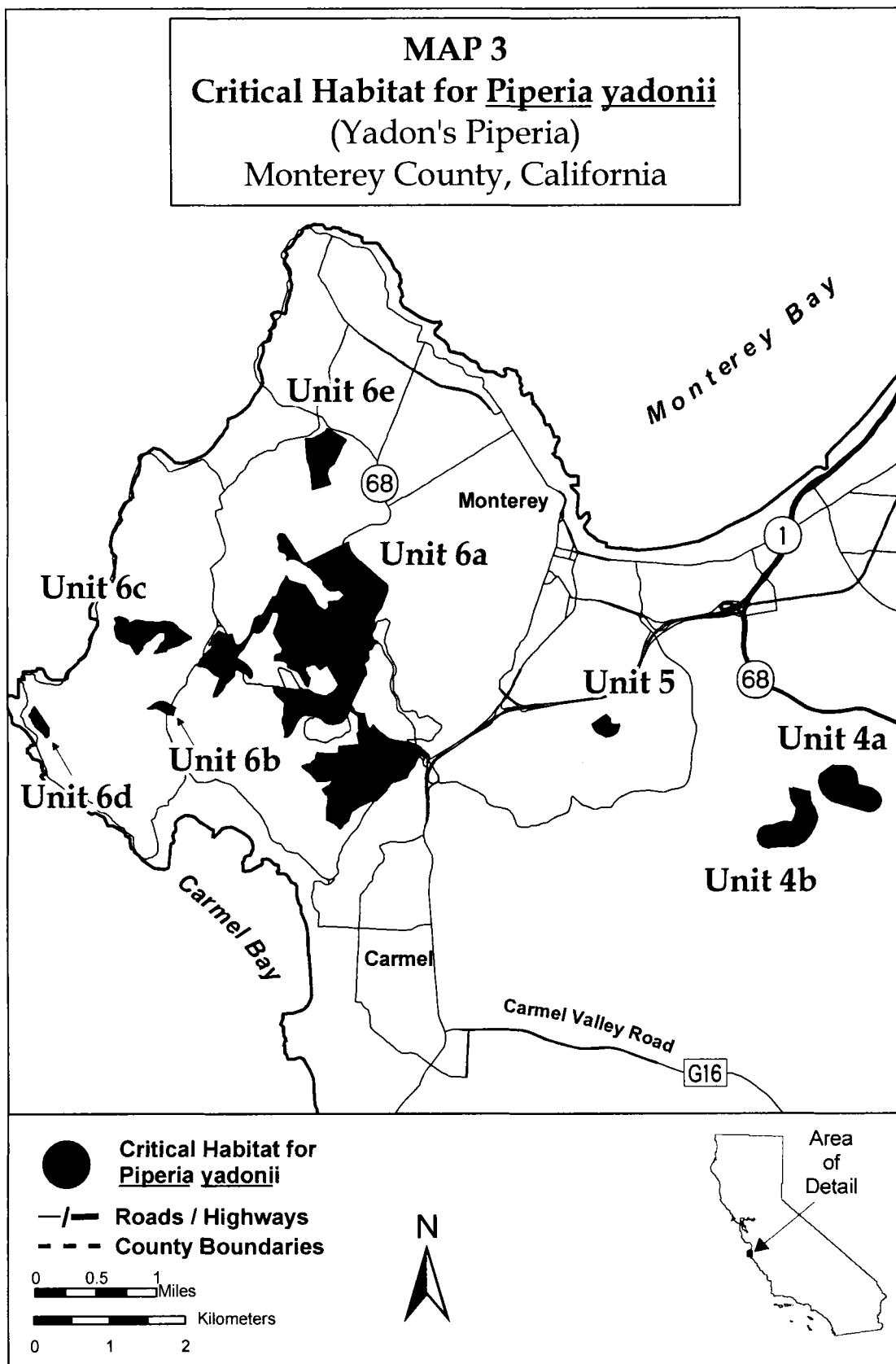
603166, 4048094; 603143, 4048051;  
603107, 4048018; 603072, 4048000;  
603024, 4047993; 602966, 4048004;  
602522, 4048105; 602451, 4048153;  
602400, 4048198; 602373, 4048240;  
602351, 4048287; returning to 602332,  
4048354.

