

Federal and State governments will have taken private property.

Our Response: Chapter VI, Section 4.g. of the DEA and Section 5.e. of the addendum address costs involved in redistricting lands from the Agricultural District to the Conservation District. About 3,319 acres of the intended designation are in the agricultural district, 2,070 acres of which are privately owned. In the event that all of these lands are redistricted to the conservation district, the loss in land value would be approximately \$18.6 million.

However, as discussed more fully in Chapter VI, Section 4.g. of the DEA and Section 5.e. of the addendum, agency-initiated and court-ordered redistricting of some of the privately owned land is reasonably foreseeable (moderate to high probability). But more to the point, any redistricting of land to Conservation, and any corresponding loss of economically beneficial use, would be decided by the LUC and the courts, not the Service, based on an array of State statutory factors. As such, the Federal government would not have taken private property.

(58) *Comment:* Several commenters stated the following: While the Service has stated that critical habitat affects only activities that require Federal permits or funding, and does not require landowners to carry out special management or restrict use of their land, this fails to address the breadth of Federal activities that affect private property in Hawaii and the extent to which private landowners are required to obtain Federal approval before they can use their property. These requirements also extend to State agencies requiring Federal funds or approvals.

Our Response: As discussed in Chapter V, Section 2.b. of the DEA, not every single project, land use, and activity that has a Federal involvement has historically been subject to section 7 consultation with the Service (*e.g.*, a federally guaranteed mortgage). Thus, the analysis was confined to those projects, land uses, and activities that are, in practice, likely to be subject to consultation. The analysis based this assessment on a review of past consultations, current practices, and the professional judgments of Service staff and other Federal agency staff.

(59) *Comment:* Several commenters stated the following: The impact of the proposed designations under State law is potentially more extensive than under Federal law since the Act contains at least general criteria for determining when alteration of critical habitat constitutes "destruction or adverse

modification." The lack of analogous provisions under State law lends itself to a much broader interpretation of what activities might be considered injurious to the species (and therefore prohibited). One commenter asked if, to the extent that the Service has considered the potential interplay between the Act and State statutes, whether the Service is aware of any circumstances where similar issues have been raised under other State conservation statutes when critical habitat was designated. Another commenter noted, however, that because Hawaii's land use laws are uniquely onerous, precedent from other States is of little value. The current wave of proposals to designate critical habitat are the first time that the Act has been applied to significant areas of private land in Hawaii. Consequently, even prior experience in Hawaii is of little relevance.

Our Response: The DEA and the addendum discuss costs resulting from the interplay of the Endangered Species Act and Hawaii State law in the sections on Indirect Costs. The uncertainties regarding the occurrence of many indirect costs and their magnitudes reflect the lack of extensive experience in Hawaii with critical habitat.

(60) *Comment:* Several commenters stated the following: The DEA fails to consider economic impacts of critical habitat that result through interaction with State law, specifically Hawaii's Environmental Impact Statement Law. HRS § 343-5 applies to any use of conservation land, and a full Environmental Impact Statement is required if any of the significance criteria listed in Hawaii Administrative Rule 11-200-12 apply. One of these criteria is that an action is significant if it "substantially affects a rare, threatened or endangered species or its habitat." This will result in costly procedural requirements and delays. However, the DEA does not acknowledge that any impact on endangered species habitat will be deemed to be "significant." In addition, multiple commenters stated that the DEA fails to evaluate the practical effect critical habitat designation will have on development. Special Management Area permits administered by the City & County of Honolulu, as required by Hawaii's Coastal Zone Management Act, will be harder to obtain, will result in delays, will cause a decline in property values, and might make it impossible to develop. This economic impact disappears because the DEA's bottom line erroneously counts only so-called "direct" costs of consultation. The Service has taken the position in other States that it has a right to intervene in

local land use proceedings if they affect endangered species on private property, as evidenced by the Service's petition to the local zoning board in Arizona to postpone approval of a rezoning petition pending a survey to determine the extent to which an endangered plant was present on the property even though no Federal approval was being sought. That the Service does not address these activities in the DEA is a fundamental error of the analysis.

Our Response: Chapter VI, Section 4.h. of the DEA discussed additional State and county environmental review that would be required for projects in critical habitat. However, as mentioned in the addendum, even with the added State and county environmental review, the intended designation will have little or no practical effect on residential, resort, commercial, or industrial development because the analysis anticipates that no such development will occur in the intended critical habitat. Reasons for this are: (1) Most of the intended critical habitat is in mountainous areas that are unsuitable for development due to difficult access and terrain; (2) approximately 96 percent of the intended designation is in the State Conservation District where existing land-use controls severely limit development; (3) almost all of the remaining agricultural land in the intended designation is in areas that are not subject to development pressure because of steep slopes and little or no nearby infrastructure; (4) the small amount of land in the urban district (0.6 acre) is on steep slopes that cannot support development; and (5) all of the land intended for critical habitat designation that is in the Special Management Area is also within the conservation district.

(61) *Comment:* Several commenters stated the following: The DEA fails to consider economic impacts of critical habitat that result through interaction with State law, specifically the State Water Code. HRS § 174C-2 states that "adequate provision shall be made for protection of fish and wildlife". HRS § 174C-71 instructs the Commission of Water Resource Management to establish an instream use protection program to protect fish and wildlife. Since landowners might depend on water pumped from other watersheds, these effects can be far-reaching. It is impossible to tell from the descriptions in the proposal whether any water diversions will have to be reduced as a result of listing and critical habitat designation. It is unfair to dismiss costly but vital sources of energy and inexpensive irrigation water while maintaining the highest level of effort to

protect primary constituent elements for species that do not physically reside in the area but might somehow be transported. If the critical habitat proposal would require reducing water diversions from any stream, the Service should investigate whether that would take anyone's vested water rights. The Service has an obligation to thoroughly investigate this issue and refrain from designating critical habitat until it has determined whether its actions will affect water use. At minimum, portions of specific parcels that include water sources or water systems should be removed.

Our Response: Existing irrigation ditch systems and potable water systems are manmade features that do not contain the primary constituent elements for the plants. Because the Service does not include these manmade features in critical habitat designations, the intended designation will not affect the operation and maintenance of irrigation and potable water systems (DEA, Chapter II, Section 4).

Regarding new stream diversions, Chapter VI, Section 3.j. of the DEA stated that it is highly unlikely that new or expanded ditch systems would be proposed or approved within the proposed designation because it would directly or indirectly reduce stream flow, which is a major environmental concern. But if a stream diversion were to be proposed, critical habitat designation might result in an expanded biological assessment, project delays, project modifications, and an increased probability of denial (DEA, Chapter VI, Section 4.f.). Activities that alter watershed characteristics in ways that would appreciably reduce groundwater recharge or alter natural, dynamic wetland or other vegetative communities may directly or indirectly destroy or adversely modify critical habitat. Such activities may include water diversion or impoundment, excess groundwater pumping, manipulation of vegetation such as timber harvesting, residential and commercial development, and grazing of livestock that degrades watershed values. However, without more specific information on the scope and location of a future (and currently unplanned) stream diversion project, it is not possible to estimate the potential indirect costs.

(62) *Comment:* Any water diversion in, or upstream of, critical habitat will be challenged by people who oppose all diversions on principle. They will contend that diverting water from endangered plants risk driving them to extinction. Opponents of diversions

could use the critical habitat designations to invent a colorable argument sufficient to delay and confuse water use decisions.

Our Response: See the response to the previous comment (61).

(63) *Comment:* The DEA fails to recognize that the indirect costs to private landowners to investigate the implications of critical habitat on their lands are sunk costs associated with the designation process.

Our Response: Chapter VI, Section 4.k. of the DEA indicated that landowners might want to learn how the designation may affect (1) the use of their land (either through restrictions or new obligations), and (2) the value of their land. The cost-estimate to investigate the implications of critical habitat was \$80,000 to \$400,000.

Section 5.g of the addendum revised the estimate to reflect the reduction in the number of potentially affected landowners as a result of the intended modifications to the critical habitat. The revised estimate ranges between \$26,500 and \$227,500. For completeness, the estimate includes expenditures made during the designation process (*i.e.*, sunk costs) and expenditures that will be made after the final designation.

Summary of Changes From the Proposed Rule

Based on a review of public comments received on the proposed determinations of critical habitat, we have reevaluated our proposed designations and included several changes to the final designations of critical habitat. These changes include the following:

(1) We published 303 single species critical habitat units for 99 plant species on the island of Oahu. As proposed, units were identified for multiple species. Delineation of critical habitat for each individual species will assist landowners, Federal agencies, and the Service in focusing and streamlining section 7 consultations.

(2) We changed the scientific names for the following species associated with the listed species found in the "SUPPLEMENTARY INFORMATION: Discussion of the Plant Taxa" section: *Athyrium sandwichianum* changed to *Diplazium sandwichianum* for *Alsinidendron trinerve*, *Cyanea acuminata*, and *Diellia falcata*; *Athyrium arnottii* changed to *Diplazium arnottii* for *Schiedea kaalae*; *Blechnum occidentale* changed to *Blechnum appendiculatum* in the discussions of *Alectryon macrococcus*, *Alsinidendron obovatum*, *Cenchrus agrimonioides*, *Ctenitis squamigera*, *Cyanea grimesiana* ssp. *obatae*, *Cyanea pinnatifida*,

Cyrtandra dentata, *Delissea subcordata*, *Diellia erecta*, *Diellia falcata*, *Diellia unisora*, *Flueggea neowawraea*, *Hedyotis degeneri*, *Lipochaeta tenuifolia*, *Lysimachia filifolia*, *Neraudia angulata*, *Nototrichium humile*, *Phyllostegia hirsuta*, *Phyllostegia kaalaensis*, *Phyllostegia mollis*, *Schiedea kaalae*, and *Schiedea hookeri*; *Bryophyllum* sp. changed to *Kalanchoe* sp. for *Lipochaeta tenuifolia*; *Glycine wightii* changed to *Neonotonia wightii* for *Hibiscus brackenridgei*; *Lipochaeta* sp. changed to *Melanthera* sp. for *Sesbania tomentosa*; *Lipochaeta integrifolia* changed to *Melanthera integrifolia* for *Peucedanum sandwicense*; *Lipochaeta remyi* changed to *Melanthera remyi* in the discussions of *Hibiscus brackenridgei* and *Schiedea kealiae*; *Lipochaeta tenuis* changed to *Melanthera tenuis* in the discussions of *Lipochaeta lobata* var. *leptophylla*, *Nototrichium humile*, and *Schiedea hookeri*; *Lycopodium* sp. changed to *Lycopodium cernua* for *Lobelia oahuensis*; *Lycopodium cernua* changed to *Lycopodium cernua* for *Platanthera holochila*; *Morinda sandwicensis* changed to *Morinda trimera* for *Flueggea neowawraea*; *Myrica faya* changed to *Morella faya* in the discussions of *Cyanea grimesiana* ssp. *obatae*, *Hedyotis parvula*, *Melicope saint-johnii*, *Schiedea kaalae*, *Silene perlmanii*, *Urera kaalae*, and *Viola chamissoniana* ssp. *chamissoniana*; *Phymatosorus scolopendria* changed to *Phymatosorus grossus* for *Diellia erecta*; *Pluchea symphytifolia* changed to *Pluchea carolinensis* for *Chamaesyce celastroides* var. *kaenana*; *Setaria gracilis* changed to *Setaria parviflora* for *Laboria cyrtandrae*; *Styphelia tameiameiae* changed to *Leptecophylla tameiameiae* in the discussions of *Bonamia menziesii*, *Cenchrus agrimonioides*, *Eugenia koolauensis*, *Hedyotis coriacea*, *Hedyotis degeneri*, *Lepidium arbuscula*, *Lobelia niihauensis*, *Platanthera holochila*, *Sanicula purpurea*, *Schiedea hookeri*, and *Viola chamissoniana* ssp. *chamissoniana*; *Thelypteris cyatheoides* changed to *Christella cyatheoides* in the discussion of *Cyanea crispa*; *Thelypteris parasitica* changed to *Christella parasitica* in the discussions of *Alectryon macrococcus*, *Cyanea grimesiana* ssp. *obatae*, *Cyanea truncata*, *Cyrtandra dentata*, *Phyllostegia kaalaensis*, *Phyllostegia mollis*, *Phyllostegia parviflora*, *Pteris lidgatei*, *Schiedea kaalae*, *Schiedea hookeri*, and *Urera kaalae*; *Thelypteris sandwicensis* changed to *Dryopteris sandwicensis* in the discussions of *Cyanea acuminata*, *Cyrtandra*

subumbellata, and *Pteris lidgatei*; and *Sphenomeris chusana* changed to *Sphenomeris chinensis* for *Pteris lidgatei*.

(3) In order to avoid confusion regarding the number of location occurrences for each species (that do not necessarily each represent a viable population) and the number of recovery populations (8 to 10 with 100, 300, or 500 reproducing individuals), we changed the word "population" to "occurrence" where appropriate and updated the number of occurrences and/or individuals for the following species found in the "SUPPLEMENTARY INFORMATION: Discussion of the Plant Taxa" section and "Table 1.—Summary of existing occurrences on Oahu, and landownership for 101 species reported from Oahu": *Abutilon sandwicense* changed from 16 populations to 30 occurrences; *Alectryon macrococcus* changed from 34 populations to 82 occurrences; *Alsinidendron obovatum* changed from 5 populations to 6 occurrences; *Alsinidendron trinerve* changed from 3 populations to 13 occurrences; *Bonamia menziesii* changed from 16 populations to 18 occurrences; *Cenchrus agrimonioides* changed from 8 populations to 7 occurrences; *Centaurium seabaeoides* changed from 3 populations to 2 occurrences; *Chamaesyce celastroides* var. *kaenana* changed from 13 populations to 15 occurrences; *Chamaesyce kuwaleana* changed from 4 populations to 5 occurrences; *Chamaesyce rockii* changed from 16 populations to 20 occurrences; *Ctenitis squamigera* changed from 4 populations to 8 occurrences; *Cyanea acuminata* changed from 22 populations to 20 occurrences; *Cyanea grimesiana* ssp. *grimesiana* changed from 6 populations to 7 occurrences; *Cyanea grimesiana* ssp. *obatae* changed from 6 populations to 8 occurrences; *Cyanea humboldtiana* changed from 8 populations to 9 occurrences; *Cyanea koolauensis* changed from 25 populations to 42 occurrences; *Cyanea st.-johnii* changed from 6 populations to 7 occurrences; *Cyrtandra dentata* changed from 8 populations to 11 occurrences; *Cyrtandra subumbellata* changed from 2 populations to 5 occurrences; *Cyrtandra viridiflora* changed from 8 populations to 23 occurrences; *Delissea subcordata* changed from 18 populations to 21 occurrences; *Diellia falcata* changed from 29 populations to 30 occurrences; *Dubautia herbstobatae* changed from 4 populations to 12 occurrences; *Eugenia*

koolauensis changed from 10 populations to 12 occurrences; *Euphorbia haeleleana* changed from 6 populations to 8 occurrences; *Flueggea neowawraea* changed from 19 populations to 23 occurrences; *Gardenia mannii* changed from 31 populations to 49 occurrences; *Gouania meyenii* changed from 3 populations to 4 occurrences; *Hedyotis degeneri* changed from 5 populations to 4 occurrences; *Hedyotis parvula* changed from 5 populations to 7 occurrences; *Hesperomannia arborescens* changed from 23 populations to 36 occurrences; *Isodendron longifolium* changed from 4 populations to 7 occurrences; *Lepidium arbuscula* changed from 10 populations to 12 occurrences; *Lipochaeta lobata* var. *leptophylla* changed from 5 populations to 4 occurrences; *Lipochaeta tenuifolia* changed from 12 populations to 41 occurrences; *Lobelia gaudichaudii* ssp. *koolauensis* changed from 4 populations to 5 occurrences; *Lobelia niihauensis* changed from 21 populations to 40 occurrences; *Lobelia oahuensis* changed from 10 populations to 12 occurrences; *Marsilea villosa* changed from 4 populations to 5 occurrences; *Melicope lydgatei* changed from 4 populations to 18 occurrences; *Melicope saint-johnii* changed from 5 populations to 6 occurrences; *Neraudia angulata* changed from 5 populations to 27 occurrences; *Nototrichium humile* changed from 21 populations to 25 occurrences; *Phlegmariurus nutans* changed from 5 populations to 3 occurrences; *Phyllostegia hirsuta* changed from 23 populations to 26 occurrences; *Phyllostegia kaalaensis* changed from 4 populations to 7 occurrences; *Phyllostegia mollis* changed from 8 populations to 5 occurrences; *Phyllostegia parviflora* changed from 2 populations to 6 occurrences; *Plantago princeps* changed from 6 populations to 11 occurrences; *Pteris lidgatei* changed from 5 populations to 9 occurrences; *Sanicula purpurea* changed from 4 populations to 5 occurrences; *Schiedea kaalae* changed from 8 populations to 7 occurrences; *Schiedea nuttallii* changed from 5 populations to 7 occurrences; *Silene lanceolata* changed from 2 populations to 4 occurrences; *Spermolepis hawaiiensis* changed from 2 populations to 6 occurrences; *Tetramolopium filiforme* changed from 6 populations to 21 occurrences; *Tetramolopium lepidotum* ssp. *lepidotum* changed from 4 populations to 5 occurrences; *Tetraplasandra gymnocarpa* changed

from 20 populations to 30 occurrences; *Urera kaalae* changed from 11 populations to 12 occurrences; *Viola chamissoniana* ssp. *chamissoniana* changed from 5 populations to 15 occurrences; and *Viola oahuensis* changed from 9 populations to 18 occurrences.

(4) We revised the list of excluded, manmade features in the "Criteria Used to Identify Critical Habitat" and § 17.99(i) to include additional features based on information received during the public comment periods. We added other water system features including but not limited to pumping stations, irrigation ditches, pipelines, siphons, tunnels, water tanks, gaging stations, intakes, reservoirs, diversions, flumes, and wells to aqueducts; existing trails; campgrounds and their immediate surrounding landscaped area; scenic lookouts; remote helicopter landing sites; existing fences; towers and associated structures to telecommunications equipment; other archaeological sites to heiaus (indigenous places of worship or shrines); and electrical power transmission lines and distribution and communication facilities and regularly maintained associated rights-of-way and access ways.

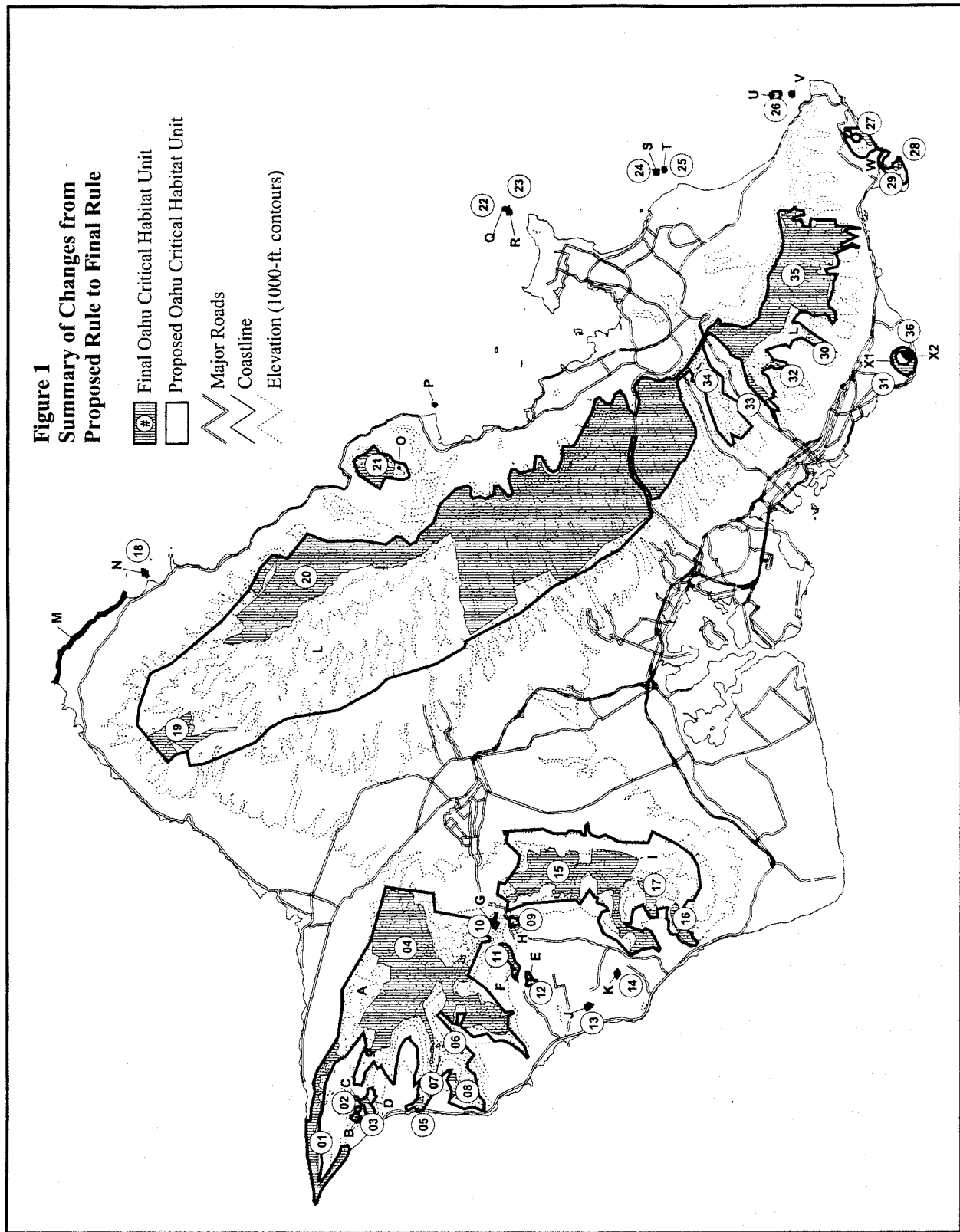
(5) We made revisions to the unit boundaries based on information supplied by commenters, as well as information gained from field visits to some of the sites, that indicated that the primary constituent elements were not present in certain portions of the proposed unit, that certain changes in land use had occurred on lands within the proposed critical habitat that would preclude those areas from supporting the primary constituent elements, or that the areas were not essential to the conservation of the species in question.

(6) Based on information received during the public comment periods, we updated the elevation ranges in § 17.99(j) "Plants on the island of Oahu: Constituent elements".

(7) All Army lands were excluded under 3(5)(A) and 4(b)(2) of the Act because we believe the benefit of excluding these lands outweigh the benefits of including these lands in the final designation (See "Analysis of Impacts Under Section 4(b)(2): Other Impacts").

A brief summary of the modifications made to each unit is given below (see also Figure 1).

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Oahu A

This unit was proposed as critical habitat for 65 species: *Abutilon sandwicense*, *Alectryon macrococcus*, *Alsinidendron obovatum*,

Alsinidendron trinerve, *Bonamia menziesii*, *Cenchrus agrimonioides*, *Centaurium sebaeoides*, *Chamaesyce celastroides* var. *kaenana*, *Chamaesyce herbstii*, *Colubrina oppositifolia*,

Ctenitis squamigera, *Cyanea acuminata*, *Cyanea grimesiana* ssp. *obatae*, *Cyanea longiflora*, *Cyanea superba*, *Cyperus trachysanthos*, *Cyrtandra dentata*, *Delissea subcordata*, *Diellia falcata*,

Diplazium molokaiense, *Dubautia herbstobatae*, *Eragrostis fosbergii*, *Eugenia koolauensis*, *Euphorbia haeleleana*, *Flueggea neowawraea*, *Gardenia manni*, *Gouania meyenii*, *Gouania vitifolia*, *Hedyotis degeneri*, *Hedyotis parvula*, *Hesperomannia arborescens*, *Hesperomannia arbuscula*, *Hibiscus brackenridgei*, *Isodendron laurifolium*, *Isodendron longifolium*, *Isodendron pyriforme*, *Labordia cyrtandrae*, *Lepidium arbuscula*, *Lipochaeta lobata* var. *leptophylla*, *Lipochaeta tenuifolia*, *Lobelia niihauensis*, *Mariscus pennatifolius*, *Melicope pallida*, *Neraudia angulata*, *Nototrichium humile*, *Peucedanum sandwicense*, *Phyllostegia hirsuta*, *Phyllostegia kaalaensis*, *Phyllostegia mollis*, *Plantago princeps*, *Sanicula marivrsa*, *Schiedea hookeri*, *Schiedea kaalae*, *Schiedea kealiae*, *Schiedea nuttallii*, *Sesbania tomentosa*, *Silene lanceolata*, *Solanum sandwicense*, *Spermolepis hawaiiensis*, *Stenogyne kanehoana*, *Tetramolopium filiforme*, *Tetramolopium lepidotum* ssp. *lepidotum*, *Urera kaalae*, *Vigna o-wahuense*, and *Viola chamissoniana* ssp. *chamissoniana*.

We excluded the proposed critical habitat on Army lands at Makua Military Reservation for *Alsinidendron obovatum*, *Diellia falcata*, *Dubautia herbstobatae*, *Flueggea neowawraea*, *Gouania meyenii*, *Hedyotis parvula*, *Lepidium arbuscula*, *Lipochaeta tenuifolia*, *Lobelia niihauensis*, *Neraudia angulata*, *Nototrichium humile*, *Peucedanum sandwicense*, *Schiedea hookeri*, *Silene lanceolata*, *Tetramolopium filiforme*, and *Viola chamissoniana* ssp. *chamissoniana* and at Schofield Barracks for *Alsinidendron trinerve*, *Cyanea acuminata*, *Cyanea grimesiana* ssp. *obatae*, *Gardenia manni*, *Labordia cyrtandrae*, *Phyllostegia hirsuta*, *Phyllostegia mollis*, *Solanum sandwicense*, *Stenogyne kanehoana*, *Tetramolopium filiforme*, *Urera kaalae*, and *Viola chamissoniana* ssp. *chamissoniana* because the benefits of excluding these areas outweigh the benefits of including these areas as critical habitat (see "Analysis of Impacts Under Section 4(b)(2): Other Impacts").

In addition, modifications were made to this unit to exclude areas that do not contain the primary constituent elements of *Alectryon macrococcus*, *Bonamia menziesii*, *Cenchrus agrimonoides*, *Colubrina oppositifolia*, *Ctenitis squamigera*, *Euphorbia haeleleana*, *Flueggea neowawraea*, *Gouania meyenii*, *Gouania vitifolia*, *Hesperomannia arborescens*, *Hibiscus brackenridgei*, *Isodendron laurifolium*, *Isodendron longifolium*, *Isodendron pyriforme*, *Lobelia niihauensis*,

Phyllostegia mollis, *Plantago princeps*, *Schiedea hookeri*, *Schiedea nuttallii*, *Spermolepis hawaiiensis*, and *Vigna o-wahuense*, all multi-island species. In order to meet the recovery goal of 8 to 10 populations within the historical range of each of these 21 species, locations on other islands have been designated as critical habitat (*i.e.*, locations on Kauai, Molokai, Maui, and/or Kahoolawe), other locations on Oahu are being designated as critical habitat in this rule; and/or other locations have been proposed for designation on the island of Hawaii. In addition, some essential areas were excluded under 4(b)(2) because active management of the area by the landowner outweighed the benefits of including that area as critical habitat. Modifications were also made to this unit to exclude areas that do not contain the primary constituent elements of *Abutilon sandwicense*, *Alsinidendron obovatum*, *Chamaesyce herbstii*, *Cyanea grimesiana* ssp. *obatae*, *Cyanea longiflora*, *Cyanea superba*, *Cyrtandra dentata*, *Delissea subcordata*, *Diellia falcata*, *Gardenia manni*, *Hedyotis parvula*, *Labordia cyrtandrae*, *Lepidium arbuscula*, *Lipochaeta lobata* var. *leptophylla*, *Lipochaeta tenuifolia*, *Neraudia angulata*, *Phyllostegia hirsuta*, *Schiedea kealiae*, *Tetramolopium filiforme*, and *Viola chamissoniana* ssp. *chamissoniana*, all Oahu-endemic species. In order to meet the recovery goal of 8 to 10 populations within the historical range of each of these 20 species, other locations on Oahu are either being designated as critical habitat in this rule, or areas were excluded under 4(b)(2) in this rule because active management of the area by the landowner outweighed the benefits of including that area as critical habitat.

The area designated as critical habitat for the following 29 Oahu-endemic species provides habitat within their historical ranges for one population each of *Cyanea acuminata* and *Eragrostis fosbergii*; two populations of *Diellia falcata*, *Lipochaeta lobata* var. *leptophylla*, *Phyllostegia hirsuta*, *Schiedea kaalae*, *Tetramolopium filiforme*, and *Urera kaalae*; three populations of *Cyanea grimesiana* ssp. *obatae* and *Cyrtandra dentata*; four populations of *Alsinidendron trinerve*, *Chamaesyce celastroides* var. *kaenana*, *Delissea subcordata*, *Dubautia herbstobatae*, *Hedyotis parvula*, *Labordia cyrtandrae*, *Lepidium arbuscula*, *Lipochaeta tenuifolia*, *Sanicula marivrsa*, and *Schiedea kealiae*; five populations of *Chamaesyce herbstii*, *Cyanea longiflora*, and *Viola chamissoniana* ssp. *chamissoniana*; six

populations of *Alsinidendron obovatum*, *Cyanea superba*, and *Neraudia angulata*; seven populations of *Abutilon sandwicense*; and nine populations of *Hedyotis degeneri* and *Phyllostegia kaalaensis*.

