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Endangered and Threatened Wildlife and Plants; Determination of Critical Habitat for the Oahu Elepaio (Chasiempis sandwichensis ibidis); Final Rule

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

RIN 1018–AG99

Endangered and Threatened Wildlife and Plants; Determination of Critical Habitat for the Oahu Elepaio (Chasiempis sandwichensis ibidis)

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Final rule.

SUMMARY: We, the U.S. Fish and Wildlife Service (Service), designate critical habitat for the Oahu elepaio pursuant to the Endangered Species Act of 1973, as amended (Act). The Oahu elepaio is a forest bird found only on the island of Oahu and is listed as endangered under the Act. The critical habitat consists of five units whose boundaries encompass a total area of approximately 26,661 hectares (ha) (65,879 acres (ac)) in the Koolau and Waianae mountains on the island of Oahu, Hawaii. Critical habitat identifies specific areas that are essential to the conservation of a listed species and that may require special management considerations or protection. As required by section 4 of the Act, we considered economic and other relevant impacts prior to making a final decision on what areas to designate as critical habitat.

DATES: This rule is effective January 9, 2002.

FOR FURTHER INFORMATION CONTACT: Marilet A. Zablan, Vertebrate Conservation Coordinator, or Eric VanderWerf, Biologist, Pacific Islands Fish and Wildlife Office, U.S. Fish and Wildlife Service, 300 Ala Moana Boulevard, Room 3–122, Box 50088, Honolulu, Hawaii 96850 (telephone: 808/541–3441; facsimile: 808/541–3470).

SUPPLEMENTARY INFORMATION:

Background

The Oahu elepaio (*Chasiempis sandwichensis ibidis*) is a small forest-dwelling bird approximately 12.5 grams (0.43 ounces) in weight and 15 centimeters (cm) (6 inches (in)) in length, and is a member of the monarch flycatcher family Monarchidae (VanderWerf 1998). It is dark brown above and white below, with light brown streaks on the breast. The tail is long (6.5 cm, 2.6 in) and often held up at an angle. Adults have conspicuous white wing bars, a white rump, and white tips on the tail feathers. The throat is white with black markings in both sexes, but males tend to have more black on the chin than females. Juveniles and subadults are reddish above, with a white belly and rusty wing-bars. The bill is medium-length, straight, and black, with the base of the lower mandible bluish-gray in adults and yellow in juveniles. The legs and feet are dark gray and the iris is dark brown (VanderWerf 1998).

Three subspecies of elepaio are recognized, each found only on a single island: the Oahu elepaio; the Hawaii elepaio (*Chasiempis s. sandwichensis*); and the Kauai elepaio (*C. s. sclateri*). The forms on different islands are similar in ecology and behavior, but differ somewhat in coloration and vocalizations (Conant 1977, van Riper 1995, VanderWerf 1998). The taxonomy used in this rule follows Pratt *et al.* (1987) and Pyle (1997), in which all forms are regarded as subspecies, but the form on each island was originally described as a separate species. The Oahu form was known as *C. s. gayi* (Wilson 1891) until Olson (1989) pointed out that the epithet *ibidis* (Stejneger 1887) has priority. The elepaio comprises a monotypic genus that is found only in the Hawaiian Islands (VanderWerf 1998). Its closest relatives are other monarch flycatchers from the Pacific region (Pratt *et al.* 1987, Sibley and Ahlquist 1985).

The Oahu elepaio occurs in a variety of forest types, but is most common in riparian vegetation along streambeds and in mesic forest with a tall canopy and a well-developed understory (Shallenberger and Vaughn 1978, VanderWerf *et al.* 1997). Population density is roughly 50 percent lower in shorter dry forest on ridges (VanderWerf *et al.* 1997). Elepaio currently are not found in very wet, stunted forest on windswept summits or in very dry shrub land, but these areas may be used by individuals dispersing among subpopulations. Forest structure appears to be more important to elepaio than plant species composition (VanderWerf *et al.* 1997), and unlike many Hawaiian forest birds, elepaio have adapted relatively well to disturbed forest composed of introduced plants (Conant 1977, VanderWerf *et al.* 1997, VanderWerf 1998). Fifty-five percent of the current range is dominated by introduced plants and 45 percent is dominated by native plants (VanderWerf *et al.* 2001). This observation does not imply that elepaio prefer introduced plant species, but probably reflects a preference by elepaio for riparian vegetation in valleys and the high degree of habitat disturbance and abundance of introduced plants in riparian areas (VanderWerf *et al.* 1997). Of the 45 percent dominated by native plants, 23 percent is categorized as wet forest, 17 percent as mesic forest, and 5 percent as dry forest, shrub land, and cliffs (Hawaii Heritage Program 1991).

Plant species composition in elepaio habitat varies considerably depending on location and elevation, but some of the most common native plants in areas where elepaio occur are ohia (*Metrosideros polymorpha*), papala kepau (*Pisonia umbellifera*), lama (*Diospyros sandwicensis*), mamaki (*Pipturus albidus*), kaulu (*Sapindus oahuensis*), hame (*Antidesma platyphyllum*), and alaa (*Pouteria sandwicensis*), and some of the most common introduced plants are guava (*Psidium guajava*), strawberry guava (P. cattleianum), kukui (*Aleurites moluccana*), mango (Mangifer indica), Christmasberry (*Schinus terebinthifolius*), and ti (*Cordyline terminalis*) (VanderWerf *et al.* 1997, VanderWerf 1998).

The current population of Oahu elepaio is approximately 1,982 birds distributed in six core subpopulations and several smaller subpopulations (Table 1, Figure 1; VanderWerf *et al.* 2001).

TABLE 1.—ESTIMATED SIZE AND AREA OF OAHU ELEPAIO SUBPOPULATIONS

[Data from VanderWerf et al. (2001). Letters before each subpopulation correspond to those on Figure 1]

Subpopulation	Total population size	Breeding population size	Area (ha)
Waianae Mountains:			
A. Southern Waianae (Honouliuli Preserve, Lualualei Naval Magazine)	458	418	1,170
B. Schofield Barracks West Range	340	310	538
C. Makaha, Waianae Kai Valleys	123	112	459

TABLE 1.—ESTIMATED SIZE AND AREA OF OAHU ELEPAIO SUBPOPULATIONS—Continued

[Data from VanderWerf et al. (2001). Letters before each subpopulation correspond to those on Figure 1]

Subpopulation	Total population size	Breeding population size	Area (ha)
D. Pahole, Kahanahaiki	18	4	256
E. Schofield Barracks South Range	6	0	20
F. Makua Valley	7	2	49
G. Kaala Natural Area Reserve	3	0	21
H. Makaleha Gulch	2	0	7
I. Kuaokala	3	2	14
J. Kaluakauila Gulch	1	0	6
Koolau Mountains:			
K. Southern Koolau (Pia, Wailupe, Kapakahi, Kuliouou, Waialae Nui)	475	432	1,063
L. Waikane, Kahana Valleys	265	242	523
M. Central Koolau (Moanalua, North and South Halawa, Aiea, Kalauao)	226	206	1,396
N. Palolo Valley	46	42	78
O. Waihee Valley	5	4	32
P. Manoa	2	0	19
Q. Hauula	1	0	4
R. Waianu Valley	1	0	8
Total	1,982	1,774	5,663

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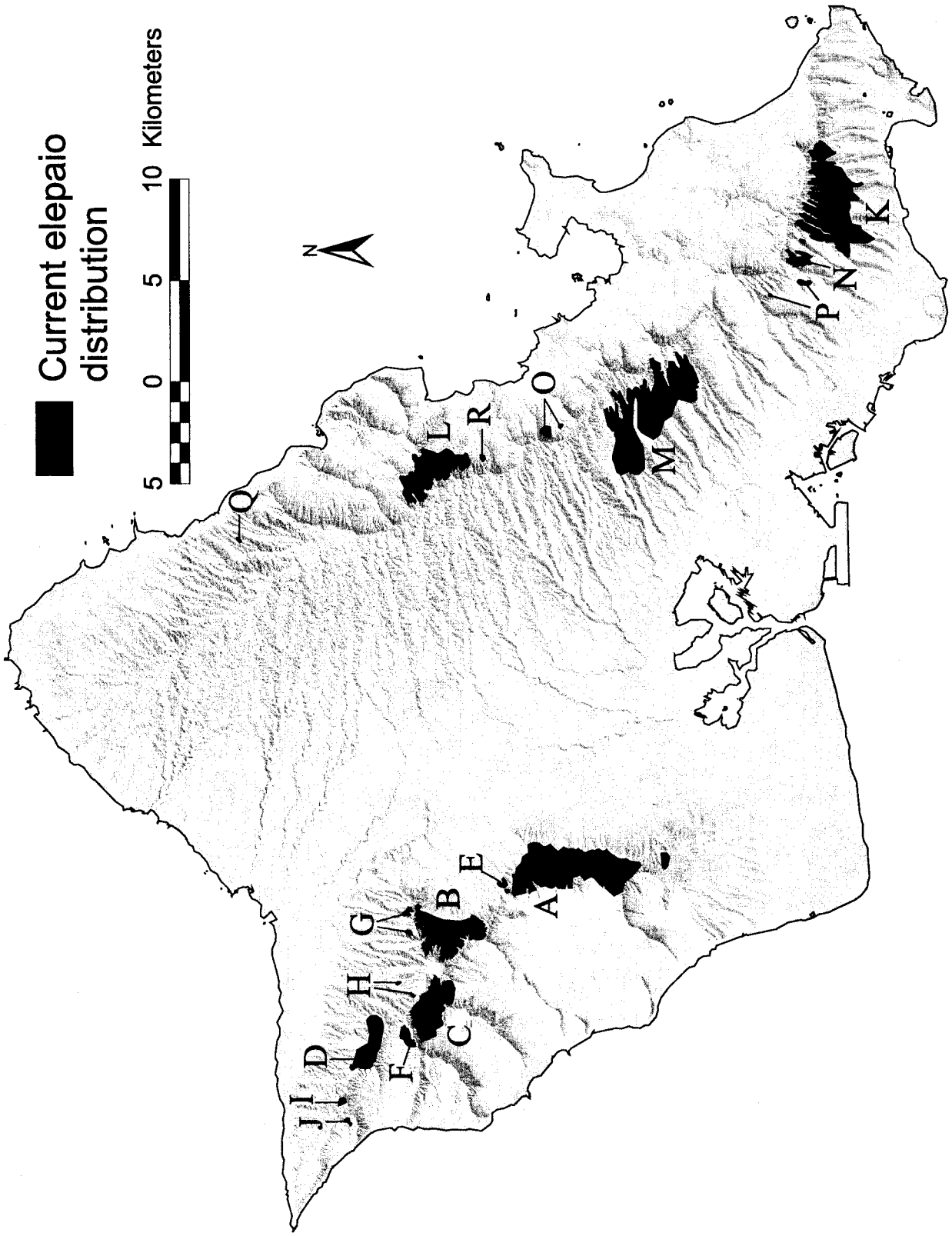

Figure 1. Current distribution of the Oahu elepaio. Subpopulations are identified by letters corresponding to those in Table 1.

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The only previous population estimate (200–500 birds; Ellis *et al.* 1992) was not accurate because little information was available when the estimate was made. The number of birds is divided about evenly between the Waianae Mountains in the west and the Koolau Mountains in the east, with three core subpopulations in each mountain range. At least 10 tiny remnant subpopulations consisting mostly or entirely of males remain in both the Waianae and Koolau mountains (Table 1). These remnant subpopulations were much larger or continuous with other subpopulations in the past, but because of their very small size, skewed sex ratio, and geographic isolation, these relicts likely will disappear in a few years as the last adults die.

The breeding population, about 1,774 birds, is less than the total population because of a male-biased sex ratio; only 84 percent of territorial males have mates in large populations (VanderWerf *et al.* 2001), and many small, declining populations contain mostly males (Table 1). The genetically effective population size, a measure that takes into account genetic population structure and variation in number of individuals over time, is probably even smaller than the breeding population because of the geographically fragmented distribution (Grant and Grant 1992). Offspring dispersal distances in elepaio are usually less than one kilometer (km) (0.62 mile (mi)) and adults have high site fidelity (VanderWerf 1998), but most elepaio populations on Oahu are separated by many kilometers of unsuitable urban or agricultural habitat. There may be some exchange among subpopulations within each mountain range, but dispersal across the extensive pineapple fields that separate the Waianae and Koolau mountains is unlikely. While the current distribution superficially appears to constitute a metapopulation, it is uncertain if dispersal occurs among subpopulations.

Before humans arrived, forest covered about 127,000 ha (313,690 ac) on Oahu (Figure 2; Hawaii Heritage Program 1991), and it is likely that elepaio once inhabited much of that area (VanderWerf *et al.* 2001). Reports by early naturalists indicate that elepaio were once widespread and abundant on Oahu. Bryan (1905) called the Oahu elepaio ''the most abundant Hawaiian species on the mountainside all the way from the sea to well up into the higher elevations.'' Perkins (1903) remarked on its ''universal distribution * * * from the lowest bounds to the uppermost edge of continuous forest.'' Seale (1900) stated the elepaio was ''the commonest native land bird to be found on the island,'' while MacCaughey (1919) described it as ''the most abundant representative of the native woodland avifauna'' and ''abundant in all parts of its range.'' The historical range of the Oahu elepaio apparently included most forested parts of the island, and it was formerly abundant.

Despite its adaptability, the Oahu elepaio has seriously declined since the arrival of humans, and it has disappeared from many areas where it was formerly common (Shallenberger 1977, Shallenberger and Vaughn 1978, Williams 1987, VanderWerf *et al.* 1997). The aggregate geographic area of all current subpopulations is approximately 5,660 ha (13,980 ac) (see Table 1) (VanderWerf *et al.* 2001). The Oahu elepaio thus currently occupies only about 4 percent of its original prehistoric range, and its range has declined by roughly 96 percent since humans arrived in Hawaii 1,600 years ago (Kirch 1982). In 1975, elepaio inhabited approximately 20,900 ha (51,623 ac) on Oahu, almost four times the area of the current range (Figure 2; VanderWerf *et al.* 2001). The range of the Oahu elepaio has thus declined by roughly 75 percent in the last 25 years. Much of the historical decline of the Oahu elepaio can be attributed to habitat loss, especially at low elevations. Fifty-six percent of the original prehistoric range has been developed for urban or agricultural use, and practically no elepaio remain in developed areas (VanderWerf *et al.* 2001).

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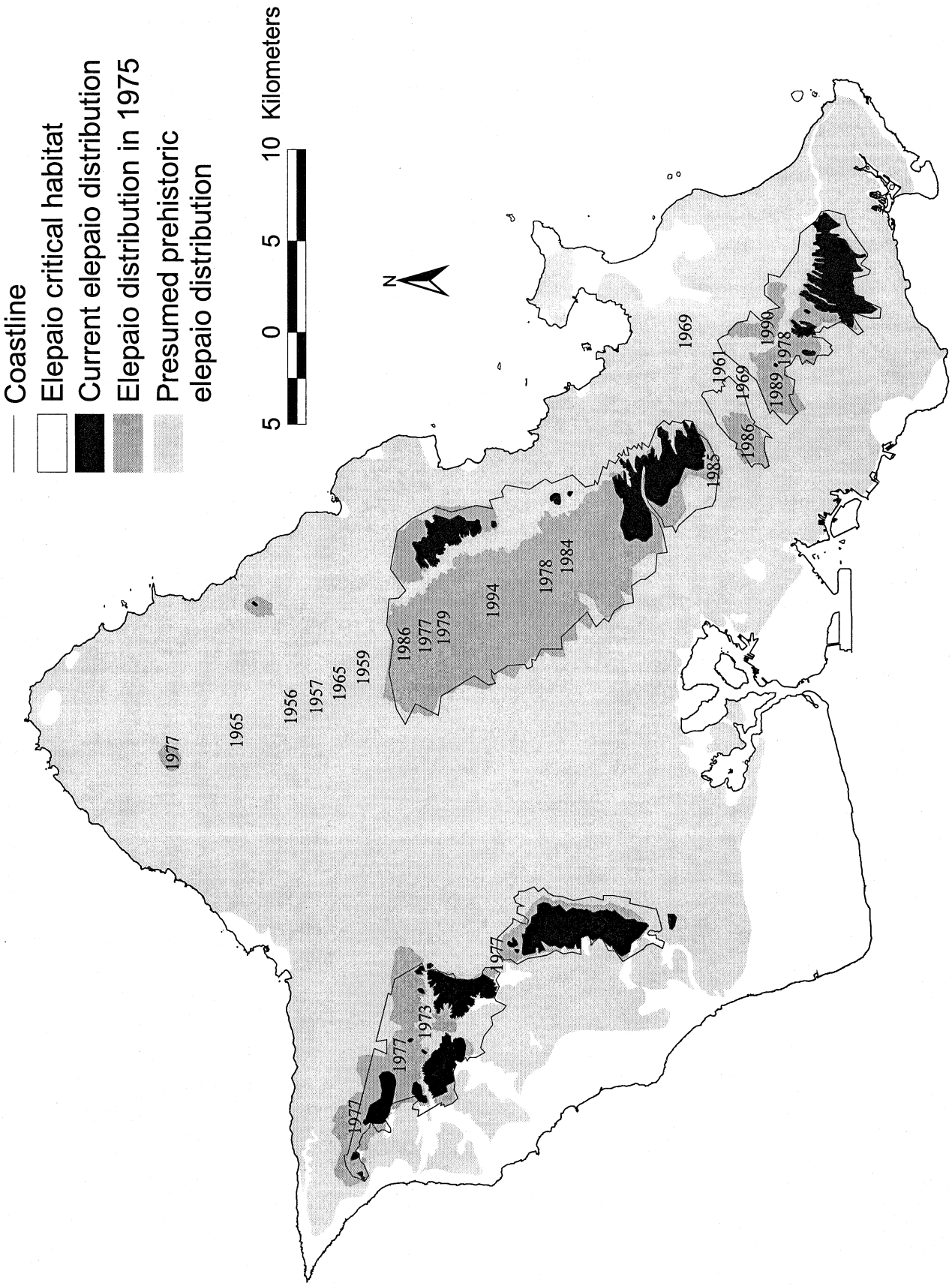

Figure 2. Critical habitat for the Oahu elepaio in relation to its current, recent historical (1975), and presumed prehistoric distributions. Years indicate when elepaio were last observed in that area.