(ii) Subunit 4b: From USGS 1:24,000  
scale quadrangle Seaside. Land bounded  
by the following UTM Zone 10, NAD83  
coordinates (E, N): 601574, 4047589;  
601594, 4047664; 601625, 4047701;  
601657, 4047723; 601695, 4047736;

601778, 4047749; 601839, 4047778;  
601926, 4047801; 601965, 4047804;  
602014, 4047795; 602048, 4047863;  
602058, 4047918; 602064, 4047991;  
602022, 4048044; 602000, 4048080;  
601988, 4048107; 601973, 4048163;  
601962, 4048239; 602022, 4048231;  
602007, 4048253; 602060, 4048243;  
602206, 4048211; 602231, 4048211;  
602246, 4048135; 602250, 4048108;  
602256, 4048082; 602264, 4048071;  
602278, 4048051; 602309, 4048008;  
602318, 4047990; 602345, 4047913;

602355, 4047883; 602350, 4047838;  
602325, 4047746; 602278, 4047654;  
602262, 4047623; 602199, 4047551;  
602130, 4047497; 602054, 4047470;  
601996, 4047474; 601864, 4047460;  
601773, 4047445; 601743, 4047440;  
601704, 4047440; 601657, 4047454;  
601611, 4047490; 601582, 4047540;  
returning to 601574, 4047589.

(iii) **Note:** Map of Units 4, 5, and 6  
(Map 3) follows:



(11) Unit 5: Old Capitol, Monterey County, California. From USGS 1:24,000 scale quadrangle Monterey. Land bounded by the following UTM Zone 10, NAD83 coordinates (E, N): 599314, 4048918; 599497, 4049056; 599551, 4048997; 599551, 4048976; 599552, 4048959; 599562, 4048939; 599593, 4048923; 599625, 4048931; 599640, 4048934; 599655, 4048928; 599675, 4048937; 599685, 4048913; 599666, 4048844; 599649, 4048821; 599603, 4048784; 599561, 4048761; 599516, 4048757; 599437, 4048777; 599370, 4048808; 599329, 4048864; returning to 599314, 4048918.

(12) Unit 6: Monterey Peninsula, Monterey County, California.

(i) Subunit 6a: From USGS 1:24,000 scale quadrangle Monterey. Land bounded by the following UTM Zone 10, NAD83 coordinates (E, N): 594042, 4049355; 594060, 4049389; 594080, 4049435; 594120, 4049486; 594160, 4049538; 594186, 4049560; 594186, 4049560; 594199, 4049572; 594209, 4049570; 594210, 4049577; 594211, 4049584; 594214, 4049592; 594216, 4049600; 594219, 4049607; 594226, 4049621; 594226, 4049621; 594201, 4049634; 594188, 4049620; 594183, 4049623; 594186, 4049648; 594202, 4049675; 594225, 4049725; 594236, 4049745; 594285, 4049805; 594296, 4049823; 594348, 4049799; 594414, 4049772; 594480, 4049792; 594500, 4049738; 594525, 4049669; 594536, 4049664; 594558, 4049652; 594572, 4049654; 594574, 4049654; 594584, 4049655; 594594, 4049663; 594613, 4049676; 594636, 4049703; 594659, 4049725; 594680, 4049752; 594698, 4049786; 594718, 4049834; 594730, 4049866; 594741, 4049919; 594754, 4049979; 594759, 4049994; 594762, 4050006; 594767, 4050021; 594788, 4050040; 594822, 4050057; 594856, 4050064; 594888, 4050101; 594890, 4050107; 594890, 4050107; 594890, 4050107; 594890, 4050107; 594890, 4050107; 594890, 4050107; 594893, 4050118; 594893, 4050118; 594897, 4050135; 594923, 4050178; 594929, 4050187; 594942, 4050217; 594960, 4050255; 594977, 4050293; 594984, 4050307; 595002, 4050317; 595010, 4050319; 595029, 4050323; 595043, 4050348; 595059, 4050386; 595076, 4050442; 595095, 4050490; 595117, 4050527; 595139, 4050569; 595145, 4050580; 595154, 4050597; 595176, 4050568; 595176, 4050568; 595176, 4050568; 595176, 4050568; 595179, 4050562; 595191, 4050537; 595193, 4050537; 595299, 4050514; 595410, 4050489; 595534, 4050334; 595574, 4050254; 595621, 4050214; 595660, 4050192; 595699, 4050182; 595717, 4050202; 595734, 4050221; 595727, 4050281; 595736, 4050293; 595873, 4050316; 595930,