The area designated as critical habitat for the following 33 multi-island species provides habitat within their historical ranges for one population each of *Alectryon macrococcus*, *Bonamia menziesii*, *Cenchrus squamigera*, *Cyperus trachysanthos*, *Diplazium molokaiense*, *Eugenia koolauensis*, *Euphorbia haeleleana*, *Flueggea neowawraea*, *Gouania meyenii*, *Hesperomannia arborescens*, *Isodendron pyriforme*, *Lobelia niihauensis*, *Peucedanum sandwicense*, *Plantago princeps*, *Sesbania tomentosa*, *Silene lanceolata*, *Solanum sandwicense*, *Spermolepis hawaiiensis*, and *Vigna o-wahuense*; three populations of *Colubrina oppositifolia*, *Hesperomannia arbuscula*, *Hibiscus brackenridgei*, *Isodendron longifolium*, *Melicope pallida*, and *Tetramolopium lepidotum* ssp. *lepidotum*; four populations of *Mariscus pennatifolius* and *Schiedea nuttallii*; five populations of *Cenchrus agrimonoides*, *Isodendron laurifolium*, *Nototrichium humile*, and *Schiedea hookeri*; and six populations of *Gouania vitifolia*.

These modifications resulted in the reduction from 8,503 ha (21,013 ac) to 3,921 ha (9,689 ac). This unit was renamed Oahu 4—*Abutilon sandwicense*—a, Oahu 4—*Abutilon sandwicense*—b, Oahu 4—*Abutilon sandwicense*—c, Oahu 4—*Alectryon macrococcus*—a, Oahu 4—*Alsinidendron obovatum*—a, Oahu 4—*Alsinidendron obovatum*—b, Oahu 4—*Alsinidendron trinerve*—a, Oahu 4—*Bonamia menziesii*—c, Oahu 4—*Cenchrus agrimonoides*—a, Oahu 4—*Cenchrus agrimonoides*—b, Oahu 1—*Cenchrus squamigera*—a, Oahu 1—*Chamaesyce celastroides* var. *kaenana*—a, Oahu 4—*Chamaesyce celastroides* var. *kaenana*—c, Oahu 5—*Chamaesyce celastroides* var. *kaenana*—d, Oahu 4—*Chamaesyce herbstii*—a, Oahu 4—*Colubrina oppositifolia*—a, Oahu 15—*Ctenitis squamigera*—a, Oahu 4—*Cyanea acuminata*—a, Oahu 4—*Cyanea grimesiana* ssp. *obatae*—a, Oahu 4—*Cyanea longiflora*—a, Oahu 4—*Cyanea longiflora*—b, Oahu 4—*Cyanea superba*—a, Oahu 4—*Cyanea superba*—b, Oahu 4—*Cyanea superba*—c, Oahu 1—*Cyperus trachysanthos*—a, Oahu 4—*Cyrtandra dentata*—a, Oahu 4—*Delissea subcordata*—a, Oahu 4—*Diellia falcata*—a, Oahu 4—*Diellia falcata*—b, Oahu 4—*Diplazium molokaiense*—a,

Oahu 4—*Dubautia herbstobatae*—a, Oahu 4—*Dubautia herbstobatae*—b, Oahu 7—*Dubautia herbstobatae*—c, Oahu 4—*Eragrostis fosbergii*—a, Oahu 4—*Eugenia koolauensis*—a, Oahu 4—*Euphorbia haeleeleana*—b, Oahu 4—*Flueggea neowawraea*—a, Oahu 4—*Gouania meyenii*—a, Oahu 4—*Gouania meyenii*—b, Oahu 5—*Gouania vitifolia*—c, Oahu 4—*Gouania vitifolia*—d, Oahu 4—*Gouania vitifolia*—e, Oahu 4—*Gouania vitifolia*—f, Oahu 4—*Gouania vitifolia*—g, Oahu 8—*Gouania vitifolia*—h, Oahu 4—*Hedyotis degeneri*—a, Oahu 4—*Hedyotis degeneri*—b, Oahu 4—*Hedyotis parvula*—a, Oahu 4—*Hesperomannia arborescens*—a, Oahu 4—*Hesperomannia arbuscula*—a, Oahu 4—*Hesperomannia arbuscula*—b, Oahu 1—*Hibiscus brackenridgei*—a, Oahu 4—*Hibiscus brackenridgei*—b, Oahu 5—*Hibiscus brackenridgei*—c, Oahu 4—*Isodendron laurifolium*—a, Oahu 4—*Isodendron laurifolium*—b, Oahu 4—*Isodendron longifolium*—a, Oahu 5—*Isodendron pyriformium*—a, Oahu 4—*Labordia cyrtandrae*—a, Oahu 4—*Lepidium arbuscula*—a, Oahu 4—*Lipochaeta lobata* var. *leptophylla*—a, Oahu 4—*Lipochaeta tenuifolia*—c, Oahu 4—*Lipochaeta tenuifolia*—d, Oahu 4—*Lipochaeta tenuifolia*—e, Oahu 4—*Lobelia niihauensis*, Oahu 4—*Mariscus pennatifolius*—a, Oahu 4—*Mariscus pennatifolius*—b, Oahu 4—*Melicope pallida*—a, Oahu 4—*Neraudia angulata*—b, Oahu 4—*Neraudia angulata*—c, Oahu 4—*Neraudia angulata*—d, Oahu 4—*Neraudia angulata*—e, Oahu 4—*Nototrichium humile*—b, Oahu 4—*Nototrichium humile*—c, Oahu 4—*Nototrichium humile*—d, Oahu 4—*Peucedanum sandwicense*—a, Oahu 4—*Phyllostegia hirsuta*—a, Oahu 4—*Phyllostegia kaalaensis*—a, Oahu 4—*Phyllostegia kaalaensis*—b, Oahu 4—*Phyllostegia kaalaensis*—c, Oahu 4—*Phyllostegia kaalaensis*—d, Oahu 4—*Phyllostegia kaalaensis*—e, Oahu 4—*Plantago princeps*—a, Oahu 4—*Plantago princeps*—b, Oahu 4—*Sanicula mariversa*—a, Oahu 4—*Sanicula mariversa*—b, Oahu 4—*Sanicula mariversa*—c, Oahu 6—*Sanicula mariversa*—d, Oahu 4—*Schiedea hookeri*—b, Oahu 4—*Schiedea hookeri*—c, Oahu 4—*Schiedea hookeri*—d, Oahu 4—*Schiedea kaalae*—a, Oahu 1—*Schiedea kealiae*—a, Oahu 4—*Schiedea nuttallii*—a, Oahu 1—*Sesbania tomentosa*—a, Oahu 4—*Silene lanceolata*—a, Oahu 4—*Solanum sandwicense*—a, Oahu 5—*Spermolepis hawaiiensis*—a, Oahu 4—*Tetramolopium filiforme*—a, Oahu 4—*Tetramolopium lepidotum* ssp.

lepidotum—a, Oahu 4—*Tetramolopium lepidotum* ssp. *lepidotum*—b, Oahu 4—*Urera kaalae*—a, Oahu 4—*Urera kaalae*—b, Oahu 1—*Vigna owahuensis*—a, Oahu 4—*Viola chamissoniana* ssp. *chamissoniana*—a, Oahu 4—*Viola chamissoniana* ssp. *chamissoniana*—b, and Oahu 4—*Viola chamissoniana* ssp. *chamissoniana*—c.

Oahu B

This unit was proposed as critical habitat for seven species: *Bonamia menziesii*, *Euphorbia haeleeleana*, *Gouania vitifolia*, *Hibiscus brackenridgei*, *Isodendron pyriformium*, *Neraudia angulata*, and *Nototrichium humile*. We excluded the proposed critical habitat for *Euphorbia haeleeleana*, *Hibiscus brackenridgei*, *Isodendron pyriformium*, and *Nototrichium humile*, all multi-island species. This area is not essential for the conservation of these four species because it lacks one or more of the primary constituent elements, has a lower proportion of associated native species than other areas we consider to be essential to their conservation, and is less likely to contain the primary constituent elements long-term because it is not currently managed for conservation of these species. In addition, there are 10 other locations in historical ranges of these four species on Oahu and other islands that provide habitat for these species and that are either designated as critical habitat in this rule on Oahu, have been previously designated on Kauai, Molokai, and/or Maui, are found in areas on Oahu or other islands that are excluded under 4(b)(2) of the Act because active management of the area by the landowner outweighed the benefits of including that area as critical habitat, or have been proposed for designation on the island of Hawaii.

We excluded the proposed critical habitat for *Neraudia angulata*, a species endemic to Oahu. This area is not essential for the conservation of *Neraudia angulata* because it lacks one or more of the primary constituent elements, has a lower proportion of associated native species than other areas we consider to be essential to the conservation of *N. angulata*, and is less likely to contain the primary constituent elements long-term because it is not currently managed for conservation of this species. In addition, there are 10 other locations in its historical range on Oahu that provide habitat for this species and that are either designated as critical habitat in this rule or are found in areas excluded under 4(b)(2) of the Act (Makua Military Reservation) because active management of the unit

by the landowner outweighed the benefits of including it as critical habitat.

The area designated as critical habitat for the following multi-island species provides habitat within their historical ranges for one population each of *Bonamia menziesii* and *Gouania vitifolia*.

These modifications resulted in the reduction from 34 ha (83 ac) to 23 ha (58 ac). This unit was renamed Oahu 2—*Bonamia menziesii*—a and Oahu 2—*Gouania vitifolia*—a.

Oahu C

This unit was proposed as critical habitat for one species: *Bonamia menziesii*, a multi-island species. This area is not essential for the conservation of *Bonamia menziesii* because it lacks one or more of the primary constituent elements, has a lower proportion of associated native species than other areas we consider to be essential to the conservation of *B. menziesii*, and is less likely to contain the primary constituent elements long-term because it is not currently managed for conservation of this species. In addition, there are 10 other locations in its historical range on Oahu and other islands that provide habitat for this species and that are either designated as critical habitat in this rule, are found in an area managed for the species on Lanai, have been designated on Kauai or Maui, or have been proposed for designation on the island of Hawaii. Exclusion of this area from critical habitat for *Bonamia menziesii* resulted in the complete removal of this unit (14 ha (35 ac)) from the final designation.

Oahu D

This unit was proposed as critical habitat for nine species: *Bonamia menziesii*, *Chamaesyce celastroides* var. *kaenana*, *Euphorbia haeleeleana*, *Gouania vitifolia*, *Hibiscus brackenridgei*, *Isodendron pyriformium*, *Neraudia angulata*, *Nototrichium humile*, and *Schiedea hookeri*. We excluded the proposed critical habitat for *Hibiscus brackenridgei* and *Isodendron pyriformium*, both multi-island species. This area is not essential for the conservation of *Hibiscus brackenridgei* and *Isodendron pyriformium* because it lacks one or more of the primary constituent elements, has a lower proportion of associated native species than other areas we consider to be essential to the two species' conservation, and is less likely to contain the primary constituent elements long-term because it is not currently managed for conservation of these species. In addition, there are 10

other locations for *Isodendron pyrifolium* and at least 9 other locations for *Hibiscus brackenridgei* in their historical ranges on Oahu and other islands that provide habitat for these species and that are either designated as critical habitat in this rule, are found in an area managed for the species on Lanai, have been designated on Molokai and Maui, or have been proposed for designation on the island of Hawaii.

The area designated as critical habitat for the following Oahu endemic species provides habitat within their historical ranges for one population each of *Chamaesyce celastroides* var. *kaenana* and *Neraudia angulata*. The area designated as critical habitat for the following multi-island species provides habitat within their historical ranges for one population each of *Bonamia menziesii*, *Euphorbia haeleleana*, *Gouania vitifolia*, *Nototrichium humile*, and *Schiedea hookeri*.

These modifications resulted in the reduction from 110 ha (271 ac) to 67 ha (164 ac). This unit was renamed Oahu 3—*Bonamia menziesii*—b, Oahu 3—*Chamaesyce celastroides* var. *kaenana*—b, Oahu 3—*Euphorbia haeleleana*—a, Oahu 3—*Gouania vitifolia*—b, Oahu 3—*Neraudia angulata*—a, Oahu 3—*Nototrichium humile*—a, and Oahu 3—*Schiedea hookeri*—a.

Oahu E

This unit was proposed as critical habitat for one species: *Chamaesyce kuwaleana*. Modifications were made to this unit to exclude small areas that do not contain the primary constituent elements of *C. kuwaleana*. The area designated as critical habitat for *C. kuwaleana* provides habitat within its historical range for one population. These modifications resulted in the slight reduction from 94 ha (38 ac) to 93 ha (37 ac). The unit was renamed Oahu 12—*Chamaesyce kuwaleana*—c.

Oahu F

This unit was proposed as critical habitat for two species: *Chamaesyce kuwaleana* and *Isodendron pyrifolium*. We excluded the proposed critical habitat for *I. pyrifolium*, a multi-island species. This area is not essential for the conservation of this species because it lacks one or more of the primary constituent elements, has a lower proportion of associated native species than other areas we consider to be essential to the conservation of *Isodendron pyrifolium*, and is less likely to contain the primary constituent elements long-term because it is not currently managed for conservation of this species. In addition, there are 10

other locations in its historical range on Oahu and other islands that provide habitat for this species and that are either designated as critical habitat in this rule, are found in an area managed for the species on Lanai, have been designated on Molokai and Maui, or have been proposed for designation on the island of Hawaii. The area designated as critical habitat for *Chamaesyce kuwaleana* provides habitat within its historical range for one population. This modification resulted in the reduction from 81 ha (200 ac) to 53 ha (131 ac). This unit was renamed Oahu 11—*Chamaesyce kuwaleana*—b.

Oahu G

This unit was proposed as critical habitat for two species: *Tetramolopium filiforme* and *Viola chamissoniana* ssp. *chamissoniana*. We excluded the proposed critical habitat for *Tetramolopium filiforme* on Army lands at Schofield Barracks because the benefits of excluding this area outweigh the benefits of including this area (see “Analysis of Impacts Under Section 4(b)(2): Other Impacts”). The area designated as critical habitat for *Viola chamissoniana* ssp. *chamissoniana* provides habitat within its historical range for one population. This modification resulted in the reduction from 16 ha (40 ac) to 6 ha (15 ac). This unit was renamed Oahu 10—*Viola chamissoniana* ssp. *chamissoniana*—d.

Oahu H

This unit was proposed as critical habitat for *Chamaesyce kuwaleana*. The area designated as critical habitat for *Chamaesyce kuwaleana* provides habitat within its historical range for one population. No modifications were made to the acreage of this unit, which was renamed Oahu 9—*Chamaesyce kuwaleana*—a.

Oahu I

This unit was proposed as critical habitat for 42 species: *Abutilon sandwicense*, *Alectryon macrococcus*, *Alsinidendron obovatum*, *Bonamia menziesii*, *Cenchrus agrimonioides*, *Chamaesyce herbstii*, *Chamaesyce kuwaleana*, *Cyanea grimesiana* ssp. *obatae*, *Cyanea pinnatifida*, *Cyrtandra dentata*, *Delissea subcordata*, *Diellia falcata*, *Diellia unisora*, *Flueggea neowawraea*, *Gardenia mannii*, *Gouania meyenii*, *Hedyotis coriacea*, *Hedyotis parvula*, *Hesperomannia arbuscula*, *Hibiscus brackenridgei*, *Isodendron pyrifolium*, *Lepidium arbuscula*, *Lipochaeta lobata* var. *leptophylla*, *Lobelia niihauensis*, *Melicope pallida*, *Melicope saint-johnii*, *Neraudia*

angulata, *Phyllostegia hirsuta*, *Phyllostegia kaalaensis*, *Phyllostegia mollis*, *Phyllostegia parviflora*, *Plantago princeps*, *Sanicula mariversa*, *Schiedea hookeri*, *Schiedea kaalae*, *Schiedea nuttallii*, *Silene perlmanii*, *Solanum sandwicense*, *Stenogyne kanehoana*, *Tetramolopium lepidotum* ssp. *lepidotum*, *Urera kaalae*, and *Viola chamissoniana* ssp. *chamissoniana*. We excluded the proposed critical habitat on Army lands at Schofield Barracks for *Cyanea grimesiana* ssp. *obatae*, *Gardenia mannii*, *Phyllostegia hirsuta*, *Phyllostegia mollis*, *Solanum sandwicense*, *Stenogyne kanehoana*, *Urera kaalae*, and *Viola chamissoniana* ssp. *chamissoniana* because the benefits of excluding this area outweigh the benefits of including this area (see “Analysis of Impacts Under Section 4(b)(2): Other Impacts”). We also excluded the proposed critical habitat for *Cyrtandra dentata*, *Flueggea neowawraea*, and *Hibiscus brackenridgei*. This area is not essential for the conservation of these three species because it lacks one or more of the primary constituent elements, has a lower proportion of associated native species than other areas we consider to be essential to the conservation of these three species, and is less likely to contain the primary constituent elements long-term because it is not currently managed for conservation of these species. In addition, there are at least 8 other locations for *Cyrtandra dentata*, and at least 10 other locations for *Flueggea neowawraea* and *Hibiscus brackenridgei*, in their historical ranges on Oahu and other islands that provide habitat for these species and that are either designated as critical habitat in this rule; are found on lands managed for the species on Lanai or Oahu’s Army lands; have been designated on Kauai, Molokai, and Maui; or have been proposed for designation on the island of Hawaii.

Modifications were made to this unit to exclude areas that do not contain the primary constituent elements for *Alectryon macrococcus*, *Bonamia menziesii*, *Cenchrus agrimonioides*, and *Tetramolopium lepidotum* ssp. *lepidotum*, all multi-island species. In order to meet the recovery goal of 8 to 10 populations within the historical range of each of these 21 species, other locations either have been designated as critical habitat on Kauai, Molokai, Maui, and/or Kahoolawe; were excluded under 4(b)(2) on one or more of the Hawaiian islands because active management of an area by the landowner outweighed the benefits of including that area as critical habitat;

are being designated as critical habitat in this rule; and/or have been proposed for designation on the island of Hawaii. Modifications were also made to this unit to exclude areas that do not contain the primary constituent elements for *Abutilon sandwicense*, *Chamaesyce herbstii*, *Cyanea pinnatifida*, *Diellia falcata*, *Diellia unisora*, *Melicope saint-johnii*, *Neraudia angulata*, *Phyllostegia hirsuta*, and *Urera kaalae*, all Oahu-endemic species. In order to meet the recovery goal of 8 to 10 populations within the historical range of each of these 20 species, other locations on Oahu are either being designated as critical habitat in this rule or were excluded under 4(b)(2) in this rule because active management of an area by the landowner outweighed the benefits of including that area as critical habitat.

The area designated as critical habitat for the following 24 Oahu-endemic species provides habitat within their historical ranges for one population each of *Alsinidendron obovatum*, *Neraudia angulata*, and *Phyllostegia kaalaensis*; two populations each of *Chamaesyce herbstii*, *Chamaesyce kuwaleana*, *Gardenia mannii*, *Gouania meyenii*, *Sanicula mariversa*, and *Viola chamissoniana* ssp. *chamissoniana*; three populations each of *Abutilon sandwicense*, *Cyanea grimesiana* ssp. *obatae*, *Hedyotis parvula*, *Lepidium arbuscula*, *Melicope saint-johnii*, *Phyllostegia hirsuta*, and *Stenogyne kanehoana*; four populations each of *Cyanea pinnatifida*, *Delissea subcordata*, *Schiedea kaalae*, and *Urera kaalae*; six populations each of *Diellia unisora* and *Silene perlmanii*; seven populations of *Diellia falcata*; and eight populations of *Lipochaeta lobata* var. *leptophylla*.

The area designated as critical habitat for the following 15 multi-island species provides habitat within their historical ranges for one population each of *Alectryon macrococcus*, *Bonamia menziesii*, *Hedyotis coriacea*, *Lobelia niihauensis*, and *Plantago princeps*; two populations each of *Hesperomannia arbuscula*, *Isodendron pyriformium*, *Schiedea hookeri*, *Schiedea nuttallii*, and *Solanum sandwicense*; three populations each of *Cenchrus agrimonoides*, *Melicope pallida*, *Phyllostegia mollis*, and *Phyllostegia parviflora*; and five populations of *Tetramolopium lepidotum* ssp. *lepidotum*.

This modification resulted in the reduction from 5,109 ha (12,623 ac) to 1,917 ha (4,736 ac). This unit was renamed Oahu 15—*Abutilon sandwicense*—d, Oahu 15—*Abutilon sandwicense*—e, Oahu 17—*Abutilon*

sandwicense—f, Oahu 15—*Alectryon macrococcus*—b, Oahu 15—*Alsinidendron obovatum*—c, Oahu 17—*Bonamia menziesii*—d, Oahu 15—*Cenchrus agrimonoides*—c, Oahu 15—*Cenchrus agrimonoides*—d, Oahu 15—*Chamaesyce herbstii*—b, Oahu 15—*Chamaesyce herbstii*—c, Oahu 15—*Chamaesyce kuwaleana*—d, Oahu 15—*Cyanea grimesiana* ssp. *obatae*—b, Oahu 15—*Cyanea grimesiana* ssp. *obatae*—c, Oahu 15—*Cyanea grimesiana* ssp. *obatae*—d, Oahu 15—*Cyanea pinnatifida*—a, Oahu 15—*Cyanea pinnatifida*—b, Oahu 15—*Cyanea pinnatifida*—c, Oahu 15—*Delissea subcordata*—b, Oahu 15—*Delissea subcordata*—c, Oahu 15—*Delissea subcordata*—d, Oahu 15—*Diellia falcata*—c, Oahu 15—*Diellia falcata*—d, Oahu 15—*Diellia unisora*—a, Oahu 15—*Gardenia mannii*—a, Oahu 15—*Gouania meyenii*—c, Oahu 15—*Hedyotis coriacea*—a, Oahu 4—*Hedyotis parvula*—b, Oahu 15—*Hedyotis parvula*—c, Oahu 15—*Hedyotis parvula*—d, Oahu 15—*Hesperomannia arbuscula*—c, Oahu 15—*Hesperomannia arbuscula*—d, Oahu 15—*Hesperomannia arbuscula*—e, Oahu 16—*Isodendron pyriformium*—b, Oahu 17—*Isodendron pyriformium*—c, Oahu 15—*Lepidium arbuscula*—b, Oahu 15—*Lepidium arbuscula*—c, Oahu 15—*Lipochaeta lobata* var. *leptophylla*—b, Oahu 17—*Lobelia niihauensis*—b, Oahu 15—*Melicope pallida*—b, Oahu 15—*Melicope pallida*—c, Oahu 15—*Melicope pallida*—d, Oahu 15—*Melicope pallida*—e, Oahu 15—*Melicope saint-johnii*—a, Oahu 15—*Melicope saint-johnii*—b, Oahu 15—*Neraudia angulata*—f, Oahu 15—*Phyllostegia hirsuta*—b, Oahu 15—*Phyllostegia hirsuta*—c, Oahu 15—*Phyllostegia kaalaensis*—f, Oahu 15—*Phyllostegia mollis*—a, Oahu 15—*Phyllostegia mollis*—b, Oahu 15—*Phyllostegia parviflora*—a, Oahu 15—*Phyllostegia parviflora*—b, Oahu 15—*Phyllostegia parviflora*—c, Oahu 15—*Plantago princeps*—c, Oahu 15—*Sanicula mariversa*—e, Oahu 15—*Sanicula mariversa*—f, Oahu 15—*Schiedea hookeri*—e, Oahu 15—*Schiedea hookeri*—f, Oahu 15—*Schiedea hookeri*—g, Oahu 15—*Schiedea kaalae*—b, Oahu 15—*Schiedea kaalae*—c, Oahu 15—*Schiedea kaalae*—d, Oahu 15—*Schiedea kaalae*—d, Oahu 15—*Schiedea nuttallii*—b, Oahu 15—*Schiedea nuttallii*—c, Oahu 15—*Silene perlmanii*—a, Oahu 15—*Silene perlmanii*—b, Oahu 15—*Silene perlmanii*—c, Oahu 15—*Silene perlmanii*—d, Oahu 15—*Solanum sandwicense*—b, Oahu 15—*Solanum sandwicense*—c, Oahu 15—*Stenogyne*

kanehoana—a, Oahu 15—*Stenogyne kanehoana*—c, Oahu 15—*Tetramolopium lepidotum* ssp. *lepidotum*—c, Oahu 15—*Tetramolopium lepidotum* ssp. *lepidotum*—d, Oahu 15—*Tetramolopium lepidotum* ssp. *lepidotum*—e, Oahu 15—*Tetramolopium lepidotum* ssp. *lepidotum*—f, Oahu 15—*Urera kaalae*—c, Oahu 15—*Urera kaalae*—d, Oahu 15—*Urera kaalae*—e, Oahu 15—*Urera kaalae*—f, Oahu 10—*Viola chamissoniana* ssp. *chamissoniana*—e, and Oahu 15—*Viola chamissoniana* ssp. *chamissoniana*—f.

Oahu J

This unit was proposed as critical habitat for *Marsilea villosa*. The area designated as critical habitat for *Marsilea villosa* provides habitat within its historical range for one population. No modifications were made to the acreage of this unit, which was renamed Oahu 13—*Marsilea villosa*—a.

Oahu K

This unit was proposed as critical habitat for *Marsilea villosa*. The area designated as critical habitat for *Marsilea villosa* provides habitat within its historical range for one population. No modifications were made to the acreage of this unit, which was renamed Oahu 14—*Marsilea villosa*—b.

Oahu L

This unit was proposed as critical habitat for 45 species: *Adenophorus perieni*, *Bonamia menziesii*, *Chamaesyce celastroides* var. *kaenana*, *Chamaesyce deppeana*, *Chamaesyce rockii*, *Cyanea acuminata*, *Cyanea crispa*, *Cyanea grimesiana* ssp. *grimesiana*, *Cyanea humboltiana*, *Cyanea koolauensis*, *Cyanea longiflora*, *Cyanea st. johnii*, *Cyanea superba*, *Cyanea truncata*, *Cyrtandra dentata*, *Cyrtandra polyantha*, *Cyrtandra subumbellata*, *Cyrtandra viridiflora*, *Delissea subcordata*, *Diellia erecta*, *Eugenia koolauensis*, *Gardenia mannii*, *Hedyotis coriacea*, *Hesperomannia arborescens*, *Isodendron laurifolium*, *Isodendron longifolium*, *Labordia cyrtandrae*, *Lobelia gaudichaudii* ssp. *koolauensis*, *Lobelia monostachya*, *Lobelia oahuensis*, *Lysimachia filifolia*, *Melicope lydgatei*, *Myrsine juddii*, *Phlegmariurus nutans*, *Phyllostegia hirsuta*, *Phyllostegia parviflora*, *Plantago princeps*, *Platanthera holochila*, *Pteris lidgatei*, *Sanicula purpurea*, *Schiedea kaalae*, *Solanum sandwicense*, *Tetraplasandra gymnocarpa*, *Trematolobelia singularis*, and *Viola oahuensis*. We excluded the proposed critical habitat on Army lands

at Schofield Barracks East Range for *Cyanea acuminata*, *Cyrtandra viridiflora*, *Gardenia mannii*, *Hesperomannia arborescens*, *Myrsine juddii*, *Phlegmariurus nutans*, and *Viola oahuensis*; at Kahuku Training Area for *Cyanea longiflora* and *Eugenia koolauensis*; and at Kawaihoa Training Area for *Cyanea acuminata*, *Cyanea crisa*, *Cyanea grimesiana* ssp. *grimesiana*, *Cyanea humboldtiana*, *Cyanea koolauensis*, *Cyanea longiflora*, *Cyanea st.-johnii*, *Cyrtandra dentata*, *Cyrtandra viridiflora*, *Gardenia mannii*, *Hesperomannia arborescens*, *Labordia cyrtandrae*, *Lobelia gaudichaudii* ssp. *koolauensis*, *Melicope lydgatei*, *Myrsine juddii*, *Phlegmariurus nutans*, *Phyllostegia hirsuta*, *Pteris lidgatei*, *Sanicula purpurea*, *Tetraplasandra gymnocarpa*, and *Viola oahuensis* because the benefits of excluding this area outweigh the benefits of including this area (see “Analysis of Impacts Under Section 4(b)(2): Other Impacts”). We excluded the proposed critical habitat for *Solanum sandwicense*, a multi-island species. This area is not essential for the conservation of this species, because it lacks one or more of the primary constituent elements, has a lower proportion of associated native species than other areas we consider to be essential to the conservation of *S. sandwicense*, and is less likely to contain the primary constituent elements long-term because it is not currently managed for conservation of this species. In addition, there are 10 other locations in its historical range on Oahu and Kauai that provide habitat for this species, which are either designated as critical habitat in this rule, in an area excluded under 4(b)(2) of the Act because active management of the area by the landowner outweighed the benefits of including that area as critical habitat (Schofield Barracks), or have been designated on Kauai.