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However, many areas of Oahu that recently supported elepaio and still contain suitable forest habitat are currently unoccupied, demonstrating that habitat loss is not the only threat. Recent declines in Oahu elepaio populations are due to a combination of low adult survival and low reproductive success. Both annual adult survival and reproductive success are lower on Oahu (0.76, 0.33, respectively) than in a large, stable population of another subspecies of elepaio at Hakalau Forest National Wildlife Refuge on Hawaii Island (0.85, 0.62; VanderWerf 1998). The two main causes of low survival and low reproduction on Oahu are nest predation by alien black rats (*Rattus rattus*) and alien diseases, particularly avian pox (*Poxvirus avium*) and avian malaria (*Plasmodium relictum*), which are carried by the alien southern house mosquito (*Culex quinquefasciatus*). Annual survival of birds with active avian pox lesions (60 percent) was lower than annual survival of healthy birds (80 percent) (E. VanderWerf unpubl. data). Pairs in which at least one bird had pox lesions produced fewer fledglings than healthy pair. (E. VanderWerf, unpubl. data). Many birds with active pox did not even attempt to nest, and infected birds were sometimes deserted by their mate. Malaria is a serious threat to many Hawaiian forest birds (Warner 1968, van Riper *et al.* 1986, Atkinson *et al.* 1995), but its effect on elepaio has not been investigated.

Nest predation by black rats causes many nests to fail, and rats also probably take adult female elepaio on the nest at night. An experiment in which automatic cameras were wired to artificial elepaio nests containing quail eggs showed that a black rat was the predator in all 10 predation events documented (VanderWerf 2001). Control of rats with snap traps and diphacinone (an anticoagulant rodenticide) bait stations was effective at improving elepaio reproductive success, resulting in an 85 percent increase in nest success and a 127 percent increase in fledglings per pair compared to control areas (VanderWerf 1999).

A comprehensive description of the life history and ecology of the elepaio is provided by VanderWerf (1998), from which much of the information below is taken. Elepaio are non-migratory and defend all-purpose territories year-round. The average territory size on Oahu was 2.0 ha (4.94 ac) in forest composed of introduced plant species (Conant 1977), but territory size likely varies with vegetation structure. Population density on Oahu was 50 percent lower in short forest on ridges than in tall riparian forest along streambeds (VanderWerf *et al.* 1997), and for the related subspecies on Hawaii, territory size was 50 percent larger in more disturbed forest with an open canopy and grass understory.

Oahu elepaio are socially monogamous, and approximately 63 percent of pairs remain together each year (E. VanderWerf, unpubl. data). Site fidelity is high, with 96 percent of males and 67 percent of females remaining on the same territory from year to year. Annual survival of healthy adults is high, approximately 85 percent in males and 70 percent in females (E. VanderWerf, unpubl. data). Young birds wander (or float) while they attempt to acquire a territory and a mate.

The nesting season usually extends from mid February through May, but active nests have been found from January through July (VanderWerf 1998). Nest site selection is not specialized, and nests have been found in a variety of plants, including 6 native species and 13 introduced species (E. VanderWerf, unpubl. data). The nest is a finely-woven, free-standing cup made of rootlets, bark strips, leaf skeletons, lichen, and spider silk, and is placed in a fork or on top of a branch (Conant 1977, VanderWerf 1998). Both sexes participate in all aspects of nesting, but the female plays a larger role in nest building and the male provides more food for the nestlings. Clutch size is 1 to 3 eggs, usually 2, and eggs hatch after 18 days. The nestling period is 16 days. Fledglings are fed by their parents for more than a month after leaving the nest, and may remain in the home territory for up to 9 months, until the start of the next breeding season. Fecundity (reproductive rate) is low; even if nest predators are removed, the mean reproductive rate is 0.75 fledglings per pair per year (VanderWerf 1999). Oahu elepaio will re-nest once or twice after failure, but they rarely attempt to re-nest if the first nest is successful. Other than introduced predators, storms with heavy rain and strong winds are the most common cause of nest failure.

The diet and foraging behaviors of elepaio are extremely varied. The diet consists of a wide range of arthropods, particularly insects and spiders, and includes introduced species such as fruit flies (Tephritidae) (VanderWerf 1998). Large prey, such as moths and caterpillars, are beaten against a branch before being eaten. In a study on Hawaii Island, VanderWerf (1993, 1994) found that elepaio foraged at all heights on all available plant species, and that they caught insects from a variety of substrates, including the ground and fallen logs (2 percent), trunks (5 percent), branches (24 percent), twigs (38 percent), foliage (20 percent), and in the air (11 percent). Elepaio are versatile and agile in pursuit of prey, using a diversity of foraging behaviors that is among the highest recorded for any bird, including perch-gleaning (48 percent), several forms of flight-gleaning (30 percent), hanging (11 percent), aerial flycatching (7 percent), and active pursuit (4 percent) (VanderWerf 1994).

Previous Federal Action

We were petitioned by Mr. Vaughn Sherwood on March 22, 1994, to list the Oahu elepaio as an endangered or threatened species with critical habitat. The November 15, 1994, Animal Candidate Notice of Review (59 FR 58991) classified the Oahu elepaio (then *Chasiempis sandwichensis gayi*) as a category 1 candidate. Category 1 candidates were those species for which we had sufficient data in our possession to support a listing proposal. On June 12, 1995 (60 FR 30827), we published a 90-day petition finding stating that the petition presented substantial information that listing may be warranted. On February 28, 1996 (61 FR 7596), and September 19, 1997 (62 FR 49398), we published notices discontinuing candidate category designations, and the Oahu elepaio was listed as a candidate species. Candidate species are those for which we have on file sufficient information on biological vulnerability and threats to support proposals to list as threatened or endangered. On October 6, 1998 (63 FR 53623), we published the proposed rule to list the Oahu elepaio as an endangered species. Because *C. s. gayi* is a synonym of *C. s. ibidis,* the proposed rule constituted the final 12-month finding for the petitioned action. On April 18, 2000 (65 FR 20760), we published the final rule to list the Oahu elepaio as an endangered species.

Section 4(a)(3) of the Act, as amended, and implementing regulations (50 CFR 424.12) require that, to the maximum extent prudent and determinable, the Secretary designate critical habitat at the time a species is determined to be endangered or threatened. Our regulations (50 CFR 424.12(a)(1)) also state that designation of critical habitat is not prudent when one or both of the following situations exist—(1) the species is threatened by taking or other 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 the proposed listing rule we indicated that designation of

critical habitat for the Oahu elepaio was not prudent because we believed a critical habitat designation would not provide any additional benefit beyond that provided through listing as endangered. Based on comments we received on the proposed listing rule and on recent court rulings which address the prudency standard, in the final listing rule we determined that a critical habitat designation for the Oahu elepaio was prudent because such a designation could benefit the species beyond listing as endangered by extending protection under section 7 of the Act to currently unoccupied habitat and by providing informational and educational benefits.

Although we determined in the final listing rule that critical habitat designation for the Oahu elepaio would be prudent, we also indicated in the final listing rule that we were not able to develop a proposed critical habitat designation for the Oahu elepaio at that time due to budgetary and workload constraints. However, on June 28, 2000, the United States District Court for the District of Hawaii established, in the case of *Conservation Council for Hawaii* v. *Babbitt,* CIV. NO. 00–00001 HG–BMK, a timetable to designate critical habitat for the Oahu elepaio, and ordered that the Service publish the final critical habitat designation by October 31, 2001. That date was extended to November 21, 2001. This final rule responds to the court's order.

On November 9, 2000, we mailed letters to 32 landowners on Oahu informing them that the Service was in the process of designating critical habitat for the Oahu elepaio and requesting from them information on management of lands that currently or recently (within the past 25 years) supported Oahu elepaio. The letters contained a fact sheet describing the Oahu elepaio and critical habitat, a map showing the historic and current range of the Oahu elepaio, and a questionnaire designed to gather information about land management practices, which we requested be returned to us by November 27, 2000. We received 11 responses to our landowner mailing with varying types and amounts of information on current land management activities. Some responses included detailed management plans, provided new information on locations where elepaio have been observed recently, and described management activities such as fencing, hunting, public access, fire management, methods for controlling invasive weeds and introduced predators, and collaboration with conservation researchers. In addition, we met with several landowners and managers, including the U.S. Army and the Hawaii State Division of Forestry and Wildlife, to obtain more specific information on management activities and suitability of certain habitat areas for the elepaio. The information provided in the responses and during meetings was considered and incorporated into this final rule.

On June 6, 2001, we published a proposed rule to designate critical habitat for the Oahu elepaio (66 FR 30372). The proposed critical habitat consisted of five units whose boundaries encompassed a total area of approximately 26,661 hectares (ha) (65,879 acres (ac)) in the Koolau and Waianae mountains on the island of Oahu, Hawaii. The public comment period was open for 60 days until August 6, 2001. We did not receive any requests for public hearings during the comment period and we did not hold any public hearings. On August 6, 2001, we published a notice announcing the reopening of the public comment period and the availability of the draft economic analysis for the proposed critical habitat designation for the Oahu elepaio (66 FR 40960). The comment period was open for an additional 30 days until September 6, 2001. On August 28, 2001, we held a public meeting in Honolulu to provide information and promote discussion about the critical habitat designation for the Oahu elepaio. The meeting was attended by 11 people, not including Service staff. During this meeting the Service presented a brief introduction to the biology of the Oahu elepaio, a summary of previous federal actions regarding the elepaio, information about critical habitat, and the methods used to identify critical habitat for the Oahu elepaio. The presentation was followed by a question and answer session and general discussion, and we made available information including maps, fact sheets, news releases, reprints of scientific papers, copies of the proposed rule and draft economic analysis, and instructions for submitting public comments. On September 5, 2001, we published a correction to the proposed rule (66 FR 46428). The proposed rule contained the correct maps and legal descriptions of the proposed critical habitat units, but figure 2 in the background section of the proposed rule, which showed the proposed critical habitat units in relation to the current, recent historical, and presumed prehistoric distribution of the Oahu elepaio, showed the proposed critical habitat units incorrectly. The correction provided an accurate version of figure 2 that matched the critical habitat units depicted in the legal description of the original proposed rule. Page 30377 of the proposed rule was replaced with page 46429 of the correction.

Critical Habitat

Critical habitat is defined in section 3, paragraph (5)(A) of the Act as—(i) the specific areas within the geographic 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 geographic 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 by the Act, means the use of all methods and procedures that are necessary to bring an endangered or a threatened species to the point at which listing under the Act is no longer necessary.

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 also requires conferences on Federal actions that are likely to result in the destruction or adverse modification of proposed critical habitat. Destruction or adverse modification is direct or indirect alteration that appreciably diminishes the value of critical habitat for the conservation 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. Aside from the added protection that may be provided under section 7, the Act does not provide other forms of regulatory protection to lands designated as critical habitat. Because consultation under section 7 of the Act does not apply to activities on private or other non-Federal lands that do not involve a Federal nexus, critical habitat designation would not afford any additional regulatory protections under the Act against such activities.

Critical habitat also provides non-regulatory benefits to the species by informing the public and private sectors of areas that are important for species recovery and where conservation actions would be most effective. Designation of critical habitat can help focus conservation activities for a listed species by identifying areas that contain the physical and biological features that

are essential for conservation of that species, and can alert the public as well as land-managing agencies to the importance of those areas. Critical habitat also identifies areas that may require special management considerations or protection, and may help provide protection to areas where significant threats to the species have been identified or help to avoid accidental damage to such areas.

In order to be included in a critical habitat designation, the habitat must be ''essential to the conservation of the species.'' Critical habitat designations identify, to the extent known and using the best scientific and commercial 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)). Section 3(5)(C) of the Act states that not all areas that can be occupied by a species should be designated as critical habitat unless the Secretary determines that all such areas are essential to the conservation of the species. Our regulations (50 CFR 424.12(e)) also state that, ''The Secretary shall designate as critical habitat areas outside the geographic area presently occupied by the species only when a designation limited to its present range would be inadequate to ensure the conservation of the species.''

Section 4(b)(2) of the Act requires that we take into consideration the economic impact, and any other relevant impact, of specifying any particular area as critical habitat. We may exclude areas from critical habitat designation when the benefits of exclusion outweigh the benefits of including the areas within critical habitat, provided the exclusion will not result in extinction of the species.

Our Policy on Information Standards Under the Endangered Species Act, published on July 1, 1994 (59 FR 34271), provides criteria, establishes procedures, and provides guidance to ensure that decisions made by the Service represent the best scientific and commercial data available. It requires that our biologists, to the extent consistent with the Act and with the use of the best scientific and commercial data available, 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 should be the listing rule for the species. Additional information may be obtained from a recovery plan, articles in peer-reviewed journals, conservation plans developed by States and counties, scientific status surveys and studies, and biological assessments or other unpublished materials (*i.e.*, gray literature).

Section 4 requires that we designate critical habitat based on what we know at the time of the designation. Habitat is often dynamic, however, and populations 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. Habitat areas outside the critical habitat designation will continue to be subject to conservation actions that may be implemented under section 7(a)(1) of the Act and to the regulatory protections afforded by the section 7(a)(2) jeopardy standard, and the section 9 take prohibition, as determined on the basis of the best available information at the time of the action. It is possible that federally funded or assisted projects affecting listed species outside their designated critical habitat areas could jeopardize those species. 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 and recovery efforts if new information available to these planning efforts calls for a different outcome.

Methods

As required by the Act and regulations (section 4(b)(2) and 50 CFR 424.12), we used the best scientific information available to determine areas that contain the physical and biological features that are essential for the survival and recovery of the Oahu elepaio. This information included: peer-reviewed scientific publications (Conant 1977; Banko 1981; VanderWerf 1993, 1994, 1998, 2001; VanderWerf *et al.* 1997, 2001); the final listing rule for the Oahu elepaio (65 FR 20760); unpublished reports by the Hawaii State Division of Forestry and Wildlife (VanderWerf 1999); the Hawaii Natural Heritage Program database; the Sightings database from the Occurrence and Status of Birds in Hawaii project maintained at Bishop Museum in Honolulu; the Oahu Forest Bird Survey conducted in 1991 by the Hawaii State Division of Forestry and Wildlife; field trip reports in the ''Elepaio'' (journal of the Hawaii Audubon Society); responses to the Oahu elepaio critical habitat outreach package mailed to Federal, State, and private land managers and landowners; and comments received during the comment period.

The distribution and abundance of the Oahu elepaio have declined seriously in the last few decades (Williams 1987; Oahu elepaio final listing rule, 65 FR 20760; VanderWerf *et al.* 2001). The area currently occupied by the Oahu elepaio represents only about four percent of the species' original range, and the distribution has contracted into numerous small fragments (Figure 2). Moreover, the remaining elepaio subpopulations are small and isolated, comprising six core subpopulations that contain between 100 and 500 birds, and numerous small remnant subpopulations, most of which contain fewer than 10 birds (Table 1). Even if the threats responsible for the decline of the elepaio were controlled, the existing subpopulations would be unlikely to persist because their small sizes make them vulnerable to extinction due to a variety of natural processes. Small populations are particularly vulnerable to reduced reproductive vigor caused by inbreeding depression, and they may suffer a loss of genetic variability over time due to random genetic drift, resulting in decreased evolutionary potential and ability to cope with environmental change (Lande 1988, IUCN 2000). Small populations are also demographically vulnerable to extinction caused by random fluctuations in population size and sex ratio and to catastrophes such as hurricanes (Lande 1988). Survival and reproduction of elepaio are known to fluctuate across years in response to variation in disease prevalence and predator populations (VanderWerf 1998, 1999), possibly due to El Niño episodes and variation in rainfall, which may exacerbate the threats associated with small population size (Lande 1988).

Elepaio are highly territorial; each pair defends an area of a certain size, depending on the forest type and structure, resulting in a maximum population density or carrying capacity (VanderWerf 1998). Although elepaio have declined island-wide and the range has contracted, density in the remaining core subpopulations is high, and much of the currently occupied land is at or near carrying capacity and cannot support many more elepaio than it currently supports (VanderWerf *et al.* 1997, 2001). Consequently, each of the currently occupied areas is too small to support an elepaio population large enough to be considered safe from extinction. In order for the number of birds in each subpopulation to increase,

additional land must be available for young birds to establish new territories and attract mates. The potential for expansion is especially important for the smallest subpopulations that currently contain only a few individuals. Because of their very small size and skewed sex ratio, these tiny subpopulations are unlikely to persist more than a few generations if limited to the currently occupied area.

Elepaio are also relatively sedentary; adults have high fidelity to their territory and juveniles rarely disperse more than 1 km (0.62 mi) in search of a territory (VanderWerf 1998). Because the areas currently occupied by elepaio are separated from each other by many kilometers (Figure 1) and elepaio are unlikely to disperse long distances, the existing subpopulations probably are isolated (VanderWerf *et al.* 2001). The Oahu elepaio evolved in an environment with large areas of continuous forest habitat covering much of the island (Figure 2), and their dispersal behavior is not adapted to a fragmented landscape. In the past, subpopulations were less isolated and dispersal and genetic exchange among different parts of the island probably was more frequent. Providing links among subpopulations via dispersal would increase the overall effective population size through genetic exchange and equalization of sex ratios and breeding opportunities, thereby helping to alleviate the threats associated with small population size, and would better reflect the conditions under which the elepaio dispersal behavior evolved. In particular, enlargement of small subpopulations by expansion onto adjacent lands not only would increase the chances of their long-term survival, but also would improve connectivity among subpopulations by enhancing their value as ''stepping stones'' within the distribution of the entire population.

Section 3(5)(A)(i) of the Act provides that areas outside the geographical area currently occupied by the species may meet the definition of critical habitat upon determination that they are essential for the conservation of the species. Because of the territorial nature of the Oahu elepaio, its small total population size, limited range, fragmented distribution, and resulting vulnerability to genetic, demographic, and environmental threats, we find that inclusion of currently unoccupied areas identified as containing the primary constituent elements is essential to the conservation of the species. The final rule listing the Oahu elepaio as endangered emphasized that the ''small total population size, limited distribution, and population fragmentation make this taxon particularly vulnerable to reduced reproductive vigor and the effects of naturally occurring events'' (65 FR 20760). Recovery will require restoration of elepaio in areas that were formerly inhabited but that are not currently occupied, through natural dispersal, translocation, or release of captive birds. Unoccupied areas adjacent to currently occupied areas are needed for recovery to allow expansion of existing subpopulations and help alleviate the threats associated with small population size. Unoccupied lands linking subpopulations are needed for recovery to provide opportunities for dispersal among subpopulations, promote genetic exchange, and facilitate finding of mates. Specifically, each of the existing core populations in Pahole-Kahanahaiki, Makaha-Waianae Kai, Schofield Barracks West Range, the southern Waianae Mountains, the central leeward Koolau Mountains, Waikane-Kahana, and the southern leeward Koolau Mountains are small and isolated, and are unlikely to be viable on their own. The long-term chances for persistence of these subpopulations would increase if each subpopulation increased in size by expanding onto adjacent lands and if the connectivity among the subpopulations was enhanced by occasional dispersal of individuals across intervening lands.