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(ii) Subunit 6b: From USGS 1:24,000 scale quadrangle Monterey. Land bounded by the following UTM Zone 10, NAD83 coordinates (E, N): 593410, 4048743; 593463, 4048782; 593479, 4048793; 593532, 4048832; 593564, 4048847; 593574, 4048849; 593597, 4048853; 593599, 4048854; 593636, 4048853; 593671, 4048844; 593790, 4048784; 593794, 4048779; 593794, 4048778; 593777, 4048726; 593769, 4048678; 593768, 4048678; 593706, 4048686; 593678, 4048693; 593650, 4048707; 593605, 4048738; 593570, 4048750; 593539, 4048752; 593451, 4048741; 593442, 4048741; 593414, 4048743; 593410, 4048743; 593601, 4048844; 593601, 4048844; 593602, 4048844; 593601, 4048844; returning to 593601, 4048844.

(iii) Subunit 6c: From USGS 1:24,000 scale quadrangle Monterey. Land bounded by the following UTM Zone 10, NAD83 coordinates (E, N): 592908, 4049902; 592972, 4049927; 593056, 4049908; 593067, 4049902; 593075, 4049896; 593086, 4049892; 593095, 4049890; 593100, 4049881; 593101, 4049853; 593115, 4049858; 593117, 4049855; 593199, 4049893; 593232, 4049897; 593269, 4049895; 593297, 4049885; 593330, 4049880; 593343, 4049884; 593353, 4049883; 593381, 4049882; 593410, 4049883; 593424, 4049883; 593464, 4049885; 593496, 4049890; 593497, 4049882; 593523, 4049886; 593522, 4049894; 593568, 4049900; 593624, 4049900; 593672, 4049895; 593693, 4049886; 593719, 4049869; 593720, 4049870; 593753, 4049842; 593772, 4049821; 593778, 4049813; 593858, 4049767; 593921, 4049727; 593938, 4049721; 593954, 4049700; 593866, 4049654; 593835, 4049631; 593788, 4049596; 593647, 4049542; 593623, 4049506; 593620, 4049504; 593616, 4049502; 593613, 4049501; 593609, 4049500; 593606, 4049499; 593466, 4049474; 593458, 4049472; 593458, 4049472; 593458, 4049472; 593485, 4049508; 593505, 4049526; 593524, 4049558; 593550, 4049606; 593560, 4049626; 593597, 4049668; 593601, 4049683; 593600, 4049694; 593592, 4049700; 593587, 4049706; 593595, 4049726; 593595, 4049735; 593581, 4049746; 593564, 4049751; 593530, 4049751; 593504, 4049743; 593486, 4049731; 593473, 4049706; 593459, 4049689; 593427, 4049662; 593407, 4049643; 593375, 4049625; 593349, 4049607; 593329, 4049575; 593318, 4049552; 593315, 4049537; 593309, 4049515; 593290, 4049495; 593258, 4049449; 593233, 4049441; 593224, 4049449; 593213, 4049463; 593201, 4049478; 593188, 4049506; 593175, 4049525; 593136, 4049566; 593102, 4049575; 593011, 4049600; 592952, 4049640; 592936, 4049694; 592929, 4049732; 592917, 4049759; 592919, 4049789; 592938, 4049832; 592929, 4049862; 592911, 4049885; returning to 592908, 4049902.