Modifications were made to this unit to exclude areas that do not contain the primary constituent elements essential to the conservation of *Adenophorus periens*, *Bonamia menziesii*, *Cyanea grimesiana* ssp. *grimesiana*, *Diellia erecta*, *Eugenia koolauensis*, and *Hesperomannia arborescens*, all multi-island species. In order to meet the recovery goal of 8 to 10 populations within the historical range of each of these six species, other locations either have been designated as critical habitat on Kauai, Molokai, Maui, and/or Kahoolawe; were excluded under 4(b)(2) on Oahu, Lanai, and Maui because active management of an area by the landowner outweighed the benefits of including that area as critical habitat;

are being designated as critical habitat in this rule; and/or have been proposed for designation on the island of Hawaii. Modifications were also made to this unit to exclude areas that do not contain the primary constituent elements essential to the conservation of *Chamaesyce rockii*, *Cyanea acuminata*, *Cyanea crisa*, *Cyanea humboldtiana*, *Cyanea koolauensis*, *Cyanea longiflora*, *Cyanea st.-johnii*, *Cyanea truncata*, *Cyrtandra polyantha*, *Cyrtandra subumbellata*, *Cyrtandra viridiflora*, *Delissea subcordata*, *Gardenia mannii*, *Labordia cyrtandrae*, *Lobelia monostachya*, *Lobelia oahuensis*, *Melicope lydgatei*, *Phyllostegia hirsuta*, and *Viola oahuensis*, all island-endemic species. In order to meet the recovery goal of 8 to 10 populations within the historical range of each of these 19 species, other locations on Oahu are either being designated as critical habitat in this rule or were excluded under 4(b)(2) in this rule because active management of an area by the landowner outweighed the benefits of including that area as critical habitat.

The area designated as critical habitat for the following 27 Oahu-endemic species provides habitat within their historical ranges for two populations each of *Chamaesyce celastroides* var. *kaenana*, *Chamaesyce deppeana*, *Cyanea superba*, *Delissea subcordata*, *Gardenia mannii*, and *Phyllostegia hirsuta*; three populations each of *Cyanea longiflora*, and *Schiedea kaalae*; four populations of *Cyanea acuminata*; five populations each of *Chamaesyce rockii*, *Cyrtandra polyantha*, and *Cyrtandra viridiflora*; six populations each of *Labordia cyrtandrae*, *Melicope lydgatei*, *Myrsine juddii*, and *Trematolobelia singularis*; seven populations each of *Cyanea crisa*, *Cyanea koolauensis*, *Cyrtandra subumbellata*, *Lobelia gaudichaudii* ssp. *koolauensis*, *Lobelia monostachya*, and *Tetraplasandra gymnocarpa*; eight populations of *Cyanea humboldtiana*; nine populations each of *Cyanea st.-johnii* and *Cyanea truncata*; and 10 populations each of *Lobelia oahuensis* and *Viola oahuensis*.

The area designated as critical habitat for the following 16 multi-island species provides habitat within their historical ranges for one population each of *Adenophorus periens*, *Bonamia menziesii*, *Diellia erecta*, *Hedyotis coriacea*, *Isodendron laurifolium*, *Isodendron longifolium*, and *Plantago princeps*; two populations each of *Hesperomannia arborescens* and *Platanther holochila*; three populations each of *Cyanea grimesiana* ssp. *grimesiana* and *Pteris lidgatei*; four populations each of *Eugenia*

koolauensis and *Sanicula purpurea*; five populations of *Phlegmariurus nutans*; and six populations each of *Lysimachia filifolia* and *Phyllostegia parviflora*.

This modification resulted in the reduction from 30,068 ha (74,301 ac) to 15,727 ha (38,863 ac). This unit was renamed Oahu 20—*Adenophorus periens*—a, Oahu 35—*Bonamia menziesii*—e, Oahu 35—*Chamaesyce celastroides* var. *kaenana*—e, Oahu 20—*Chamaesyce deppeana*—a, Oahu 25—*Chamaesyce deppeana*—b, Oahu 20—*Chamaesyce rockii*—a, Oahu 20—*Chamaesyce rockii*—b, Oahu 20—*Chamaesyce rockii*—c, Oahu 20—*Cyanea acuminata*—b, Oahu 20—*Cyanea crisa*—a, Oahu 20—*Cyanea crisa*—b, Oahu 35—*Cyanea crisa*—c, Oahu 20—*Cyanea grimesiana* ssp. *grimesiana*—a, Oahu 35—*Cyanea grimesiana* ssp. *grimesiana*—b, Oahu 19—*Cyanea grimesiana* ssp. *grimesiana*—c, Oahu 20—*Cyanea humboldtiana*—a, Oahu 20—*Cyanea humboldtiana*—b, Oahu 20—*Cyanea humboldtiana*—c, Oahu 20—*Cyanea humboldtiana*—d, Oahu 35—*Cyanea humboldtiana*—e, Oahu 20—*Cyanea koolauensis*—a, Oahu 20—*Cyanea koolauensis*—b, Oahu 35—*Cyanea koolauensis*—c, Oahu 35—*Cyanea koolauensis*—d, Oahu 19—*Cyanea longiflora*—c, Oahu 20—*Cyanea st.-johnii*—a, Oahu 35—*Cyanea st.-johnii*—b, Oahu 35—*Cyanea superba*—d, Oahu 20—*Cyanea truncata*—a, Oahu 35—*Cyrtandra polyantha*—a, Oahu 20—*Cyrtandra subumbellata*—a, Oahu 20—*Cyrtandra subumbellata*—b, Oahu 20—*Cyrtandra viridiflora*—a, Oahu 35—*Delissea subcordata*—e, Oahu 35—*Delissea subcordata*—f, Oahu 35—*Diellia erecta*—a, Oahu 19—*Eugenia koolauensis*—b, Oahu 20—*Eugenia koolauensis*—c, Oahu 20—*Gardenia mannii*—b, Oahu 20—*Gardenia mannii*—c, Oahu 35—*Hedyotis coriacea*—b, Oahu 20—*Hesperomannia arborescens*—b, Oahu 35—*Isodendron laurifolium*—c, Oahu 20—*Isodendron longifolium*—b, Oahu 20—*Labordia cyrtandrae*—b, Oahu 20—*Labordia cyrtandrae*—c, Oahu 20—*Lobelia gaudichaudii* ssp. *koolauensis*—a, Oahu 30—*Lobelia monostachya*—a, Oahu 32—*Lobelia monostachya*—b, Oahu 33—*Lobelia monostachya*—c, Oahu 25—*Lobelia monostachya*—d, Oahu 20—*Lobelia oahuensis*—a, Oahu 35—*Lobelia oahuensis*—b, Oahu 20—*Lysimachia filifolia*—a, Oahu 20—*Melicope lydgatei*—a, Oahu 20—*Myrsine juddii*—a, Oahu 20—*Phlegmariurus nutans*—a, Oahu 20—*Phyllostegia hirsuta*—d, Oahu 20—*Phyllostegia parviflora*—d, Oahu 20—*Plantago princeps*—d, Oahu 20—

Plantago princeps—e, Oahu 20—*Platanthera holochila*—a, Oahu 20—*Platanthera holochila*—b, Oahu 20—*Pteris lidgatei*—a, Oahu 20—*Pteris lidgatei*—b, Oahu 20—*Pteris lidgatei*—c, Oahu 20—*Sanicula purpurea*—a, Oahu 20—*Schiedea kaalae*—e, Oahu 20—*Tetraplasandra gymnocarpa*—a, Oahu 20—*Tetraplasandra gymnocarpa*—b, Oahu 20—*Tetraplasandra gymnocarpa*—c, Oahu 20—*Tetraplasandra gymnocarpa*—d, Oahu 35—*Tetraplasandra gymnocarpa*—e, Oahu 35—*Tetraplasandra gymnocarpa*—f, Oahu 20—*Trematolobelia singularis*—a, Oahu 20—*Trematolobelia singularis*—b, Oahu 34—*Trematolobelia singularis*—c, Oahu 35—*Trematolobelia singularis*—d, Oahu 35—*Trematolobelia singularis*—e, Oahu 20—*Viola oahuensis*—a, and Oahu 20—*Viola oahuensis*—b.

Oahu M

This unit was proposed as critical habitat for *Sesbania tomentosa*. We excluded the proposed critical habitat for this multi-island species. This area is not essential for the conservation of *S. tomentosa* because it lacks one or more of the primary constituent elements, has a lower proportion of associated native species than other areas we consider to be essential to the conservation of *S. tomentosa*, and is less likely to contain the primary constituent elements long-term because it is not currently managed for conservation of this species. In addition, there are at least 10 other locations in its historical range on Oahu and other islands that provide habitat for this species, which are either designated as critical habitat in this rule; have been designated on Kauai, Molokai, Maui, and the Northwestern Hawaiian Islands; or have been proposed for designation on the island of Hawaii. Exclusion of this unit from critical habitat for *Sesbania tomentosa* resulted in the removal of this 100 ha (246 ac) unit from the final designation.

Oahu N

This unit was proposed as critical habitat for two species: *Centaurium sebaeoides* and *Sesbania tomentosa*. We excluded the proposed critical habitat for *Centaurium sebaeoides*, a multi-island species. This area is not essential for the conservation of this species because it lacks one or more of the primary constituent elements, has a lower proportion of associated native species than other areas we consider to be essential to the conservation of *C. sebaeoides*, and is less likely to contain the primary constituent elements long-term because it is not currently managed

for conservation of this species. In addition, there are at least 10 other locations in its historical range on Oahu and other islands that provide habitat for this species, which are either designated as critical habitat in this rule; have been designated on Kauai, Molokai, and Maui; or are found in an area managed for the species on Lanai. The area designated as critical habitat for *Sesbania tomentosa* provides habitat within its historical range for one population. The exclusion of *Centaurium sebaeoides* did not result in a change to the acreage of this unit, which was renamed Oahu 18—*Sesbania tomentosa*—b.

Oahu O

This unit was proposed as critical habitat for three species: *Cyanea crispa*, *Cyanea truncata*, and *Schiedea kaalae*. Modifications were made to this unit to exclude areas that do not contain the primary constituent elements essential to the conservation of *Cyanea crispa* and *Cyanea truncata*, both endemic to Oahu. The area designated as critical habitat for the three Oahu-endemic species provides habitat within their historical ranges for one population each of *Cyanea crispa*, *Cyanea truncata*, and *Schiedea kaalae*. In order to meet the recovery goal of 8 to 10 populations within the historical range of each of these three species, other locations on Oahu are being designated as critical habitat in this rule. Modifications to this unit resulted in the reduction from 431 ha (1,066 ac) to 312 ha (772 ac). This unit was renamed Oahu 21—*Cyanea crispa*—c, Oahu 21—*Cyanea truncata*—b, and Oahu 21—*Schiedea kaalae*—f.

Oahu P

This unit was proposed as critical habitat for *Sesbania tomentosa*. We excluded the proposed critical habitat for this multi-island species. This area is not essential for the conservation of *S. tomentosa* because it lacks one or more of the primary constituent elements, has a lower proportion of associated native species than other areas we consider to be essential to the conservation of *Sesbania tomentosa*, and is less likely to contain the primary constituent elements long-term because it is not currently managed for conservation of this species. In addition, there are at least 10 other locations in its historical range on Oahu and other islands that provide habitat for this species which are either designated as critical habitat in this rule; have been designated on Kauai, Molokai, and Maui, and the Northwestern Hawaiian Islands; or have been proposed for designation on the island of Hawaii.

Exclusion of this unit from critical habitat for *Sesbania tomentosa* resulted in the removal of this entire unit (2 ha (3 ac)) from the final designation.

Oahu Q

This unit was proposed as critical habitat for two species: *Chamaesyce kuwaleana* and *Sesbania tomentosa*. We excluded the proposed critical habitat for *Sesbania tomentosa*, a multi-island species. This area is not essential for the conservation of this species because it lacks one or more of the primary constituent elements, has a lower proportion of associated native species than other areas we consider to be essential to the conservation of *S. tomentosa*, and is less likely to contain the primary constituent elements long-term because it is not currently managed for conservation of this species. In addition, there are at least 10 other locations in its historical range on Oahu and other islands that provide habitat for this species, which are either designated as critical habitat in this rule; have been designated on Kauai, Molokai, and Maui, and the Northwestern Hawaiian Islands; or have been proposed for designation on the island of Hawaii. The area designated as critical habitat for the Oahu-endemic, *Chamaesyce kuwaleana*, provides habitat within its historical range for one population. No modifications were made to the acreage of this unit, which was renamed Oahu 22—*Chamaesyce kuwaleana*—e.

Oahu R

This unit was proposed as critical habitat for two species: *Chamaesyce kuwaleana* and *Sesbania tomentosa*. We excluded the proposed critical habitat for *Sesbania tomentosa*, a multi-island species. This area is not essential for the conservation of this species because it lacks one or more of the primary constituent elements, has a lower proportion of associated native species than other areas we consider to be essential to the conservation of *S. tomentosa*, and is less likely to contain the primary constituent elements long-term because it is not currently managed for conservation of this species. In addition, there are at least 10 other locations in its historical range on Oahu and other islands that provide habitat for this species, which are either designated as critical habitat in this rule; have been designated on Kauai, Molokai, and Maui, and the Northwestern Hawaiian Islands; or have been proposed for designation on the island of Hawaii. The area designated as critical habitat for the Oahu-endemic, *Chamaesyce kuwaleana*, provides

habitat within its historical range for one population. No modifications were made to the acreage of this unit, which was renamed Oahu 23—*Chamaesyce kuwaleana*—f.

Oahu S

This unit was proposed as critical habitat for two species: *Sesbania tomentosa* and *Vigna o-wahuensis*. We excluded the proposed critical habitat for *Sesbania tomentosa*, a multi-island species. This area is not essential for the conservation of this species because it lacks one or more of the primary constituent elements, has a lower proportion of associated native species than other areas we consider to be essential to the conservation of *S. tomentosa*, and is less likely to contain the primary constituent elements long-term because it is not currently managed for conservation of this species. In addition, there are at least 10 other locations in its historical range on Oahu and other islands that provide habitat for this species which are either designated as critical habitat in this rule; have been designated on Kauai, Molokai, and Maui, and the Northwestern Hawaiian Islands; or have been proposed for designation on the island of Hawaii. The area designated as critical habitat for the multi-island species, *Vigna o-wahuensis*, provides habitat within its historical range for one population. No modifications were made to the acreage of this unit, which was renamed Oahu 24—*Vigna o-wahuensis*—b.

Oahu T

This unit was proposed as critical habitat for two species: *Sesbania tomentosa* and *Vigna o-wahuensis*. We excluded the proposed critical habitat for *Sesbania tomentosa*, a multi-island species. This area is not essential for the conservation of this species because it lacks one or more of the primary constituent elements, has a lower proportion of associated native species than other areas we consider to be essential to the conservation of *S. tomentosa*, and is less likely to contain the primary constituent elements long-term because it is not currently managed for conservation of this species. In addition, there are at least 10 other locations in its historical range on Oahu and other islands that provide habitat for this species which are either designated as critical habitat in this rule; have been designated on Kauai, Molokai, and Maui, and the Northwestern Hawaiian Islands; or have been proposed for designation on the island of Hawaii. The area designated as critical habitat for the multi-island

species, *Vigna o-wahuensis*, provides habitat within its historical range for one population. No modifications were made to the acreage of this unit, which was renamed Oahu 25—*Vigna o-wahuensis*—c.

Oahu U

This unit was proposed as critical habitat for three species: *Chamaesyce kuwaleana*, *Sesbania tomentosa*, and *Vigna o-wahuensis*. We excluded the proposed critical habitat for *Sesbania tomentosa*, a multi-island species. This area is not essential for the conservation of this species because it lacks one or more of the primary constituent elements, has a lower proportion of associated native species than other areas we consider to be essential to the conservation of *S. tomentosa*, and is less likely to contain the primary constituent elements long-term because it is not currently managed for conservation of this species. In addition, there are at least 10 other locations in its historical range on Oahu and other islands that provide habitat for this species which are either designated as critical habitat in this rule; have been designated on Kauai, Molokai, and Maui, and the Northwestern Hawaiian Islands; or have been proposed for designation on the island of Hawaii. The area designated as critical habitat for the multi-island species, *Vigna o-wahuensis*, and Oahu endemic, *Chamaesyce kuwaleana*, provides habitat within their historical ranges for one population of each. No modifications were made to the acreage of this unit, which was renamed Oahu 26—*Chamaesyce kuwaleana*—g and Oahu 26—*Vigna o-wahuensis*—d.

Oahu V

This unit was proposed as critical habitat for one species: *Sesbania tomentosa*. We excluded the proposed critical habitat for *Sesbania tomentosa*, a multi-island species. This area is not essential for the conservation of this species because it lacks one or more of the primary constituent elements, has a lower proportion of associated native species than other areas we consider to be essential to the conservation of *S. tomentosa*, and is less likely to contain the primary constituent elements long-term because it is not currently managed for conservation of this species. In addition, there are at least 10 other locations in its historical range on Oahu and other islands that provide habitat for this species which are either designated as critical habitat in this rule; have been designated on Kauai, Molokai, and Maui, and the Northwestern Hawaiian Islands; or have been proposed for designation on the

island of Hawaii. Exclusion of this unit from critical habitat for *Sesbania tomentosa* resulted in the removal of this entire unit (4 ha (10 ac)) from the final designation.

Oahu W

This unit was proposed as critical habitat for three species: *Centaurium sebaeoides*, *Cyperus trachysanthos*, and *Marsilea villosa*. Modifications were made to this unit to exclude areas that do not contain the primary constituent elements essential to the conservation of *Centaurium sebaeoides*, a multi-island species. The area designated as critical habitat for the three multi-island species, *Centaurium sebaeoides*, *Cyperus trachysanthos*, and *Marsilea villosa*, provides habitat within their historical ranges for one population of each. Modifications to this unit resulted in the reduction from 340 ha (840 ac) to 43 ha (106 ac). This unit was renamed Oahu 27—*Centaurium sebaeoides*—b, Oahu 28—*Cyperus trachysanthos*—b, Oahu 29—*Cyperus trachysanthos*—c, Oahu 28—*Marsilea villosa*—c, and Oahu 29—*Marsilea villosa*—d.

Oahu X1

This unit was proposed as critical habitat for two multi-island species: *Gouania meyenii* and *Spermolepis hawaiiensis*. Modifications were made to this unit to exclude areas that do not contain the primary constituent elements essential to the conservation of *Gouania meyenii* and *Spermolepis hawaiiensis*. The area designated as critical habitat for *Gouania meyenii* and *Spermolepis hawaiiensis* provides habitat within their historical ranges for one population of each. These modifications resulted in the reduction from 117 ha (290 ac) to 116 ha (286 ac). This unit was renamed Oahu 31—*Gouania meyenii*—d and Oahu 31—*Spermolepis hawaiiensis*—b.

Oahu X2

This unit was proposed as critical habitat for two multi-island species: *Cyperus trachysanthos* and *Marsilea villosa*. Modifications were made to this unit to exclude small areas that do not contain the primary constituent elements essential to the conservation of *Cyperus trachysanthos* and *Marsilea villosa*. The area designated as critical habitat for *Cyperus trachysanthos* and *Marsilea villosa* provides habitat within their historical ranges for one population of each. This modification resulted in the reduction from 8 ha (21 ac) to 6 ha (15 ac). This unit was renamed Oahu 36—*Cyperus trachysanthos*—d and Oahu 36—*Marsilea villosa*—e.

Critical Habitat

Critical habitat is defined in section 3 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. In our regulations at 50 CFR 402.02, we define destruction or adverse modification as “* * * a direct or indirect alteration that appreciably diminishes the value of critical habitat for both the survival and recovery of a listed species. Such alterations include, but are not limited to, alterations adversely modifying any of those physical or biological features that were the basis for determining the habitat to be critical.” The relationship between a species’ survival and its recovery has been a source of confusion for some in the past. We believe that a species’ ability to recover depends on its ability to survive into the future when its recovery can be achieved; thus, the concepts of long-term survival and recovery are intricately linked. However, in the March 15, 2001, decision of the United States Court of Appeals for the Fifth Circuit (*Sierra Club v. Fish and Wildlife Service et al.*, 245 F.3d 434) regarding a not prudent finding, the court found our definition of destruction or adverse modification as currently contained in 50 CFR 402.02 to be invalid. In response to this decision, we are reviewing the regulatory definition of adverse modification in relation to the conservation of species.

In order to be included in a critical habitat designation, areas within the geographical range of the species at the time of listing must contain the physical

or biological features essential to the conservation of the species or, for an area outside the geographical area occupied by the species at the time of listing, the area itself must be essential to the conservation of the species (16 U.S.C. 1532(5)(A)).

Section 4 requires that we designate critical habitat for a species, to the extent such habitat is determinable, at the time of listing. When we designate critical habitat at the time of listing or under short court-ordered deadlines, we may not have sufficient information to identify all the areas essential for the conservation of the species, or we may inadvertently include areas that later will be shown to be nonessential. Nevertheless, we are required to designate those areas we know to be critical habitat, using the best information available to us.

Within the geographic areas occupied by the species, we will designate only areas that have features and habitat characteristics that are necessary to sustain the species. If the information available at the time of designation does not show that an area provides essential life cycle needs of the species, then the area should not be included in the critical habitat designation.

Our regulations state that “The Secretary shall designate as critical habitat areas outside the geographical area presently occupied by a species only when a designation limited to its present range would be inadequate to ensure the conservation of the species’ (50 CFR 424.12(e)). Accordingly, when the best available scientific and commercial data do not demonstrate that the conservation needs of the species require designation of critical habitat outside of occupied areas, we will not designate critical habitat in areas outside the geographic area occupied by the species.

Our Policy on Information Standards Under the Endangered Species Act, published in the **Federal Register** on July 1, 1994 (59 FR 34271), provides criteria, establishes procedures, and provides guidance to ensure that our decisions represent the best scientific and commercial data available. It requires our biologists, to the extent consistent with the Act and with the use of the best scientific and commercial data available, to use primary and original sources of information as the basis for recommendations to designate critical habitat. When determining which areas are critical habitat, a primary source of information should be the listing package for the species. Additional information may be obtained from recovery plans, articles in peer-reviewed journals, conservation plans

developed by States and counties, scientific status surveys and studies, and biological assessments or other unpublished materials.

It is important to clearly understand that critical habitat designations do not signal that habitat outside the designation is unimportant or may not be required for recovery. Areas outside the critical habitat designation will continue to be subject to conservation actions that may be implemented under section 7(a)(1) and to the regulatory protections afforded by the Act’s 7(a)(2) jeopardy standard and section 9 prohibitions, as determined on the basis of the best available information at the time of the action. We specifically anticipate that federally funded or assisted projects affecting listed species outside their designated critical habitat areas may still result in jeopardy findings in some cases. Similarly, critical habitat designations made on the basis of the best available information at the time of designation will not control the direction and substance of future recovery plans, habitat conservation plans, or other species conservation planning efforts if new information available to these planning efforts calls for a different outcome. Furthermore, we recognize that designation of critical habitat may not include all of the habitat areas that may be determined to be necessary for the recovery of the species.

A. Prudence

Designation of critical habitat is not prudent when one or both of the following situations exist: (i) The species is threatened by taking or other human activity, and identification of critical habitat can be expected to increase the degree of such threat to the species; or (ii) such designation of critical habitat would not be beneficial to the species (50 CFR 424.12(a)(1)).

To determine whether critical habitat would be prudent for each species, we analyzed the potential threats and benefits for each species in accordance with the court’s order. One species, *Cyrtandra crenata*, a Oahu endemic species, is no longer extant in the wild. *Cyrtandra crenata* was last seen in the wild in 1947 (HINHP Database 2001). In addition, this species is not known to be in storage or under propagation. Under these circumstances, we have determined that designation of critical habitat for *Cyrtandra crenata* is not prudent because such designation would be of no benefit to this species. If this species is relocated, we may revise this final determination to incorporate or address new information

as it becomes available (See 16 U.S.C. 1532(5)(B); 50 CFR 424.13(f)).

Due to low numbers of individuals and/or populations and their inherent immobility, the other 100 plant species could be vulnerable to unrestricted collection, vandalism, or disturbance. We examined the evidence currently available for each of these species and found specific evidence of vandalism, disturbance, and/or the threat of unrestricted collection for one species of *Pritchardia*, the native palm. At the time of listing, we determined that designation of critical habitat was not prudent for *Pritchardia kaalae* because it would increase the degree of threat from vandalism or collecting and would provide no benefit (61 FR 53108). Since then, we have received information on the commercial trade in palms conducted through the Internet (Grant Canterbury, Service, *in litt.* 2000). Several nurseries advertise and sell seedlings and young plants, including 13 species of Hawaiian *Pritchardia*. Seven of these species are federally protected, including *Pritchardia kaalae*. In light of this information, we believe that designation of critical habitat would likely increase the threat from vandalism or collection to this species of *Pritchardia* on Oahu. These plants are easy to identify, and they are attractive to collectors of rare palms, either for their personal use or to trade or sell for personal gain (Johnson 1996). We believe that the evidence shows that *Pritchardia kaalae* may be attractive to such collectors. The final listing rule for this species contained only general information on its distribution, but the publication of precise maps and descriptions of critical habitat in the **Federal Register** would make *Pritchardia kaalae* more vulnerable to incidents of vandalism or collection and, therefore, contribute to its decline and make recovery more difficult (61 FR 53089).

For *Pritchardia kaalae*, we believe that the benefits of designating critical habitat do not outweigh the potential increased threats from vandalism or collection. Given all of the above considerations, we determine that designation of critical habitat for *Pritchardia kaalae* is not prudent.

In the final rule designating critical habitat for plants on Lanai, published on January 9, 2003 (68 FR 1220), we explained why we believe that critical habitat was prudent for the following 17 multi-island species that also occur on Oahu: *Adenophorus periens*, *Bonamia menziesii*, *Cenchrus agrimonioides*, *Centaurium sebaeoides*, *Ctenitis squamigera*, *Cyanea grimesiana* ssp. *grimesiana*, *Cyperus trachysanthos*,

Diellia erecta, *Diplazium molokaiense*, *Hesperomannia arborescens*, *Hibiscus brackenridgei*, *Isodendron pyriformium*, *Sesbania tomentosa*, *Silene lanceolata*, *Spermolepis hawaiiensis*, *Tetramolopium lepidotum* ssp. *lepidotum*, and *Vigna o-wahuensis*. In the final rule designating critical habitat for plants on Kauai and Niihau, published on February 27, 2003 (68 FR 9116), we explained why that critical habitat was prudent for the following 16 multi-island species that are also found on Oahu: *Alectryon macrococcus*, *Euphorbia haeleleana*, *Flueggea neowawraea*, *Gouania meyenii*, *Isodendron laurifolium*, *Isodendron longifolium*, *Lobelia niihauensis*, *Lysimachia filifolia*, *Mariscus pennatifolius*, *Melicope pallida*, *Peucedanum sandwicense*, *Phlegmariurus nutans*, *Plantago princeps*, *Platanthera holochila*, *Schiedea nuttallii*, and *Solanum sandwicense*. In the final rule designating critical habitat for plants on Molokai, published on March 19, 2003 (68 FR 12982), we indicated why that critical habitat was prudent for the following four multi-island species that are also found on Oahu: *Eugenia koolauensis*, *Marsilea villosa*, *Phyllostegia mollis*, and *Pteris lidgatei*. In the final rule designating critical habitat for plants on Maui and Kahoolawe, published on May 14, 2003 (68 FR 25934) we indicated why we believe that critical habitat was prudent for the following eight multi-island species that are also found on Oahu: *Colubrina oppositifolia*, *Gouania vitifolia*, *Hedyotis coriacea*, *Hesperomannia arbuscula*, *Nototrichium humile*, *Phyllostegia parviflora*, *Sanicula purpurea*, and *Schiedea hookeri*.

We examined the potential threats and benefits for the other 54 taxa and have not, at this time, found specific evidence of taking, vandalism, collection, or trade of these taxa or of similarly situated species. Consequently, while we remain concerned that these activities could potentially threaten these 54 plant species in the future, consistent with applicable regulations (50 CFR 424.12(a)(1)(i)) and the court's discussion of these regulations, we do not find that any of these species are currently threatened by taking or other human activity. None of these threats would be exacerbated by the designation of critical habitat.

In the absence of finding that critical habitat would increase threats to a species, if there are any benefits to critical habitat designation, then a prudent finding is warranted. The

potential benefits of designation of critical habitat for these 54 species include: (1) Triggering section 7 consultation in new areas where it would not otherwise occur because, for example, it is or has become unoccupied or the occupancy is in question; (2) focusing conservation activities on the most essential areas; (3) providing educational benefits to State or county governments or private entities; and 4) preventing people from causing inadvertent harm to the species.

In the case of these 54 species, there would be some benefits to critical habitat. The primary regulatory effect of critical habitat is the section 7 requirement that Federal agencies refrain from taking any action that is likely to destroy or adversely affect critical habitat. Thirty-seven of these species are reported on or near Federal lands (see Table 1), where actions are subject to section 7 consultation. Although a majority of the species considered in this rule are located exclusively on non-Federal lands with limited Federal activities, there could be Federal actions affecting these lands in the future. While a critical habitat designation for habitat currently occupied by these species would not likely change the section 7 consultation outcome, since an action that destroys or adversely modifies such critical habitat would also be likely to result in jeopardy to the species, there may be instances where section 7 consultation would be triggered only if critical habitat were designated. There would also be some educational or informational benefits to the designation of critical habitat. Benefits of designation would include the notification of land owners, land managers, and the general public of the importance of protecting the habitat of these species and dissemination of information regarding their essential habitat requirements.