We determined the amount and spatial arrangement of critical habitat needed to support a viable population of Oahu elepaio. Because a recovery plan for the Oahu elepaio has not been completed yet, in making this determination we looked to the historical distribution of the Oahu elepaio for a model of a viable population. The best and most recent information available on the distribution of an apparently viable Oahu elepaio population is from 1975, when extensive surveys were conducted over much of the island (Shallenberger 1977, Shallenberger and Vaughn 1978, Banko 1981). Elepaio began declining on Oahu before 1975 and already had disappeared from some parts of the island (Figure 2; Conant 1977, Williams 1987, VanderWerf *et al.* 2001), but in 1975 the subpopulations were still relatively large and birds were distributed in two well-connected population clusters, one in the Waianae Mountains and one in the Koolau Mountains. The areas occupied since 1975 also are likely to be most suitable for recovery because they supported elepaio for a longer period. The number and distribution of Oahu elepaio in 1975 has allowed for the persistence of a population, albeit in a declining state, for more than 25 years. We believe that active management of threats, including nest predation and disease, in areas reflecting the distribution in 1975 would allow for long-term recovery. This approach is consistent with the approved recovery outline for the Oahu elepaio; if, after critical habitat for the Oahu elepaio is designated, a final approved recovery plan for Hawaiian forest birds calls for a different approach to the conservation of the Oahu elepaio, we will consider amending the critical habitat designation, subject to resource and workload priorities.

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 are required to consider those physical and biological features that are essential to the conservation of the species and that may require special management considerations and protection. Such features are termed primary constituent elements, and include but are not limited to: space for individual and population growth and for normal behavior; food, water, air, light, minerals and other nutritional or physiological requirements; cover or shelter; sites for nesting and rearing of offspring; and habitats that are protected from disturbance and are representative of the historic geographical and ecological distributions of the species.

Elepaio are adaptable and able to forage and nest in a variety of forest types composed of both native and introduced plant species (Conant 1977, VanderWerf 1993, 1994, 1998). Nest site selection by elepaio is non-specialized; nests have been found in 7 native and 13 introduced plant species (E. VanderWerf, unpubl. data). Shallenberger and Vaughn (1978) found the highest relative abundance of elepaio in forest dominated by introduced guava and kukui trees, but they also found elepaio in the following forest types (in order of decreasing abundance): mixed native-exotic; tall exotic; koa dominant; mixed koa-ohia; low exotic; ohia dominant; and ohia scrub. This distribution does not imply that elepaio prefer introduced plant species, but probably reflects a preference by elepaio for riparian vegetation in valleys and the high degree of habitat disturbance and abundance of introduced plants in riparian areas. VanderWerf *et al.* (1997) found that (1) forest structure was more

important to elepaio than plant species composition, (2) most birds occurred in areas with a continuous forest canopy and a dense understory, and (3) population density was roughly twice as high in tall riparian vegetation in valleys as in shorter forest on ridges. Fifty-five percent of the currently occupied area consists of forest dominated by introduced plant species, 23 percent is native wet forest, 17 percent is native mesic forest, and 5 percent is native dry forest and shrub land (VanderWerf *et al.* 2001).

The primary constituent elements required by the Oahu elepaio for foraging, sheltering, roosting, nesting, and rearing of young are undeveloped wet, mesic, and dry forest habitats composed of native or introduced plant species. Higher population density can be expected in tall, closed canopy riparian forest than in low scrubby forest on ridges and summits. In addition, the primary constituent elements associated with the biological needs of dispersal and genetic exchange among populations are undeveloped wet or dry shrub land and wet or dry cliff habitats. Elepaio may not establish territories in shrub or cliff habitats and may use them only transiently, but areas containing these habitats are important for linking populations by providing the opportunities for dispersal and genetic exchange.

Within the forests and shrub lands providing the primary constituent elements, plant species composition varies with rainfall, elevation, and degree of habitat disturbance, and plant species occur in a variety of assemblages. Common native and introduced species within these plant assemblages include, but are not limited to, ohia (*Metrosideros polymorpha*), koa (*Acacia koa*), papala kepau (*Pisonia umbellifera*), lama (*Diospyros sandwicensis*), mamaki (*Pipturus albidus*), kaulu (*Sapindus oahuensis*), hame (*Antidesma platyphyllum*), alaa (*Pouteria sandwicensis*), aalii (*Dodonaea viscosa*), naupaka kuahiwi (*Scaevola* spp.), pukiawe (*Styphelia tameiameiae*), uluhe (*Dicranopteris linearis*), guava (*Psidium guajava*), strawberry guava (*P. cattleianum*), mango (*Mangifera indica*), kukui (*Aleurites moluccana*), christmasberry (*Schinus terebinthifolius*), ti (*Cordyline terminalis*), rose apple (*Syzygium jambos*), mountain apple (*S. malaccense*), and Java plum (*S. cumini*).

Criteria Used To Identify Critical Habitat

We used several criteria to identify and select lands for designation as critical habitat. We began with areas that are currently occupied by elepaio, excluding a few very small, isolated subpopulations that contain only a single male. We then added unoccupied lands containing the primary constituent elements that were needed for recovery of the species. As discussed in greater detail in the Methods section, in deciding which unoccupied areas were essential for recovery, we used the distribution of elepaio in 1975 as a model of a viable population. Within this area of distribution in 1975, we gave preference to lands that (a) provided more preferred forest types, (b) were more recently occupied (since 1975), and (c) were contiguous and formed large blocks of preferred habitat or provided links between areas of preferred habitat. We determined the boundaries of critical habitat units by the extent of suitable forest containing the primary constituent elements, which in many areas coincided with the boundaries of State Forest Reserves, Natural Area Reserves, or other conservation lands. We did not include urban and agricultural lands because they generally do not contain the primary constituent elements and are not suitable for elepaio. We included lower Wailupe Valley because it contains the primary constituent elements, is currently occupied by elepaio, and is contiguous with a large subpopulation. Although this area is zoned for urban use, the topography and unstable soil conditions make it unsuitable for development.

We were unable to map the critical habitat unit boundaries in sufficient detail to exclude all existing developed lands that do not contain the primary constituent elements. However, existing development features and structures within the boundaries of the mapped units, such as buildings, roads, aqueducts, antennas, water tanks, agricultural fields, paved areas, lawns, and other urban landscaped areas generally do not contain the primary constituent elements and are not critical habitat. Federal actions limited to those areas, therefore, would not trigger a section 7 consultation, unless they affect the species or primary constituent elements in adjacent critical habitat.

Application of the Section 3(5)(A) Criteria Regarding Special Management Considerations or Protection

Critical habitat is defined in section 3, paragraph (5)(A) of the Act as—(i) the specific areas within the geographic 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 geographic 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. Special management and protection are not required if adequate management and protection are already in place. Adequate special management or protection is provided by a legally operative plan or agreement that addresses the maintenance and improvement of the primary constituent elements important to the species and manages for the long-term conservation of the species. If any areas containing the primary constituent elements currently were being managed to address the conservation needs of the Oahu elepaio and did not require special management or protection, these areas would not meet the definition of critical habitat in section 3(5)(A)(i) of the Act and would not be included in the designation.

To determine if a plan provides adequate management or protection we consider 3 criteria: (1) Whether the plan is current and specifies the management actions and whether such actions provide sufficient conservation benefit to the species; (2) whether the plan provides assurances that the conservation management strategies will be implemented, and in determining this we consider whether: (a) A management plan or agreement exists that specifies the management actions being implemented or to be implemented; (b) the schedule for implementation is timely; (c) there is a high probability that the funding source(s) or other resources necessary to implement the actions will be available; and (d) the party(ies) have the authority and long-term commitment to implement the management actions, as demonstrated, for example, by a legal instrument providing enduring protection and management of the lands, and (3) whether the plan provides assurances that the conservation management strategies will be effective. In determining whether an action is likely to be effective, we consider whether: (a) The plan specifically addresses the management needs, including reduction of threats to the species; (b) such actions have been successful in the past; (c) there are provisions for monitoring and assessment of the effectiveness of the management actions; and (d) adaptive management principles have been incorporated into the plan.

Based on information provided to us by landowners and managers to date, we

find that no areas are adequately managed and protected to address the threats to elepaio. Several areas are covered under current management plans and are being managed in a manner that meets some of the conservation needs of the Oahu elepaio, but in no areas does the management adequately reduce the primary threats to this species. Specifically, the threat from introduced nest predators, primarily rodents, has been successfully managed on a small scale in Honouliuli Preserve by The Nature Conservancy of Hawaii, in Schofield Barracks West Range and Makua Military Reservation by the U.S. Army, and in the Honolulu Watershed Forest Reserve by the Hawaii State Division of Forestry and Wildlife, but in each case the management actions have affected only a small proportion of the elepaio in the area. Adequate reduction of the threat from rodents will require larger scale management that protects more elepaio. The other primary threat to the Oahu elepaio, introduced diseases carried by mosquitoes, has not been managed in any area. In several areas, such as Schofield Barracks, the threat from fire also has not been managed adequately.

The Oahu Forest National Wildlife Refuge does not meet these criteria because the refuge was created only recently (December 2000) and current management does not yet provide adequate management for the Oahu elepaio. Refuge lands have not been adequately surveyed yet, and it remains uncertain whether the area is currently occupied by elepaio.

The Sikes Act Improvements Amendment of 1997 (Sikes Act) requires 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 Resources Management Plan (INRMP). An INRMP integrates implementation of the military mission of the installation with stewardship of the natural resources found there. Each INRMP is to include an assessment of the ecological needs on the installation, including needs 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. We consult with the military on the development and implementation of INRMPs for installations with listed species. We believe that bases that have completed and approved INRMPs that address the needs of the species generally do not meet the definition of critical habitat discussed above, because they require no additional special management or protection. Therefore, we do not include these areas in critical habitat designations if they meet the following three criteria: (1) A current INRMP must be complete and provide a conservation benefit to the species; (2) the plan must provide assurances that the conservation management strategies will be implemented; and (3) the plan must provide assurances that the conservation management strategies will be effective, by providing for periodic monitoring and revisions as necessary. If all of these criteria are met, then the lands covered under the plan would not meet the definition of critical habitat. To date, no military installation on Oahu has completed a final INRMP that provides sufficient management and protection for the elepaio. The Service received information from the Army indicating they understand and agree that the current INRMP for Army installations on Oahu does not obviate the need for critical habitat designations because it does not meet criteria for special management or protection necessary to ensure long-term conservation of the species (Department of the Army, *in litt.* 2001).

Critical Habitat Designation

Lands designated as critical habitat occur in five separate units and provide the full range of primary constituent elements needed by the Oahu elepaio, including: a variety of currently occupied undeveloped forested areas that are used for foraging, roosting, sheltering, nesting, and raising offspring; a variety of currently unoccupied undeveloped forested areas that are adjacent to occupied areas and provide for expansion of existing subpopulations; and shrub land and cliff habitats that link subpopulations and can be used for dispersal. If elepaio were restored throughout each of the critical habitat units, the resulting distribution would resemble the distribution in 1975, when the subpopulations were larger and less isolated, the overall population appeared to be viable, and the Oahu elepaio was not considered endangered. The area designated as critical habitat (26,661 ha) is larger than the area occupied in 1975 (20,900 ha) because the critical habitat contains not only lands expected to support breeding elepaio populations, but also intervening lands that provide for periodic dispersal, which is a primary biological need, but not for permanent occupation.

TABLE 2.—CRITICAL HABITAT UNITS AND POTENTIAL ELEPAIO POPULATIONS

[Data on current density from VanderWerf *et al.* (2001). Unit 4 is not currently occupied by elepaio; the density used to estimate the potential elepaio population of this unit is an average of the densities in the two nearest units, central and southern Koolau.]

Critical habitat unit	Area	Elepaio density in currently occupied parts of unit	Potential elepaio population in unit
1. Northern Waianae Mountains	4,454 ha 11,005 ac	0.45 per ha 0.18 per ac	2,004
2. Southern Waianae Mountains	2,422 ha 5,985 ac	0.39 per ha 0.16 per ac	945
3. Central Koolau Mountains	14,801 ha 36,573 ac	0.33 per ha 0.14 per ac	4,884
4. Kalihi-Kapalama	804 ha 1,987 ac	0.39 per ha 0.16 per ac	314
5. Southern Koolau Mountains	4,180 ha 10,329 ac	0.45 per ha 0.18 per ac	1,881
All units	26,661 ha 65,879 ac	0.37 per ha 0.15 per ac	10,028

The potential elepaio population in the area designated as critical habitat is approximately 10,028 birds, as estimated by multiplying the current density of elepaio in different parts of the island by the area of each critical habitat unit (Table 2). Although population density varies somewhat among locations depending on the habitat quality, we believe the current overall density of elepaio on Oahu, 37.6 birds per square kilometer, is a reasonable estimate of the potential population density throughout the entire area designated as critical habitat. It may be possible to restore elepaio to higher densities in some large blocks of dense forest, but in other areas, such as steep slopes and ridges, it likely will be difficult to establish dense populations. The densities used to calculate these potential populations are average values and the estimates are approximate.

Critical habitat for the Oahu elepaio includes land under Federal, State, and private ownership, with Federal lands being managed by the Department of Defense and the Department of the Interior. Designated lands include most (99 percent) of the species' current range and encompass approximately 21 percent of the species' original range. Approximately 22 percent of designated lands are currently occupied by elepaio, and 78 percent are currently unoccupied but were recently occupied (since 1975). A detailed description of each unit and reasons for designating each portion of the unit as critical habitat are presented below. The approximate area and land ownership within each critical habitat unit are shown in Table 3.

TABLE 3.—APPROXIMATE AREA (HECTARES, ACRES) OF CRITICAL HABITAT UNITS BY LAND OWNERSHIP

Unit	Federal [1]	State	County	Private	Total
1. Northern Waianae Mountains	774 ha 1,913 ac	3,033 ha 7,494 ac	646 ha 1,596 ac	0.7 ha 2 ac	4,454 ha. 11,005 ac.
2. Southern Waianae Mountains	616 ha 1,522 ac	308 ha. 761 ac		1,498 ha 3,702 ac	2,422 ha. 5,985 ac.
3. Central Koolau Mountains	2,852 ha 7,047 ac	3,754 ha 9,276 ac	308 ha 761 ac	7,887 ha 19,489 ac	14,801 ha 36,573 ac.
4. Kalihi-Kapalama		397 ha 981 ac	179 ha 442 ac	228 ha 564 ac	804 ha. 1,987 ac.
5. Southern Koolau Mountains	3 ha 7 ac	2,553 ha 6,309 ac	476 ha 1,176 ac	1,148 ha 2,837 ac	4,180 ha. 10,329 ac.
Total	4,245 ha 10,489 ac	10,045 ha 24,821 ac	1,609 ha 3,975 ac	10,762 ha 26,594 ac	26,661 ha. 65,879 ac.

[1] Federal lands include Department of Defense and U.S. Fish and Wildlife Service.

Unit 1: Northern Waianae Mountains

Unit 1 consists of approximately 4,454 ha (11,005 ac) encompassing the higher elevations of the northern Waianae Mountains. It is bounded on the south by Kolekole pass, and on the north, east, and west by forest edge created by human actions. Natural features within the unit include Mt. Kaala, the highest peak on Oahu at 1,227 m (4,025 feet), several other high peaks along the spine of the Waianae Range, and the upper portions of valleys and slopes, including Waianae Kai, Makaha, Makua, Kahanahaiki, and Kuaokala valleys on the west slope, Haleauau and Mohiakea gulches on the east slope, and several narrow valleys on the north slope. Vegetation consists primarily of mixed-species wet, mesic, and dry forest communities composed of native and introduced plants, with smaller amounts of dry shrub land and cliff plant communities (Hawaii Heritage Program 1991).

Unit 1 contains two important elepaio core subpopulations: One in upper Haleauau and Mohiakea gulches above the firebreak road on U.S. Army Schofield Barracks West Range, and the other in upper Makaha and Waianae Kai valleys on Waianae Kai State Forest Reserve and City and County of Honolulu land. The unit also includes small scattered elepaio subpopulations in Pahole and Kaala State Natural Area Reserves, Mokuleia, Makua-Keaau, and Kuaokala State Forest Reserves, and the upper portion of the U.S. Army Makua Military Reservation. Thirty percent of Unit 1 is currently occupied by elepaio. Of critical habitat lands on the West Range of Schofield Barracks, approximately 70 percent are currently occupied by elepaio. The subpopulation on Schofield Barracks is of particular importance to the conservation of the species because it is the densest and third largest subpopulation on the island, contains the majority of birds remaining in the northern Waianae Mountains, and may serve as a source that supports smaller subpopulations nearby. Elepaio in the northern Waianae Mountains are morphologically and behaviorally distinct from elepaio in other parts of the island, and conservation of this population segment would not be possible without the core subpopulation on Schofield Barracks.

In addition to protecting lands occupied by the two core elepaio subpopulations and six smaller subpopulations, designated lands in Unit 1 provide for expansion of these subpopulations by including currently unoccupied lands that were occupied within the past 30 years and contain the types of forest most preferred by elepaio. Specifically, currently unoccupied lands in Pahole and Kaala State Natural Area Reserves, Mokuleia, Makua-Keaau, and Kuaokala State Forest Reserves, upper Makua Valley, and upper Kahanahaiki Valley are needed for recovery to allow the number of birds in existing subpopulations to increase. The current distribution of elepaio in Unit 1 represents a remnant of what was once a single, large, continuous elepaio population in the northern Waianae Mountains. Inclusion of currently unoccupied forested lands that provide for expansion and shrub land and cliff habitats that provide for dispersal among subpopulations will provide linkage needed to approximate the original genetic and demographic conditions that once existed in this area.