(iv) Subunit 6d: From USGS 1:24,000 scale quadrangle Monterey. Land bounded by the following UTM Zone 10, NAD83 coordinates (E, N): 591851, 4048564; 591855, 4048576; 591861, 4048580; 591868, 4048583; 591873, 4048588; 591879, 4048594; 591884, 4048602; 591887, 4048610; 591889, 4048617; 591889, 4048625; 591891, 4048632; 591918, 4048685; 591925, 4048690; 591925, 4048690; 591935, 4048688; 591945, 4048672; 591953, 4048660; 591961, 4048648; 591969, 4048636; 592120, 4048437; 592141, 4048411; 592144, 4048397; 592144, 4048351; 592144, 4048317; 592136, 4048297; 592116, 4048287; 592116, 4048287; 592116, 4048287; 592096, 4048293; 592073, 4048322; 592062, 4048334; 592050, 4048344; 592038, 4048354; 591992, 4048388; 591951, 4048418; 591951, 4048418; 591933, 4048448; 591931, 4048452; 591928, 4048456; 591924, 4048461; 591920, 4048466; 591920, 4048466; 591912, 4048476; 591908, 4048485; 591907, 4048489; 591905, 4048496; 591902, 4048503; 591899, 4048510; 591895, 4048517; 591891, 4048523; 591886, 4048529; 591882, 4048534; 591877, 4048538; 591872, 4048543; 591866, 4048548; 591860, 4048552; 591855, 4048556; returning to 591851, 4048564.

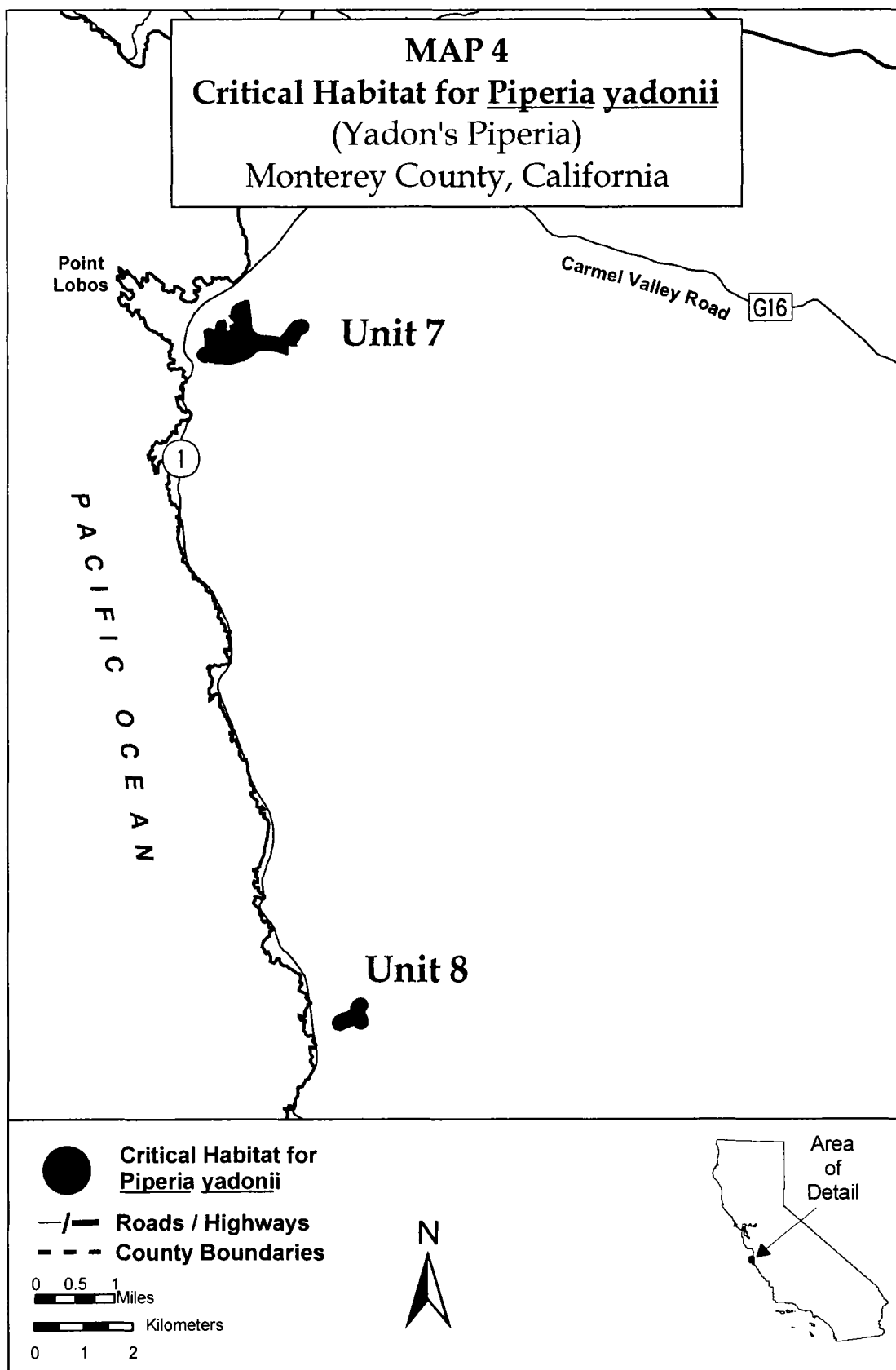
(v) Subunit 6e: From USGS 1:24,000 scale quadrangle Monterey. Land bounded by the following UTM Zone 10, NAD83 coordinates (E, N): 595291, 4052402; 595329, 4052406; 595339, 4052409; 595340, 4052409; 595341, 4052409; 595343, 4052408; 595345, 4052408; 595347, 4052408; 595347, 4052408; 595348, 4052408; 595350, 4052408; 595352, 4052408; 595354, 4052408; 595355, 4052408; 595357, 4052408; 595359, 4052408; 595359, 4052408; 595361, 4052408; 595362, 4052409; 595364, 4052409; 595366, 4052409; 595367, 4052409; 595368, 4052409; 595369, 4052410; 595371,