Therefore, designation of critical habitat is prudent for these 54 plant species: *Abutilon sandwicense*, *Alsinidendron obovatum*, *Alsinidendron trinerve*, *Chamaesyce celastroides* var. *kaenana*, *Chamaesyce deppeana*, *Chamaesyce herbstii*, *Chamaesyce kuwaleana*, *Chamaesyce rockii*, *Cyanea acuminata*, *Cyanea crispa*, *Cyanea grimesiana* ssp. *obatae*, *Cyanea humboltiana*, *Cyanea koolauensis*, *Cyanea longiflora*, *Cyanea pinnatifida*, *Cyanea st.-johnii*, *Cyanea superba*, *Cyanea truncata*, *Cyrtandra dentata*, *Cyrtandra polyantha*, *Cyrtandra subumbellata*, *Cyrtandra viridiflora*, *Delissea subcordata*, *Diellia falcata*, *Diellia unisora*, *Dubautia herbstobatae*, *Eragrostis fosbergii*,

Gardenia mannii, *Hedyotis degeneri*, *Hedyotis parvula*, *Labordia cyrtandrae*, *Lepidium arbuscula*, *Lipochaeta lobata* var. *leptophylla*, *Lipochaeta tenuifolia*, *Lobelia gaudichaudii* ssp. *koolauensis*, *Lobelia monostachya*, *Lobelia oahuensis*, *Melicope lydgatei*, *Melicope saint-johnii*, *Myrsine juddii*, *Neraudia angulata*, *Phyllostegia hirsuta*, *Phyllostegia kaalaensis*, *Sanicula mariversa*, *Schiedea kaalae*, *Schiedea kealiae*, *Silene perlmanii*, *Stenogyne kanehoana*, *Tetramolopium filiforme*, *Tetraplasandra gymnocarpa*, *Trematolobelia singularis*, *Uera kaalae*, *Viola chamissoniana* ssp. *chamissoniana*, and *Viola oahuensis* because the potential benefits of critical habitat designation outweigh the potential threats.

B. 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 conservation of *Abutilon sandwicense*, *Adenophorus periens*, *Alectryon macrococcus*, *Alsinidendron obovatum*, *Alsinidendron trinerve*, *Bonamia menziesii*, *Cenchrus agrimonioides*, *Centaurium sebaeoides*, *Chamaesyce celastroides* var. *kaenana*, *Chamaesyce deppeana*, *Chamaesyce herbstii*, *Chamaesyce kuwaleana*, *Chamaesyce rockii*, *Colubrina oppositifolia*, *Ctenitis squamigera*, *Cyanea acuminata*, *Cyanea crispa*, *Cyanea grimesiana* ssp. *grimesiana*, *Cyanea grimesiana* ssp. *obatae*, *Cyanea humboltiana*, *Cyanea koolauensis*, *Cyanea longiflora*, *Cyanea pinnatifida*, *Cyanea st.-johnii*, *Cyanea superba*, *Cyanea truncata*, *Cyperus trachysanthos*, *Cyrtandra dentata*, *Cyrtandra polyantha*, *Cyrtandra subumbellata*, *Cyrtandra viridiflora*, *Delissea subcordata*, *Diellia erecta*, *Diellia falcata*, *Diellia unisora*, *Diplazium molokaiense*, *Dubautia herbstobatae*, *Eragrostis fosbergii*, *Eugenia koolauensis*, *Euphorbia haeleleana*, *Flueggea neowawraea*, *Gardenia mannii*, *Gouania meyenii*, *Gouania vitifolia*, *Hedyotis coriacea*, *Hedyotis degeneri*, *Hedyotis parvula*, *Hesperomannia arborescens*, *Hesperomannia arbuscula*, *Hibiscus brackenridgei*, *Isodendron laurifolium*, *Isodendron longifolium*, *Isodendron pyriformis*, *Labordia cyrtandrae*, *Lepidium arbuscula*, *Lipochaeta lobata* var. *leptophylla*, *Lipochaeta tenuifolia*, *Lobelia gaudichaudii* ssp. *koolauensis*, *Lobelia monostachya*, *Lobelia niuhauensis*, *Lobelia oahuensis*, *Lysimachia filifolia*, *Mariscus pennatifolius*, *Marsilea villosa*,

Melicope lydgatei, *Melicope pallida*, *Melicope saint-johnii*, *Myrsine juddii*, *Neraudia angulata*, *Nototrichium humile*, *Peucedanum sandwicense*, *Phlegmariurus nutans*, *Phyllostegia hirsuta*, *Phyllostegia kaalaensis*, *Phyllostegia mollis*, *Phyllostegia parviflora*, *Plantago princeps*, *Platanthera holochila*, *Pteris lidgatei*, *Sanicula mariversa*, *Sanicula purpurea*, *Schiedea hookeri*, *Schiedea kaalae*, *Schiedea kealiae*, *Schiedea nuttallii*, *Sesbania tomentosa*, *Silene lanceolata*, *Silene perlmanii*, *Solanum sandwicense*, *Spermolepis hawaiiensis*, *Stenogyne kanehoana*, *Tetramolopium filiforme*, *Tetramolopium lepidotum* ssp. *lepidotum*, *Tetraplasandra gymnocarpa*, *Trematolobelia singularis*, *Uera kaalae*, *Vigna o-wahuensis*, *Viola chamissoniana* ssp. *chamissoniana*, and *Viola oahuensis*. This information included the known locations; site-specific species information from the HINHP database and our own rare plant database; species information from the Center for Plant Conservation's (CPC's) rare plant monitoring database housed at the University of Hawaii's Lyon Arboretum; island-wide Geographic Information System (GIS) coverages (e.g., vegetation, soils, annual rainfall, elevation contours, landownership); the final listing rules for these 99 species; the May 28, 2002, proposal; information received during the public comment periods and public hearings; recent biological surveys and reports; our recovery plans for these species; discussions with botanical experts; and recommendations from the Hawaii and Pacific Plant Recovery Coordinating Committee (HPPRCC) (see also the discussion below) (CPC *in litt.* 1999; GDSI 2000; HINHP Database 2000; HPPRCC 1998; Service 1994, 1995a, 1995b, 1996a, 1996b, 1996c, 1996d, 1997, 1998a, 1998b, 1999; 67 FR 37108).

In 1994, the HPPRCC initiated an effort to identify and map habitat it believed to be important for the recovery of 282 endangered and threatened Hawaiian plant species. The HPPRCC identified these areas on most of the islands in the Hawaiian chain, and in 1999, we published them in our *Recovery Plan for the Multi-Island Plants* (Service 1999). The HPPRCC expects there will be subsequent efforts to further refine the locations of important habitat areas and that new survey information or research may also lead to additional refinement of identifying and mapping of habitat important for the recovery of these species.

The HPPRCC identified essential habitat areas for all listed, proposed, and candidate plants and evaluated

species of concern to determine if essential habitat areas would provide for their habitat needs. However, the HPPRCC's mapping of habitat is distinct from the regulatory designation of critical habitat as defined by the Act. More data have been collected since the recommendations made by the HPPRCC in 1998. Much of the area that was identified by the HPPRCC as inadequately surveyed has now been surveyed to some degree. New location data for many species have been gathered. Also, the HPPRCC identified areas as essential based on species clusters (areas that included listed species as well as candidate species and species of concern), while we have only delineated areas that are essential for the conservation of the 99 listed species at issue. As a result, the critical habitat designations in this rule include not only some habitat that was identified as essential in the 1998 recommendations but also habitat that was not identified as essential in those recommendations.

C. 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 base critical habitat determinations on the best scientific and commercial data available and to consider those physical and biological features (primary constituent elements) that are essential to the conservation of the species. These features include, but are not limited to: Space for individual and population growth, and for normal behavior; food, water, air, light, minerals, or other nutritional or physiological requirements; cover or shelter; sites for breeding, reproduction, or rearing of offspring, germination, or seed dispersal; and habitats that are protected from disturbance or are representative of the historic geographical and ecological distributions of a species.

Much of what is known about the specific physical and biological requirements of *Abutilon sandwicense*, *Adenophorus periens*, *Alectryon macrococcus*, *Alsinidendron obovatum*, *Alsinidendron trinerve*, *Bonamia menziesii*, *Cenchrus agrimonioides*, *Centaurium sebaeoides*, *Chamaesyce celastroides* var. *kaenana*, *Chamaesyce deppeana*, *Chamaesyce herbstii*, *Chamaesyce kuwaleana*, *Chamaesyce rockii*, *Colubrina oppositifolia*, *Ctenitis squamigera*, *Cyanea acuminata*, *Cyanea crispa*, *Cyanea grimesiana* ssp. *grimesiana*, *Cyanea grimesiana* ssp. *obatae*, *Cyanea humboltiana*, *Cyanea koolauensis*, *Cyanea longiflora*, *Cyanea pinnatifida*, *Cyanea st.-johnii*, *Cyanea*

superba, *Cyanea truncata*, *Cyperus trachysanthos*, *Cyrtandra dentata*, *Cyrtandra polyantha*, *Cyrtandra subumbellata*, *Cyrtandra viridiflora*, *Delissea subcordata*, *Diellia erecta*, *Diellia falcata*, *Diellia unisora*, *Diplazium molokaiense*, *Dubautia herbstobatae*, *Eragrostis fosbergii*, *Eugenia koolauensis*, *Euphorbia haeleleana*, *Flueggea neowawraea*, *Gardenia mannii*, *Gouania meyenii*, *Gouania vitifolia*, *Hedyotis coriacea*, *Hedyotis degeneri*, *Hedyotis parvula*, *Hesperomannia arborescens*, *Hesperomannia arbuscula*, *Hibiscus brackenridgei*, *Isodendron laurifolium*, *Isodendron longifolium*, *Isodendron pyriforme*, *Labordia cyrtandrae*, *Lepidium arbuscula*, *Lipochaeta lobata* var. *leptophylla*, *Lipochaeta tenuifolia*, *Lobelia gaudichaudii* ssp. *koolauensis*, *Lobelia monostachya*, *Lobelia niihauensis*, *Lobelia oahuensis*, *Lysimachia filifolia*, *Mariscus pennatifolius*, *Marsilea villosa*, *Melicope lydgatei*, *Melicope pallida*, *Melicope saint-johnii*, *Myrsine juddii*, *Neraudia angulata*, *Nototrichium humile*, *Peucedanum sandwicense*, *Phlegmariurus nutans*, *Phyllostegia hirsuta*, *Phyllostegia kaalaensis*, *Phyllostegia mollis*, *Phyllostegia parviflora*, *Plantago princeps*, *Platanthera holochila*, *Pteris lidgatei*, *Sanicula mariversa*, *Sanicula purpurea*, *Schiedea hookeri*, *Schiedea kaalae*, *Schiedea kealiae*, *Schiedea nuttallii*, *Sesbania tomentosa*, *Silene lanceolata*, *Silene perlmanii*, *Solanum sandwicense*, *Spermolepis hawaiiensis*, *Stenogyne kanehoana*, *Tetramolopium filiforme*, *Tetramolopium lepidotum* ssp. *lepidotum*, *Tetraplasandra gymnocarpa*, *Trematolobelia singularis*, *Urera kaalae*, *Vigna o-wahuensis*, *Viola chamissoniana* ssp. *chamissoniana*, and *Viola oahuensis* is described in the "Background" section of this final rule.

All areas designated as critical habitat are within the historical range of the 99 species at issue and contain one or more of the physical or biological features (primary constituent elements) essential for the conservation of the species.

As described in the discussions for each of the 99 species for which we are designating critical habitat, we are defining the primary constituent elements on the basis of the habitat features of the areas from which the plant species are reported, as described by the type of plant community (e.g., mesic *Metrosideros polymorpha* forest), associated native plant species, locale information (e.g., steep rocky cliffs, talus slopes, gulches, stream banks), and elevation. The habitat features provide the ecological components required by the plant. The type of plant community

and associated native plant species indicate specific microclimate (localized climatic) conditions, retention and availability of water in the soil, soil microorganism community, and nutrient cycling and availability. The locale indicates information on soil type, elevation, rainfall regime, and temperature. Elevation indicates information on daily and seasonal temperature and sun intensity. Therefore, the descriptions of the physical elements of the locations of each of these species, including habitat type, plant communities associated with the species, location, and elevation, as described in the "SUPPLEMENTARY INFORMATION: Discussion of the Plant Taxa" section above, constitute the primary constituent elements for these species on the island of Oahu.

D. Criteria Used To Identify Critical Habitat

The lack of detailed scientific data on the life history of these plant species makes it impossible for us to develop a robust quantitative model (e.g., population viability analysis (National Research Council 1995)) to identify the optimal number, size, and location of critical habitat units to achieve recovery (Beissinger and Westphal 1998; Burgman *et al.* 2001; Ginzburg *et al.* 1990; Karieva and Wennergren 1995; Menges 1990; Murphy *et al.* 1990; Taylor 1995). However, based on the best information available at this time, including information on which the listing of and recovery plans for these species were based, we have concluded that the current size and distribution of the extant populations are not sufficient to expect a reasonable probability of long-term survival and recovery of these plant species.

For each of these species, the overall recovery strategy outlined in the approved recovery plans includes: (1) Stabilization of existing wild populations, (2) protection and management of habitat, (3) enhancement of existing small populations and reestablishment of new populations within historic range, and (4) research on species biology and ecology (Service 1994, 1995a, 1995b, 1996a, 1996b, 1996c, 1996d, 1997, 1998a, 1998b, 1999). Thus, the long-term recovery of these species is dependent upon the protection of existing population sites and suitable unoccupied habitat within their historic range.

The overall recovery goal stated in the recovery plans for each of these species includes the establishment of 8 to 10 populations with a minimum of 100 mature, reproducing individuals per population for long-lived perennials;

300 mature, reproducing individuals per population for short-lived perennials; and 500 mature, reproducing individuals per population for the annual. (Please note that there are some specific exceptions to this general recovery goal of 8 to 10 populations for species that are believed to be very narrowly distributed.) To be considered recovered, the populations of a multi-island species should be distributed among the islands of its known historic range (Service 1994, 1995a, 1995b, 1996a, 1996b, 1996c, 1996d, 1997, 1998a, 1998b, 1999). A population, for the purposes of this discussion and as defined in the recovery plans for these species, is a unit in which the individuals could be regularly cross-pollinated and influenced by the same small-scale events (such as landslides), and which contains a minimum of 100, 300, or 500 mature, reproducing individuals, depending on whether the species is a long-lived perennial, short-lived perennial, or annual.

Marsilea villosa, a short-lived perennial aquatic fern, was historically known from six populations on three different islands, Molokai, Oahu, and Niihau. This species is now extant only on Oahu and Molokai. Delisting objectives for this species include protection and stabilization of at least six (rather than 8 to 10) geographically distinct, self-sustaining populations (either three on Oahu and three on Molokai or three on Oahu, two on Molokai, and one on Niihau), stable or increasing population sizes, no active management needed, and self-maintenance of each population through two successive floods resulting in sexual reproduction. Delisting objectives for *Marsilea villosa* do not include a specific number of mature individuals per population because of its clonal nature, as it is extremely difficult to distinguish between individuals in clonal plant species (Service 1996a).

By adopting the specific recovery objectives enumerated above, the adverse effects of genetic inbreeding and random environmental events and catastrophes, such as landslides, hurricanes or tsunamis, which could destroy a large percentage of a species at any one time, may be reduced (Menges 1990; Podolsky 2001). These recovery objectives were initially developed by the HPPRCC and are found in all of the recovery plans for these species. While they are expected to be further refined as more information on the population biology of each species becomes available, the justification for these objectives is found in the current conservation biology

literature addressing the conservation of rare and endangered plants and animals (Beissinger and Westphal 1998; Burgman *et al.* 2001; Falk *et al.* 1996; Ginzburg *et al.* 1990; Hendrix and Kyhl 2000; Karieva and Wennergren 1995; Luijten *et al.* 2000; Meffe and Carroll 1996; Menges 1990; Murphy *et al.* 1990; Podolsky 2001; Quintana-Ascencio and Menges 1996; Taylor 1995; Tear *et al.* 1995; Wolf and Harrison 2001). The overall goal of recovery in the short-term is a successful population that can carry on basic life history processes, such as establishment, reproduction, and dispersal, at a level where the probability of extinction is low. In the long-term, the species and its populations should be at a reduced risk of extinction and be adaptable to environmental change through evolution and migration.

Many aspects of a species' life history are typically considered to determine guidelines for its interim stability and recovery, including longevity, breeding system, growth form, fecundity, ramet (a plant that is an independent member of a clone) production, survivorship, seed longevity, environmental variation, and successional stage of the habitat. Hawaiian species are poorly studied, and the only one of these characteristics that can be uniformly applied to all Hawaiian plant species is longevity (*i.e.*, long-lived perennial, short-lived perennial, and annual). In general, long-lived woody perennial species would be expected to be viable at population levels of 50 to 250 individuals per population, while short-lived perennial species would be viable at population levels of 1,500 to 2,500 individuals or more per population. These population numbers were refined for Hawaiian plant species by the HPPRCC (1994) due to the restricted distribution of suitable habitat typical of Hawaiian plants and the likelihood of smaller genetic diversity of several species that evolved from a single introduction. For recovery of Hawaiian plants, the HPPRCC recommended a general recovery guideline of 100 mature, reproducing individuals per population for long-lived perennial species; 300 mature, reproducing individuals per population for short-lived perennial species; and 500 mature, reproducing individuals per population for annual species.

The HPPRCC also recommended the conservation and establishment of 8 to 10 populations to address the numerous risks to the long-term survival and conservation of Hawaiian plant species. Although absent the detailed information inherent to the types of population viability analysis models described above (Burgman *et al.* 2001),

this approach employs two widely recognized and scientifically accepted goals for promoting viable populations of listed species—(1) creation or maintenance of multiple populations so that a single or series of catastrophic events cannot destroy the entire listed species (Luijten *et al.* 2000; Menges 1990; Quintana-Ascencio and Menges 1996); and (2) increasing the size of each population in the respective critical habitat units to a level where the threats of genetic, demographic, and normal environmental uncertainties are diminished (Hendrix and Kyhl 2000; Luijten *et al.* 2000; Meffe and Carroll 1996; Podolsky 2001; Service 1997; Tear *et al.* 1995; Wolf and Harrison 2001). In general, the larger the number of populations and the larger the size of each population, the lower the probability of extinction (Meffe and Carroll 1996; Raup 1991). This basic conservation principle of redundancy applies to Hawaiian plant species. By maintaining 8 to 10 viable populations in several critical habitat units, the threats represented by a fluctuating environment are alleviated and the species has a greater likelihood of achieving long-term survival and recovery. Conversely, loss of one or more of the plant populations within any critical habitat unit could result in an increase in the risk that the entire listed species may not survive and recover.

Due to the reduced size of suitable habitat areas for these Hawaiian plant species, they are now more susceptible to the variations and weather fluctuations affecting quality and quantity of available habitat, as well as direct pressure from hundreds of species of nonnative plants and animals. Establishing and conserving 8 to 10 viable populations on one or more islands within the historic range of the species will provide each species with a reasonable expectation of persistence and eventual recovery, even with the high potential that one or more of these populations will be eliminated by normal or random adverse events, such as the hurricanes that occurred in 1982 and 1992 on Kauai, fires, and nonnative plant invasions (HPPRCC 1998; Luijten *et al.* 2000; Mangel and Tier 1994; Pimm *et al.* 1998; Stacey and Taper 1992). We conclude that designation of adequate suitable habitat for 8 to 10 populations as critical habitat is essential to give the species a reasonable likelihood of long-term survival and conservation, based on currently available information.

In summary, the long-term survival and conservation of Hawaiian plant species requires the designation of critical habitat units on one or more of

the Hawaiian islands with suitable habitat for 8 to 10 populations of each plant species. Some of this habitat is currently not known to be occupied by these species. To recover the species, it is essential to conserve suitable habitat in these unoccupied units, which in turn will allow for the establishment of additional populations through natural recruitment or managed reintroductions. Establishment of these additional populations will increase the likelihood that the species will survive and recover in the face of normal and stochastic events (*e.g.*, hurricanes, fire, and nonnative species introductions) (Mangel and Tier 1994; Pimm *et al.* 1998; Stacey and Taper 1992).

In this rule, we have defined the primary constituent elements based on the general habitat features of the areas from which the plants are reported, such as the type of plant community, the associated native plant species, the physical location (*e.g.*, steep rocky cliffs, talus slopes, stream banks), and elevation. The areas we are designating as critical habitat provide some or all of the habitat components essential for the conservation of the 99 plant species as discussed in the individual unit descriptions.

Our approach to delineating critical habitat units was applied in the following manner:

1. Critical habitat was proposed and has been designated on an island by island basis for ease of understanding for landowners and the public, for ease of conducting the public hearing process, and for ease of conducting public outreach. In Hawaii, landowners and the public are most interested and affected by issues centered on the island on which they reside.

2. We focused on designating units representative of the known current and historical geographic and elevational range of each species; and

3. We designed critical habitat units to allow for expansion of existing wild populations and reestablishment of wild populations within the historic range, as recommended by the recovery plans for each species.

The proposed critical habitat units were delineated by creating rough units for each species by screen digitizing polygons (map units) using ArcView (Environmental Systems Research Institute, Inc.), a computer GIS program. We created polygons by overlaying current and historic plant location points onto digital topographic maps of each of the islands.

We then evaluated the resulting shape files (delineating historic elevational range and potentially suitable habitat). We refined elevation ranges, and we

avoided areas identified as not suitable for a particular species (*i.e.*, not containing the primary constituent elements). We then considered the resulting shape files for each species to define all suitable habitat on the island, including occupied and unoccupied habitat.

We further evaluated these shape files of suitable habitat. We used several factors to delineate the proposed critical habitat units from these land areas. We reviewed the recovery objectives, as described above and in recovery plans for each of the species, to determine if the number of populations and population size requirements needed for conservation would be available within the suitable habitat units identified as containing the appropriate primary constituent elements for each species. If more than the area needed for the number of recovery populations was identified as potentially suitable, only those areas within the least disturbed suitable habitat were included as proposed critical habitat. A population for this purpose is defined as a discrete aggregation of individuals located a sufficient distance from a neighboring aggregation such that the two are not affected by the same small-scale events and are not believed to be consistently cross-pollinated. In the absence of more specific information indicating the appropriate distance to assure limited cross-pollination, we are using a distance of 1,000 m (3,280 ft) based on our review of current literature on gene flow (Barret and Kohn 1991; Fenster and Dudash 1994; Havens 1998; Schierup and Christiansen 1996). We further refined the resulting critical habitat units by using satellite imagery and parcel data to eliminate areas that did not contain the appropriate vegetation or associated native plant species, as well as features such as cultivated agriculture fields, housing developments, and other areas that are unlikely to contribute to the conservation of one or more of the 99 plant species for which critical habitat was proposed on May 28, 2002. We used geographic features (ridge lines, valleys, streams, coastlines, etc.) or manmade features (roads or obvious land use) that created an obvious boundary for a unit as unit area boundaries.

Following publication of the proposed critical habitat rules, some of which were revised, for 255 Hawaiian plants (67 FR 3940, 67 FR 9806, 67 FR 15856, 67 FR 16492, 67 FR 34522, 67 FR 36968, 67 FR 37108), we reevaluated proposed critical habitat. State-wide, for each species using the applicable recovery guidelines (generally 8 to 10

populations with a minimum of 100 mature, reproducing individuals per population for long-lived perennial species; 300 mature, reproducing individuals per population for short-lived perennial species; and 500 mature, reproducing individuals per population for annual species) to determine if we had inadvertently proposed for designation too much or too little habitat to meet the essential recovery goals (HINHP Database 2000, 2001; Wagner *et al.* 1990, 1999).

Based on comments and information we received during the comment periods, we assessed the proposed critical habitat in order to ascertain which areas contained the highest quality habitat, had the highest likelihood of species conservation, were geographically distributed within the species' historical range, and were located a sufficient distance from each other such that populations of a single species are unlikely to be impacted by a single catastrophic event. We ranked areas of the proposed critical habitat by the quality of the primary constituent elements (*e.g.*, intact native plant communities, predominance of associated native plants versus nonnative plants), potential as a conservation area (*e.g.*, whether the land is zoned for conservation or whether the landowner is already participating in plant conservation actions), and current or expected management of known threats (*e.g.*, ungulate control; weed control; nonnative insect, slug, and snail control). Of these most essential areas, we selected adequate area to provide for 8 to 10 populations distributed among the islands of each species' historical range.

Areas that contain high quality primary constituent elements and conservation potential (*e.g.*, are zoned for conservation and have ongoing or expected threat abatement actions) were ranked the most essential. This ranking process also included determining which habitats were representative of the historic geographical and ecological distributions of the species (see "Primary Constituent Elements"). Of the proposed critical habitat for a species, areas that were not ranked most essential and that may provide habitat for populations above the recovery goal of 8 to 10 populations were determined not essential for the conservation of the species and were excluded from the final designation. Areas that were excluded because the benefits of exclusion outweigh the benefits of inclusion under 4(b)(2) of the Act are included in the total count of habitat for 8 to 10 populations.

In selecting areas of designated critical habitat, we made an effort to avoid developed areas, such as towns and other similar lands, that are unlikely to contribute to the conservation of the 99 species. However, the minimum mapping unit that we used to approximate our delineation of critical habitat for these species did not allow us to exclude all such developed areas from the maps. Existing manmade features and structures within the boundaries of the mapped areas, such as buildings; roads; aqueducts and other water system features, including, but not limited to pumping stations, irrigation ditches, pipelines, siphons, tunnels, water tanks, gaging stations, intakes, reservoirs, diversions, flumes, and wells; existing trails; campgrounds and their immediate surrounding landscaped area; scenic overlooks; remote helicopter landing sites; existing fences; telecommunications towers and associated structures and equipment; electrical power transmission lines and distribution, and communication facilities and regularly maintained associated rights-of-way and access ways; radars; telemetry antennas; missile launch sites; arboreta and gardens; heiau (indigenous places of worship or shrines) and other archaeological sites; airports; other paved areas; lawns and other rural residential landscaped areas do not contain one or more of the primary constituent elements and are therefore excluded from critical habitat designation under the terms of this regulation. Federal actions limited to those areas would not trigger a section 7 consultation unless they affect the species or primary constituent elements in adjacent critical habitat.

In summary, for these species, we utilized the approved recovery plan guidance to identify appropriately sized land units containing essential occupied and unoccupied habitat. Based on the best available information, we believe these areas constitute the essential habitat on Oahu to provide for the recovery of these 99 species.

The critical habitat areas described below constitute our best assessment of the physical and biological features needed for the conservation and special management needs of the 99 plant species, and are based on the best scientific and commercial information available (as described above). We publish this final rule acknowledging that we have incomplete information regarding many of the primary biological and physical requirements for these species. However, both the Act and the relevant court orders require us

to proceed with designation at this time based on the best information available. As new information accrues, we may consider reevaluating the boundaries of

areas that warrant critical habitat designation.

Descriptions of Critical Habitat Units

The approximate areas of proposed critical habitat by landownership or

jurisdiction are shown in Table 3. The approximate final critical habitat area (ha (ac)), essential area, and excluded area, are shown in Table 4.