Unit 2: Southern Waianae Mountains

Unit 2 consists of approximately 2,422 ha (5,985 ac) encompassing the higher elevations of the southern Waianae Mountains. It is bounded on the north by Kolekole Pass, and on the east, west, and south by forest edge created by human actions. Natural features of the unit include several high peaks along the spine of the southern Waianae Range, including Palikea, Kaua, Kanehoa, and Hapapa, the upper portions of Lualualei and Nanakuli valleys on the west side of the mountains, and the upper portions of numerous narrower valleys on the east side of the mountains. Vegetation consists primarily of mixed-species

mesic and dry forest communities composed of native and introduced plants, with smaller amounts of dry shrub land and cliff communities (Hawaii Heritage Program 1991).

Unit 2 contains the second largest Oahu elepaio subpopulation, encompassing several land parcels, including Honouliuli Preserve (managed by The Nature Conservancy of Hawaii), Naval Magazine Pearl Harbor Lualualei Branch, Nanakuli State Forest Reserve, and other unmanaged State lands. This unit also contains several scattered elepaio territories north of the core subpopulation on U.S. Army Schofield Barracks South Range. Fifty percent of Unit 2 is currently occupied by elepaio. In addition to protecting currently occupied habitat, designated lands in Unit 2 include peripheral areas of currently unoccupied habitat in Honouliuli Preserve, Lualualei, and Schofield Barracks South Range that are needed for recovery to allow expansion of the core subpopulation, and dry shrub land and cliff habitats on unmanaged State land between Lualualei and Honouliuli and on Schofield Barracks South Range that provide for dispersal among parts of the southern Waianae subpopulation and between the northern and southern Waianae subpopulations.

Unit 3: Central Koolau Mountains

Unit 3 is the largest unit, encompassing 14,801 ha (36,573 ac) of the higher elevations of the central Koolau Mountains. Natural features of the unit include the summit of the Koolau Range and the upper portions of numerous narrow valleys separated by steep ridges, including (from south to north) Manaiki, Moanalua, South Halawa, North Halawa, Kalauao, Waimalu, Waimano, Manana, Waiawa, Kipapa, Kaukonahua, and Poamoho on the leeward (western) side, and Waihee, Kaalaea, Waiahole, Waikane, and Kahana on the windward (eastern) side. Vegetation consists primarily of montane and lowland wet and mesic forest, and smaller areas of shrub land and wet cliff plant communities (Hawaii Heritage Program 1991). The higher elevations of the unit are primarily native forest dominated by ohia and koa, but the lower elevations are more disturbed and dominated by a variety of introduced plant species.

Unit 3 contains two important core elepaio subpopulations: one located almost entirely on private land in Moanalua, North and South Halawa, Manaiki, and Kalauao valleys at the southern end of the unit; the other on the windward side in Kahana Valley State Park and on private lands in Waikane Valley. The unit also contains a few scattered elepaio territories in Waiahole State Forest Reserve. Thirteen percent of Unit 3 is currently occupied by elepaio. Designated lands include the existing subpopulations, and also provide for the expansion and recovery of existing subpopulations by including adjacent lands in Manaiki, Waimalu, Waimano, Manana, Waiawa, Kipapa, Kaukonahua, and Poamoho on the leeward (western) side, and in Waihee, Kaalaea, Waiahole, Waikane, and Kahana on the windward (eastern) side that are currently unoccupied but were occupied since 1975. Unit 3 also includes wet shrub land and cliff habitats along the Koolau summit that provide for dispersal of elepaio between the windward and leeward sides of the Koolau Mountains. The existing core subpopulations are geographically distant from each other and probably are isolated. Restoration of elepaio in intervening areas would increase the chances of dispersal and genetic exchange between subpopulations. Currently unoccupied habitat lies on the Oahu Forest National Wildlife Refuge, U.S. Army Schofield Barracks East Range, U.S. Army Fort Shafter, Ewa and Waiahole State Forest Reserves, Kahana Valley State Park, and 9 privately owned parcels. The narrow indentation in the southern portion of Unit 3 reflects the H–3 freeway and adjacent cleared areas in North Halawa Valley.

Unit 4: Kalihi-Kapalama

Unit 4 consists of approximately 804 ha (1,987 ac) encompassing the higher elevations of the leeward (western) side of the central Koolau Mountains above Kalihi and Kapalama. It is bounded on the north by the Likelike Highway and on the south by the Pali Highway. Natural features of the unit include the upper portions of Kalihi, Kamanaiki, and Kapalama valleys. Vegetation consists primarily of mixed-species wet and mesic forest composed of native and introduced plant species (Hawaii Heritage Program 1991). The higher elevations are primarily native forest dominated by ohia and koa, but the lower elevations are more disturbed and are dominated by introduced plant species. This unit is not known to contain any elepaio at present, but it was occupied within the last 20 years, still contains suitable forest habitat, and provides an important habitat stepping-stone that increases the chances of dispersal and genetic exchange between elepaio subpopulations in the central and southern Koolau units. This unit includes lands within the State of Hawaii Honolulu Watershed Forest Reserve, two parcels owned by the City and County of Honolulu, and 3 private parcels.

Unit 5: Southern Koolau Mountains

Unit 5 consists of approximately 4,180 ha (10,329 ac) encompassing the higher elevations of the southern Koolau Mountains. It is bounded on the west by the Pali Highway. Natural features of the unit include: the summit of the southern Koolau Mountains, including Konahuanui, the highest peak in the Koolau Range at 960 m (3,150 ft), the upper portion of Maunawili Valley on the windward (northern) side of the mountains, and the upper portions of numerous narrow valleys separated by steep ridges on the leeward side, including (from east to west) Kaalakei, Kuliouou, Kupaua, Pia, Kului, Wailupe, Kapakahi, Waialae Nui, Palolo, Manoa, Tantalus, and Pauoa. The vegetation consists primarily of mixed-species wet, mesic, and dry forest communities, with small areas of mesic shrub land and wet cliff plant communities (Hawaii Heritage Program 1991). The higher elevations are primarily native forest dominated by ohia and koa, but the lower elevations are more disturbed and are dominated by introduced plant species, particularly guava, kukui, christmasberry, and mango.

Unit 5 contains the largest remaining elepaio subpopulation, located in Kuliouou, Kupaua, Pia, Kului, Wailupe, Kapakahi, and Waialae Nui valleys, and two smaller elepaio populations located nearby in Palolo and Manoa valleys. Twenty-nine percent of Unit 5 is currently occupied by elepaio. The current distribution of elepaio in the southern Koolau Mountains represents a remnant of what was once a single, large, continuous population. In addition to protecting the largest remaining subpopulation and two smaller subpopulations, designated lands in Unit 5 provide for recovery through expansion of existing subpopulations by including currently unoccupied lands in Maunawili, Palolo, Manoa, Nuuanu, Tantalus, and Pauoa that were occupied since 1975 and contain the most preferred forest types. Designated lands in Unit 5 also provide for recovery by including shrub land and wet cliff habitats along the Koolau summit that are used for dispersal and link subpopulations on the windward and leeward sides of the Koolau Mountains, thereby increasing the potential genetic exchange and maintenance of optimal sex ratios. Restoration of elepaio in unoccupied lands in Tantalus and Pauoa at the western end of Unit 5 would increase the chances of dispersal and genetic exchange between the southern Koolau

subpopulation and the central Koolau subpopulation. Ownership within Unit 5 consists of the Honolulu Watershed, Maunawili, and Kuliouou State Forest Reserves, several parcels owned by the City and County of Honolulu, and nine private parcels.

Effects of Critical Habitat Designation

Section 7 Consultation

Section 7(a) of the Act requires Federal agencies, including the Service, to ensure that actions they fund, authorize, or carry out do not destroy or adversely modify critical habitat. Destruction or adverse modification occurs when a Federal action directly or indirectly alters critical habitat to the extent it appreciably diminishes the value of critical habitat for the conservation of the species. Individuals, organizations, States, local governments, and other non-Federal entities are affected by the designation of critical habitat only if their actions occur on Federal lands, require a Federal permit, license, or other authorization, or involve Federal funding.

Section 7(a) of the Act requires Federal agencies to evaluate their actions with respect to any species that is proposed or listed as endangered or threatened and with respect to its critical habitat, if any is designated or proposed. 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 species proposed for listing or result in destruction or adverse modification of proposed critical habitat. Conference reports provide conservation recommendations to assist the agency in eliminating conflicts that may be caused by the proposed action. The conservation recommendations in a conference report are advisory.

We may issue a formal conference report, if requested by the Federal action agency. Formal conference reports include an opinion that is prepared according to 50 CFR 402.14, as if the species was listed or critical habitat was designated. We may adopt the formal conference report as the biological opinion when the species is listed or 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)).

If a species is listed or critical habitat is designated, section 7(a)(2) of the Act requires Federal agencies to ensure that actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of such a species or 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. Through this consultation, the Federal action agency would ensure that the permitted actions do not destroy or adversely modify critical habitat.

If we issue a biological opinion concluding that a project is likely to result in the destruction or adverse modification of critical habitat, we would 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 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 critical habitat is subsequently designated 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 designated critical habitat.

Activities on Federal lands that may affect the elepaio or its critical habitat will require section 7 consultation. Activities on private or State lands requiring a permit from a Federal agency, such as a permit from the U.S. Army Corps of Engineers under section 404 of the Clean Water Act, or some other Federal action, including funding (e.g., from the Federal Highway Administration, Federal Aviation Administration, Federal Emergency Management Agency, or Natural Resources Conservation Service) will also continue to be subject to the section 7 consultation process. Federal actions not affecting listed species or critical habitat and actions on non-Federal lands that are not federally funded or permitted do not require section 7 consultation.

Section 4(b)(8) of the Act requires us to evaluate briefly in any proposed or final regulation that designates critical habitat those activities involving a Federal action that may adversely modify such habitat or that may be affected by such designation. Activities that may result in the destruction or adverse modification of critical habitat include those that alter the primary constituent elements to an extent that the value of critical habitat for the survival and recovery of the elepaio is appreciably reduced. We note that such activities also may jeopardize the continued existence of the species. Activities that may directly or indirectly adversely affect critical habitat for the Oahu elepaio include, but are not limited to:

(1) Removing, thinning, or destroying elepaio habitat (as defined in the Primary Constituent Elements discussion), whether by burning, mechanical, chemical, or other means (e.g., woodcutting, grading, overgrazing, construction, road building, mining, herbicide application, etc.).

(2) Appreciably decreasing habitat value or quality as an indirect effect of an action (e.g., introduction or promotion of potential nest predators, diseases or disease vectors, vertebrate or invertebrate food competitors, or invasive plant species; forest fragmentation; overgrazing; augmentation of feral ungulate populations; water diversion or impoundment, groundwater pumping, or other activities that alter water quality or quantity to an extent that these activities affect vegetation structure or produce mosquito breeding habitat; and activities that increase the risk of fire).

To properly portray the effects of critical habitat designation, we must first compare the section 7 requirements for actions that may affect critical habitat with the requirements for actions that may affect a listed species. Section 7 prohibits actions funded, authorized, or carried out by Federal agencies from jeopardizing the continued existence of a listed species or destroying or adversely modifying the listed species' critical habitat.

Actions likely to result in the destruction or adverse modification of critical habitat would almost always result in jeopardy to the species concerned, particularly when the area affected by the proposed action is occupied by the species concerned. In those cases, critical habitat provides little additional protection to a species, and the ramifications of its designation

are few or none. However, critical habitat designation in unoccupied areas may trigger consultation under section 7 of the Act where it would not have otherwise occurred if critical habitat had not been designated.

Federal agencies already consult with us on activities in areas currently occupied by the species to ensure that their actions do not jeopardize the continued existence of the species. These actions include, but are not limited to:

(1) Regulation of activities affecting waters of the United States by the Army Corps of Engineers under section 404 of the Clean Water Act;

(2) Regulation of water flows, damming, diversion, and channelization by Federal agencies;

(3) Development on private or State lands requiring permits from other Federal agencies, such as the Department of Housing and Urban Development;

(4) Military training or similar activities of the U.S. Department of Defense (Army and Navy) on their lands or lands under their jurisdiction at Schofield Barracks, Makua Military Reservation, Fort Shafter, Kawailoa Training Area, and Pearl Harbor Naval Magazine Lualualei Branch;

(5) Construction of communication sites licensed by the Federal Communications Commission;

(6) Road construction and maintenance, right-of-way designation, and regulation of agricultural activities by Federal agencies;

(7) Hazard mitigation and post-disaster repairs funded by the Federal Emergency Management Agency; and

(8) Activities not previously mentioned that are funded or authorized by the U.S. Department of Agriculture (Forest Service, Natural Resources Conservation Service), Department of Defense, Department of Transportation, Department of Energy, Department of the Interior (U.S. Fish and Wildlife Service, U.S. Geological Survey, National Park Service), Department of Commerce (National Oceanic and Atmospheric Administration), Environmental Protection Agency, or any other Federal agency.

If you have questions regarding whether specific activities would constitute adverse modification of critical habitat, contact the Field Supervisor, Pacific Islands Ecological Services Field Office (see **ADDRESSES** section). Requests for copies of the regulations on listed wildlife and plants and inquiries about prohibitions and permits should be directed to the U.S. Fish and Wildlife Service, Endangered Species Act Section 10 Program at the same address.

Exclusions Under Section 4(b)(2)

Section 4(b)(2) of the Act requires that we designate critical habitat on the basis of the best scientific and commercial information available, and that we consider the economic and other relevant impacts of designating a particular area as critical habitat. We may exclude areas from critical habitat designation if the benefits of exclusion outweigh the benefits of designation, provided the exclusion will not result in the extinction of the species. We conducted an analysis of the economic impacts of designating these areas as critical habitat prior to a final determination. We find that in no area do the benefits of exclusion outweigh the benefits of inclusion, and we did not exclude any areas under Section 4(b)(2).

Currently, no habitat conservation plans (HCPs) include the Oahu elepaio as a covered species. However, we believe that in most instances the benefits of excluding HCPs from critical habitat designations will outweigh the benefits of including them. In the event that future HCPs are developed within the boundaries of proposed or designated critical habitat, we will work with applicants to ensure that the HCPs provide for protection and management of habitat areas essential for the conservation of this species. This will be accomplished by either directing development and habitat modification to nonessential areas, or appropriately modifying activities within essential habitat areas so that such activities will not adversely modify the critical habitat.

We will provide technical assistance and work closely with applicants throughout the development of any future HCPs to identify lands essential for the long-term conservation of the Oahu elepaio and appropriate management for those lands. The take minimization and mitigation measures provided under such HCPs would be expected to protect the essential habitat lands designated as critical habitat in this rule and provide for the conservation of the covered species. Furthermore, we will complete intra-Service consultation on our issuance of section 10(a)(1)(B) permits for these HCPs to ensure permit issuance will not destroy or adversely modify critical habitat.

Summary of Comments and Recommendations

In the proposed rule published on June 6, 2001 (66 FR 30372), we requested that all interested parties submit comments on the proposal. We also contacted all appropriate State and Federal agencies, county governments, landowners, and other interested parties and invited them to comment. In addition, we requested three expert ornithologists and conservation biologists to provide peer review of the proposed critical habitat designation. The first comment period closed on August 6, 2001 (66 FR 30372). The comment period was reopened from August 6 to September 6, 2001, to allow for comments on the draft economic analysis of the proposed critical habitat and additional comments on the proposed rule (66 FR 40960).

We received a total of 22 written comments during the two comment periods. Comments were received from 2 Federal agencies, 5 State agencies, 8 private organizations or individuals, and 3 peer reviewers. Four commenters provided comments in both comment periods. We reviewed all comments received for substantive issues and new data regarding critical habitat and the Oahu elepaio. Peer reviewer comments are summarized separately in the next paragraph. Public comments are grouped into 4 general issues relating to the proposed critical habitat determination and draft economic analysis, and are addressed in the following summary.

All three peer reviewers thought our methods for designating critical habitat were sound, the best available scientific information was used, and the relevant scientific literature, reports, and recent research were summarized adequately. All three also felt that inclusion of currently unoccupied areas was justified and well supported, and that the definition of primary constituent elements and the criteria used to identify critical habitat were comprehensive, valid, and justified. One reviewer commented that the short dispersal distances of elepaio offspring justify the inclusion of large tracts of contiguous forest. Two reviewers felt that the size and distribution of the units would allow for development of sustainable populations, but one reviewer expressed some doubt whether the amount of critical habitat proposed, which is similar to the area occupied in 1975, was sufficient to ensure the survival of the species, because the distribution in 1975 was unstable. Finally, one reviewer suggested that the importance of wet stunted forest and dry shrubland for dispersal should be more clearly demonstrated if possible. None of the reviewers provided new information about the biology or distribution of elepaio or about areas that should be considered essential to its conservation.

Issue 1: Biological Justification and Methodology

(1) *Comment:* Several commenters supported the CH designation and felt that critical habitat is needed because habitat loss is one of the primary causes in the decline of the Oahu elepaio.

Service Response: Habitat loss has been an important factor in the decline of the Oahu elepaio; 56 percent of the former range has been lost to urban and agricultural development.

(2) *Comment:* Several commenters supported the inclusion of unoccupied habitat due to the clear need for the elepaio to expand outside currently occupied areas if it is to recover.

Service Response: As stated in both the proposed rule and this final rule, the small population size and fragmented distribution of the Oahu elepaio make it vulnerable to extinction. Each of the currently occupied areas is too small to support a viable long-term population, and recovery will require restoration of elepaio in areas that were formerly inhabited.

(3) *Comment:* The area proposed as critical habitat is larger than necessary. One commenter stated that a smaller area than that proposed would meet all legal requirements and lessen the regulatory burden. Based on the area of the proposed critical habitat (26,853 ha, 66,354 ac) and the current population density of elepaio on Oahu (37.6 birds per square kilometer), the area proposed would provide habitat for 10,100 elepaio. The commenter asserted that elepaio occur at densities over 200 birds per square kilometer on other islands, that it is possible to attain densities of 50–100 elepaio per square kilometer on Oahu, so that less land is needed to support the same number of elepaio.