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(13) Unit 7: Point Lobos Ranch,  
 Monterey County, California. From  
 USGS 1:24,000 scale quadrangles  
 Monterey and Soberanes Point. Land  
 bounded by the following UTM Zone  
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 4041140; 596553, 4041137; 596503,  
 4041119; 596451, 4041086; 596363,  
 4041006; 596211, 4040900; 596003,  
 4040843; 595913, 4040829; 595905,  
 4040827; 595884, 4040824; 595865,  
 4040825; 595753, 4040829; 595629,  
 4040826; 595611, 4040841; 595574,  
 4040832; 595575, 4040825; 595539,  
 4040822; 595537, 4040822; 595497,  
 4040858; 595465, 4040822; 595393,  
 4040831; 595371, 4040840; 595366,  
 4040838; 595297, 4040891; returning to  
 595261, 4040950. **Note:** Map of Units 7  
 and 8 (Map 4) follows:





(14) Unit 8; Palo Colorado, Monterey County, California. From USGS 1:24,000 scale quadrangle Soberanes Point. Land bounded by the following UTM Zone 10, NAD83 coordinates (E, N): 598818, 4027785; 598823, 4027824; 598834, 4027852; 598855, 4027884; 598877, 4027904; 599017, 4027985; 599111, 4028022; 599176, 4028075; 599179, 4028121; 599198, 4028182; 599233, 4028238; 599262, 4028268; 599316, 4028304; 599373, 4028315; 599431,

4028304; 599479, 4028271; 599498, 4028249; 599518, 4028204; 599522, 4028146; 599508, 4028099; 599476, 4028056; 599471, 4028019; 599511, 4027964; 599527, 4027921; 599543, 4027880; 599551, 4027832; 599546, 4027793; 599531, 4027757; 599514, 4027733; 599484, 4027707; 599430, 4027685; 599362, 4027687; 599326, 4027702; 599282, 4027741; 599266, 4027766; 599135, 4027707; 599026, 4027647; 598988, 4027637; 598949,

4027637; 598893, 4027655; 598855, 4027686; 598830, 4027728; 598821, 4027756; returning to 598818, 4027785.  
\* \* \* \* \*

Dated: October 3, 2006.

**David M. Verhey,**  
*Acting Assistant Secretary for Fish and Wildlife and Parks.*

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