TABLE 3.—APPROXIMATE CRITICAL HABITAT DESIGNATED AREA BY UNIT AND LANDOWNERSHIP OR JURISDICTION, OAHU, CITY AND COUNTY OF HONOLULU, HAWAII¹

Unit name	State/local	Private	Federal	Total
Oahu 4— <i>Abutilon sandwicense</i> —a	453 ha (1,120 ac)	151 ha (372 ac)		604 ha (1,492 ac)
Oahu 4— <i>Abutilon sandwicense</i> —b	26 ha (65 ac)			26 ha (65 ac)
Oahu 4— <i>Abutilon sandwicense</i> —c	41 ha (102 ac)			41 ha (102 ac)
Oahu 15— <i>Abutilon sandwicense</i> —d			49 ha (121 ac)	49 ha (121 ac)
Oahu 15— <i>Abutilon sandwicense</i> —e	1 ha (2 ac)		32 ha (80 ac)	33 ha (81 ac)
Oahu 17— <i>Abutilon sandwicense</i> —f	30 ha (74 ac)			30 ha (74 ac)
Oahu 20— <i>Adenophorus periens</i> —a	606 ha (1,500 ac)	105 ha (259 ac)		711 ha (1,759 ac)
Oahu 4— <i>Alectryon macrococcus</i> —a	23 ha (58 ac)			23 ha (58 ac)
Oahu 15— <i>Alectryon macrococcus</i> —b		112 ha (278 ac)		112 ha (278 ac)
Oahu 4— <i>Alsinidendron obovatum</i> —a	176 ha (436 ac)			176 ha (436 ac)
Oahu 4— <i>Alsinidendron obovatum</i> —b	25 ha (62 ac)			25 ha (62 ac)
Oahu 15— <i>Alsinidendron obovatum</i> —c	1 ha (2 ac)	31 ha (75 ac)		32 ha (76 ac)
Oahu 4— <i>Alsinidendron trinerve</i> —a	60 ha (149 ac)			60 ha (149 ac)
Oahu 2— <i>Bonamia menziesii</i> —a	21 ha (51 ac)			21 ha (51 ac)
Oahu 3— <i>Bonamia menziesii</i> —b	42 ha (104 ac)			42 ha (104 ac)
Oahu 4— <i>Bonamia menziesii</i> —c	3 ha (8 ac)	91 ha (225 ac)		94 ha (233 ac)
Oahu 17— <i>Bonamia menziesii</i> —d	77 ha (191 ac)			77 ha (191 ac)
Oahu 35— <i>Bonamia menziesii</i> —e	121 ha (300 ac)	253 ha (624 ac)		374 ha (924 ac)
Oahu 4— <i>Cenchrus agrimonioides</i> —a	529 ha (1,306 ac)			529 ha (1,306 ac)
Oahu 4— <i>Cenchrus agrimonioides</i> —b	40 ha (99 ac)			40 ha (99 ac)
Oahu 15— <i>Cenchrus agrimonioides</i> —c		200 ha (495 ac)		200 ha (495 ac)
Oahu 15— <i>Cenchrus agrimonioides</i> —d		117 ha (290 ac)		117 ha (290 ac)
Oahu 1— <i>Centaurium sebaeoides</i> —a	61 ha (149 ac)	<1 ha (<1 ac)	<1 ha (<1 ac)	61 ha (149 ac)
Oahu 27— <i>Centaurium sebaeoides</i> —b	30 ha (74 ac)			30 ha (74 ac)
Oahu 1— <i>Chamaesyce celastroides</i> var. <i>kaenana</i> —a	233 ha (571 ac)			233 ha (571 ac)
Oahu 3— <i>Chamaesyce celastroides</i> var. <i>kaenana</i> —b	4 ha (11 ac)			4 ha (11 ac)
Oahu 4— <i>Chamaesyce celastroides</i> var. <i>kaenana</i> —c	43 ha (107 ac)			43 ha (107 ac)
Oahu 5— <i>Chamaesyce celastroides</i> var. <i>kaenana</i> —d	32 ha (80 ac)	4 ha (9 ac)		36 ha (89 ac)
Oahu 35— <i>Chamaesyce celastroides</i> var. <i>kaenana</i> —e	1 ha (2 ac)	237 ha (585 ac)		238 ha (587 ac)
Oahu 20— <i>Chamaesyce deppeana</i> —a	3 ha (8 ac)	14 ha (33 ac)		17 ha (41 ac)
Oahu 35— <i>Chamaesyce deppeana</i> —b	16 ha (40 ac)	2 ha (6 ac)		18 ha (46 ac)
Oahu 4— <i>Chamaesyce herbstii</i> —a	429 ha (1,059 ac)			429 ha (1,059 ac)
Oahu 15— <i>Chamaesyce herbstii</i> —b		47 ha (116 ac)		47 ha (116 ac)
Oahu 15— <i>Chamaesyce herbstii</i> —c		21 ha (53 ac)		21 ha (53 ac)
Oahu 9— <i>Chamaesyce kuwaleana</i> —a			27 ha (68 ac)	27 ha (68 ac)
Oahu 11— <i>Chamaesyce kuwaleana</i> —b	19 ha (47 ac)		34 ha (83 ac)	53 ha (130 ac)
Oahu 12— <i>Chamaesyce kuwaleana</i> —c	37 ha (92 ac)			37 ha (92 ac)
Oahu 15— <i>Chamaesyce kuwaleana</i> —d	117 ha (288 ac)	67 ha (166 ac)		184 ha (454 ac)
Oahu 22— <i>Chamaesyce kuwaleana</i> —e	1 ha (3 ac)			1 ha (3 ac)
Oahu 23— <i>Chamaesyce kuwaleana</i> —f	6 ha (15 ac)			6 ha (15 ac)
Oahu 26— <i>Chamaesyce kuwaleana</i> —g	26 ha (63 ac)			26 ha (63 ac)
Oahu 20— <i>Chamaesyce rockii</i> —a	612 ha (1,512 ac)	214 ha (527 ac)		826 ha (2,039 ac)
Oahu 20— <i>Chamaesyce rockii</i> —b	8 ha (20 ac)	25 ha (63 ac)	164 ha (405 ac)	197 ha (488 ac)
Oahu 20— <i>Chamaesyce rockii</i> —c	85 ha (210 ac)	173 ha (429 ac)		258 ha (639 ac)
Oahu 4— <i>Colubrina oppositifolia</i> —a	766 ha (1,894 ac)	16 ha (41 ac)		782 ha (1,935 ac)
Oahu 4— <i>Ctenitis squamigera</i> —a	120 ha (297 ac)			120 ha (297 ac)
Oahu 4— <i>Cyanea acuminata</i> —a	82 ha (205 ac)			82 ha (205 ac)
Oahu 20— <i>Cyanea acuminata</i> —b	916 ha (2,260 ac)	1,022 ha (2,525 ac)	585 ha (1,446 ac)	2,522 ha (6,231 ac)
Oahu 20— <i>Cyanea crispa</i> —a	958 ha (2,367 ac)	873 ha (2,158 ac)		1,831 ha (4,525 ac)
Oahu 20— <i>Cyanea crispa</i> —b	597 ha (1,475 ac)	3,243 ha (8,010 ha)	20 ha (49 ac)	3,860 ha (9,534 ac)
Oahu 21— <i>Cyanea crispa</i> —c	114 ha (282 ac)	188 ha (465 ac)		302 ha (747 ac)
Oahu 35— <i>Cyanea crispa</i> —d	1,041 ha (2,573 ac)	295 ha (728 ac)		1,336 ha (3,301 ac)
Oahu 20— <i>Cyanea grimesiana</i> ssp. <i>grimesiana</i> —a	342 ha (845 ac)	2,292 ha (5,661 ac)		2,634 ha (6,506 ac)
Oahu 35— <i>Cyanea grimesiana</i> ssp. <i>grimesiana</i> —b	149 ha (367 ac)	181 ha (447 ac)		330 ha (814 ac)
Oahu 4— <i>Cyanea grimesiana</i> ssp. <i>obatae</i> —a	523 ha (1,289 ac)			523 ha (1,289 ac)
Oahu 15— <i>Cyanea grimesiana</i> ssp. <i>obatae</i> —b	1 ha (1 ac)	184 ha (454 ac)	<1 ha (<1 ac)	185 ha (455 ac)

TABLE 3.—APPROXIMATE CRITICAL HABITAT DESIGNATED AREA BY UNIT AND LANDOWNERSHIP OR JURISDICTION, OAHU, CITY AND COUNTY OF HONOLULU, HAWAII¹—Continued

Unit name	State/local	Private	Federal	Total
Oahu 15— <i>Cyanea grimesiana</i> ssp. <i>obatae</i> —c.	.....	34 ha (84 ac) .....	.....	34 ha (84 ac)
Oahu 15— <i>Cyanea grimesiana</i> ssp. <i>obatae</i> —d.	<1 ha (1 ac)	83 ha (204 ac) .....	.....	83 ha (205 ac)
Oahu 20— <i>Cyanea humboldtiana</i> —a	398 ha (982 ac)	105 ha (259 ac) .....	.....	503 ha (1,241 ac)
Oahu 20— <i>Cyanea humboldtiana</i> —b	24 ha (61 ac)	103 ha (254 ac) .....	.....	127 ha (315 ac)
Oahu 20— <i>Cyanea humboldtiana</i> —c	88 ha (219 ac)	212 ha (522 ac) .....	.....	300 ha (741 ac)
Oahu 20— <i>Cyanea humboldtiana</i> —d	20 ha (48 ac)	137 ha (340 ac)	3 ha (5 ac)	160 ha (393 ac)
Oahu 35— <i>Cyanea humboldtiana</i> —e	493 ha (1,221 ac)	45 ha (110 ac) .....	.....	538 ha (1,331 ac)
Oahu 20— <i>Cyanea koolauensis</i> —a	94 ha (233 ac)	374 ha (924 ac) .....	.....	468 ha (1,157 ac)
Oahu 20— <i>Cyanea koolauensis</i> —b	68 ha (170 ac)	254 ha (629 ac) .....	.....	322 ha (799 ac)
Oahu 35— <i>Cyanea koolauensis</i> —c	209 ha (517 ac) .....	.....	.....	209 ha (517 ac)
Oahu 35— <i>Cyanea koolauensis</i> —d	181 ha (448 ac)	131 ha (322 ac) .....	.....	312 ha (770 ac)
Oahu 4— <i>Cyanea longiflora</i> —a	362 ha (894 ac) .....	.....	.....	362 ha (894 ac)
Oahu 4— <i>Cyanea longiflora</i> —b	61 ha (150 ac) .....	.....	.....	61 ha (150 ac)
Oahu 19— <i>Cyanea longiflora</i> —c	243 ha (602 ac)	81 ha (199 ac) .....	.....	324 ha (801 ac)
Oahu 15— <i>Cyanea pinnatifida</i> —a .....	.....	154 ha (380 ac) .....	.....	154 ha (380 ac)
Oahu 15— <i>Cyanea pinnatifida</i> —b .....	.....	42 ha (104 ac) .....	.....	42 ha (104 ac)
Oahu 15— <i>Cyanea pinnatifida</i> —c	<1 ha (<1 ac)	129 ha (318 ac) .....	.....	129 ha (318 ac)
Oahu 20— <i>Cyanea st.-johnii</i> —a	240 ha (593 ac)	414 ha (1,023 ac)	43 ha (107 ac)	697 ha (1,723 ac)
Oahu 35— <i>Cyanea st.-johnii</i> —b	123 ha (305 ha)	12 ha (29 ac) .....	.....	135 ha (334 ac)
Oahu 4— <i>Cyanea superba</i> —a	303 ha (747 ac) .....	.....	.....	303 ha (747 ac)
Oahu 4— <i>Cyanea superba</i> —b	115 ha (286 ac) .....	.....	.....	115 ha (286 ac)
Oahu 4— <i>Cyanea superba</i> —c	183 ha (453 ac)	1 ha (3 ac) .....	.....	184 ha (456 ac)
Oahu 35— <i>Cyanea superba</i> —d	170 ha (420 ac)	111 ha (277 ac) .....	.....	281 ha (697 ac)
Oahu 20— <i>Cyanea truncata</i> —a	900 ha (2,226 ac)	1,129 ha (2,793 ac) .....	.....	2,029 ha (5,019 ac)
Oahu 21— <i>Cyanea truncata</i> —b	59 ha (146 ac)	151 ha (374 ac) .....	.....	210 ha (520 ac)
Oahu 1— <i>Cyperus trachysanthos</i> —a	78 ha (194 ac) .....	.....	.....	78 ha (194 ac)
Oahu 28— <i>Cyperus trachysanthos</i> —b	8 ha (20 ac) .....	.....	.....	8 ha (20 ac)
Oahu 29— <i>Cyperus trachysanthos</i> —c	4 ha (10 ac) .....	.....	.....	4 ha (10 ac)
Oahu 36— <i>Cyperus trachysanthos</i> —d	5 ha (13 ac) .....	.....	.....	5 ha (13 ac)
Oahu 4— <i>Cyrtandra dentata</i> —a	307 ha (758 ac) .....	.....	.....	307 ha (758 ac)
Oahu 35— <i>Cyrtandra polyantha</i> —a	112 ha (277 ac)	78 ha (192 ac) .....	.....	190 ha (469 ac)
Oahu 20— <i>Cyrtandra subumbellata</i> —a	589 ha (1,455 ac)	240 ha (593 ac) .....	.....	829 ha (2,048 ac)
Oahu 20— <i>Cyrtandra subumbellata</i> —b .....	.....	.....	67 ha (167 ac)	67 ha (167 ac)
Oahu 20— <i>Cyrtandra viridiflora</i> —a	505 ha (1,247 ac)	206 ha (509 ac)	71 ha (176 ac)	782 ha (1,932 ac)
Oahu 4— <i>Delissea subcordata</i> —a	762 ha (1,879 ac)	2 ha (6 ac) .....	.....	764 ha (1,885 ac)
Oahu 15— <i>Delissea subcordata</i> —b .....	.....	220 ha (545 ac) .....	.....	220 ha (545 ac)
Oahu 15— <i>Delissea subcordata</i> —c .....	.....	32 ha (78 ac) .....	.....	32 ha (78 ac)
Oahu 15— <i>Delissea subcordata</i> —d .....	.....	81 ha (200 ac) .....	.....	81 ha (200 ac)
Oahu 35— <i>Delissea subcordata</i> —e	88 ha (217 ac)	204 ha (504 ac) .....	.....	292 ha (721 ac)
Oahu 35— <i>Delissea subcordata</i> —f	1 ha (3 ac)	128 ha (314 ac) .....	.....	129 ha (317 ac)
Oahu 35— <i>Diellia erecta</i> —a	173 ha (430 ac)	120 ha (301 ac) .....	.....	293 ha (731 ha)
Oahu 4— <i>Diellia falcata</i> —a	59 ha (148 ac) .....	.....	.....	59 ha (148 ac)
Oahu 4— <i>Diellia falcata</i> —b	22 ha (54 ac) .....	.....	.....	22 ha (54 ac)
Oahu 15— <i>Diellia falcata</i> —c	23 ha (58 ac)	314 ha (776 ac)	4 ha (10 ac)	341 ha (844 ac)
Oahu 15— <i>Diellia falcata</i> —d	7 ha (17 ac)	170 ha (419 ac)	<1 ha (<1 ac)	178 ha (437 ac)
Oahu 15— <i>Diellia unisora</i> —a	68 ha (167 ac)	253 ha (626 ac)	41 ha (101 ac)	362 ha (894 ac)
Oahu 4— <i>Diplazium molokaiense</i> —a	139 ha (340 ac) .....	.....	.....	139 ha (340 ac)
Oahu 4— <i>Dubautia herbstobatae</i> —a	12 ha (29 ac) .....	.....	.....	12 ha (29 ac)
Oahu 4— <i>Dubautia herbstobatae</i> —b	76 ha (191 ac)	<1 ha (<1 ac) .....	.....	76 ha (191 ac)
Oahu 7— <i>Dubautia herbstobatae</i> —c	3 ha (7 ac) .....	.....	.....	3 ha (7 ac)
Oahu 4— <i>Eragrostis fosbergii</i> —a	81 ha (199 ac) .....	.....	.....	81 ha (199 ac)
Oahu 4— <i>Eugenia koolauensis</i> —a	114 ha (280 ac) .....	.....	.....	114 ha (280 ac)
Oahu 19— <i>Eugenia koolauensis</i> —b	38 ha (94 ac)	111 ha (275 ac) .....	.....	149 ha (369 ac)
Oahu 20— <i>Eugenia koolauensis</i> —c	71 ha (176 ac)	51 ha (127 ac) .....	.....	122 ha (303 ac)
Oahu 3— <i>Euphorbia haeleeleana</i> —a	14 ha (38 ac) .....	.....	.....	14 ha (38 ac)
Oahu 4— <i>Euphorbia haeleeleana</i> —b	94 ha (233 ac)	262 ha (648 ac) .....	.....	356 ha (881 ac)
Oahu 4— <i>Flueggea neowawraea</i> —a	845 ha (2,087 ac) .....	.....	.....	845 ha (2,087 ac)
Oahu 15— <i>Gardenia mannii</i> —a .....	.....	266 ha (658 ac) .....	.....	266 ha (658 ac)
Oahu 20— <i>Gardenia mannii</i> —b .....	.....	206 ha (510 ac) .....	.....	206 ha (510 ac)
Oahu 20— <i>Gardenia mannii</i> —c .....	.....	.....	1,311 ha (3,239 ac)	1,311 ha (3,239 ac)
Oahu 4— <i>Gouania meyenii</i> —a	47 ha (118 ac) .....	.....	.....	47 ha (118 ac)
Oahu 4— <i>Gouania meyenii</i> —b	39 ha (96 ac) .....	.....	.....	39 ha (96 ac)
Oahu 15— <i>Gouania meyenii</i> —c	2 ha (6 ac)	206 ha (509 ac)	<1 ha (<1 ac)	208 ha (515 ac)
Oahu 31— <i>Gouania meyenii</i> —d	116 ha (286 ac) .....	.....	.....	116 ha (286 ac)
Oahu 2— <i>Gouania vitifolia</i> —a	20 ha (49 ac) .....	.....	.....	20 ha (49 ac)
Oahu 3— <i>Gouania vitifolia</i> —b	48 ha (120 ac) .....	.....	.....	48 ha (120 ac)
Oahu 5— <i>Gouania vitifolia</i> —c	176 ha (434 ac)	20 ha (48 ac) .....	.....	196 ha (482 ac)
Oahu 4— <i>Gouania vitifolia</i> —d	85 ha (208 ac) .....	.....	.....	85 ha (208 ac)
Oahu 4— <i>Gouania vitifolia</i> —e	102 ha (252 ac) .....	.....	.....	102 ha (252 ac)

TABLE 3.—APPROXIMATE CRITICAL HABITAT DESIGNATED AREA BY UNIT AND LANDOWNERSHIP OR JURISDICTION, OAHU, CITY AND COUNTY OF HONOLULU, HAWAII¹—Continued

Unit name	State/local	Private	Federal	Total
Oahu 4— <i>Gouania vitifolia</i> —f	27 ha (67 ac)			27 ha (67 ac)
Oahu 4— <i>Gouania vitifolia</i> —g	17 ha (42 ac)	<1 ha (1 ac)		17 ha (43 ac)
Oahu 8— <i>Gouania vitifolia</i> —h	41 ha (101 ac)	23 ha (57 ac)		64 ha (158 ac)
Oahu 15— <i>Hedyotis coriacea</i> —a		185 ha (458 ac)		185 ha (458 ac)
Oahu 35— <i>Hedyotis coriacea</i> —b	9 ha (22 ac)	155 ha (382 ac)		164 ha (404 ac)
Oahu 4— <i>Hedyotis degeneri</i> —a	917 ha (2,265 ac)			917 ha (2,265 ac)
Oahu 4— <i>Hedyotis degeneri</i> —b	12 ha (29 ac)			12 ha (29 ac)
Oahu 4— <i>Hedyotis parvula</i> —a	387 ha (956 ac)			387 ha (956 ac)
Oahu 15— <i>Hedyotis parvula</i> —b			8 ha (19 ac)	8 ha (19 ac)
Oahu 15— <i>Hedyotis parvula</i> —c	42 ha (105 ac)	22 ha (54 ac)	31 ha (77 ac)	95 ha (236 ac)
Oahu 15— <i>Hedyotis parvula</i> —d	20 ha (48 ac)		30 ha (74 ac)	50 ha (122 ac)
Oahu 4— <i>Hesperomannia arborescens</i> —a	122 ha (301 ac)	3 ha (7 ac)		125 ha (308 ac)
Oahu 20— <i>Hesperomannia arborescens</i> —b	405 ha (1,001 ac)	184 ha (455 ac)		589 ha (1,456 ac)
Oahu 4— <i>Hesperomannia arbuscula</i> —a	597 ha (1,472 ac)			597 ha (1,472 ac)
Oahu 4— <i>Hesperomannia arbuscula</i> —b	32 ha (78 ac)			32 ha (78 ac)
Oahu 15— <i>Hesperomannia arbuscula</i> —c	2 ha (4 ac)	161 ha (398 ac)	<1 ha (<1 ac)	163 ha (402 ac)
Oahu 15— <i>Hesperomannia arbuscula</i> —d	2 ha (4 ac)	23 ha (56 ac)		25 ha (60 ac)
Oahu 15— <i>Hesperomannia arbuscula</i> —e	3 ha (5 ac)	67 ha (167 ac)		70 ha (172 ac)
Oahu 1— <i>Hibiscus brackenridgei</i> —a	20 ha (49 ac)	58 ha (144 ac)		78 ha (193 ac)
Oahu 4— <i>Hibiscus brackenridgei</i> —b	75 ha (185 ac)	485 ha (1,200 ac)		560 ha (1,385 ac)
Oahu 5— <i>Hibiscus brackenridgei</i> —c	23 ha (56 ac)	<1 ha (<1 ac)		23 ha (56 ac)
Oahu 4— <i>Isodendron laurifolium</i> —a	616 ha (1,524 ac)			616 ha (1,524 ac)
Oahu 4— <i>Isodendron laurifolium</i> —b	62 ha (154 ac)			62 ha (154 ac)
Oahu 35— <i>Isodendron laurifolium</i> —c	109 ha (270 ac)	168 ha (414 ac)		277 ha (684 ac)
Oahu 4— <i>Isodendron longifolium</i> —a	529 ha (1,306 ac)	23 ha (57 ac)		552 ha (1,363 ac)
Oahu 20— <i>Isodendron longifolium</i> —b			162 ha (399 ac)	162 ha (399 ac)
Oahu 5— <i>Isodendron pyriformium</i> —a	29 ha (71 ac)	1 ha (3 ac)		30 ha (74 ac)
Oahu 16— <i>Isodendron pyriformium</i> —b	129 ha (317 ac)	1 ha (1 ac)		130 ha (318 ac)
Oahu 17— <i>Isodendron pyriformium</i> —c	73 ha (181 ac)			73 ha (181 ac)
Oahu 4— <i>Labordia cyrtandrae</i> —a	161 ha (397 ac)			161 ha (397 ac)
Oahu 20— <i>Labordia cyrtandrae</i> —b	472 ha (1,168 ac)	123 ha (305 ac)		595 ha (1,473 ac)
Oahu 20— <i>Labordia cyrtandrae</i> —c	205 ha (508 ac)	412 ha (1,017 ac)		617 ha (1,525 ac)
Oahu 4— <i>Lepidium arbuscula</i> —a	330 ha (813 ac)			330 ha (813 ac)
Oahu 15— <i>Lepidium arbuscula</i> —b	38 ha (94 ac)	6 ha (16 ac)	74 ha (183 ac)	118 ha (292 ac)
Oahu 15— <i>Lepidium arbuscula</i> —c	38 ha (93 ac)		61 ha (151 ha)	99 ha (244 ac)
Oahu 4— <i>Lipochaeta lobata</i> var. <i>leptophylla</i> —a	139 ha (345 ac)			139 ha (345 ac)
Oahu 15— <i>Lipochaeta lobata</i> var. <i>leptophylla</i> —b	207 ha (514 ac)	53 ha (131 ac)	274 ha (676 ac)	534 ha (1,321 ac)
Oahu 4— <i>Lipochaeta tenuifolia</i> —a	23 ha (57 ac)			23 ha (57 ac)
Oahu 4— <i>Lipochaeta tenuifolia</i> —b	66 ha (167 ac)			66 ha (167 ac)
Oahu 4— <i>Lipochaeta tenuifolia</i> —c	118 ha (292 ac)			118 ha (292 ac)
Oahu 20— <i>Lobelia guadichaudii</i> ssp. <i>koolauensis</i> —a	371 ha (915 ac)	458 ha (1,132 ac)	97 ha (241 ac)	926 ha (2,288 ac)
Oahu 30— <i>Lobelia monostachya</i> —a	48 ha (118 ac)	11 ha (32 ac)		59 ha (150 ac)
Oahu 22— <i>Lobelia monostachya</i> —b	1 ha 2 (ac)	46 ha (113 ac)		47 ha (115 ac)
Oahu 33— <i>Lobelia monostachya</i> —c	70 ha (173 ac)	<1 ha (1 ac)		70 ha (174 ac)
Oahu 35— <i>Lobelia monostachya</i> —d	123 ha (303 ac)	367 ha (906 ac)	3 ha (8 ac)	493 ha (1,217 ac)
Oahu 4— <i>Lobelia niihauensis</i> —a	44 ha (108 ac)			44 ha (108 ac)
Oahu 17— <i>Lobelia niihauensis</i> —b	41 ha (102 ac)			41 ha (102 ac)
Oahu 20— <i>Lobelia oahuensis</i> —a	204 ha (504 ac)	240 ha (593 ac)	46 ha (114 ac)	490 ha (1,211 ac)
Oahu 35— <i>Lobelia oahuensis</i> —b	139 ha (342 ac)	13 ha (32 ac)		152 ha (374 ac)
Oahu 20— <i>Lysimachia filifolia</i> —a	992 ha (2,450 ac)	512 ha (1,263 ac)	8 ha (21 ac)	1,512 ha (3,734 ac)
Oahu 4— <i>Mariscus pennatiformis</i> —a	166 ha (410 ac)			166 ha (410 ac)
Oahu 4— <i>Mariscus pennatiformis</i> —b	171 ha (421 ac)			171 ha (421 ac)
Oahu 13— <i>Marsilea villosa</i> —a			10 ha (25 ac)	10 ha (25 ac)
Oahu 14— <i>Marsilea villosa</i> —b			7 ha (18 ac)	7 ha (18 ac)
Oahu 28— <i>Marsilea villosa</i> —c	7 ha (18 ac)			7 ha (18 ac)
Oahu 29— <i>Marsilea villosa</i> —d	5 ha (11 ac)			5 ha (11 ac)
Oahu 36— <i>Marsilea villosa</i> —e	6 ha (14 ac)			6 ha (14 ac)
Oahu 20— <i>Melicope lydgatei</i> —a	351 ha (864 ac)	2,613 ha (6,458 ac)	535 ha (1,323 ac)	3,499 ha (8,645 ac)
Oahu 4— <i>Melicope pallida</i> —a	846 ha (2,089 ac)	9 ha (21 ac)		855 ha (2,110 ac)
Oahu 15— <i>Melicope pallida</i> —b		174 ha (431 ac)		174 ha (431 ac)
Oahu 15— <i>Melicope pallida</i> —c	2 ha (5 ac)		27 ha (66 ac)	29 ha (71 ac)
Oahu 15— <i>Melicope pallida</i> —d	10 ha (25 ac)		10 ha (26 ac)	20 ha (51 ac)
Oahu 15— <i>Melicope pallida</i> —e		243 ha (602 ac)		243 ha (602 ac)
Oahu 15— <i>Melicope saint-johnii</i> —a	2 ha (6 ac)	242 ha (598 ac)	<1 ha (<1 ac)	244 ha (604 ac)
Oahu 15— <i>Melicope saint-johnii</i> —b	28 ha (69 ac)	149 ha (368 ac)	37 ha (92 ac)	214 ha (529 ac)
Oahu 20— <i>Myrsine juddii</i> —a	386 ha (954 ac)	291 ha (719 ac)	273 ha (674 ac)	950 ha (2,347 ac)
Oahu 3— <i>Neraudia angulata</i> —a	39 ha (97 ac)			39 ha (97 ac)
Oahu 4— <i>Neraudia angulata</i> —b	83 ha (205 ac)	7 ha (17 ac)		90 ha (222 ac)

TABLE 3.—APPROXIMATE CRITICAL HABITAT DESIGNATED AREA BY UNIT AND LANDOWNERSHIP OR JURISDICTION, OAHU, CITY AND COUNTY OF HONOLULU, HAWAII¹—Continued