Service Response: The critical habitat designation was based on the distribution of lands required to support a viable population of elepaio, not on the amount of land required to support a certain number of elepaio. The viability of a population depends not only on the number of birds, but also on their distribution. We feel the distribution of lands in the designation, in large blocks of contiguous habitat, is necessary for the long-term conservation of elepaio on Oahu, as a large number of birds distributed in many tiny habitat fragments is less likely to persist than birds in a single large population or in several well-connected populations. We also believe the current density of elepaio on Oahu, 37.6 birds per square kilometer, is a reasonable estimate of the overall potential population density throughout the entire area designated as critical habitat. It probably will be possible to restore elepaio to densities of 50–100 birds per square kilometer in some large blocks of dense forest, but in other areas density probably will be lower than 37.6 birds per square kilometer because it will be difficult to establish populations in other portions of the former range. The density we used to estimate the potential population is an average value.

(4) *Comment:* Several commenters supported the designation of critical habitat on military lands, citing the threats from military training, particularly fire, to the elepaio.

Service Response: We included all areas containing the primary constituent elements that are essential to the conservation of the elepaio, regardless of ownership. We determined that no areas, including military lands, were sufficiently protected so as not to meet the definition of critical habitat under section 3(5)(A)(i)(II) of the Act, or qualified for exclusion from critical habitat under Section 4(b)(2) of the Act. Also see comments 6 and 7.

(5) *Comment:* Critical habitat designation is not appropriate in particular areas. One commenter stated it was not appropriate to designate critical habitat in areas that are not occupied by the elepaio, and that none of the physical or biological features necessary to the conservation of the species are present in unoccupied areas. The Army requested that an area southeast of Puu Pane be removed from Unit 1 because it is marginal habitat for the elepaio and has limited potential for recovery.

Service Response: All currently unoccupied areas designated as critical habitat were occupied by elepaio within the past 25 years, and these areas still contain the primary constituent elements needed by the elepaio. Even if the threats responsible for the decline of the elepaio were controlled, the existing subpopulations would be unlikely to persist because their small sizes and isolation make them vulnerable to extinction due to a variety of natural processes, such as inbreeding depression, loss of genetic variability due to genetic drift, decreased evolutionary potential and ability to cope with environmental change, random fluctuations in population size and sex ratio, and catastrophes such as hurricanes. Unoccupied areas that still contain the primary constituent elements are needed for recovery to allow the number of elepaio to increase. (Also see comment 2 and summary of reviewer's comments).

Since the proposed rule was published we visited the area southeast of Puu Pane with Army biologists, and we agree with the Army that it is marginal habitat for the elepaio and should not have been included in the proposed designation. Much of this area consists of exposed ridges and steep slopes that support dry shrubland, and most of the remainder is dominated by Eucalyptus robusta, an alien tree that is not favored by elepaio. The small forested areas in the dry gulches southeast of Puu Pane could support at most a few pairs of elepaio, and they are isolated from other forested areas and would not serve as habitat stepping stones between other subpopulations. In this final rule we removed 48 ha (119 ac) from the proposed rule that should not be designated as critical habitat.

(6) *Comment:* The U.S. Navy requested that lands in NAVMAG Pearl Harbor Lualualei Branch be excluded from the critical habitat designation because existing protections and management are sufficient, thereby resulting in their lands not requiring special management or protection and not meeting the definition of critical habitat under Section 3(5)(A) of the Act. The Navy also stated that it has prepared a full management strategy for the Oahu elepaio in the pending INRMP for NAVMAG Pearl Harbor Lualualei Branch, which includes an evaluation of population distribution, quality and quantity of nesting habitat, threats, and management needs for recovery. The Navy maintains that the management strategy in the INRMP provides adequate management and protection and should exempt NAVMAG Pearl Harbor Lualualei Branch from critical habitat.

Service Response: The primary threats to the elepaio, predation by alien rats and diseases carried by alien mosquitoes, have not been addressed on Navy lands. The Navy conducts predator control in a small wetland in Lualualei to protect endangered waterbirds, but this site is several kilometers from elepaio critical habitat and provides no benefit to elepaio. After reviewing the draft INRMP for NAVMAG Pearl Harbor Lualualei Branch, we have determined that it does not provide for adequate protection or management for the Oahu elepaio. The draft INRMP does not include a management strategy for the Oahu elepaio and does not provide an evaluation of population distribution, quality and quantity of nesting habitat, threats, and management needs for recovery.

We agree that INRMPs can provide adequate management and protection of military lands such that they no longer require critical habitat designation. To determine if an INRMP provides

adequate management or protection we consider: (1) Whether there is a current plan specifying the management actions and whether such actions provide sufficient conservation benefit to the species; (2) whether the plan provides assurances that the conservation management strategies will be implemented; and (3) whether the plan provides assurances that the conservation management strategies will be effective, i.e., provide for periodic monitoring and revisions as necessary. If all of these criteria are met, then under current Service policy the lands covered under the plan would no longer meet the definition of critical habitat.

(7) *Comment:* The U.S. Army stated that current management actions for the Oahu elepaio at Schofield Barracks and Makua Military Reservation and existing wildfire management programs afford adequate protection for the elepaio, suggesting these areas should be excluded from critical habitat.

Service Response: We agree that the Army has conducted some valuable management for the elepaio, but thus far only a small fraction of elepaio on Army lands have benefited from management activities such as rodent control, and the threat to elepaio at Schofield Barracks of wildfires resulting from training activities has not been managed adequately. Larger scale rodent control and improved fire management will be necessary to meet the long-term conservation needs of the elepaio. We have determined that current management does not adequately address the conservation needs of the Oahu elepaio, and that Army lands cannot be excluded from critical habitat under Section 3(5)(A)(i)(II).

(8) *Comment:* Before final designation, the Service should ground-truth all suitable habitat and the known range of elepaio to maximize the area available for recovery.

Service Response: The critical habitat designation was based on the best information available at the time, and included data from numerous surveys by university, State, military, and private biologists. We recognize that more information on habitat suitability and distribution of the elepaio would be useful, and the Service recently ground-truthed several areas. If new scientific information shows that there is a need to add or remove lands from the critical habitat, an amendment or correction to the designation could be considered.

Issue 2: Policy and Regulations

(9) *Comment:* Efforts by the Service to protect elepaio habitat must include incentives and support for landowners to manage habitat. Several commenters mentioned that they have ongoing management for elepaio, and four commenters urged the Service to provide financial and technical support to private landowners to implement additional voluntary predator control and habitat management.

Service Response: The Service agrees there is a need to provide financial and technical support to private landowners who would like to help recover listed species. Since the proposed rule was published, the Partners for Fish and Wildlife Program of the Service has provided a private land manager with money to manage elepaio habitat through the Hawaii Community-Based Endangered Species Conservation Initiative. The Service also is working, in collaboration with the State Department of Land and Natural Resources, to design potential Safe Harbor Agreements with private landowners under section 10 of the Act, in which the Service would provide technical support and up to 75 percent of the cost of managing habitat for elepaio recovery. One Safe Harbor Agreement is approved and funded, and there is potential to develop more. (see also comments 13 and 22).

(10) *Comment:* Several commenters questioned whether critical habitat designation would provide any benefit to the elepaio, particularly on privately owned lands with no Federal nexus. One commenter requested that, since there are no discernible benefits to including private lands in the designation, such lands be excluded under Section 4(b)(2) of the Act. Another commenter stated that the majority of land proposed as critical habitat already is protected by State conservation zoning, Natural Area Reserves, Forest Reserves, and watershed partnerships, and that critical habitat designation is not necessary and would duplicate existing zoning and land use protection.

Service Response: It is true that most (99.6%) of the critical habitat for the Oahu elepaio is in areas that already receive protection from State regulations, zoning restrictions, private preserves, and partnerships, but the critical habitat designation provides an additional type of protection that only affects actions carried out, funded, or permitted by the Federal Government. If actions with a Federal nexus occur on State, County, or private lands, then critical habitat designation will ensure that those actions do not adversely modify the habitat elements important to the elepaio. Over 39,000 acres of the critical habitat are in the Resource Subzone of the State Conservation District, which allows such actions as commercial forestry, mining, and extraction of any material or natural resource. An additional 1,136 acres are in the General Subzone of the Conservation District, which in addition to the activities listed above, allows farming, nurseries, orchards, and grazing. Critical habitat designation ensures that any of these actions on State conservation lands that involve a Federal nexus will not adversely modify critical habitat. Because State Conservation zoning already places limitations on land use, we expect very few if any economic impacts from the designation of critical habitat.

Critical habitat designation provides educational as well as regulatory benefits. Attention brought by critical habitat designation can help educate the public about the conservation needs of a species, aid landowners and managers in focusing and concerting management efforts, and can even result in increased funding opportunities (see response to comment 9).

(11) *Comment:* Critical habitat designation will result in expensive additional land management requirements for private landowners. There is no benefit to designating critical habitat on the property of a small landowner if they do not have the resources to manage the area and government agencies do not have access for management.

Service Response: Critical habitat designation does not require any additional management to be done by private landowners, State agencies, or the Federal Government. Critical habitat designation does not create a wilderness area or preserve; it does not require fencing, control of rodents, ungulates, or weeds; and it does not close an area to hunting or hiking. It requires only that actions carried out, funded, or permitted by the Federal Government must not destroy or adversely modify critical habitat. The decision to manage land to control threats to the elepaio, such as nest predation or disease, is separate from critical habitat designation and at the discretion of the landowner.

(12) *Comment:* Designation of critical habitat may discourage private landowners from entering cooperative management programs such as watershed partnerships, particularly if a landowner is concerned or uncertain about Federal regulations.

Service Response: The goals of watershed partnerships are compatible with the conservation needs of the Oahu elepaio and with the objectives of critical habitat. There is no reason that critical habitat designation should discourage private landowners from entering watershed partnerships. We

welcome the opportunity to discuss concerns or uncertainties about critical habitat regulations with any such partnership. Our Partnerships Program is actively involved in cooperative management programs, such as watershed partnerships, and helps guide and fund partnerships toward good land stewardship practices.

(13) *Comment:* Money spent on this and future regulatory processes to enforce critical habitat could be much better spent on management activities. More management, not more regulations, can best address the decline of the elepaio.

Service Response: We agree that greater management of threats such as predation and disease is needed for recovery of the elepaio, but habitat protection also is essential to the recovery of the elepaio, and critical habitat is a method of habitat protection. The Service provides financial and technical support for several elepaio recovery actions, and critical habitat designation can lead to increased funding opportunities for recovery actions (see comments 9 and 22).

(14) *Comment:* One commenter questioned the Service's policy not to include existing structures within the boundaries of the mapped critical habitat units because doing so could create confusion as to whether a given area contains the primary constituent elements and thus whether section 7 consultation is necessary.

Service Response: Within the critical habitat units there are numerous small structures that do not contain the primary constituent elements required by the elepaio, such as buildings, roads, aqueducts, water tanks, and antennas. Including such structures in the critical habitat designation would imply that they are required by the elepaio and therefore must be present for the elepaio to survive, which is not true and easily could be misinterpreted. In the text of the proposed rule we therefore stated that any such features within the critical habitat units are not included in the critical habitat designation. The alternative to describing such features in the text is to depict each one as a ''hole'' in the critical habitat. However, these structures are too small to be visible on a map and it was impossible to map every existing structure that does not contain the primary constituent elements. A few structures, such as the H–3 freeway and the Palehua Road, are large enough to be mapped.

(15) *Comment:* One commenter objected to the suggestion in the proposed rule that habitat cannot be ''critical'' unless it contains the primary constituent elements, and stated that for unoccupied areas the only relevant consideration is whether the area is essential for the conservation of the species. Some unoccupied areas may be degraded, but that does not mean they do not require protection from further adverse modification for the elepaio to have a chance at recovery.

Service Response: We recognize that areas outside the boundaries of the critical habitat may be suitable for elepaio recovery, and that it is possible, although perhaps expensive, to restore degraded areas that do not currently contain the primary constituent elements. The focus of critical habitat, however, is the area essential to the conservation of the species. For some species there may not be sufficient land available that contains the primary constituent elements, and it may be necessary to restore additional habitat in order to provide for the conservation of the species. In the case of the Oahu elepaio, we believe that the designated critical habitat does contain the areas essential to the conservation of the species, and that these lands alone are sufficient to provide for its recovery. This does not mean that areas outside the designated critical habitat units are not suitable and cannot be used for elepaio recovery, nor does it imply that they should not be protected or restored. It simply reflects our conclusions that sufficient lands are available that already contain the primary constituent elements.

(16) *Comment:* One commenter urged the Service not to exclude any areas containing the primary constituent elements, including areas covered by Conservation Agreements and Safe Harbor Agreements, that are being managed to address the conservation needs of the species and therefore allegedly do not meet the definition of critical habitat in Section 3(5)(A) of the Act because they do not require special management or protection.

Service Response: No areas were excluded from the designation on the basis that current management was adequate and special management or protection was not required. Currently there are no Conservation Agreements or Safe Harbor Agreements that include the Oahu elepaio.

(17) *Comment:* The inability to use flares and tracer ammunition at Schofield Barracks would require that the Army conduct all such training elsewhere, which would have tremendous economic impact and would adversely affect training readiness.

Service Response: Designation of critical habitat for the Oahu elepaio on Army lands would not necessarily prohibit any training activities or the use of any type of ammunition at Schofield Barracks. The critical habitat does not contain any lands used for training, but an impact area for live-fire training is adjacent to critical habitat. The primary potential effect on elepaio from military training at Schofield Barracks is the risk of wildfires that cross the firebreak road and burn forested areas comprising the critical habitat. If an adequate fire management plan is implemented and fires that affect critical habitat are controlled, there should be no effect on elepaio from military training and no changes needed to the types of training conducted at Schofield Barracks.

Although it would be possible, but more expensive, to conduct training with flares and tracer ammunition at an alternate site, we believe that moving such training is not necessary if the risk of fires resulting from use of such munitions at Schofield Barracks is adequately controlled. A detailed fire management plan has been prepared for nearby Makua Military Installation, but the draft INRMP for Schofield Barracks does not contain a full fire management plan and currently there are no specific procedures to control wildfires at Schofield Barracks. Because most of the critical habitat at Schofield Barracks is occupied by elepaio, the effect of military training on elepaio would require consultation under Section 7 of the Act even if critical habitat were not designated. Since the area is occupied by elepaio, consultations will point to a need for a fire management plan regardless of any CH designation, which, if adequately done, will moot any impact to the Army from the critical habitat designation. The Service expects to work with the Army on the development of a sound fire management plan for Schofield Barracks and on minimizing or mitigating potential impacts of training on the elepaio in ways that will not compromise training readiness.

Issue 3: Economic Issues

(18) *Comment:* Several commenters stated that critical habitat designation will have an adverse economic impact to private landowners, and requested that a particular area be excluded from designation under Section 4(b)(2) because costs outweigh benefits. One commenter pointed out that the draft economic analysis found that the area along Palehua Road might experience a large economic impact, and that exclusion of the area would not compromise conservation objectives, would maximize efficiency of private land use for commercial purposes, and

would not result in extinction of the species.

Service Response: Critical habitat designation would not affect any uses of private land unless actions on the land were carried out, funded, or somehow permitted by the Federal Government. The economic analysis showed that the economic impact of the proposed critical habitat designation would be minimal in most areas, and that only a few locations potentially could experience a moderate impact. Some of the areas where the economic impact might be moderate also are of high value to the elepaio, and we feel that the benefits of inclusion outweigh the benefits of exclusion.

Since publication of the proposed rule, we have re-evaluated the Palehua Road area and decided that for biological reasons it should not have been included in the proposed designation, and we removed it from the final designation (see Summary of Changes From the Proposed Rule).

(19) *Comment:* One commenter expressed concern about the impact of critical habitat designation on agricultural resources, particularly the water catchment and distribution facilities of the Waiahole Ditch (which is within the boundaries of Unit 3), and recommended that a corridor be established around the ditch excluding it from critical habitat. This ditch is the sole source of irrigation water for several thousand acres of agricultural land in south-central Oahu, and it will require periodic maintenance.

Service Response: Existing features and structures within the boundaries of the critical habitat units, such as the Waiahole Ditch, are not included in the critical habitat because they do not contain the primary constituent elements needed by the elepaio. Maintenance of these features and structures would only be affected by the critical habitat designation and would only require section 7 consultation if the maintenance is federally funded or permitted and if the action affected the species or the primary constituent elements in adjacent areas of critical habitat. It was not practical to create a corridor in the critical habitat around the Waiahole Ditch because the ditch is too small.

(20) *Comment:* One commenter objected to the draft Economic Analysis because it does not meet the requirements of the Tenth Circuit Court's opinion in *New Mexico Cattle Growers Association* v. *U.S. Fish and Wildlife Service,* No. 00–2050, May 11, 2001, which requires a full analysis of all economic impacts of a critical habitat designation, regardless of whether those impacts are attributable co-extensively to other causes.

Service Response: On May 11, 2001, the U.S. Court of Appeals for the Tenth Circuit issued a ruling that addressed the analytical approach used by the Service to estimate the economic impacts associated with the critical habitat designation for the southwestern willow flycatcher. *New Mexico Cattle Growers Association* v. *U.S. Fish and Wildlife Service,* 248 F.3d 1277 (10th Cir. 2001). Specifically, the court rejected the approach used by the Service to define and characterize baseline conditions. Defining the baseline is a critical step in an economic analysis, as the baseline in turn identifies the type and magnitude of incremental impacts that are attributed to the policy or change under scrutiny. In the flycatcher analysis, the Service defined baseline conditions to include the effects associated with the listing of the flycatcher and presented only the incremental effects of the rule.

We have revised the economic analysis for the Oahu elepaio through the Addendum to specifically address the Tenth Circuit Court's instructions. Specifically, the economic analysis quantifies, to the extent possible, the effects of section 7 in its entirety on current and planned activities that are reasonably expected to occur in the near future within proposed critical habitat. For these reasons we believe the economic analysis of the critical habitat designation for the Oahu elepaio meets the requirements of the Tenth Circuit Court's opinion.

Issue 4: Other Relevant Issues

(21) *Comment:* The Service and other agencies should work together in a cooperative fashion to benefit endangered species. The U.S. Navy commented that, although this critical habitat designation was generated as a result of litigation, that fact should not limit the ability of the Navy and the Service to work together. A State agency commended the Service for the process used in developing the critical habitat designation for the Oahu elepaio, and commented that State and Service biologists have worked together to identify and manage important habitat for the Oahu elepaio.

Service Response: We fully agree, and we expect to continue working closely with all Federal and State agencies and private landowners and managers in developing effective management for the elepaio and other endangered species. We see no reason that this designation, or any other action that results from litigation, should affect existing positive working relationships.

(22) *Comment:* Current management efforts fall short of meeting the conservation needs of the Oahu elepaio. Recovery of the elepaio will require larger, landscape-scale management, more funding, and possibly different methods, such as aerial broadcast of rodenticide to control rodents.

Service Response: We agree that current management is not sufficient and that recovery of the elepaio will require not just habitat protection but large-scale active habitat management. Both the proposed rule and this final rule clearly state that additional management will be necessary for recovery of the elepaio. The Service has provided technical assistance with rodent control to the U.S. Army, the U.S. Navy, the State, and private land managers, and financial support for rodent control to the State and private managers. We also are actively involved in obtaining EPA registration for aerial broadcast of rodenticide, which will be an important tool in reducing the threat from nest predation by rats.

(23) *Comment:* The critical habitat designation for the Oahu elepaio directly conflicts with approved Federal recovery plans for 12 endangered plant species, which identify control of introduced plant species as a needed recovery action. The proposed rule identifies the primary constituent elements for the elepaio as wet, mesic, and dry forest composed of both native and introduced plant species. Preservation of a native forest ecosystem should be emphasized and protected over a mixed or introduced forest. Mixed or introduced forest should be excluded as a primary constituent element of elepaio habitat.

Service Response: Elepaio are generalized in habitat use and are able to occupy a variety of forest types composed of many different plants, including native and introduced species. Many areas currently occupied by elepaio contain mostly introduced plants, but this does not mean that elepaio must have those introduced plants to survive. The structure of the forest is more important to elepaio than the species of plants present. The plant species listed in the description of primary constituent elements are examples of common plants in areas suitable for elepaio; it is not necessary for all those species to be present. The critical habitat designation for the Oahu elepaio does not require or advocate the preservation of introduced forests over native forests. Recovery actions for endangered native plant species that involve removal of alien plants do not conflict with recovery of the elepaio, as long as the alien plant species are

replaced with native plant species and the vegetative cover is retained in the long term. To avoid this misconception in the final rule, the description of the primary constituent elements has been changed to wet, mesic, and dry forest composed of native or introduced plant species.

(24) *Comment:* Several commenters supported the critical habitat designation for the Oahu elepaio, citing the species cultural significance to the Hawaiian people, its uniqueness and value to the Hawaiian ecosystem, its intangible existence value, and the benefits it provides to human communities that cannot be measured.

Service Response: We recognize the cultural and natural significance of the Oahu elepaio. The elepaio is familiar to many people in Hawaii, and it has served as a symbol not only for the natural environment, but also for conservation and collaborative management. In addition to being a guardian spirit of Hawaiian canoe makers, the elepaio was prominent in legends and folklore. Elepaio are often the first birds to sing in the morning, and their songs were thought to warn spirits of the night that their work must end because dawn was approaching.

(25) *Comment:* Hunting for various mammals and game birds currently is authorized in portions of all five critical habitat units. Because nothing in the proposed rule indicates there will be a curtailment or cessation of hunting, it must be assumed that current authorized hunting programs will continue. A well-designed hunting program is a vital element of game management and overall conservation. If hunting is considered to have negative impacts, or a hunting program is considered for expansion or improvement, hunter groups should be involved in any discussions or planning.

Service Response: Alteration of native ecosystems by feral mammals is not one of the primary threats to the Oahu elepaio, and no changes in authorized hunting programs are expected as a result of critical habitat designation for the Oahu elepaio. The Service agrees that in many circumstances a well-designed hunting program can be an important component in the conservation of native ecosystems in Hawaii by helping to control excessive damage caused by large populations of feral mammals. Should a change in authorized hunting programs result from this critical habitat designation, the Service would work with State agencies and hunting groups to address any concerns.

Summary of Changes From the Proposed Rule

In the proposed rule we attempted to use Hawaiian language diacritical marks in the spelling of Hawaiian words, but there were numerous conversion errors and the marks were not printed correctly. We published a correction to the proposed rule (66 FR 46428) in which we said we would ensure that the marks are either used correctly or eliminated. In this final rule we eliminated the diacritical marks because we cannot ensure they will be printed properly in the short time before the court-ordered publication deadline. We recognize the importance of using the marks to accurately portray the pronunciation of Hawaiian words and we regret not being able to use them, but we feel that printing the marks incorrectly would be worse than not using them.

Based partly on public comments received on the proposed determination of critical habitat for the Oahu elepaio and partly on additional biological examination of several areas, we re-evaluated our proposed designation of critical habitat for the Oahu elepaio. This resulted in the removal for biological reasons of five relatively small areas totaling 207 ha (513 ac) in this final determination, including: (1) 48 ha (119 ac) in Unit 1 on Schofield Barracks West Range; (2) 31 ha (77 ac) in Unit 2 around the Palehua-Mauna Kapu road; (3) 63 ha (156 ac) in Unit 2 in Nanakuli Valley; (4) 49 ha (121 ac) in Unit 3 in Keaiwa Heiau State Recreation Area; and (5) 16 ha (40 ac) in Unit 5 in and around Lyon Arboretum in Manoa Valley. These areas comprise less than 1 percent of the area originally proposed. The designation is based on the distribution of lands needed to support a viable population, not on the amount of land required to support a certain number of birds. The lands in question were all located on the edge of one of the habitat units and were unlikely to serve as habitat stepping stones between other forested areas. A more detailed discussion and justification for removal of each of these areas is provided below.

On Schofield Barracks West Range we removed 48 ha (119 ac) in the area southeast of Puu Pane, which was the easternmost portion of Unit 1, because it is less suitable for elepaio than we realized. This area consists largely of exposed ridges, steep dry slopes that support dry shrub land, and open forest dominated by *Eucalyptus robusta,* an introduced tree not favored by elepaio. The gulches contain small areas of more mesic forest that could support a few pairs of elepaio, but these areas are isolated from other suitable forest and would not provide habitat stepping stones between other elepaio subpopulations.

As a result of the economic analysis and information provided to us during the public comment period on the proposed rule, we learned that the area along the Palehua Road at the southern edge of Unit 2 contains a large concentration of telecommunication antennas and associated facilities, several houses, and other structures. The forest has been largely removed due to the extensive development, and the existing vegetation is dominated by ironwood (*Casuarina* spp.) and *Eucalyptus robusta,* introduced trees that are not favored by elepaio. The existing structures in this area were not included in the proposed designation because they are developed features that do not contain the primary constituent elements required by elepaio, but to make this more explicit and clear, we removed a total of 31 ha (77 ac) in a corridor roughly 200 meters wide centered on the road between Palehua and Mauna Kapu. Of this area, 24 ha (60 ac) is privately owned and 7 ha (17 ac) is owned by the State.

In Nanakuli Valley we removed 63 ha (156 ac) from the southwest corner of Unit 2 because it is does not contain forest with the primary constituent elements needed by elepaio and is unlikely to be useful for dispersal. This valley is much drier than we previously realized and contains mostly dry shrubland and grassland. Portions of the valley are very steep and contain almost no vegetation. This area is on the very edge of the potential elepaio distribution and is unlikely to serve as a link to other subpopulations because of its location.

In Unit 3, we removed 49 ha (121 ac) that contained developed areas of the Keaiwa Heiau State Recreation Area, including roads, parking areas, campsites, picnic areas, and restrooms. These are developed features and do not contain the primary constituent elements needed by the elepaio, and as such were not included in the proposed critical habitat. To clarify this, in this final rule we have moved the boundary so it does not include the developed section of the recreation area, but the higher, undeveloped section of the recreation area is retained.

Finally, we removed 16 ha (40 ac) on the edge of Unit 5 that consisted of landscaped areas in and near Lyon Arboretum in Manoa Valley. The landscaped gardens in Lyon Arboretum are developed features that do not contain the primary constituent

elements needed by the elepaio, and as such were not included in the proposed designation. To clarify this, in this final rule we moved the boundary so it does not include the lower, developed section of the arboretum, but it still contains the higher, undeveloped section.

Economic Analysis

Section 4(b)(2) of the Act requires us to designate critical habitat on the basis of the best scientific and commercial data available and to consider the economic and other relevant impacts of designating a particular area as critical habitat. We may exclude areas from critical habitat upon a determination that the benefits of such exclusions outweigh the benefits of specifying such areas as critical habitat, but we cannot exclude such areas from critical habitat if the exclusion will result in the extinction of the species.

In the addendum, the methodology was modified to more fully describe and explore the baseline conditions attributable to the listing of the elepaio. This change in methodology is consistent with the planned modification discussed in the Foreword to the DEA, and is consistent with the ruling of the Tenth Circuit Court concerning the analytical approach used by the Service to estimate economic impacts. The results of the analysis cover economic impacts that are attributable to (1) both the listing of the elepaio as an endangered species and its critical habitat designation and (2) just the critical habitat designation. In general, cost and benefit estimates were not developed for projects and activities in cases where: (1) The economic impacts attributable to both the listing and the critical habitat are expected to be small, (2) the probability of the impacts occurring is small, (3) the impacts are highly speculative, or (4) data needed to quantify the impacts are not reasonably available.

An analysis of the economic impacts of critical habitat designation for the Oahu elepaio was prepared by Decision Analysts Hawaii, Incorporated, under subcontract to the Service through Industrial Economics, Incorporated, and was made available for public review from August 6 through September 6, 2001 (66 FR 40960). The final analysis, which reviewed and incorporated public comments, concluded that no significant economic impacts are expected from critical habitat designation. Few new developments, land uses, or other activities are expected in the critical habitat units because of the mountainous terrain, poor access, and existing conservation zoning. Most current and planned projects and land uses in the critical habitat areas have no Federal involvement, and thus would not be affected by critical habitat designation. Most activities with a Federal nexus involve the operation and management of existing facilities, and also would not be affected by critical habitat designation. The primary economic impact on most activities would be a small cost associated with an increased number of section 7 consultations and an increased length of time required for consultations resulting from critical habitat. There may be a modest economic impact of critical habitat designation on lands owned or controlled by the Department of Defense.

A copy of the final economic analysis and supporting documents are included in our administrative record and may be obtained by contacting the Pacific Islands Field Office (see **ADDRESSES** section). Copies of the final economic analysis also are available on the Internet at *http://pacificislands.fws.gov/wesa/endspindex.html*.

Required Determinations

Regulatory Planning and Review

In accordance with Executive Order 12866, this document has been reviewed by the Office of Management and Budget (OMB). OMB makes the final determination of significance under Executive Order 12866.

(a) This rule will not have an annual economic effect of $100 million or adversely affect an economic sector, productivity, jobs, the environment, or other units of government. A cost-benefit and economic analysis therefore is not required. The Oahu elepaio was listed as an endangered species in April 2000. In fiscal years 2000 through 2001 we have conducted two informal section 7 consultations with other Federal agencies to ensure that their actions would not jeopardize the continued existence of the Oahu elepaio. We have not issued any section 10(a)(1)(B) incidental take permits for the elepaio.

Under the Act, critical habitat may not be adversely modified by a Federal agency action; critical habitat does not impose any restrictions on non-Federal persons or agencies unless they are conducting activities funded or otherwise sponsored, authorized, or permitted by a Federal agency. Section 7 requires Federal agencies to ensure that they do not jeopardize the continued existence of this species. Based upon our experience with this species and its needs, we conclude that any Federal action or authorized action that could potentially cause adverse modification of proposed critical habitat would currently be considered as ''jeopardy'' under the Act in areas occupied by the species. Accordingly, the designation of currently occupied areas as critical habitat does not have any impacts on what actions may or may not be conducted by Federal agencies or non-Federal persons that receive Federal authorization or funding beyond the existing impacts. The designation of areas as critical habitat where section 7 consultations would not have occurred but for the critical habitat designation may have impacts on what actions may or may not be conducted by Federal agencies or non-Federal persons who receive Federal authorization or funding that are not attributable to the species listing. These impacts were evaluated in our economic analysis (under section 4 of the Act; see Economic Analysis section of this rule). Non-Federal persons or agencies that do not have Federal involvement in their actions are not restricted by the designation of critical habitat.

(b) This rule will not create inconsistencies with other agencies' actions. As discussed above, Federal agencies have been required to ensure that their actions do not jeopardize the continued existence of the Oahu elepaio since its listing in April 2000. We evaluated the impact of designating areas where section 7 consultations would not have occurred but for the critical habitat designation in our economic analysis (see Economic Analysis section of this rule). The prohibition against adverse modification of critical habitat is not expected to impose any additional restrictions to those that currently exist on currently occupied lands and will not create inconsistencies with other agencies' actions on unoccupied lands. Specifically, construction and land management activities carried out by the Service on the newly created Oahu Forest National Wildlife Refuge are expected to benefit the elepaio and other listed species in the long term, and those actions therefore will not be affected by this designation. Storage of munitions by the U.S. Navy at NAVMAG Pearl Harbor Lualualei Branch is not expected to be affected by this designation because the lands used for munitions storage and those designated as critical habitat do not overlap, and storage of munitions on adjacent lands does not affect the elepaio. Training by the U.S. Army at Makua Military Reservation and Schofield Barracks is not expected to be affected by this designation because

wildfires caused by training exercises are the only means by which training may affect the elepaio, and the Army has implemented a detailed fire management plan for Makua and soon plans to implement a fire management plan for Schofield Barracks.

(c) This rule will not materially affect entitlements, grants, user fees, loan programs, or the rights and obligations of their recipients. Federal agencies are currently required to ensure that their activities do not jeopardize the continued existence of a listed species, and, as discussed above, we do not anticipate that the adverse modification prohibition resulting from critical habitat designation will result in additional restrictions.

(d) OMB has determined that this rule raises novel legal or policy issues. Therefore, this rule is significant under E.O. 12866, and, as a result, has undergone OMB review.

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 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 to require Federal agencies to provide a statement of the factual basis for certifying that a rule will not have a significant economic effect on a substantial number of small entities. The SBREFA also amended the Regulatory Flexibility Act to require a certification statement. In this rule, we are certifying that the critical habitat designation for the Oahu elepaio will not have a significant effect on a substantial number of small entities. The following discussion explains our rationale.

Small entities include small organizations, such as independent non-profit organizations, small governmental jurisdictions, including school boards and city and town governments that serve fewer than 50,000 residents, as well as small businesses. Small businesses include manufacturing and mining concerns with fewer than 500 employees, wholesale trade entities with fewer than 100 employees, retail and service businesses with less than $5 million in annual sales, general and heavy construction businesses with less than $27.5 million in annual business, special trade contractors doing less than $11.5 million in annual business, and agricultural businesses with annual sales less than $750,000. To determine if potential economic impacts to these small entities are significant, we consider the types of activities that might trigger regulatory impacts under this rule as well as the types of project modifications that may result. In general, the term significant economic impact is meant to apply to a typical small business firm's business operations.

To determine if the rule would affect a substantial number of small entities, we consider the number of small entities affected within particular types of economic activities (e.g., housing development, grazing, oil and gas production, timber harvesting, etc.). We apply the ''substantial number'' test individually to each industry to determine if certification is appropriate. In some circumstances, especially with critical habitat designations of limited extent, we may aggregate across all industries and consider whether the total number of small entities affected is substantial. In estimating the numbers of small entities potentially affected, we also consider whether their activities have any Federal involvement. Designation of critical habitat only affects activities conducted, funded, or permitted by Federal agencies. Some kinds of activities are unlikely to have any Federal involvement and so will not be affected by critical habitat designation.

In areas where the species is present, Federal agencies already are required to consult with us under section 7 of the Act on activities that they fund, permit, or implement that may affect the Oahu elepaio. Federal agencies also must consult with us if their activities may affect critical habitat. Designation of critical habitat therefore could result in an additional economic impact on small entities due to the requirement to reinitiate consultation for ongoing Federal activities. However, since the Oahu elepaio was proposed for listing in October 1998, we have conducted only two informal consultations and one formal consultation, involving the Oahu Forest National Wildlife Refuge and the U.S. Army. As a result, the requirement to reinitiate consultation for ongoing projects will not affect any small entities.

In areas where the species clearly is not present, designation of critical habitat could trigger additional review of Federal activities under section 7 of the Act. We are aware of relatively few activities in the critical habitat for the Oahu elepaio that have Federal involvement and thus would require consultation or reinitiation of already-completed consultations for ongoing projects. Moreover, no activities currently undertaken by small entities in the critical habitat units have Federal involvement, nor, for the reasons explained herein, would Federal involvement be expected in the future, and thus we do not anticipate that this designation of critical habitat will result in any additional regulatory impacts to small entities.

Current activities with Federal involvement that will require consultation are; training by the U.S. Army; storage of munitions by the U.S. Navy; Federally funded land management and wildlife restoration and game-hunting projects; and improvements to communications facilities that require approval from the FCC. We are not aware of any additional projects that have been proposed, but potential future activities that might have Federal involvement include; maintenance of water diversion and flood control facilities that may require authorization from the Army Corps of Engineers under Section 404 of the Clean Water Act; watershed and restoration management projects sponsored by NRCS; projects to improve access and management for the Oahu Forest National Wildlife Refuge. The requirement in section 7(a)(2) to avoid jeopardizing listed species and destroying or adversely modifying designated critical habitat may result in Federal agencies requiring certain modifications to proposed projects.

The five critical habitat units identified in this rule consist of 15, 6, 37, 12, and 43 parcels, of which 0, 1, 16, 3, and 12 parcels are owned by 0, 1, 11, 3, and 9 different small entities, respectively. The majority of parcels are owned by the Federal government, the State of Hawaii, and the City and County of Honolulu, which are not small entities.

Of the lands designated as critical habitat for the Oahu elepaio, 99.6% are zoned for conservation. Projected uses of these lands consist of; recreation (hiking, camping, hunting, and fishing); protection of natural and cultural resources, including threatened and endangered species; watershed protection and management; ecotourism; and in certain areas, harvesting of natural resources under an approved management plan. As discussed in the economic analysis,

most of the critical habitat lands are in mountainous areas where access is difficult due to the steep terrain, and these lands are not suited to development or agriculture. Because use of the vast majority of lands designated as critical habitat already is limited by existing zoning regulations and mountainous terrain with difficult access, we do not anticipate a significant decline in property values as a result of this critical habitat designation.