Unit name	State/local	Private	Federal	Total
Oahu 4— <i>Neraudia angulata</i> —c	298 ha (736 ac)			298 ha (736 ac)
Oahu 4— <i>Neraudia angulata</i> —d	33 ha (81 ac)			33 ha (81 ac)
Oahu 4— <i>Neraudia angulata</i> —e	40 ha (98 ac)			40 ha (98 ac)
Oahu 15— <i>Neraudia angulata</i> —f	17 ha (44 ac)		66 ha (163 ac)	83 ha (207 ac)
Oahu 3— <i>Nototrichium humile</i> —a	20 ha (51 ac)			20 ha (51 ac)
Oahu 4— <i>Nototrichium humile</i> —b	168 ha (416 ac)	61 ha (152 ac)		229 ha (568 ac)
Oahu 4— <i>Nototrichium humile</i> —c	55 ha (138 ac)	181 ha (448 ac)		236 ha (586 ac)
Oahu 4— <i>Nototrichium humile</i> —d	30 ha (75 ac)			30 ha (75 ac)
Oahu 4— <i>Peucedanum sandwicense</i> —a	76 ha (186 ac)			76 ha (186 ac)
Oahu 20— <i>Phlegmariurus nutans</i> —a	713 ha (1,762 ac)	514 ha (1,269 ac)	398 ha (983 ac)	1,625 ha (4,014 ac)
Oahu 4— <i>Phyllostegia hirsuta</i> —a	113 ha (282 ac)			113 ha (282 ac)
Oahu 15— <i>Phyllostegia hirsuta</i> —b	1 ha (2 ac)	130 ha (322 ac)	<1 ha (<1 ac)	131 ha (324 ac)
Oahu 15— <i>Phyllostegia hirsuta</i> —c		69 ha (171 ac)		69 ha (171 ac)
Oahu 20— <i>Phyllostegia hirsuta</i> —d	719 ha (1,777 ac)	285 ha (706 ac)		1,004 ha (2,483 ac)
Oahu 4— <i>Phyllostegia kaalaensis</i> —a	57 ha (141 ac)			57 ha (141 ac)
Oahu 4— <i>Phyllostegia kaalaensis</i> —b	589 ha (1,456 ac)			589 ha (1,456 ac)
Oahu 4— <i>Phyllostegia kaalaensis</i> —c	119 ha (295 ac)	3 ha (9 ac)		122 ha (304 ac)
Oahu 4— <i>Phyllostegia kaalaensis</i> —d	28 ha (69 ac)			28 ha (69 ac)
Oahu 4— <i>Phyllostegia kaalaensis</i> —e	16 ha (39 ac)			16 ha (39 ac)
Oahu 15— <i>Phyllostegia kaalaensis</i> —f		30 ha (74 ac)		30 ha (74 ac)
Oahu 15— <i>Phyllostegia mollis</i> —a		152 ha (376 ac)		152 ha (376 ac)
Oahu 15— <i>Phyllostegia mollis</i> —b		85 ha (210 ac)		85 ha (210 ac)
Oahu 15— <i>Phyllostegia parviflora</i> —a		70 ha (173 ac)		70 ha (173 ac)
Oahu 15— <i>Phyllostegia parviflora</i> —b		21 ha (51 ac)		21 ha (51 ac)
Oahu 15— <i>Phyllostegia parviflora</i> —c		69 ha (171 ac)		69 ha (171 ac)
Oahu 20— <i>Phyllostegia parviflora</i> —d	806 ha (1,992 ac)	436 ha (1,078 ac)	188 ha (463 ac)	1,430 ha (3,533 ac)
Oahu 4— <i>Plantago princeps</i> —a	15 ha (37 ac)			15 ha (37 ac)
Oahu 4— <i>Plantago princeps</i> —b	52 ha (131 ac)			52 ha (131 ac)
Oahu 15— <i>Plantago princeps</i> —c		63 ha (157 ac)		63 ha (157 ac)
Oahu 20— <i>Plantago princeps</i> —d	99 ha (246 ac)	733 ha (1,810 ac)	160 ha (394 ac)	992 ha (2,450 ac)
Oahu 20— <i>Plantago princeps</i> —e	194 ha (477 ac)	103 ha (252 ac)		297 ha (729 ac)
Oahu 20— <i>Platanthera holochila</i> —a		35 ha (86 ac)		35 ha (86 ac)
Oahu 20— <i>Platanthera holochila</i> —b	<1 ha (<1 ac)	4 ha (9 ac)	161 ha (397 ac)	165 ha (407 ac)
Oahu 20— <i>Pteris lidgatei</i> —a	847 ha (2,091 ac)	386 ha (953 ac)		1,233 ha (3,044 ac)
Oahu 20— <i>Pteris lidgatei</i> —b	153 ha (377 ac)	25 ha (61 ac)	111 ha (273 ac)	289 ha (711 ac)
Oahu 20— <i>Pteris lidgatei</i> —c	267 ha (660 ac)	577 ha (1,424 ac)		844 ha (2,084 ac)
Oahu 4— <i>Sanicula mariversa</i> —a	7 ha (17 ac)			7 ha (17 ac)
Oahu 4— <i>Sanicula mariversa</i> —b	6 ha (15 ac)			6 ha (15 ac)
Oahu 4— <i>Sanicula mariversa</i> —c	25 ha (61 ac)			25 ha (61 ac)
Oahu 6— <i>Sanicula mariversa</i> —d	3 ha (8 ac)			3 ha (8 ac)
Oahu 15— <i>Sanicula mariversa</i> —e		14 ha (34 ac)		14 ha (34 ac)
Oahu 15— <i>Sanicula mariversa</i> —f	19 ha (46 ac)	20 ha (49 ac)		39 ha (95 ac)
Oahu 20— <i>Sanicula purpurea</i> —a	366 ha (903 ac)	289 ha (715 ac)	46 ha (114 ac)	701 ha (1,732 ac)
Oahu 3— <i>Schiedea hookeri</i> —a	22 ha (56 ac)			22 ha (56 ac)
Oahu 4— <i>Schiedea hookeri</i> —b	710 ha (1,755 ac)			710 ha (1,755 ac)
Oahu 4— <i>Schiedea hookeri</i> —c	248 ha (612 ac)			248 ha (612 ac)
Oahu 4— <i>Schiedea hookeri</i> —d	31 ha (78 ac)			31 ha (78 ac)
Oahu 15— <i>Schiedea hookeri</i> —e			14 ha (34 ac)	14 ha (34 ac)
Oahu 15— <i>Schiedea hookeri</i> —f		10 ha (25 ac)		10 ha (25 ac)
Oahu 15— <i>Schiedea hookeri</i> —g	33 ha (81 ac)	<1 ha (<1 ac)	50 ha (123 ac)	83 ha (204 ac)
Oahu 4— <i>Schiedea kaalae</i> —a	426 ha (1,051 ac)			426 ha (1,051 ac)
Oahu 15— <i>Schiedea kaalae</i> —b		134 ha (331 ac)		134 ha (331 ac)
Oahu 15— <i>Schiedea kaalae</i> —c		22 ha (53 ac)		22 ha (53 ac)
Oahu 15— <i>Schiedea kaalae</i> —d		39 ha (97 ac)		39 ha (97 ac)
Oahu 20— <i>Schiedea kaalae</i> —e	371 ha (915 ac)	8 ha (19 ac)		379 ha (934 ac)
Oahu 21— <i>Schiedea kaalae</i> —f	6 ha (15 ac)	99 ha (245 ac)		105 ha (260 ac)
Oahu 1— <i>Schiedea kealiae</i> —a	145 ha (357 ac)	49 ha (121 ac)		194 ha (478 ac)
Oahu 4— <i>Schiedea nuttallii</i> —a	527 ha (1,304 ac)			527 ha (1,304 ac)
Oahu 15— <i>Schiedea nuttallii</i> —b	1 ha (1 ac)	140 ha (346 ac)		141 ha (347 ac)
Oahu 15— <i>Schiedea nuttallii</i> —c		41 ha (102 ac)		41 ha (102 ac)
Oahu 1— <i>Sesbania tomentosa</i> —a	101 ha (250 ac)	<1 ha (<1 ac)	<1 ha (<1 ac)	101 ha (250 ac)
Oahu 18— <i>Sesbania tomentosa</i> —b	5 ha (12 ac)			5 ha (12 ac)
Oahu 4— <i>Silene lanceolata</i> —a	113 ha (281 ac)			113 ha (281 ac)
Oahu 15— <i>Silene perlmanii</i> —a	29 ha (73 ac)		36 ha (89 ac)	65 ha (162 ac)
Oahu 15— <i>Silene perlmanii</i> —b		5 ha (12 ac)		5 ha (12 ac)
Oahu 15— <i>Silene perlmanii</i> —c	18 ha (46 ac)		31 ha (78 ac)	49 ha (124 ac)
Oahu 15— <i>Silene perlmanii</i> —d		52 ha (130 ac)		52 ha (130 ac)
Oahu 4— <i>Solanum sandwicense</i> —a	104 ha (258 ac)			104 ha (258 ac)
Oahu 15— <i>Solanum sandwicense</i> —b	<1 ha (<1 ac)	146 ha (361 ac)		146 ha (361 ac)
Oahu 15— <i>Solanum sandwicense</i> —c	<1 ha (<1 ac)	78 ha (192 ac)		78 ha (192 ac)
Oahu 5— <i>Spermolepis hawaiiensis</i> —a	20 ha (51 ac)	1 ha (2 ac)		21 ha (53 ac)

TABLE 3.—APPROXIMATE CRITICAL HABITAT DESIGNATED AREA BY UNIT AND LANDOWNERSHIP OR JURISDICTION, OAHU, CITY AND COUNTY OF HONOLULU, HAWAII ¹—Continued

Unit name	State/local	Private	Federal	Total
Oahu 31— <i>Spermolepis hawaiiensis</i> —b	116 ha (286 ac) .....	.....	.....	116 ha (286 ac)
Oahu 15— <i>Stenogyne kanehoana</i> —a	1 ha (2 ac)	138 ha (342 ac)	1 ha (3 ac)	140 ha (347 ac)
Oahu 15— <i>Stenogyne kanehoana</i> —b	1 ha (2 ac)	42 ha (105 ac) .....	.....	43 ha (107 ac)
Oahu 4— <i>Tetramolopium filiforme</i> —a	111 ha (273 ac) .....	.....	.....	111 ha (273 ac)
Oahu 4— <i>Tetramolopium lepidotum</i> ssp. <i>lepidotum</i> —a.	167 ha (413 ac) .....	.....	.....	167 ha (413 ac)
Oahu 4— <i>Tetramolopium lepidotum</i> ssp. <i>lepidotum</i> —b.	23 ha (56 ac) .....	.....	.....	23 ha (56 ac)
Oahu 15— <i>Tetramolopium lepidotum</i> ssp. <i>lepidotum</i> —c.	.....	.....	11 ha (28 ac)	11 ha (28 ac)
Oahu 15— <i>Tetramolopium lepidotum</i> ssp. <i>lepidotum</i> —d.	34 ha (84 ac)	12 ha (29 ac)	48 ha (120 ac)	94 ha (233 ac)
Oahu 15— <i>Tetramolopium lepidotum</i> ssp. <i>lepidotum</i> —e.	<1 ha (1 ac)	1 ha (2 ac) .....	.....	1 ha (3 ac)
Oahu 15— <i>Tetramolopium lepidotum</i> ssp. <i>lepidotum</i> —f.	37 ha (92 ac)	182 ha (450 ac)	40 ha (99 ac)	259 ha (641 ac)
Oahu 20— <i>Tetraplasandra gymnocarpa</i> —a ...	454 ha (1,122 ac)	3 ha (7 ac) .....	.....	457 ha (1,129 ac)
Oahu 20— <i>Tetraplasandra gymnocarpa</i> —b ...	71 ha (175 ac)	32 ha (79 ac)	132 ha (327 ac)	235 ha (581 ac)
Oahu 20— <i>Tetraplasandra gymnocarpa</i> —c ...	119 ha (295 ac)	292 ha (723 ac) .....	.....	411 ha (1,018 ac)
Oahu 20— <i>Tetraplasandra gymnocarpa</i> —d ...	121 ha (299 ac)	231 ha (571 ac)	10 ha (24 ac)	362 ha (894 ac)
Oahu 35— <i>Tetraplasandra gymnocarpa</i> —e ...	152 ha (377 ac) .....	.....	.....	152 ha (377 ac)
Oahu 35— <i>Tetraplasandra gymnocarpa</i> —f ...	131 ha (323 ac)	82 ha (205 ac) .....	.....	213 ha (528 ac)
Oahu 20— <i>Trematolobelia singularis</i> —a	58 ha (147 ac)	27 ha (69 ac)	1 ha (3 ac)	86 ha (219 ac)
Oahu 20— <i>Trematolobelia singularis</i> —b	1 ha (3 ac)	9 ha (22 ac)	<1 ha (1 ac)	10 ha (26 ac)
Oahu 34— <i>Trematolobelia singularis</i> —c	<1 ha (1 ac)	2 ha (4 ac) .....	.....	2 ha (5 ac)
Oahu 35— <i>Trematolobelia singularis</i> —d	13 ha (33 ac) .....	.....	.....	13 ha (33 ac)
Oahu 35— <i>Trematolobelia singularis</i> —e	23 ha (56 ac)	3 ha (8 ac) .....	.....	26 ha (64 ac)
Oahu 4— <i>Urera kaalae</i> —a	53 ha (133 ac) .....	.....	.....	53 ha (133 ac)
Oahu 4— <i>Urera kaalae</i> —b	17 ha (43 ac) .....	.....	.....	17 ha (43 ac)
Oahu 15— <i>Urera kaalae</i> —c .....	.....	224 ha (555 ac)	<1 ha (<1 ac)	224 ha (555 ac)
Oahu 15— <i>Urera kaalae</i> —d .....	.....	35 ha (87 ac) .....	.....	35 ha (87 ac)
Oahu 15— <i>Urera kaalae</i> —e	13 ha (31 ac) .....	.....	38 ha (94 ac)	51 ha (125 ac)
Oahu 15— <i>Urera kaalae</i> —f	2 ha (5 ac)	80 ha (197 ac) .....	.....	82 ha (202 ac)
Oahu 1— <i>Vigna o-wahuensis</i> —a	180 ha (447 ac) .....	.....	.....	180 ha (447 ac)
Oahu 24— <i>Vigna o-wahuensis</i> —b	4 ha (12 ac) .....	.....	.....	4 ha (12 ac)
Oahu 25— <i>Vigna o-wahuensis</i> —c	4 ha (9 ac) .....	.....	.....	4 ha (9 ac)
Oahu 26— <i>Vigna o-wahuensis</i> —d	26 ha (63 ac) .....	.....	.....	26 ha (63 ac)
Oahu 4— <i>Viola chamissoniana</i> ssp. <i>chamissoniana</i> —a.	199 ha (491 ac) .....	.....	.....	199 ha (491 ac)
Oahu 4— <i>Viola chamissoniana</i> ssp. <i>chamissoniana</i> —b.	10 ha (25 ac) .....	.....	.....	10 ha (25 ac)
Oahu 4— <i>Viola chamissoniana</i> ssp. <i>chamissoniana</i> —c.	22 ha (55 ac) .....	.....	.....	22 ha (55 ac)
Oahu 10— <i>Viola chamissoniana</i> ssp. <i>chamissoniana</i> —d.	.....	.....	6 ha (15 ac)	6 ha (15 ac)
Oahu 15— <i>Viola chamissoniana</i> ssp. <i>chamissoniana</i> —e.	.....	.....	13 ha (31 ac)	13 ha (31 ac)
Oahu 15— <i>Viola chamissoniana</i> ssp. <i>chamissoniana</i> —f.	.....	11 ha (28 ac)	18 ha (44 ac)	29 ha (72 ac)
Oahu 20— <i>Viola oahuensis</i> —a	402 ha (994 ac)	373 ha (923 ac)	125 ha (308 ac)	900 ha (2,225 ac)
Oahu 35— <i>Viola oahuensis</i> —b	74 ha (186 ac) .....	.....	.....	74 ha (186 ac)
Grand Total *	9,035 ha (22,326 ac)	10,985 ha (27,143 ac)	2,254 ha (5,571 ac) ...	2,274 ha (55,040 ac)

¹Area differences due to digital mapping discrepancies between TMK data (GDSI 2000) and USGS coastline, or differences due to rounding.
 * Totals take into consideration overlapping individual species units.

TABLE 4.—APPROXIMATE FINAL CRITICAL HABITAT AREA (HA (AC)), ESSENTIAL AREA, AND EXCLUDED AREA

Area considered essential	33,179 ha 81,987 ac
Area not included because of species management or protection/ Area excluded under 4(b)(2).	10,905 ha 26,946 ac
Final Critical Habitat	22,274 ha 55,040 ac

Critical habitat includes habitat for these 99 species primarily in the upland portions of Oahu, as well as some coastal and off-shore lands. Lands designated as critical habitat have been divided into a total of 304 units. A brief description of each unit is presented below.

Oahu 4—*Abutilon sandwicense*—a

This unit is critical habitat for *Abutilon sandwicense* and is 604 ha

(1,492 ac) on State (Mokuleia Forest Reserve and Kaala NAR) and private land, containing a portion of Dupont Trail. This unit provides habitat for 5 populations of 300 mature, reproducing individuals of the short-lived perennial *Abutilon sandwicense* and is currently occupied by 56 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the

expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, steep slopes or gulches in dry to mesic lowland forest. This unit is geographically separated from the other five units designated as critical habitat for this island-endemic species, in order to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 4—*Abutilon sandwicense*—b

This unit is critical habitat for *Abutilon sandwicense* and is 26 ha (65 ac) on State land. This unit contains no named natural features. This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Abutilon sandwicense* and is currently occupied by 40 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, steep slopes or gulches in dry to mesic lowland forest. This unit is geographically separated from the other five units designated as critical habitat for this island-endemic species, in order to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 4—*Abutilon sandwicense*—c

This unit is critical habitat for *Abutilon sandwicense* and is 41 ha (102 ac) on State land. This unit contains no named natural features. This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Abutilon sandwicense* and is currently occupied by 4 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, steep slopes or gulches in dry to mesic lowland forest. This unit is geographically separated from the other five units designated as critical habitat for this island-endemic species, in order to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 15—*Abutilon sandwicense*—d

This unit is critical habitat for *Abutilon sandwicense* and is 49 ha (121 ac) on Federal land (Honouliuli Preserve). This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Abutilon sandwicense* and is currently occupied by 2 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, steep slopes or gulches in dry to mesic lowland forest. This unit is geographically separated from the other five units designated as critical habitat for this island-endemic species, in order to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 15—*Abutilon sandwicense*—e

This unit is critical habitat for *Abutilon sandwicense* and is 33 ha (81 ac) on State and Federal land (Lualualei Naval Reservation). This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Abutilon sandwicense* and is currently occupied by 7 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, steep slopes or gulches in dry to mesic lowland forest. This unit is geographically separated from the other five units designated as critical habitat for this island-endemic species, in order to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 17—*Abutilon sandwicense*—f

This unit is critical habitat for *Abutilon sandwicense* and is 30 ha (74 ac) on State land (Nanakuli Forest Reserve). This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Abutilon sandwicense* and is currently occupied by 115 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species

and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, steep slopes or gulches in dry to mesic lowland forest. This unit is geographically separated from the other five units designated as critical habitat for this island-endemic species, in order to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 20—*Adenophorus periens*—a

This unit is critical habitat for *Adenophorus periens* and is 711 ha (1,759 ac) on State (Kaipapau Forest Reserve, Hauula Forest Reserve, Sacred Falls State Park, and Kahana Valley State Park) and private land. This unit contains portions of the Summit Trail and Puu Pauao Summit. This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Adenophorus periens* and is currently unoccupied. This unit is essential to the conservation of the species because it supports habitat that is essential to the establishment of additional populations on Oahu in order to reach recovery goals. The habitat features contained in this unit that are essential for this species include, but are not limited to, tree trunks in *Metrosideros polymorpha* or *Metrosideros rugosa* wet forests. This unit is geographically separated from critical habitat designated on Kauai, Molokai, and Maui for this species in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 4—*Alectryon macrococcus*—a

This is critical habitat for *Alectryon macrococcus* and is 23 ha (58 ac) on State land. This unit contains no named natural features. This unit provides habitat for one population of 100 mature, reproducing individuals of the long-lived perennial *Alectryon macrococcus* and is currently occupied by 78 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is essential for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, slopes, ridges, or gulches within mesic lowland forests. This unit is geographically separated from critical habitat designated elsewhere on Oahu and on Kauai, Molokai, and Maui for

this species in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 15—*Alectryon macrococcus*—b

This is critical habitat for *Alectryon macrococcus* and is 112 ha (278 ac) on private (Honouliuli Preserve) land. This unit contains no named natural features. This unit provides habitat for one population of 100 mature, reproducing individuals of the long-lived perennial *Alectryon macrococcus* and is currently occupied by 83 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is essential for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, slopes, ridges, or gulches within mesic lowland forests. This unit provides for one population within this multi-island species' historical range on Oahu that is geographically separated from critical habitat designated on Oahu and other islands for this species in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 4—*Alsinidendron obovatum*—a

This is critical habitat for *Alsinidendron obovatum* and is 176 ha (436 ac) on State land (Mokuleia Forest Reserve and Pahole NAR). This unit provides habitat for five populations of 300 mature, reproducing individuals of the short-lived perennial *Alsinidendron obovatum* and is currently occupied by 3 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, ridges and slopes in lowland diverse mesic forest dominated by *Acacia koa* and *Metrosideros polymorpha*. Although we do not believe that enough habitat currently exists to reach the recovery goal of 8 to 10 populations for this species, this unit is geographically separated from the other two units designated as critical habitat for this island-endemic species to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 4—*Alsinidendron obovatum*—b

This is critical habitat for *Alsinidendron obovatum* and is 25 ha (62 ac) on State land (Waianae Kai Forest Reserve). This unit contains no named natural features. This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Alsinidendron obovatum* and is currently unoccupied. This unit is essential to the conservation of the species because it supports habitat that is necessary for the establishment of additional populations on Oahu in order to reach recovery goals. The habitat features contained in this unit that are essential for this species include, but are not limited to, ridges and slopes in lowland diverse mesic forest dominated by *Acacia koa* and *Metrosideros polymorpha*. Although we do not believe that enough habitat currently exists to reach the recovery goal of 8 to 10 populations for this species, this unit is geographically separated from the other two units designated as critical habitat for this island-endemic species to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 15—*Alsinidendron obovatum*—c

This is critical habitat for *Alsinidendron obovatum* and is 32 ha (76 ac) on Federal and State land (Nanakuli Forest Reserve), containing a portion of Palikea Summit. This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Alsinidendron obovatum* and is currently unoccupied. This unit is essential to the conservation of the species because it supports habitat that is necessary for the establishment of additional populations on Oahu in order to reach recovery goals. The habitat features contained in this unit that are essential for this species include, but are not limited to, ridges and slopes in lowland diverse mesic forest dominated by *Acacia koa* and *Metrosideros polymorpha*. Although we do not believe that enough habitat currently exists to reach the recovery goal of 8 to 10 populations for this species, this unit is geographically separated from the other two units designated as critical habitat for this island-endemic species to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 4—*Alsinidendron trinerve*—a

This unit is critical habitat for *Alsinidendron trinerve* and is 60 ha (149 ac) on State land (Mokuleia Forest

Reserve, Waianae Kai Forest Reserve, and Kaala NAR), containing a portion of Kaala Summit. This unit provides habitat for 4 populations of 300 mature, reproducing individuals of the short-lived perennial *Alsinidendron trinerve* and is currently occupied by 10 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, slopes in wet forest or the wetter portions of diverse mesic forest dominated by *Metrosideros polymorpha* or *Ilex anomala* and *Metrosideros polymorpha* montane wet forest. We do not believe that enough habitat currently exists to reach the recovery goal of 8 to 10 populations for this species. However, we have identified habitat for an additional three populations on Army lands at Schofield Barracks Military Reservation (see “*Analysis of Impacts Under Section 4(b)(2): Other Impacts*”).

Oahu 2—*Bonamia menziesii*—a

This unit is critical habitat for *Bonamia menziesii* and is 21 ha (51 ac) on State land (Kaena Point State Park). This unit, in combination with unit Oahu 3—*Bonamia menziesii*—b, provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Bonamia menziesii* and is currently occupied by 4 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, steep slopes or level ground in dry or mesic forest in open or closed canopy. This unit, together with unit Oahu 3—*Bonamia menziesii*—b, is geographically separated from critical habitat designated elsewhere on Oahu and on Kauai and Maui for this species in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 3—*Bonamia menziesii*—b

This unit is critical habitat for *Bonamia menziesii* and is 42 ha (104 ac) on State land (Kaena Point State Park and Kuaokala Forest Reserve). This unit, in combination with unit Oahu 2—*Bonamia menziesii*—a, provides habitat for one population of 300 mature,

reproducing individuals of the short-lived perennial *Bonamia menziesii* and is currently occupied by 18 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, steep slopes or level ground in dry or mesic forest in open or closed canopy. This unit, together with units Oahu 2—*Bonamia menziesii*—a, is geographically separated from critical habitat designated elsewhere on Oahu and on Kauai and Maui for this species in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 4—*Bonamia menziesii*—c

This unit is critical habitat for *Bonamia menziesii* and is 94 ha (233 ac) on State (Mokuleia Forest Reserve) and private land. This unit contains no named natural features. This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Bonamia menziesii* and is currently occupied by 5 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, steep slopes or level ground in dry or mesic forest in open or closed canopy. This unit is geographically separated from critical habitat designated elsewhere on Oahu and on Kauai and Maui for this species in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 17—*Bonamia menziesii*—d

This unit is critical habitat for *Bonamia menziesii* and is 77 ha (191 ac) on State land (Nanakuli Forest Reserve). This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Bonamia menziesii* and is currently occupied by one individual. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential

for this species include, but are not limited to, steep slopes or level ground in dry or mesic forest in open or closed canopy. This unit is geographically separated from critical habitat designated elsewhere on Oahu and on Kauai and Maui for this species in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 35—*Bonamia menziesii*—e

This unit is critical habitat for *Bonamia menziesii* and is 374 ha (924 ac) on State (Honolulu Watershed Forest Reserve) and private land. This unit contains a portion of Kulepiamoia Ridge and Laulaupoe Gulch. This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Bonamia menziesii* and is currently occupied by 5 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, steep slopes or level ground in dry or mesic forest in open or closed canopy. This unit is geographically separated from critical habitat designated elsewhere on Oahu and on Kauai and Maui for this species in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 4—*Cenchrus agrimonioides*—a

This unit is critical habitat for *Cenchrus agrimonioides* and is 529 ha (1,306 ac) on State land (Mokuleia Forest Reserve, and Pahole and Kaala NAR). This unit provides habitat for 4 populations of 300 mature, reproducing individuals of the short-lived perennial *Cenchrus agrimonioides* and is currently occupied by 3 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, dry ridges or upper slopes or ridges in lowland mixed mesic forest. It provides habitat for the westernmost range of the species. This unit is geographically separated from critical habitat designated elsewhere on Oahu and on Maui for this species in order to avoid all recovery populations being

destroyed by one naturally-occurring catastrophic event.

Oahu 4—*Cenchrus agrimonioides*—b

This unit is critical habitat for *Cenchrus agrimonioides* and is 40 ha (99 ac) on State land (Waianae Kai Forest Reserve). This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Cenchrus agrimonioides* and is currently occupied by 9 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, dry ridges or upper slopes or ridges in lowland mixed mesic forest. It provides habitat for the westernmost range of the species. This unit is geographically separated from critical habitat designated elsewhere on Oahu and on Maui for this species in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 15—*Cenchrus agrimonioides*—c

This unit is critical habitat for *Cenchrus agrimonioides* and is 200 ha (495 ac) on private land (Honouliuli Preserve). This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Cenchrus agrimonioides* and is currently occupied by 45 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, dry ridges or upper slopes or ridges in lowland mixed mesic forest. It provides habitat for the westernmost range of the species. This unit is geographically separated from critical habitat designated elsewhere on Oahu and on Maui for this species in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 15—*Cenchrus agrimonioides*—d

This unit is critical habitat for *Cenchrus agrimonioides* and is 117 ha (290 ac) on private land (Honouliuli Preserve). This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Cenchrus agrimonioides*

and is currently occupied by 2 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, dry ridges or upper slopes or ridges in lowland mixed mesic forest. It provides habitat for the westernmost range of the species. This unit is geographically separated from critical habitat designated elsewhere on Oahu and on Maui for this species in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 1—*Centaurium sebaeoides*—a

This unit is critical habitat for *Centaurium sebaeoides* and is 61 ha (149 ac) on State (Kaena Point NAR), private, and Federal land. This unit contains no named natural features. This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Centaurium sebaeoides* and is currently occupied by one plant. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, volcanic or clay soils or cliffs in arid coastal areas or on coral plains. This unit is geographically separated from critical habitat designated elsewhere on Oahu and on Kauai, Molokai, and Maui for this species in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 27—*Centaurium sebaeoides*—b

This unit is critical habitat for *Centaurium sebaeoides* and is 30 ha (74 ac) on State land, containing a portion of the eastern flank of Koko Head Crater. This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Centaurium sebaeoides* and is currently occupied by one individual. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential

for this species include, but are not limited to, volcanic or clay soils or cliffs in arid coastal areas or on coral plains. This unit is geographically separated from critical habitat designated elsewhere on Oahu and on Kauai, Molokai, and Maui for this species in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 1—*Chamaesyce celastroides* var. *kaenana*—a

This unit is critical habitat for *Chamaesyce celastroides* var. *kaenana* and is 233 ha (571 ac) on State land (Kaena Point State Park). This unit provides habitat for 2 populations of 300 mature, reproducing individuals of the short-lived perennial *Chamaesyce celastroides* and is currently occupied by 543 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, windward talus slopes, leeward rocky cliffs, open grassy slopes, or vegetated cliff faces in coastal dry shrubland. Although we do not believe that enough habitat currently exists to reach the recovery goal of 8 to 10 populations for this species, this unit is geographically separated from the other four units designated as critical habitat for this island-endemic species to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 3—*Chamaesyce celastroides* var. *kaenana*—b

This unit is critical habitat for *Chamaesyce celastroides* var. *kaenana* and is 4 ha (11 ac) on State land (Kaena Point State Park and Kuaokala Forest Reserve). This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Chamaesyce celastroides* and is currently occupied by one individual. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, windward talus slopes, leeward rocky cliffs, open grassy slopes, or vegetated cliff faces in coastal dry shrubland. Although we do not believe

that enough habitat currently exists to reach the recovery goal of 8 to 10 populations for this species, this unit is geographically separated from the other four units designated as critical habitat for this island-endemic species to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 4—*Chamaesyce celastroides* var. *kaenana*—c

This unit is critical habitat for *Chamaesyce celastroides* var. *kaenana* and is 43 ha (107 ac) on State land (Waianae Kai Forest Reserve). This unit contains no named natural features. This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Chamaesyce celastroides* and is currently unoccupied. This unit is essential to the conservation of the species because it supports habitat that is necessary for the establishment of additional populations on Oahu in order to reach recovery goals. The habitat features contained in this unit that are essential for this species include, but are not limited to, windward talus slopes, leeward rocky cliffs, open grassy slopes, or vegetated cliff faces in coastal dry shrubland. Although we do not believe that enough habitat currently exists to reach the recovery goal of 8 to 10 populations for this species, this unit is geographically separated from the other four units designated as critical habitat for this island-endemic species to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 5—*Chamaesyce celastroides* var. *kaenana*—d

This unit is critical habitat for *Chamaesyce celastroides* var. *kaenana* and is 36 ha (89 ac) on State and private land, containing a portion of Ohikilolo Ridge. This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Chamaesyce celastroides* and is currently occupied by 2 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, windward talus slopes, leeward rocky cliffs, open grassy slopes, or vegetated cliff faces in coastal dry shrubland. Although we do not believe that enough habitat currently exists to reach the recovery goal of 8 to 10

populations for this species, this unit is geographically separated from the other four units designated as critical habitat for this island-endemic species to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 35—*Chamaesyce celastroides* var. *kaenana*—e

This unit is critical habitat for *Chamaesyce celastroides* var. *kaenana* and is 238 ha (587 ac) on State and private land. This unit contains a portion of Hawaii Loa Ridge, Kupaua Valley, Kuleplamo Ridge, and Pia Valley. This unit provides habitat for 2 populations of 300 mature, reproducing individuals of the short-lived perennial *Chamaesyce celastroides* and is currently unoccupied. The habitat features contained in this unit that are essential for this species include, but are not limited to, windward talus slopes, leeward rocky cliffs, open grassy slopes, or vegetated cliff faces in coastal dry shrubland. Although we do not believe that enough habitat currently exists to reach the recovery goal of 8 to 10 populations for this species, this unit is geographically separated from the other four units designated as critical habitat for this island-endemic species to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 20—*Chamaesyce deppeana*—a