Unit 5 includes a portion of one parcel in Wailupe Valley that is zoned for urban use and is occupied by elepaio. Residential development of this parcel was considered before 1970, but was abandoned due to the unstable nature of the soil in this area. The parcel recently was purchased by the City and County of Honolulu, and future development is unlikely. Unit 2 includes one parcel owned by the U.S. Navy that is partially zoned for agriculture, but this area is very dry and access is restricted by the Naval installation, making agriculture unlikely.

In general, two different mechanisms in section 7 consultations could lead to additional regulatory requirements. First, if we conclude, in a biological opinion, that a proposed action is likely to jeopardize the continued existence of a species or adversely modify its critical habitat, we can offer ''reasonable and prudent alternatives.'' Reasonable and prudent alternatives are alternative actions that can be implemented in a manner consistent with the scope of the Federal agency's legal authority and jurisdiction, that are economically and technologically feasible, and that would avoid jeopardizing the continued existence of listed species or resulting in adverse modification of critical habitat. A Federal agency and an applicant may elect to implement a reasonable and prudent alternative associated with a biological opinion that has found jeopardy or adverse modification of critical habitat. An agency or applicant could alternatively choose to seek an exemption from the requirements of the Act or proceed without implementing the reasonable and prudent alternative. However, unless an exemption were obtained, the Federal agency or applicant would be at risk of violating section 7(a)(2) of the Act if it chose to proceed without implementing the reasonable and prudent alternatives. Secondly, if we find that a proposed action is not likely to jeopardize the continued existence of a listed animal species, we may identify reasonable and prudent measures designed to minimize the amount or extent of take and require the Federal agency or applicant to implement such measures through non-discretionary terms and conditions. We may also identify discretionary conservation recommendations designed to minimize or avoid the adverse effects of a proposed action on listed species or critical habitat, help implement recovery plans, or to develop information that could contribute to the recovery of the species.

Based on our experience with section 7 consultations for all listed species, virtually all projects-including those that, in their initial proposed form, would result in jeopardy or adverse modification determinations in section 7 consultations-can be implemented successfully with, at most, the adoption of reasonable and prudent alternatives. These measures, by definition, must be economically feasible and within the scope of authority of the Federal agency involved in the consultation. As we have a very limited consultation history for the Oahu elepaio, we can only describe the general kinds of actions that may be identified in future reasonable and prudent alternatives. These are based on our understanding of the needs of the species and the threats it faces, as described in the final listing rule and this critical habitat designation. The kinds of actions that may be included in future reasonable and prudent alternatives include; conservation set-asides; management of non-native predators, particularly black rats; management of non-native mosquitoes that carry non-native avian diseases; restoration of degraded habitat; and regular monitoring. These measures are not likely to result in a significant economic impact to project proponents.

As required under section 4(b)(2) of the Act, we conducted an analysis of the potential economic impacts of this critical habitat designation, and that analysis was made available for public review and comment before finalization of this designation. Based on estimates provided in the economic analysis, the potential economic impact of critical habitat designation for the Oahu elepaio over the next 10 years ranged from $296,000 to $1,347,000, of which the cost to small entities ranged from $40,000 to $60,000. The high estimate of the total potential impact includes control of alien rodents in all Army and navy installations, which probably will not be required as a result of critical habitat designation, and implementation of a fire management plan at Schofield Barracks, which also is attributable to other purposes, so the lower estimate of $296,000 is a more realistic estimate of the impact attributable to the critical habitat designation. The estimate of the potential impact to small entities varied depending on the number of small entities attempting to investigate the implications of critical habitat designation on their land.

In summary, we have considered whether this rule would result in a significant economic effect on a substantial number of small entities. It would not affect a substantial number of small entities. The entire critical habitat designation involves fewer than 120 parcels, only 32 of which are owned by 23 different small entities. All of these parcels are zoned for conservation, and most of these parcels are located in mountainous areas where access is limited. Future uses of these lands are already limited, and are not expected to have Federal involvement or result or section 7 consultations. This rule would result in project modifications only when proposed Federal activities would destroy or adversely modify critical habitat. While this may occur, it is not expected frequently enough to affect a substantial number of small entities. Even when it does occur, we do not expect it to result in a significant economic impact, as the measures included in reasonable and prudent alternatives must be economically feasible and consistent with the proposed action. The kinds of measures we anticipate we would provide can usually be implemented at very low cost. Therefore, we are certifying that the designation of critical habitat for the Oahu elepaio will not have a significant economic impact on a substantial number of small entities. A regulatory flexibility analysis is not required.

Small Business Regulatory Enforcement Fairness Act (5 U.S.C. 804(2))

In the economic analysis, we determined whether designation of critical habitat would cause (a) any effect on the economy of $100 million or more, (b) any increases in costs or prices for consumers, individual industries, Federal, State, or local government agencies, or geographic regions, or (c) any significant adverse effects on competition, employment, investment, productivity, innovation, or the ability of U.S.-based enterprises to compete with foreign-based enterprises. Refer to the final economic analysis for a discussion of the effects of this determination.

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

In accordance with the Unfunded Mandates Reform Act (2 U.S.C. 1501 *et seq.*):

(a) This rule will not ''significantly or uniquely'' affect small governments. A

Small Government Agency Plan is not required. Small governments will only be affected to the extent that they must ensure that any programs involving Federal funds, permits or other authorized activities will not adversely affect the critical habitat.

(b) This rule will not produce a Federal mandate of $100 million or greater in any year, that is, it is not a ''significant regulatory action'' under the Unfunded Mandates Reform Act. The designation of critical habitat imposes no obligations on State or local governments.

Executive Order 13211

On May 18, 2001, the President issued Executive Order EO 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. Although this is a significant regulatory action under Executive Order 12866, this final rule 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.

Takings

In accordance with Executive Order 12630 (''Government Actions and Interference with Constitutionally Protected Private Property Rights''), we have analyzed the potential takings implications of designating critical habitat for the Oahu elepaio in a takings implication assessment. The takings implications assessment concludes that this final rule does not pose significant takings implications.

Federalism

In accordance with Executive Order 13132, the rule does not have significant Federalism effects. A Federalism assessment is not required. As discussed above, the designation of critical habitat in areas currently occupied by the Oahu elepaio would have little incremental impact on State and local governments and their activities. The designations may have some benefit to these governments in that the areas essential to the conservation of these species are more clearly defined, and the primary constituent elements of the habitat necessary to the survival of the species are identified. While 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 consultation to occur.

Civil Justice Reform

In accordance with Executive Order 12988, the Department of the Interior's Office of the Solicitor has determined that this rule does not unduly burden the judicial system and does meet the requirements of sections 3(a) and 3(b)(2) of the Order. We designate critical habitat in accordance with the provisions of the Act. The 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 the Oahu elepaio.

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

This rule does not contain any information collection requirements for which Office of Management and Budget approval under the Paperwork Reduction Act is required.

National Environmental Policy Act

We have determined that an Environmental Assessment or an Environmental Impact Statement as defined by the National Environmental Policy Act of 1969 need not be prepared in connection with regulations adopted pursuant to section 4(a) of the Endangered Species Act. A notice outlining our reason for this determination was published in the **Federal Register** on October 25, 1983 (48 FR 49244). This proposed rule does not constitute a major Federal action significantly affecting the quality of the human environment.

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 the Interior's manual at 512 DM 2, we readily acknowledge our responsibility to communicate meaningfully with federally recognized Tribes on a government-to-government basis. The designation of critical habitat for the Oahu elepaio does not contain any Tribal lands or lands that we have identified as impacting Tribal trust resources.

References Cited

A complete list of all references cited in this proposed rule is available upon request from the Pacific Islands Fish and Wildlife Office (see **ADDRESSES** section).

Author

The primary author of this document is Eric A. VanderWerf, Pacific Islands Fish and Wildlife Office (see **ADDRESSES** section).

List of Subjects in 50 CFR Part 17

Endangered and threatened species, Exports, Imports, Reporting and record keeping requirements, Transportation.

Regulation Promulgation

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

PART 17—[AMENDED]

1. The authority citation for part 17 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 § 17.11(h) revise the entry for ''Elepaio, Oahu'' under ''BIRDS'' to read as follows:

§ 17.11 Endangered and threatened wildlife.

* * * * *

(h) * * *

Species		Historic range	Vertebrate population where endangered or threatened	Status	When listed	Critical habitat	Special rules
Common name	Scientific name						
*	*	*	*	*	*	*	
BIRDS							

Species		Historic range	Vertebrate population where endangered or threatened	Status	When listed	Critical habitat	Special rules
Common name	Scientific name						
*	*	*	*	*	*	*	
Elepaio, Oahu	*Chasiempis sandwichensis ibidis (Chasiempis sandwichensis gayi).*	U.S.A. (HI)	Entire	E	696	17.95(b)	NA
*	*	*	*	*	*	*	

3. Amend § 17.95(b) by adding critical habitat for the Oahu elepaio (*Chasiempis sandwichensis ibidis*) in the same alphabetical order as this species occurs in § 17.11(h), to read as follows:

§ 17.95 Critical habitat—fish and wildlife.

* * * * *

(b) Birds.

* * * * *

Oahu elepaio (*Chasiempis sandwichensis ibidis*)

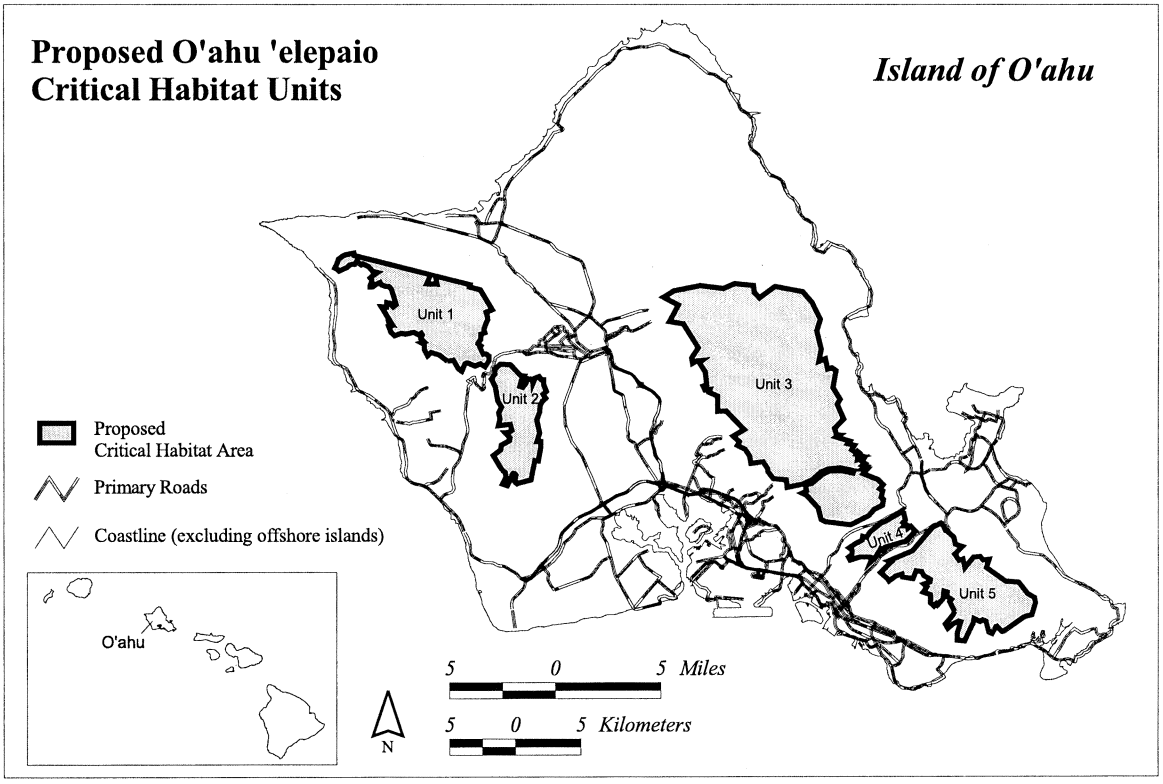
(1) Critical Habitat Units are depicted for the City and County of Honolulu on the maps below.

(2) (i) Within these areas, the primary constituent elements required by the Oahu elepaio are those habitat components that are essential for the biological needs of foraging, sheltering, roosting, nesting, and rearing of young. These primary constituent elements are undeveloped wet, mesic, and dry forest habitats with a generally continuous canopy and a dense understory and that are composed of native and/or introduced plant species. Such forests are found in valleys and on mountain slopes and ridges. The primary constituent elements associated with the biological needs of dispersal and genetic exchange are undeveloped wet or dry shrub land and wet or dry cliff habitats composed of native and/or introduced plant species that separate elepaio populations. Elepaio may not establish territories in shrub or cliff habitats and may use them only transiently, but undeveloped areas containing these habitats are important for linking populations by providing dispersal corridors and promoting genetic exchange among populations.

(ii) Within the forests and shrub lands providing the primary constituent elements, plant species composition varies with rainfall, elevation, and degree of habitat disturbance, and plant species occur in a variety of assemblages. Common native and introduced species within these plant assemblages include, but are not limited to, ohia (*Metrosideros polymorpha*), koa (*Acacia koa*), papala kepau (*Pisonia umbellifera*), lama (*Diospyros sandwicensis*), mamaki (*Pipturus albidus*), kaulu (*Sapindus oahuensis*), hame (*Antidesma platyphyllum*), alaa (*Pouteria sandwicensis*), aalii (*Dodonaea viscosa*), naupaka kuahiwi (*Scaevola spp.*), pukiawe (*Styphelia tameiameiae*), uluhe (*Dicranopteris linearis*), guava (*Psidium guajava*), strawberry guava (*P. cattleianum*), mango (*Mangifera indica*), kukui (*Aleurites moluccana*), christmasberry (*Schinus terebinthifolius*), ti (*Cordyline terminalis*), rose apple (*Syzygium jambos*), mountain apple (*S. malaccense*), and Java plum (*S. cumini*).

(3) Existing developed features and structures, such as buildings, roads, aqueducts, antennas, water tanks, agricultural fields, paved areas, lawns, and other urban landscaped areas, that do not contain one or more of the primary constituent elements, are not included as critical habitat.

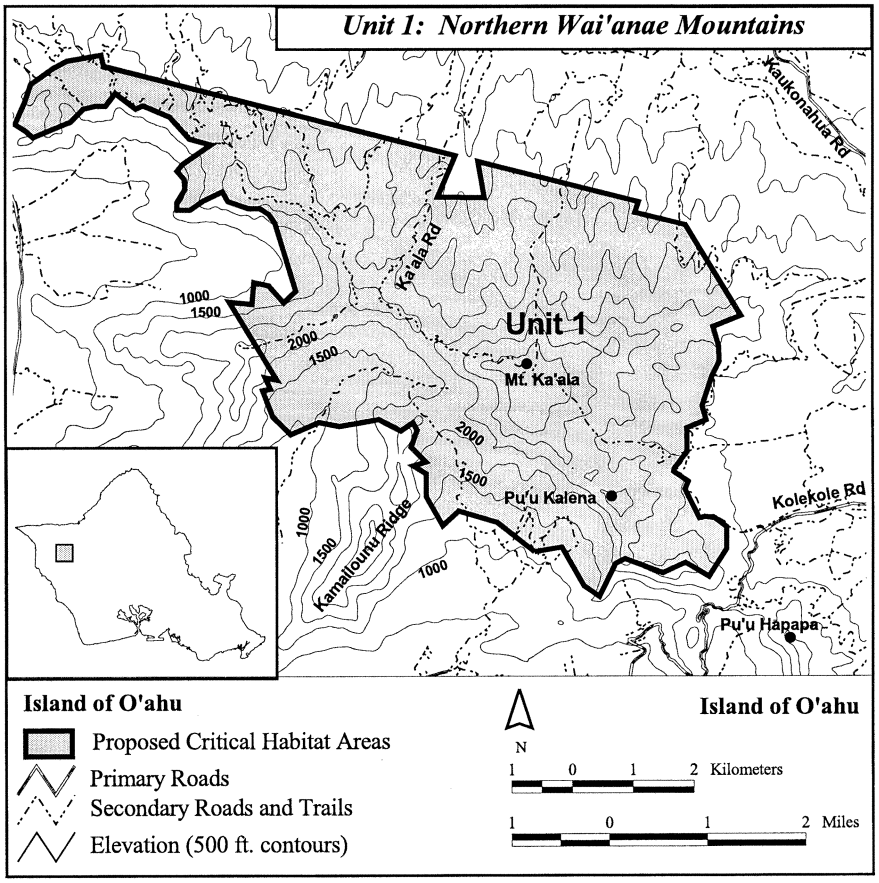
(4) Map of critical habitat units for the Oahu elepaio follows.



(5) Unit 1 (4,454 ha; 11,005 ac)

(i) Unit 1 consists of 94 boundary points with the following coordinates in UTM Zone 4 with the units in meters using North American Datum of 1983 (NAD83): 588465, 2375750; 587846, 2376228; 587213, 2376416; 586946, 2376176; 586675, 2376658; 586672, 2377028; 586468, 2377154; 586672, 2377219; 586430, 2377462; 586532, 2377741; 586464, 2377863; 586261, 2377727; 585895, 2377915; 585242, 2377801; 584907, 2377864; 584433, 2377671; 584139, 2377961; 583974, 2378388; 584099, 2378414; 584016, 2378599; 584207, 2378563; 583425, 2379849; 583801, 2379814; 583831, 2380171; 584075, 2380122; 584324, 2379841; 584526, 2380031; 584181, 2381150; 584078, 2381295; 583938, 2381385; 583738, 2381388; 583402, 2381505; 583315, 2381668; 582998, 2381518; 582785, 2381368; 582566, 2381369; 582561, 2381485; 582694, 2381702; 582685, 2381865; 582566, 2382005; 582651, 2382112; 583122, 2382432; 582768, 2382529; 582445, 2382889; 581998, 2383075; 581881, 2383019; 581546, 2383276; 581387, 2383071; 581221, 2383069; 581023, 2383019; 580811, 2382809; 580192, 2382557; 580070, 2382662; 579894, 2382772; 580060, 2383144; 580151, 2383425; 580526, 2383690; 580750, 2383802; 581314, 2383901; 581353, 2383719; 587168, 2382252; 586876, 2381574; 587645, 2381564; 587539, 2382159; 590187, 2381495; 590131, 2381324; 590955, 2381123; 591864, 2379621; 591408, 2379439; 591501, 2379125; 591510, 2378867; 591393, 2378631; 591229, 2378138; 591294, 2377905; 590979, 2377773; 590984, 2377387; 590770, 2377109; 590760, 2377063; 590999, 2376896; 590945, 2376772; 591176, 2376297; 591268, 2376320; 591426, 2376305; 591624, 2376158; 591620, 2375793; 591334, 2375340; 590950, 2375570; 590580, 2375400; 589956, 2375632; 589799, 2375555; 589539, 2375014; 589285, 2375190; 588919, 2375824; 588465, 2375750.

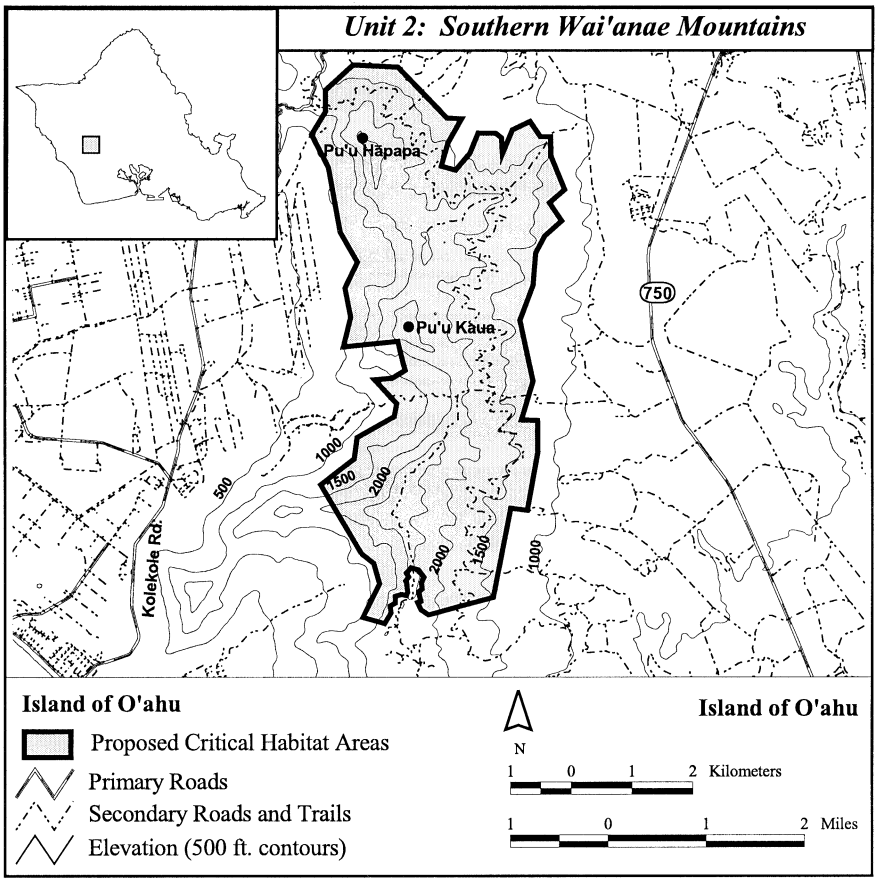
(ii) Map of Unit 1 follows.



(6) Unit 2 (2,422 ha; 5,985 ac)

(i) Unit 2 consists of 78 boundary points with the following coordinates in UTM Zone 4 with the units in meters using North American Datum of 1983 (NAD83): 592645, 2367498; 591970, 2368628; 592530, 2369066; 592575, 2369415; 593190, 2369759; 593231, 2369971; 592864, 2370362; 593156, 2370385; 593368, 2370513; 593249, 2370991; 592348, 2370899; 592469, 2371381; 592374, 2371861; 592582, 2372284; 592295, 2372774; 592100, 2373836; 591816, 2374384; 592053, 2374764; 592045, 2375115; 592504, 2375529; 593245, 2375497; 594056, 2374659; 594299, 2374644; 594081, 2374253; 593970, 2373860; 594207, 2373793; 594437, 2374070; 594578, 2374412; 594867, 2374406; 594965, 2374331; 594978, 2374067; 595140, 2374463; 595431, 2374602; 595604, 2374352; 595772, 2374351; 595782, 2374020; 596005, 2373471; 595754, 2373256; 595960, 2372960; 595678, 2372709; 595531, 2372434; 595485, 2371908; 595272, 2371337; 595489, 2370340; 595296, 2369703; 595561, 2369694; 595565, 2369178; 595390, 2368213; 595117, 2368245; 594830, 2366778; 594015, 2366560; 593884, 2366525; 593756, 2366491; 593635, 2366570; 593574, 2366695; 593629, 2366713; 593594, 2366869; 593651, 2366917; 593639, 2367019; 593682, 2367104; 593591, 2367228; 593472, 2367265; 593388, 2367176; 593425, 2367112; 593379, 2367045; 593395, 2367010; 593413, 2366861; 593391, 2366809; 593307, 2366826; 593203, 2366792; 593207, 2366684; 593121, 2366632; 593137, 2366521; 593030, 2366348; 592668, 2366451; 592945, 2366998; 592852, 2367332; 592645, 2367498.

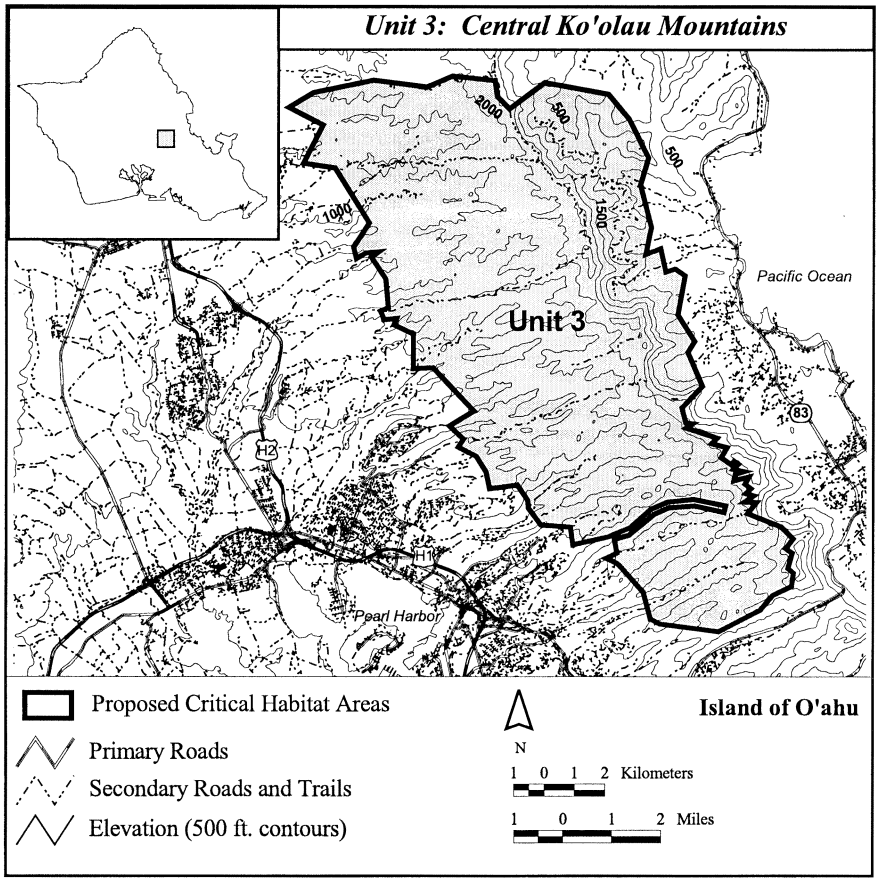
(ii) Map of Unit 2 follows.



(7) Unit 3 (14,801 ha; 36,573 ac)

(i) Unit 3 consists of 108 boundary points with the following coordinates in UTM Zone 4 with the units in meters using North American Datum of 1983 (NAD83): 615481, 2366443; 614313, 2366190; 614232, 2366761; 613262, 2366836; 612845, 2367394; 612829, 2367639; 612488, 2368140; 611561, 2368027; 611448, 2368566; 611117, 2369088; 610523, 2369387; 610693, 2369643; 610226, 2370083; 611040, 2370565; 609681, 2371985; 609025, 2371951; 609034, 2373100; 608391, 2373401; 608469, 2373609; 608065, 2373567; 607941, 2373859; 608199, 2373978; 608109, 2374925; 607637, 2375635; 607869, 2375817; 607456, 2375780; 607136, 2375598; 607046, 2375977; 607565, 2376766; 606428, 2378568; 605381, 2378725; 606026, 2379972; 604900, 2380551; 605708, 2381032; 607698, 2381439; 609468, 2381214; 610319, 2381573; 611728, 2381425; 611797, 2380904; 612201, 2380506; 613364, 2381362; 615459, 2380980; 616152, 2380161; 616780, 2378903; 616513, 2378013; 616873, 2376632; 616699, 2375737; 617180, 2375933; 617356, 2375158; 617664, 2375259; 617994, 2375029; 617757, 2373739; 618311, 2372859; 618082, 2372506; 618563, 2371385; 617894, 2370668; 618022, 2370181; 618247, 2370148; 618043, 2370014; 619043, 2369685; 618878, 2369509; 619381, 2369376; 619182, 2369040; 619525, 2368805; 619611, 2368922; 619747, 2368829; 619588, 2368664; 619928, 2368585; 619650, 2368496; 619614, 2368284; 620097, 2368401; 619967, 2368174; 620164, 2368022; 620005, 2367870; 620257, 2367795; 619954, 2367590; 620341, 2367572; 620055, 2367214; 621150, 2366779; 621549, 2366388; 621302, 2366064; 621511, 2365913; 621381, 2365424; 621553, 2365265; 621489, 2364827; 620880, 2364530; 620469, 2364040; 619115, 2363338; 617176, 2363590; 616868, 2363761; 616638, 2364642; 615913, 2365439; 615777, 2365575; 615420, 2365753; 615767, 2365918; 615684, 2366361; 616156, 2366495; 616990, 2367187; 617469, 2367398; 618312, 2367466; 619282, 2367250; 619336, 2367460; 618293, 2367672; 617426, 2367594; 616876, 2367352; 616189, 2366748; 615713, 2366555; 615481, 2366443.

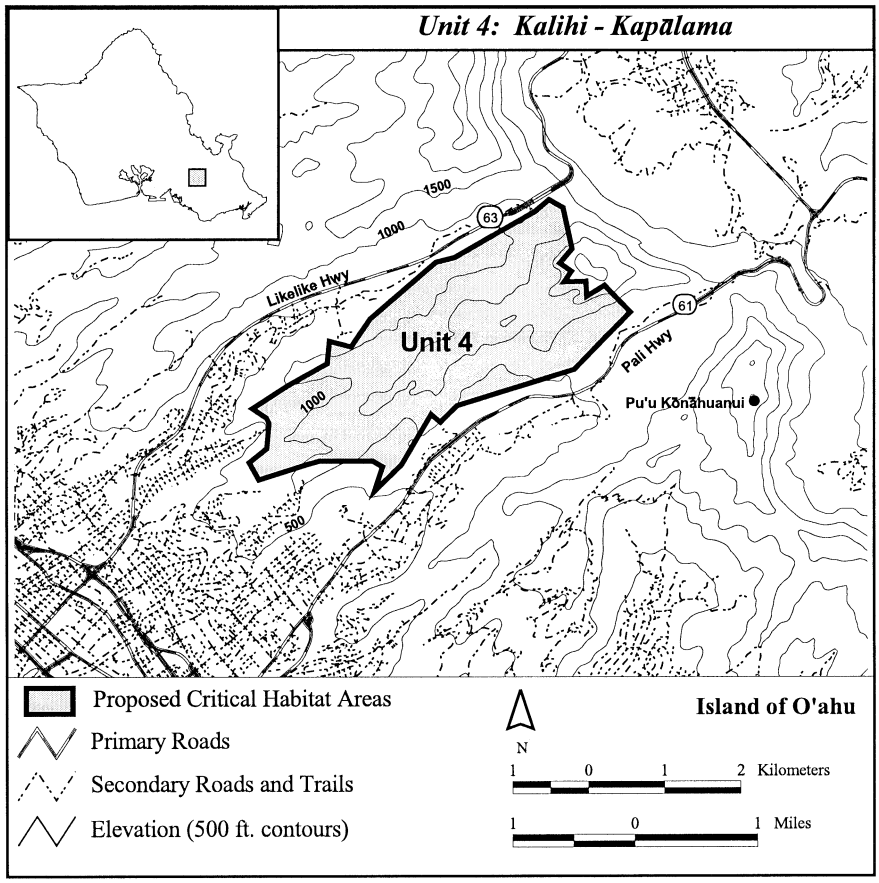
(ii) Map of Unit 3 follows.



(8) Unit 4 (804 ha; 1,987 ac)

(i) Unit 4 consists of 35 boundary points with the following coordinates in UTM Zone 4 with the units in meters using North American Datum of 1983 (NAD83): 619449, 2361897; 619967, 2362184; 619999, 2362473; 620286, 2362404; 620537, 2362773; 621409, 2363520; 621660, 2363584; 622719, 2364191; 622901, 2364348; 623091, 2364242; 623209, 2363699; 623046, 2363507; 623201, 2363403; 623106, 2363264; 623391, 2363271; 623404, 2363073; 623634, 2363216; 623976, 2362864; 623238, 2362105; 621688, 2361633; 621467, 2361418; 621345, 2361518; 620954, 2360860; 620598, 2360514; 620700, 2360831; 620572, 2360908; 619869, 2360908; 619670, 2360852; 619064, 2360661; 618935, 2360886; 619170, 2361072; 619199, 2361402; 619163, 2361470; 618977, 2361595; 619449, 2361897.

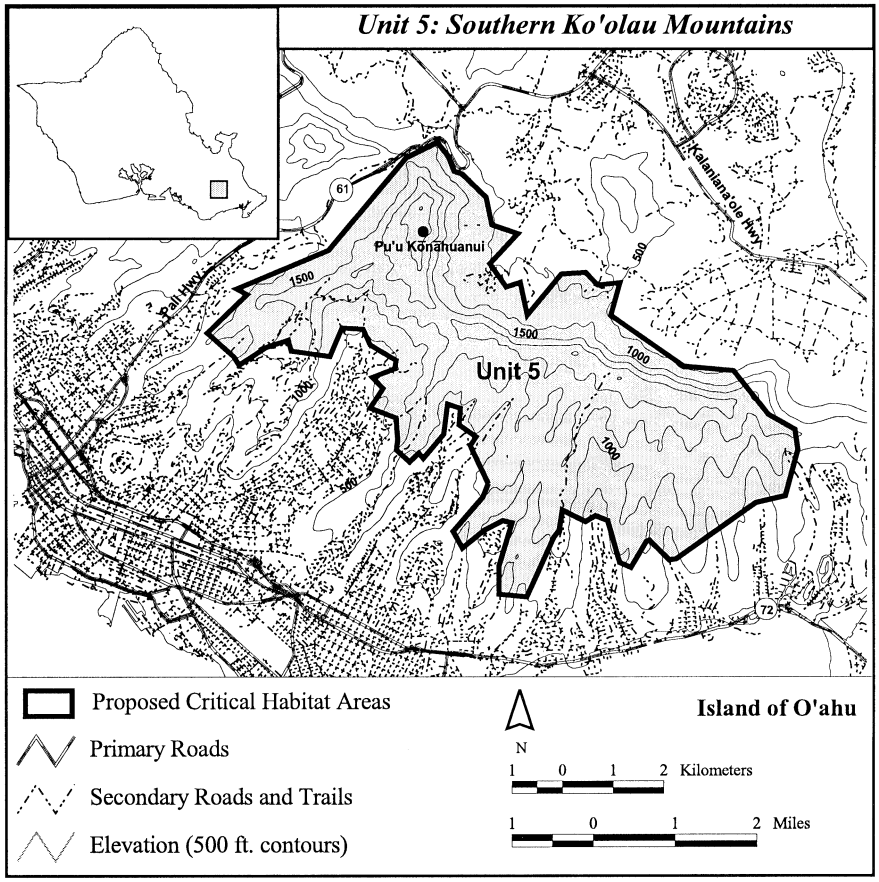
(ii) Map of Unit 4 follows.



(9) Unit 5 (4,180 ha; 10,329 ac)

(i) Unit 5 consists of 78 boundary points with the following coordinates in UTM Zone 4 with the units in meters using North American Datum of 1983 (NAD83): 626915, 2356759; 626560, 2357502; 626675, 2357669; 626333, 2357906; 626359, 2358234; 626110, 2358313; 626031, 2357725; 625623, 2357254; 625538, 2357354; 625351, 2357186; 625091, 2357420; 625118, 2357617; 625085, 2358039; 624568, 2358236; 624821, 2358624; 624612, 2358850; 625059, 2359019; 625083, 2359182; 624571, 2359489; 624430, 2359798; 624013, 2359828; 623768, 2359261; 623004, 2359366; 622941, 2359584; 622499, 2359435; 621968, 2359088; 621864, 2359256; 621335, 2359722; 622127, 2360488; 621920, 2360603; 623746, 2361359; 625281, 2363179; 625896, 2363475; 626109, 2363219; 626146, 2363135; 626234, 2362910; 626392, 2362857; 626871, 2362399; 626986, 2361859; 627500, 2361686; 626946, 2361095; 627268, 2360638; 627548, 2360727; 627690, 2360077; 628361, 2360895; 628839, 2360922; 629079, 2360676; 629519, 2360722; 629341, 2360070; 630776, 2359069; 631754, 2358982; 632440, 2358108; 632959, 2357815; 633019, 2357425; 632769, 2356517; 632191, 2356385; 630620, 2355286; 630491, 2355266; 630104, 2355644; 630041, 2355624; 629732, 2355117; 629510, 2355214; 629279, 2356032; 629033, 2356130; 628836, 2356015; 628378, 2356236; 628317, 2355841; 628209, 2355703; 627673, 2354542; 627125, 2354591; 627125, 2355143; 627381, 2355990; 627200, 2356033; 626832, 2355846; 626399, 2355498; 626215, 2355823; 626806, 2356493; 626915, 2356759.

(ii) Map of Unit 5 follows.



Dated: November 20, 2001.

Joseph E. Doddridge,

Acting Assistant Secretary for Fish and Wildlife and Parks.

[FR Doc. 01–29475 Filed 12–7–01; 8:45 am]

BILLING CODE 4310–55–P