This unit is critical habitat for *Chamaesyce deppeana* and is 17 ha (41 ac) on State and private land, containing a portion of the Wilson Tunnel. This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Chamaesyce deppeana* and is currently unoccupied. This unit is essential to the conservation of the species because it supports habitat that is necessary for the establishment of additional populations on Oahu in order to reach recovery goals. The habitat features contained in this unit that are essential for this species include, but are not limited to, windward-facing ridge crests, cliff faces, and mixed native cliffs. Although we do not believe that enough habitat currently exists to reach the recovery goal of 8 to 10 populations for this species, this unit is geographically separated from the other unit designated as critical habitat for this island-endemic species to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 35—*Chamaesyce deppeana*—b

This unit is critical habitat for *Chamaesyce deppeana* and is 18 ha (46 ac) on State (Honolulu Watershed Forest Reserve) and private land, containing a portion of Nuuanu Pali. This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Chamaesyce deppeana* and is currently occupied by 50 individuals. This unit is essential to the conservation of the species because it supports habitat that is necessary for the establishment of additional populations on Oahu in order to reach recovery goals. The habitat features contained in this unit that are essential for this species include, but are not limited to, windward-facing ridge crests, cliff faces, and mixed native cliffs. Although we do not believe that enough habitat currently exists to reach the recovery goal of 8 to 10 populations for this species, this unit is geographically separated from the other unit designated as critical habitat for this island-endemic species to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 4—*Chamaesyce herbstii*—a

This unit is critical habitat for *Chamaesyce herbstii* and is 429 ha (1,059 ac) on State land (Mokuleia Forest Reserve and Pahole NAR). This unit provides habitat for 5 populations of 300 mature, reproducing individuals of the short-lived perennial *Chamaesyce herbstii* and is currently occupied by 60 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, shaded gulch bottoms and slopes in mesic *Acacia koa*-*Metrosideros polymorpha* lowland forests or diverse mesic forests. Although we do not believe that enough habitat currently exists to reach the recovery goal of 8 to 10 populations for this species, this unit is geographically separated from the other two units designated as critical habitat for this island-endemic species to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 15—*Chamaesyce herbstii*—b

This unit is critical habitat for *Chamaesyce herbstii* and is 47 ha (116 ac) on private land (Honouliuli

Preserve). This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Chamaesyce herbstii* and is currently unoccupied. This unit is essential to the conservation of the species because it supports habitat that is necessary for the establishment of additional populations on Oahu in order to reach recovery goals. The habitat features contained in this unit that are essential for this species include, but are not limited to, shaded gulch bottoms and slopes in mesic *Acacia koa*-*Metrosideros polymorpha* lowland forests or diverse mesic forests. Although we do not believe that enough habitat currently exists to reach the recovery goal of 8 to 10 populations for this species, this unit is geographically separated from the other two units designated as critical habitat for this island-endemic species to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 15—*Chamaesyce herbstii*—c

This unit is critical habitat for *Chamaesyce herbstii* and is 21 ha (53 ac) on private land (Honouliuli Preserve). This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Chamaesyce herbstii* and is currently occupied by 2 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, shaded gulch bottoms and slopes in mesic *Acacia koa*-*Metrosideros polymorpha* lowland forests or diverse mesic forests. Although we do not believe that enough habitat currently exists to reach the recovery goal of 8 to 10 populations for this species, this unit is geographically separated from the other two units designated as critical habitat for this island-endemic species to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 9—*Chamaesyce kuwaleana*—a

This unit is critical habitat for *Chamaesyce kuwaleana* and is 27 ha (53 ac) on Federal land (Lualualei Naval Reservation), containing a portion of Mauna Kuwale. This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Chamaesyce*

kuwaleana and is currently occupied by one individual. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, thin guano soil on basaltic rock; arid, exposed volcanic cliffs; dry or mesic rocky ridges; or sparsely vegetated slopes. Although we do not believe that enough habitat currently exists to reach the recovery goal of 8 to 10 populations for this species, this unit is geographically separated from the other six units designated as critical habitat for this island-endemic species to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 11—*Chamaesyce kuwaleana*—b

This unit is critical habitat for *Chamaesyce kuwaleana* and is 53 ha (130 ac) on Federal (Lualualei Naval Reservation) and State land (Waianae Kai Forest Reserve), containing a portion of Kauaopuu Summit. This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Chamaesyce kuwaleana* and is currently unoccupied. This unit is essential to the conservation of the species because it supports habitat that is necessary for the establishment of additional populations on Oahu in order to reach recovery goals. The habitat features contained in this unit that are essential for this species include, but are not limited to, thin guano soil on basaltic rock; arid, exposed volcanic cliffs; dry or mesic rocky ridges; or sparsely vegetated slopes. Although we do not believe that enough habitat currently exists to reach the recovery goal of 8 to 10 populations for this species, this unit is geographically separated from the other six units designated as critical habitat for this island-endemic species to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 12—*Chamaesyce kuwaleana*—c

This unit is critical habitat for *Chamaesyce kuwaleana* and is 37 ha (92 ac) on State land, containing a portion of Puu Kailio. This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Chamaesyce kuwaleana* and is currently unoccupied. This unit is essential to the conservation of the species because it supports habitat that

is necessary for the establishment of additional populations on Oahu in order to reach recovery goals. The habitat features contained in this unit that are essential for this species include, but are not limited to, thin guano soil on basaltic rock; arid, exposed volcanic cliffs; dry or mesic rocky ridges; or sparsely vegetated slopes. Although we do not believe that enough habitat currently exists to reach the recovery goal of 8 to 10 populations for this species, this unit is geographically separated from the other six units designated as critical habitat for this island-endemic species to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 15—*Chamaesyce kuwaleana*—d

This unit is critical habitat for *Chamaesyce kuwaleana* and is 184 ha (454 ac) on State and private land, containing a portion of Puu Heleakala. This unit provides habitat for 2 populations of 300 mature, reproducing individuals of the short-lived perennial *Chamaesyce kuwaleana* and is currently unoccupied. This unit is essential to the conservation of the species because it supports habitat that is necessary for the establishment of additional populations on Oahu in order to reach recovery goals. The habitat features contained in this unit that are essential for this species include, but are not limited to, thin guano soil on basaltic rock; arid, exposed volcanic cliffs; dry or mesic rocky ridges; or sparsely vegetated slopes. Although we do not believe that enough habitat currently exists to reach the recovery goal of 8 to 10 populations for this species, this unit is geographically separated from the other six units designated as critical habitat for this island-endemic species to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 22—*Chamaesyce kuwaleana*—e

This unit is critical habitat for *Chamaesyce kuwaleana* and is 1 ha (3 ac) on State land (Moku Manu Island State Seabird Sanctuary). This unit, in combination with unit Oahu 23—*Chamaesyce kuwaleana*—f, provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Chamaesyce kuwaleana* and is currently unoccupied. This unit is essential to the conservation of the species because it supports habitat that is necessary for the establishment of additional populations on Oahu in order to reach recovery goals. The habitat features contained in this unit that are essential for this

species include, but are not limited to, thin guano soil on basaltic rock; arid, exposed volcanic cliffs; dry or mesic rocky ridges; or sparsely vegetated slopes. This unit, together with unit 23—*Chamaesyce kuwaleana*—f, provides for one population within this island-endemic species' historical range on Oahu. Although we do not believe that enough habitat currently exists to reach the recovery goal of 8 to 10 populations for this species, this unit is geographically separated from the other six units designated as critical habitat for this island-endemic species to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 23—*Chamaesyce kuwaleana*—f

This unit is critical habitat for *Chamaesyce kuwaleana* and is 6 ha (15 ac) on State land (Moku Manu Island State Seabird Sanctuary). This unit, in combination with unit Oahu 22—*Chamaesyce kuwaleana*—e, provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Chamaesyce kuwaleana* and is currently unoccupied. This unit is essential to the conservation of the species because it supports habitat that is necessary for the establishment of additional populations on Oahu in order to reach recovery goals. The habitat features contained in this unit that are essential for this species include, but are not limited to, thin guano soil on basaltic rock; arid, exposed volcanic cliffs; dry or mesic rocky ridges; or sparsely vegetated slopes. This unit, together with unit 22—*Chamaesyce kuwaleana*—e, provides for one population within this island-endemic species' historical range on Oahu. Although we do not believe that enough habitat currently exists to reach the recovery goal of 8 to 10 populations for this species, this unit is geographically separated from the other six units designated as critical habitat for this island-endemic species to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 26—*Chamaesyce kuwaleana*—g

This unit is critical habitat for *Chamaesyce kuwaleana* and is 26 ha (63 ac) on State land (Manana Island State Seabird Sanctuary), containing a portion of Manana Island. This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Chamaesyce kuwaleana* and is currently unoccupied. This unit is essential to the conservation of the species because it supports habitat that is necessary for the

establishment of additional populations on Oahu in order to reach recovery goals. The habitat features contained in this unit that are essential for this species include, but are not limited to, thin guano soil on basaltic rock; arid, exposed volcanic cliffs; dry or mesic rocky ridges; or sparsely vegetated slopes. Although we do not believe that enough habitat currently exists to reach the recovery goal of 8 to 10 populations for this species, this unit is geographically separated from the other six units designated as critical habitat for this island-endemic species to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 20—*Chamaesyce rockii*—a

This unit is critical habitat for *Chamaesyce rockii* and is 826 ha (2,039 ac) on Federal (Oahu Forest National Wildlife Refuge), private, and State land (Kaipapau Forest Reserve, Hauula Forest Reserve, Sacred Falls State Park, Kahana Valley State Park, and Ewa Forest Reserve). This unit contains a portion of Puu Kainapua, Koolau Summit Trail, Puu Pauao, and Puu Kaaumakua. This unit provides habitat for 3 populations of 300 mature, reproducing individuals of the short-lived perennial *Chamaesyce rockii* and is currently occupied by 563 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present populations. The habitat features contained in this unit that are essential for this species include, but are not limited to, gulch slopes, gulch bottoms, and ridge crests in wet *Metrosideros polymorpha-Dicranopteris linearis* forest and shrubland. This unit is geographically separated from the other two units designated as critical habitat for this island-endemic species, in order to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 20—*Chamaesyce rockii*—b

This unit is critical habitat for *Chamaesyce rockii* and is 197 ha (487 ac) on private and State land (Kahana Valley State Park), containing Puu Kaaumakua. This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Chamaesyce rockii* and is currently unoccupied. This unit is essential to the conservation of the species because it supports habitat that is necessary for the establishment of additional populations on Oahu in order to reach recovery goals. The habitat features contained in this unit that are

essential for this species include, but are not limited to, gulch slopes, gulch bottoms, and ridge crests in wet *Metrosideros polymorpha-Dicranopteris linearis* forest and shrubland. This unit is geographically separated from the other two units designated as critical habitat for this island-endemic species, in order to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 20—*Chamaesyce rockii*—c

This unit is critical habitat for *Chamaesyce rockii* and is 258 ha (639 ac) on State (Ewa Forest Reserve) and private land, containing a portion of Eleao Summit. This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Chamaesyce rockii* and is currently occupied by one individual. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, gulch slopes, gulch bottoms, and ridge crests in wet *Metrosideros polymorpha-Dicranopteris linearis* forest and shrubland. This unit is geographically separated from the other two units designated as critical habitat for this island-endemic species, in order to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 4—*Colubrina oppositifolia*—a

This unit is critical habitat for *Colubrina oppositifolia* and is 782 ha (1,935 ac) on private and State land (Mokuleia Forest Reserve and Kaala and Pahole NARs), containing a portion of Dupont Trail. This unit provides habitat for 3 populations of 100 mature, reproducing individuals of the long-lived *Colubrina oppositifolia* and is currently occupied by 53 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, lowland dry or mesic forests dominated by *Diospyros sandwicensis*. It provides habitat for the westernmost range of the species. This unit provides is geographically separated from critical

habitat designated on Maui for this species in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 4—*Ctenitis squamigera*—a

This unit is critical habitat for *Ctenitis squamigera* and is 120 ha (297 ac) on State land (Mokuleia Forest Reserve and Kaala NAR), containing a portion of Dupont Trail. This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Colubrina oppositifolia* and is currently occupied by 12 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, gentle to steep slopes in *Metrosideros polymorpha-Diospyros sandwicensis* mesic forest or diverse mesic forest. This unit is geographically separated from critical habitat designated on Kauai, Maui, and Molokai for this species in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 4—*Cyanea acuminata*—a

This unit is critical habitat for *Cyanea acuminata* and is 82 ha (205 ac) on State land (Mokuleia Forest Reserve, Kaala NAR, and Waianae Kai Forest Reserve). This unit provides habitat for 2 populations of 300 mature, reproducing individuals of the short-lived perennial *Cyanea acuminata* and is currently occupied by 20 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, slopes, ridges, or stream banks in *Metrosideros polymorpha-Dicranopteris linearis* or *Acacia koa-Metrosideros polymorpha* wet or mesic forest or shrubland, or *Diospyros sandwicensis-Metrosideros polymorpha* lowland mesic forest. This unit is geographically separated from the other unit designated as critical habitat for this island-endemic species, in order to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 20—*Cyanea acuminata*—b

This unit is critical habitat for *Cyanea acuminata* and is 2,522 ha (6,231 ac) on private and State land (Hauula Forest Reserve, Sacred Falls State Park, Kahana Valley State Park, Kaipapau Forest Reserve, and Waiahole Forest Reserve). This unit contains a portion of Castle Trail, Koolau Summit Trail, Puu Pauao, Puu Kaaumakua, Kipapa Trail, and Eleao Summit. This unit provides habitat for 3 populations of 300 mature, reproducing individuals of the short-lived perennial *Cyanea acuminata* and is currently occupied by 30 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, slopes, ridges, or stream banks in *Metrosideros polymorpha-Dicranopteris linearis* or *Acacia koa-Metrosideros polymorpha* wet or mesic forest or shrubland, or *Diospyros sandwicensis-Metrosideros polymorpha* lowland mesic forest. This unit is geographically separated from the other unit designated as critical habitat for this island-endemic species, in order to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 20—*Cyanea crispa*—a

This unit is critical habitat for *Cyanea crispa* and is 1,831 ha (4,525 ac) on private and State land (Hauula Forest Reserve, Sacred Falls State Park, and Kaipapau Forest Reserve). This unit contains Sacred Falls and a portion of Castle Trail. This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Cyanea crispa* and is currently occupied by 11 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, slopes, moist gullies, or stream banks in open mesic forests or closed wet forests. This unit is geographically separated from the other three units designated as critical habitat for this island-endemic species, in order to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 20—*Cyanea crispa*—b

This unit is critical habitat for *Cyanea crispa* and is 3,860 ha (9,529 ac) on private, Federal, and State land (Waiahole Forest Reserve, Kaneohe Forest Reserve, Keaiwa Heiau State Recreation Area, and Fort Shafter). This unit contains a portion of Aiea Loop Trail, Halawa Trail, Luluku Tunnel, Puu Kahuauuli, Puu Kawipoo, Puu Keahiakahoe, and Puu Uau. This unit provides habitat for 3 populations of 300 mature, reproducing individuals of the short-lived perennial *Cyanea crispa* and is currently unoccupied. This unit is essential to the conservation of the species because it supports habitat that is necessary for the establishment of additional populations on Oahu in order to reach recovery goals. The habitat features contained in this unit that are essential for this species include, but are not limited to, slopes, moist gullies, or stream banks in open mesic forests or closed wet forests. This unit is geographically separated from the other three units designated as critical habitat for this island-endemic species, in order to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 21—*Cyanea crispa*—c

This unit is critical habitat for *Cyanea crispa* and is 302 ha (747 ac) on private and State land (Kahana Valley State Park), containing a portion of Hidden Valley. This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Cyanea crispa* and is currently occupied by 13 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, slopes, moist gullies, or stream banks in open mesic forests or closed wet forests. This unit is geographically separated from the other three units designated as critical habitat for this island-endemic species, in order to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 35—*Cyanea crispa*—d

This unit is critical habitat for *Cyanea crispa* and is 1,336 ha (3,301 ac) on private and State land (Honolulu Watershed Forest Reserve). This unit contains a portion of Kaau Crater, Kainawaaunui Summit, Konahuanui

Summit, Manoa Falls, Manoa Tunnel, Mount Olympus, Palikea Summit, Puu Lanipo, and Waaloa Spring. This unit provides habitat for 3 populations of 300 mature, reproducing individuals of the short-lived perennial *Cyanea crispa* and is currently occupied by 27 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, slopes, moist gullies, or stream banks in open mesic forests or closed wet forests. This unit is geographically separated from the other three units designated as critical habitat for this island-endemic species, in order to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 20—*Cyanea grimesiana* ssp. *grimesiana*—a

This unit is critical habitat for *Cyanea grimesiana* ssp. *grimesiana* and is 2,634 ha (6,506 ac) on State (Ewa Forest Reserve and Keaiwa Heiau State Recreation Area) and private land. This unit contains a portion of Aiea Loop Trail, Puu Kawipoo, Puu Uau, and Waimano Trail. This unit provides habitat for 2 populations of 300 mature, reproducing individuals of the short-lived perennial *Cyanea grimesiana* ssp. *grimesiana* and is currently unoccupied. This unit is essential to the conservation of the species because it supports habitat that is necessary for the establishment of additional populations on Oahu in order to reach recovery goals. The habitat features contained in this unit that are essential for this species include, but are not limited to, rocky or steep slopes of stream banks in mesic forest often dominated by *Metrosideros polymorpha* or *Metrosideros polymorpha* and *Acacia koa*. It provides habitat for the westernmost range of the species. This unit is geographically separated from critical habitat designated elsewhere on Oahu and on Molokai and Maui for this species in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 35—*Cyanea grimesiana* ssp. *grimesiana*—b

This unit is critical habitat for *Cyanea grimesiana* ssp. *grimesiana* and is 330 ha (814 ac) on private and State land (Honolulu Watershed Forest Reserve). This unit contains no named natural features. This unit provides habitat for

one population of 300 mature, reproducing individuals of the short-lived perennial *Cyanea grimesiana* ssp. *grimesiana* and is currently occupied by 6 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, rocky or steep slopes of stream banks in mesic forest often dominated by *Metrosideros polymorpha* or *Metrosideros polymorpha* and *Acacia koa*. It provides habitat for the westernmost range of the species. This unit is geographically separated from critical habitat designated elsewhere on Oahu and on Molokai and Maui for this species in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 4—*Cyanea grimesiana* ssp. *obatae*—a

This unit is critical habitat for *Cyanea grimesiana* ssp. *obatae* and is 523 ha (1,289 ac) on State land (Mokuleia Forest Reserve and Pahole NAR). This unit provides habitat for 3 populations of 300 mature, reproducing individuals of the short-lived perennial *Cyanea grimesiana* ssp. *obatae* and is currently occupied by 4 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, steep, moist, shaded slopes in diverse mesic to wet lowland forests. This unit is geographically separated from the other three units designated as critical habitat for this island-endemic species, in order to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 15—*Cyanea grimesiana* ssp. *obatae*—b

This unit is critical habitat for *Cyanea grimesiana* ssp. *obatae* and is 185 ha (455 ac) on State, private, and Federal land (Lualualei Naval Reservation). This unit contains a portion of Puu Hapapa and Puu kanehoa. This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Cyanea grimesiana* ssp. *obatae* and is currently unoccupied. This unit is essential to the

conservation of the species because it supports habitat that is necessary for the establishment of additional populations on Oahu in order to reach recovery goals. The habitat features contained in this unit that are essential for this species include, but are not limited to, steep, moist, shaded slopes in diverse mesic to wet lowland forests. This unit is geographically separated from the other three units designated as critical habitat for this island-endemic species, in order to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 15—*Cyanea grimesiana* ssp. *obatae*—c

This unit is critical habitat for *Cyanea grimesiana* ssp. *obatae* and is 34 ha (84 ac) on private land (Honouliuli Preserve). This unit contains no named natural features. This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Cyanea grimesiana* ssp. *obatae* and is currently occupied by three individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, steep, moist, shaded slopes in diverse mesic to wet lowland forests. This unit is geographically separated from the other three units designated as critical habitat for this island-endemic species, in order to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 15—*Cyanea grimesiana* ssp. *obatae*—d

This unit is critical habitat for *Cyanea grimesiana* ssp. *obatae* and is 83 ha (205 ac) on State and private land (Honouliuli Preserve), containing the Palikea Summit. This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Cyanea grimesiana* ssp. *obatae* and is currently occupied by 5 plants. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not

limited to, steep, moist, shaded slopes in diverse mesic to wet lowland forests. This unit is geographically separated from the other three units designated as critical habitat for this island-endemic species, in order to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 20—*Cyanea humboltiana*—a

This unit is critical habitat for *Cyanea humboltiana* and is 503 ha (1,241 ac) on private and State land (Hauula Forest Reserve, Sacred Falls State Park, and Kaipapau Forest Reserve), containing a portion of the Koolau Summit Trail. This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Cyanea humboltiana* and is currently occupied by 9 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, wet *Metrosideros polymorpha-Dicranopteris linearis* lowland shrubland. This unit is geographically separated from the other four units designated as critical habitat for this island-endemic species, in order to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 20—*Cyanea humboltiana*—b

This unit is critical habitat for *Cyanea humboltiana* and is 127 ha (315 ac) on private and State land (Ewa Forest Reserve). This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Cyanea humboltiana* and is currently unoccupied. This unit is essential to the conservation of the species because it supports habitat that is necessary for the establishment of additional populations on Oahu in order to reach recovery goals. The habitat features contained in this unit that are essential for this species include, but are not limited to, wet *Metrosideros polymorpha-Dicranopteris linearis* lowland shrubland. This unit is geographically separated from the other four units designated as critical habitat for this island-endemic species, in order to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 20—*Cyanea humboltiana*—c

This unit is critical habitat for *Cyanea humboltiana* and is 300 ha (741 ac) on private and State land (Waiahole Forest Reserve), containing a portion of Puu Kawipoo. This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Cyanea humboltiana* and is currently unoccupied. This unit is essential to the conservation of the species because it supports habitat that is necessary for the establishment of additional populations on Oahu in order to reach recovery goals. The habitat features contained in this unit that are essential for this species include, but are not limited to, wet *Metrosideros polymorpha-Dicranopteris linearis* lowland shrubland. This unit is geographically separated from the other four units designated as critical habitat for this island-endemic species, in order to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 20—*Cyanea humboltiana*—d

This unit is critical habitat for *Cyanea humboltiana* and is 160 ha (393 ac) on private, Federal, and State land (Kaneohe Forest Reserve), containing a portion of Puu Keahiakahoe. This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Cyanea humboltiana* and is currently occupied by one plant. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, wet *Metrosideros polymorpha-Dicranopteris linearis* lowland shrubland. This unit is geographically separated from the other four units designated as critical habitat for this island-endemic species, in order to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 35—*Cyanea humboltiana*—e

This unit is critical habitat for *Cyanea humboltiana* and is 538 ha (1,331 ac) on private and State land (Honolulu Watershed Forest Reserve). This unit contains a portion of Kainawaunui Summit, Konahuanui Summit, Manoa Falls, Mount Olympus, Palikea Summit, and Puu Lanipo. This unit provides habitat for 4 populations of 300 mature, reproducing individuals of the short-lived perennial *Cyanea humboltiana*

and is currently occupied by 21 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, wet *Metrosideros polymorpha-Dicranopteris linearis* lowland shrubland. This unit is geographically separated from the other four units designated as critical habitat for this island-endemic species, in order to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 20—*Cyanea koolauensis*—a

This unit is critical habitat for *Cyanea koolauensis* and is 468 ha (1,157 ac) on private and State land (Sacred Falls State Park, Kaipapau Forest Reserve, and Kahuku Forest Reserve). This unit contains a portion of Kawailoa Trail, Puu Kainapuaa, and Koolau Summit Trail. This unit provides habitat for 2 populations of 300 mature, reproducing individuals of the short-lived perennial *Cyanea koolauensis* and is currently occupied by 46 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, slopes, stream banks, and ridge crests in wet *Metrosideros polymorpha-Dicranopteris linearis* forest or shrubland. This unit is geographically separated from the other three units designated as critical habitat for this island-endemic species, in order to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 20—*Cyanea koolauensis*—b

This unit is critical habitat for *Cyanea koolauensis* and is 322 ha (799 ac) on private and State land (Ewa Forest Reserve and Waiahole Forest Reserve), containing a portion of Eleao Summit. This unit provides habitat for 2 populations of 300 mature, reproducing individuals of the short-lived perennial *Cyanea koolauensis* and is currently occupied by 4 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population,

which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, slopes, stream banks, and ridge crests in wet *Metrosideros polymorpha-Dicranopteris linearis* forest or shrubland. This unit is geographically separated from the other three units designated as critical habitat for this island-endemic species, in order to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 35—*Cyanea koolauensis*—c

This unit is critical habitat for *Cyanea koolauensis* and is 209 ha (517 ac) on State land (Honolulu Watershed Forest Reserve). This unit contains a portion of Konahuanui Summit and Manoa Falls. This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Cyanea koolauensis* and is currently occupied by 10 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, slopes, stream banks, and ridge crests in wet *Metrosideros polymorpha-Dicranopteris linearis* forest or shrubland. This unit is geographically separated from the other three units designated as critical habitat for this island-endemic species, in order to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 35—*Cyanea koolauensis*—d

This unit is critical habitat for *Cyanea koolauensis* and is 312 ha (770 ac) on private and State land (Honolulu Watershed Forest Reserve). This unit contains a portion of Kaa Crater, Kainawaunui Summit, Palikea Summit, and Puu Lanipo. This unit provides habitat for two populations of 300 mature, reproducing individuals of the short-lived perennial *Cyanea koolauensis* and is currently occupied by seven individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, slopes, stream banks, and

ridge crests in wet *Metrosideros polymorpha-Dicranopteris linearis* forest or shrubland. This unit is geographically separated from the other three units designated as critical habitat for this island-endemic species, in order to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 4—*Cyanea longiflora*—a

This unit is critical habitat for *Cyanea longiflora* and is 362 ha (894 ac) on State land (Mokuleia Forest Reserve and Pahole Kaala NARs). This unit contains a portion of Kamaohanui Summit. This unit provides habitat for 4 populations of 300 mature, reproducing individuals of the short-lived perennial *Cyanea longiflora* and is currently occupied by 3 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, steep slopes, bases of cliffs, or ridge crests in mesic *Acacia koa-Metrosideros polymorpha* lowland forest. This unit is geographically separated from the other two units designated as critical habitat for this island-endemic species, in order to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 4—*Cyanea longiflora*—b

This unit is critical habitat for *Cyanea longiflora* and is 61 ha (150 ac) on State land (Waianae Kai Forest Reserve). This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Cyanea longiflora* and is currently occupied by 15 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, steep slopes, bases of cliffs, or ridge crests in mesic *Acacia koa-Metrosideros polymorpha* lowland forest. This unit is geographically separated from the other two units designated as critical habitat for this island-endemic species, in order to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 19—*Cyanea longiflora*—c

This unit is critical habitat for *Cyanea longiflora* and is 324 ha (801 ac) on private and State land (Pupukea-Paumalu Forest Reserve). This unit provides habitat for 3 populations of 300 mature, reproducing individuals of the short-lived perennial *Cyanea longiflora* and is currently unoccupied. This unit is essential to the conservation of the species because it supports habitat that is necessary for the establishment of additional populations on Oahu in order to reach recovery goals. The habitat features contained in this unit that are essential for this species include, but are not limited to, steep slopes, bases of cliffs, or ridge crests in mesic *Acacia koa-Metrosideros polymorpha* lowland forest. This unit is geographically separated from the other two units designated as critical habitat for this island-endemic species, in order to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 15—*Cyanea pinnatifida*—a

This unit is critical habitat for *Cyanea pinnatifida* and is 154 ha (380 ac) on private land (Honouliuli Preserve). This unit provides habitat for 2 populations of 300 mature, reproducing individuals of the short-lived perennial *Cyanea pinnatifida* and is currently unoccupied. This unit is essential to the conservation of the species because it supports habitat that is necessary for the establishment of additional populations on Oahu in order to reach recovery goals. The habitat features contained in this unit that are essential for this species include, but are not limited to, steep, wet, rocky slopes in diverse mesic forest. Although we do not believe that enough habitat currently exists to reach the recovery goal of 8 to 10 populations for this species, this unit is geographically separated from the other two units designated as critical habitat for this island-endemic species to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 15—*Cyanea pinnatifida*—b

This unit is critical habitat for *Cyanea pinnatifida* and is 42 ha (104 ac) on private land (Honouliuli Preserve). This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Cyanea pinnatifida* and is currently unoccupied. This unit is essential to the conservation of the species because it supports habitat that is necessary for the establishment of additional populations on Oahu in order to reach recovery

goals. The habitat features contained in this unit that are essential for this species include, but are not limited to, steep, wet, rocky slopes in diverse mesic forest. Although we do not believe that enough habitat currently exists to reach the recovery goal of 8 to 10 populations for this species, this unit is geographically separated from the other two units designated as critical habitat for this island-endemic species to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 15—*Cyanea pinnatifida*—c

This unit is critical habitat for *Cyanea pinnatifida* and is 129 ha (318 ac) on State and private land (Honouliuli Preserve). This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Cyanea pinnatifida* and is currently unoccupied. This unit is essential to the conservation of the species because it supports habitat that is necessary for the establishment of additional populations on Oahu in order to reach recovery goals. The habitat features contained in this unit that are essential for this species include, but are not limited to, steep, wet, rocky slopes in diverse mesic forest. Although we do not believe that enough habitat currently exists to reach the recovery goal of 8 to 10 populations for this species, this unit is geographically separated from the other two units designated as critical habitat for this island-endemic species to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 20—*Cyanea st.-johnii*—a

This unit is critical habitat for *Cyanea st.-johnii* and is 697 ha (1,723 ac) on private, Federal (Oahu Forest National Wildlife Refuge), and State land (Hauula Forest Reserve, Sacred Falls State Park, Kahana Valley State Park, and Waiahole Forest Reserve). This unit contains a portion of Eleao Summit, Puu Kaaumakua Summit, and Puu Pauao Summit. This unit provides habitat for 6 populations of 300 mature, reproducing individuals of the short-lived perennial *Cyanea st.-johnii* and is currently occupied by 44 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, wet, windswept slopes and

ridges in *Metrosideros polymorpha* mixed lowland shrubland or *Metrosideros polymorpha-Dicranopteris linearis* lowland shrubland. This unit is geographically separated from the other unit designated as critical habitat for this island-endemic species, in order to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 35—*Cyanea st.-johnii*—b

This unit is critical habitat for *Cyanea st.-johnii* and is 135 ha (334 ac) on private and State land (Honolulu Watershed Forest Reserve). This unit contains a portion of Kainawaaunui Summit, Konahuanui Summit, Mount Olympus, Palikea Summit, and Puu Lanipo Summit. This unit provides habitat for 3 populations of 300 mature, reproducing individuals of the short-lived perennial *Cyanea st.-johnii* and is currently occupied by 12 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, wet, windswept slopes and ridges in *Metrosideros polymorpha* mixed lowland shrubland or *Metrosideros polymorpha-Dicranopteris linearis* lowland shrubland. This unit is geographically separated from the other unit designated as critical habitat for this island-endemic species, in order to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 4—*Cyanea superba*—a

This unit is critical habitat for *Cyanea superba* and is 303 ha (747 ac) on State land (Mokuleia Forest Reserve and Pahole NAR). This unit provides habitat for 4 populations of 300 mature, reproducing individuals of the short-lived perennial *Cyanea superba* and is currently unoccupied. This unit is essential to the conservation of the species because it supports habitat that is necessary for the establishment of additional populations on Oahu in order to reach recovery goals. The habitat features contained in this unit that are essential for this species include, but are not limited to, sloping terrain on well drained rocky substrate within mesic forest. This unit is geographically separated from the other three units designated as critical habitat for this island-endemic species, in order to avoid all recovery populations from

being destroyed by one naturally occurring catastrophic event.

Oahu 4—*Cyanea superba*—b

This unit is critical habitat for *Cyanea superba* and is 115 ha (286 ac) on State land (Mokuleia Forest Reserve and Pahole NAR). This unit provides habitat for 4 populations of 300 mature, reproducing individuals of the short-lived perennial *Cyanea superba* and is currently unoccupied. This unit is essential to the conservation of the species because it supports habitat that is necessary for the establishment of additional populations on Oahu in order to reach recovery goals. The habitat features contained in this unit that are essential for this species include, but are not limited to, sloping terrain on well drained rocky substrate within mesic forest. This unit is geographically separated from the other three units designated as critical habitat for this island-endemic species, in order to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 4—*Cyanea superba*—c

This unit is critical habitat for *Cyanea superba* and is 184 ha (456 ac) on private and State land (Mokuleia Forest Reserve and Kaala NAR). This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Cyanea superba* and is currently unoccupied. This unit is essential to the conservation of the species because it supports habitat that is necessary for the establishment of additional populations on Oahu in order to reach recovery goals. The habitat features contained in this unit that are essential for this species include, but are not limited to, sloping terrain on well drained rocky substrate within mesic forest. This unit is geographically separated from the other three units designated as critical habitat for this island-endemic species, in order to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 35—*Cyanea superba*—d

This unit is critical habitat for *Cyanea superba* and is 281 ha (697 ac) on private and State land (Honolulu Watershed Forest Reserve). This unit provides habitat for 2 populations of 300 mature, reproducing individuals of the short-lived perennial *Cyanea superba* and is currently unoccupied. This unit is essential to the conservation of the species because it supports habitat that is necessary for the establishment of additional populations

on Oahu in order to reach recovery goals. The habitat features contained in this unit that are essential for this species include, but are not limited to, sloping terrain on well drained rocky substrate within mesic forest. This unit is geographically separated from the other three units designated as critical habitat for this island-endemic species, in order to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 20—*Cyanea truncata*—a

This unit is critical habitat for *Cyanea truncata* and is 2,029 ha (5,019 ac) on private and State land (Sacred Falls State Park, Kaipapau Forest Reserve, Hauula Forest Reserve, Kahana Valley State Park, and Waiahole Forest Reserve). This unit contains a portion of Castle Trail, Puu Pauao, Sacred Falls, Sacred Falls Trail, and Waiahole Ditch Tunnel. This unit provides habitat for 9 populations of 300 mature, reproducing individuals of the short-lived perennial *Cyanea truncata* and is currently occupied by one plant. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, windward slopes and stream banks in mesic to wet forests. This unit is geographically separated from the other unit designated as critical habitat for this island-endemic species, in order to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 21—*Cyanea truncata*—b

This unit is critical habitat for *Cyanea truncata* and is 210 ha (520 ac) on private and State land (Kahana Valley State Park), containing a portion of Hidden Valley. This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Cyanea truncata* and is currently unoccupied. This unit is essential to the conservation of the species because it supports habitat that is necessary for the establishment of additional populations on Oahu in order to reach recovery goals. The habitat features contained in this unit that are essential for this species include, but are not limited to, windward slopes and stream banks in mesic to wet forests. This unit is geographically separated from the other unit designated as critical habitat for this island-endemic species,

in order to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 1—*Cyperus trachysanthos*—a

This unit is critical habitat for *Cyperus trachysanthos* and is 78 ha (194 ac) on State land, containing a portion of Kaena Point. This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Cyperus trachysanthos* and is currently unoccupied. This unit is essential to the conservation of the species because it supports habitat that is necessary for the establishment of additional populations on Oahu in order to reach recovery goals. The habitat features contained in this unit that are essential for this species include, but are not limited to, seasonally wet sites (mud flats, wet clay soil, seasonal ponds, or wet cliff seeps) on seepy flats, coastal cliffs, or talus slopes. This unit is geographically separated from critical habitat designated elsewhere on Oahu and on Kauai and Niihau for this species in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 28—*Cyperus trachysanthos*—b

This unit is critical habitat for *Cyperus trachysanthos* and is 8 ha (20 ac) on State land, containing a portion of Nonoula Crater. This unit, in combination with unit Oahu 29—*Cyperus trachysanthos*—c, provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Cyperus trachysanthos* and is currently unoccupied. This unit is essential to the conservation of the species because it supports habitat that is necessary for the establishment of additional populations on Oahu in order to reach recovery goals. The habitat features contained in this unit that are essential for this species include, but are not limited to, seasonally wet sites (mud flats, wet clay soil, seasonal ponds, or wet cliff seeps) on seepy flats, coastal cliffs, or talus slopes. This unit is geographically separated from critical habitat designated elsewhere on Oahu and on Kauai and Niihau for this species in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 29—*Cyperus trachysanthos*—c

This unit is critical habitat for *Cyperus trachysanthos* and is 4 ha (10 ac) on State land, containing a portion of Ihelhelauakea Crater. This unit, in combination with unit Oahu 28—

Cyperus trachysanthos—b, provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Cyperus trachysanthos* and is currently unoccupied. This unit is essential to the conservation of the species because it supports habitat that is necessary for the establishment of additional populations on Oahu in order to reach recovery goals. The habitat features contained in this unit that are essential for this species include, but are not limited to, seasonally wet sites (mud flats, wet clay soil, seasonal ponds, or wet cliff seeps) on seepy flats, coastal cliffs, or talus slopes. This unit is geographically separated from critical habitat designated elsewhere on Oahu and on Kauai and Niihau for this species in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 36—*Cyperus trachysanthos*—d

This unit is critical habitat for *Cyperus trachysanthos* and is 5 ha (13 ac) on State land (Diamond Head State Park), containing a portion of Diamond Head. This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Cyperus trachysanthos* and is currently occupied by 40 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, seasonally wet sites (mud flats, wet clay soil, seasonal ponds, or wet cliff seeps) on seepy flats, coastal cliffs, or talus slopes. This unit is geographically separated from critical habitat designated elsewhere on Oahu and on Kauai and Niihau for this species in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 4—*Cyrtandra dentata*—a

This unit is critical habitat for *Cyrtandra dentata* and is 307 ha (758 ac) on State land (Mokuleia Forest Reserve and Pahole NAR). This unit provides habitat for 3 populations of 300 mature, reproducing individuals of the short-lived perennial *Cyrtandra dentata* and is currently occupied by 20 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered

nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, gulches, slopes, stream banks, or ravines in mesic or wet forest. This unit is geographically separated from Army lands at Kawaihoa Training Area that provide habitat for five populations of this species, in order to avoid all populations from being destroyed by one naturally occurring catastrophic event (see “*Analysis of Impacts Under Section 4(b)(2): Other Impacts*”).

Oahu 35—*Cyrtandra polyantha*—a

This unit is critical habitat for *Cyrtandra polyantha* and is 190 ha (469 ac) on private and State land (Honolulu Watershed Forest Reserve and Kuliouou Forest Reserve), containing a portion of Puu o Kona. This unit provides habitat for 5 populations of 300 mature, reproducing individuals of the short-lived perennial *Cyrtandra polyantha* and is currently occupied by 3 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, ridges in *Metrosideros polymorpha* mesic or wet forests. We do not believe that enough habitat currently exists to reach the recovery goal of 8 to 10 populations for this species.

Oahu 20—*Cyrtandra subumbellata*—a

This unit is critical habitat for *Cyrtandra subumbellata* and is 829 ha (1,457 ac) on private and State land (Hauula Forest Reserve, Sacred Falls State Park, Kaipapau Forest Reserve, Kahana Valley State Park, and Ewa Forest Reserve), containing a portion of Castle Trail, Puu Kaaumakua, and Puu Pauao. This unit provides habitat for 6 populations of 300 mature, reproducing individuals of the short-lived perennial *Cyrtandra subumbellata* and is currently unoccupied. This unit is essential to the conservation of the species because it supports habitat that is necessary for the establishment of additional populations on Oahu in order to reach recovery goals. The habitat features contained in this unit that are essential for this species include, but are not limited to, moist slopes or gulch bottoms in wet forest dominated by *Metrosideros polymorpha* or a mixture of *Metrosideros polymorpha*-*Dicranopteris linearis*-*Acacia koa*. Although we do not believe that enough

habitat currently exists to reach the recovery goal of 8 to 10 populations for this species, this unit is geographically separated from the other unit designated as critical habitat for this island-endemic species to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 20—*Cyrtandra subumbellata*—b

This unit is critical habitat for *Cyrtandra subumbellata* and is 67 ha (167 ac) on State land. This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Cyrtandra subumbellata* and is currently unoccupied. This unit is essential to the conservation of the species because it supports habitat that is necessary for the establishment of additional populations on Oahu in order to reach recovery goals. The habitat features contained in this unit that are essential for this species include, but are not limited to, moist slopes or gulch bottoms in wet forest dominated by *Metrosideros polymorpha* or a mixture of *Metrosideros polymorpha-Dicranopteris linearis-Acacia koa*. Although we do not believe that enough habitat currently exists to reach the recovery goal of 8 to 10 populations for this species, this unit is geographically separated from the other unit designated as critical habitat for this island-endemic species to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 20—*Cyrtandra viridiflora*—a

This unit is critical habitat for *Cyrtandra viridiflora* and is 782 ha (1,932 ac) on private and State land (Hauula Forest Reserve, Sacred Falls State Park, Kaipapau Forest Reserve, Kahana Valley State Park, and Ewa Forest Reserve). This unit contains Puu Kaaumakua, Puu Pauao, and portions of the Koolau Summit Trail. This unit provides habitat for 5 populations of 300 mature, reproducing individuals of the short-lived perennial *Cyrtandra viridiflora* and is currently occupied by 33 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, moist slopes or gulch bottoms in wet forest dominated by *Metrosideros polymorpha* or a mixture of *Metrosideros polymorpha-Dicranopteris linearis-Acacia koa*.

Oahu 4—*Delissea subcordata*—a

This unit is critical habitat for *Delissea subcordata* and is 764 ha (1,885 ac) on private and State land (Mokuleia Forest Reserve and Pahole and Kaala NARs). This unit contains no named natural features. This unit provides habitat for 4 populations of 300 mature, reproducing individuals of the short-lived perennial *Delissea subcordata* and is currently occupied by 4 plants. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, moderate to steep gulch slopes in mixed mesic forests. This unit is geographically separated from the other five units designated as critical habitat for this island-endemic species, in order to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 15—*Delissea subcordata*—b

This unit is critical habitat for *Delissea subcordata* and is 220 ha (545 ac) on private land (Honouliuli Preserve). This unit, in combination with unit Oahu 15—*Delissea subcordata*—c, provides habitat for 3 populations of 300 mature, reproducing individuals of the short-lived perennial *Delissea subcordata* and is currently occupied by 9 plants. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, moderate to steep gulch slopes in mixed mesic forests. This unit is geographically separated from the other five units designated as critical habitat for this island-endemic species, in order to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 15—*Delissea subcordata*—c

This unit is critical habitat for *Delissea subcordata* and is 32 ha (78 ac) on private land (Honouliuli Preserve). This unit, in combination with unit Oahu 15—*Delissea subcordata*—b, provides habitat for 3 populations of 300 mature, reproducing individuals of

the short-lived perennial *Delissea subcordata* and is currently occupied by 3 plants. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, moderate to steep gulch slopes in mixed mesic forests. This unit is geographically separated from the other five units designated as critical habitat for this island-endemic species, in order to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 15—*Delissea subcordata*—d

This unit is critical habitat for *Delissea subcordata* and is 81 ha (200 ac) on private land (Honouliuli Preserve). This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Delissea subcordata* and is currently occupied by 3 plants. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, moderate to steep gulch slopes in mixed mesic forests. This unit is geographically separated from the other five units designated as critical habitat for this island-endemic species, in order to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 35—*Delissea subcordata*—e

This unit is critical habitat for *Delissea subcordata* and is 292 ha (721 ac) on private and State land (Honouliuli Preserve), containing a portion of Mauumae Ridge. This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Delissea subcordata* and is currently unoccupied. This unit is essential to the conservation of the species because it includes habitat that is necessary for the establishment of additional populations on Oahu in order to reach recovery. The habitat features contained in this unit that are essential for this species include, but are not limited to, moderate to steep gulch slopes in mixed mesic forests. This unit is geographically

separated from the other five units designated as critical habitat for this island-endemic species, in order to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 35—*Delissea subcordata*—f

This unit is critical habitat for *Delissea subcordata* and is 129 ha (317 ac) on State and private land. This unit contains a portion of Kulepiamo Ridge, Pia Valley, and Kupaua Valley. This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Delissea subcordata* and is currently unoccupied. This unit is essential to the conservation of the species because it includes habitat that is necessary for the establishment of additional populations on Oahu in order to reach recovery. The habitat features contained in this unit that are essential for this species include, but are not limited to, moderate to steep gulch slopes in mixed mesic forests. This unit is geographically separated from the other five units designated as critical habitat for this island-endemic species, in order to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 35—*Diellia erecta*—a

This unit is critical habitat for *Diellia erecta* and is 293 ha (731 ac) on private and State land (Honolulu Watershed Forest Reserve). This unit contains a portion of Kulepiamo Ridge and Lauaupoe Gulch. This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Diellia erecta* and is currently unoccupied. This unit is essential to the conservation of the species because it supports habitat that is necessary for the establishment of additional populations on Oahu in order to reach recovery goals. The habitat features contained in this unit that are essential for this species include, but are not limited to, moderate to steep gulch slopes or sparsely vegetated rock faces in mesic forest. This unit is geographically separated from critical habitat designated elsewhere on Oahu and on Kauai, Molokai, and Maui for this species in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 4—*Diellia falcata*—a

This unit is critical habitat for *Diellia falcata* and is 59 ha (148 ac) on State land (Pahole NAR and Mokuleia Forest Reserve). This unit provides habitat for one population of 300 mature,

reproducing individuals of the short-lived perennial *Diellia falcata* and is currently unoccupied. This unit is essential to the conservation of the species because it supports habitat that is necessary for the establishment of additional populations on Oahu in order to reach recovery goals. The habitat features contained in this unit that are essential for this species include, but are not limited to, deep shade or open understory on moderate to moderately steep slopes and gulch bottoms in diverse mesic forest. This unit is geographically separated from the other three units designated as critical habitat for this island-endemic species, in order to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 4—*Diellia falcata*—b

This unit is critical habitat for *Diellia falcata* and is 22 ha (54 ac) on State land (Pahole NAR and Mokuleia Forest Reserve). This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Diellia falcata* and is currently occupied by 20 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, deep shade or open understory on moderate to moderately steep slopes and gulch bottoms in diverse mesic forest. This unit is geographically separated from the other three units designated as critical habitat for this island-endemic species, in order to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 15—*Diellia falcata*—c

This unit is critical habitat for *Diellia falcata* and is 341 ha (844 ac) on State, Federal (Lualualei Naval Reservation), and private land (Honouliuli Preserve). This unit contains a portion of Puu Hapapa, Puu Kanehoa, and Puu Kaua. This unit provides habitat for 4 populations of 300 mature, reproducing individuals of the short-lived perennial *Diellia falcata* and is currently occupied by 297 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features

contained in this unit that are essential for this species include, but are not limited to, deep shade or open understory on moderate to moderately steep slopes and gulch bottoms in diverse mesic forest. This unit is geographically separated from the other three units designated as critical habitat for this island-endemic species, in order to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 15—*Diellia falcata*—d

This unit is critical habitat for *Diellia falcata* and is 178 ha (437 ac) on State, Federal (Lualualei Naval Reservation), and private land (Honouliuli Preserve), containing a portion of Palikea Summit. This unit provides habitat for 3 populations of 300 mature, reproducing individuals of the short-lived perennial *Diellia falcata* and is currently occupied by 1,230 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and habitat that is necessary to reach recovery goals. The habitat features contained in this unit that are essential for this species include, but are not limited to, deep shade or open understory on moderate to moderately steep slopes and gulch bottoms in diverse mesic forest. This unit is geographically separated from the other three units designated as critical habitat for this island-endemic species, in order to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 15—*Diellia unisora*—a

This unit is critical habitat for *Diellia unisora* and is 362 ha (894 ac) on State, Federal (Lualualei Naval Reservation), and private land (Honouliuli Preserve). This unit contains a portion of Palikea Summit, Laikea Trail, Pohakea Pass, Puu Kanehoa, and Puu Kaua. This unit provides habitat for 6 populations of 300 mature, reproducing individuals of the short-lived perennial *Diellia unisora* and is currently occupied by 697 plants. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the establishment of additional populations. The habitat features contained in this unit that are essential for this species include, but are not limited to, moderate to steep slopes or gulch bottoms in deep shade or open understory in mesic forest. We do not believe that enough habitat currently exists to reach the recovery goal of 8 to 10 populations for this species, but this unit is large enough that one naturally occurring

catastrophic event is unlikely to destroy habitat for all six populations.

Oahu 4—*Diplazium molokaiense*—a

This unit is critical habitat for *Diplazium molokaiense* and is 139 ha (340 ac) on State land (Mokuleia Forest Reserve, Kaala NAR, and Waianae Kai Forest Reserve). This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Diplazium molokaiense* and is currently unoccupied. This unit is essential to the conservation of the species because it supports habitat that is necessary for the establishment of additional populations on Oahu in order to reach recovery goals. The habitat features contained in this unit that are essential for this species include, but are not limited to, steep, rocky, wooded gulch walls in wet forests. This unit is geographically separated from critical habitat designated on Kauai, Molokai, and Maui for this species in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 4—*Dubautia herbstobatae*—a

This unit is critical habitat for *Dubautia herbstobatae* and is 12 ha (29 ac) on State land (Makua Keauu Forest Reserve). This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Dubautia herbstobatae* and is currently unoccupied. This unit is essential to the conservation of the species because it supports habitat that is necessary for the establishment of additional populations on Oahu in order to reach recovery goals. The habitat features contained in this unit that are essential for this species include, but are not limited to, rock outcrops, ridges, moderate slopes, or vertical cliffs in dry or mesic shrubland. Although we do not believe that enough habitat currently exists to reach the recovery goal of 8 to 10 populations for this species, this unit is geographically separated from the other two units designated as critical habitat for this island-endemic species to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event. In addition, this unit is geographically separated from Army lands at Makua Military Reservation that provide habitat for two populations of this species (see “*Analysis of Impacts Under Section 4(b)(2): Other Impacts*”).

Oahu 4—*Dubautia herbstobatae*—b

This unit is critical habitat for *Dubautia herbstobatae* and is 76 ha (191 ac) on private and State land (Waianae

Kai Forest Reserve), containing a portion of Puu Kawiwi Summit. This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Dubautia herbstobatae* and is currently unoccupied. This unit is essential to the conservation of the species because it supports habitat that is necessary for the establishment of additional populations on Oahu in order to reach recovery goals. The habitat features contained in this unit that are essential for this species include, but are not limited to, rock outcrops, ridges, moderate slopes, or vertical cliffs in dry or mesic shrubland. Although we do not believe that enough habitat currently exists to reach the recovery goal of 8 to 10 populations for this species, this unit is geographically separated from the other two units designated as critical habitat for this island-endemic species to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event. In addition, this unit is geographically separated from Army lands at Makua Military Reservation that provide habitat for two populations of this species (see “*Analysis of Impacts Under Section 4(b)(2): Other Impacts*”).

Oahu 7—*Dubautia herbstobatae*—c

This unit is critical habitat for *Dubautia herbstobatae* and is 3 ha (7 ac) on State land (Makua Keauu Forest Reserve). This unit provides habitat for 2 populations of 300 mature, reproducing individuals of the short-lived perennial *Dubautia herbstobatae* and is currently unoccupied. This unit is essential to the conservation of the species because it supports habitat that is necessary for the establishment of additional populations on Oahu in order to reach recovery goals. The habitat features contained in this unit that are essential for this species include, but are not limited to, rock outcrops, ridges, moderate slopes, or vertical cliffs in dry or mesic shrubland. Although we do not believe that enough habitat currently exists to reach the recovery goal of 8 to 10 populations for this species, this unit is geographically separated from the other two units designated as critical habitat for this island-endemic species to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event. In addition, this unit is geographically separated from Army lands at Makua Military Reservation that provide habitat for two populations of this species (see “*Analysis of Impacts Under Section 4(b)(2): Other Impacts*”).

Oahu 4—*Eragrostis fosbergii*—a

This unit is critical habitat for *Eragrostis fosbergii* and is 81 ha (199 ac) on State (Waianae Kai Forest Reserve) land. This unit contains no named natural features. This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Eragrostis fosbergii* and is currently occupied by 6 plants. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, ridge crests or moderate slopes in dry or mesic forests. We do not believe that enough habitat currently exists to reach the recovery goal of 8 to 10 populations for this species.

Oahu 4—*Eugenia koolauensis*—a

This unit is critical habitat for *Eugenia koolauensis* and is 114 ha (280 ac) on State land, containing a portion of Kaukonahua Stream. This unit provides habitat for one population of 100 mature, reproducing individuals of the long-lived perennial *Eugenia koolauensis* and is currently occupied by 2 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, gentle to steep slopes or ridges in mesic or dry forests dominated by *Metrosideros polymorpha* or *Diospyros* sp. This unit is geographically separated from critical habitat designated elsewhere on Oahu and on Molokai for this species in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 19—*Eugenia koolauensis*—b

This unit is critical habitat for *Eugenia koolauensis* and is 149 ha (369 ac) on private and State (Pupukea-Paumalu Forest Reserve) land, containing a portion of Mount Kawela. This unit provides habitat for one population of 100 mature, reproducing individuals of the long-lived perennial *Eugenia koolauensis* and is currently occupied by 8 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes

habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, gentle to steep slopes or ridges in mesic or dry forests dominated by *Metrosideros polymorpha* or *Diospyros* sp. This unit is geographically separated from critical habitat designated elsewhere on Oahu and on Molokai for this species in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 20—*Eugenia koolauensis*—c

This unit is critical habitat for *Eugenia koolauensis* and is 122 ha (303 ac) on private and State (Hauula Forest Reserve) land. This unit contains no named natural features. This unit provides habitat for 2 populations of 100 mature, reproducing individuals of the long-lived perennial *Eugenia koolauensis* and is currently occupied by 2 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, gentle to steep slopes or ridges in mesic or dry forests dominated by *Metrosideros polymorpha* or *Diospyros* sp. This unit is geographically separated from critical habitat designated elsewhere on Oahu and on Molokai for this species in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 3—*Euphorbia haeleeleana*—a

This unit is critical habitat for *Euphorbia haeleeleana* and is 14 ha (38 ac) on State (Kaena State Park, Kuaokala Forest Reserve) land. This unit contains no named natural features. This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Euphorbia haeleeleana* and is currently occupied by 50 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. It provides habitat for the easternmost range of the species. The habitat features contained in this unit that are essential for this species include, but are not limited to, dry forest dominated by *Diospyros* sp.

This unit is geographically separated from critical habitat designated elsewhere on Oahu and on Kauai for this species in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 4—*Euphorbia haeleeleana*—b

This unit is critical habitat for *Euphorbia haeleeleana* and is 356 ha (881 ac) on private and State (Mokuleia Forest Reserve) land. This unit contains no named natural features. This unit provides habitat for 3 populations of 300 mature, reproducing individuals of the short-lived perennial *Euphorbia haeleeleana* and is currently occupied by 49 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. It provides habitat for the easternmost range of the species. The habitat features contained in this unit that are essential for this species include, but are not limited to, dry forest dominated by *Diospyros* sp. This unit is geographically separated from critical habitat designated elsewhere on Oahu and on Kauai for this species in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 4—*Flueggea neowawraea*—a

This unit is critical habitat for *Flueggea neowawraea* and is 845 ha (2,087 ac) on State (Mokuleia Forest Reserve and Pahole and Kaala NARs) land. This unit contains no named natural features. This unit provides habitat for one population of 100 mature, reproducing individuals of the long-lived perennial *Flueggea neowawraea* and is currently occupied by 10 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, gulch slopes, ridge crests, or areas near streams in dry or mesic forest. This unit is geographically separated from critical habitat designated on Kauai, Molokai, and Maui for this species in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 15—*Gardenia mannii*—a

This unit is critical habitat for *Gardenia mannii* and is 266 ha (658 ac) on private (Honouliuli Preserve) land, containing Honouliuli Contour Trail. This unit provides habitat for 2 populations of 300 mature, reproducing individuals of the short-lived perennial *Gardenia mannii* and is currently occupied by 4 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, moderate to moderately steep gulch slopes, ridge crests, gulch bottoms, and stream banks in mesic or wet forests. This unit is geographically separated from the other two units designated as critical habitat for this island-endemic species, in order to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event. This unit is also geographically separated from Army lands at Schofield Barracks and Kawaihoa that provide habitat for six populations of this species.

Oahu 20—*Gardenia mannii*—b

This unit is critical habitat for *Gardenia mannii* and is 206 ha (510 ac) on private land, containing Kaluakauila Gulch. This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Gardenia mannii* and is currently occupied by 2 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, moderate to moderately steep gulch slopes, ridge crests, gulch bottoms, and stream banks in mesic or wet forests. This unit is geographically separated from the other two units designated as critical habitat for this island-endemic species, in order to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event. This unit is also geographically separated from Army lands at Schofield Barracks and Kawaihoa that provide habitat for six populations of this species.

Oahu 20—*Gardenia mannii*—c

This unit is critical habitat for *Gardenia mannii* and is 1,311 ha (3,239 ac) on private land, containing a portion of Puu Kamana. This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Gardenia mannii* and is currently unoccupied. This unit is essential to the conservation of the species because it supports habitat that is necessary for the establishment of additional populations on Oahu in order to reach recovery goals. The habitat features contained in this unit that are essential for this species include, but are not limited to, moderate to moderately steep gulch slopes, ridge crests, gulch bottoms, and stream banks in mesic or wet forests. This unit is geographically separated from the other two units designated as critical habitat for this island-endemic species, in order to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event. This unit is also geographically separated from Army lands at Schofield Barracks and Kawaihoa that provide habitat for six populations of this species.

Oahu 4—*Gouania meyenii*—a

This unit is critical habitat for *Gouania meyenii* and is 47 ha (118 ac) on State (Waianae Kai Forest Reserve) land. This unit contains no named natural features. This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Gouania meyenii* and is currently occupied by 62 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. It provides habitat for the easternmost range of the species. The habitat features contained in this unit that are essential for this species include, but are not limited to, moderate to steep slopes in dry shrubland or mesic lowland forest. This unit is geographically separated from the other units designated on Oahu and Kauai as critical habitat for this multi-island species to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 4—*Gouania meyenii*—b

This unit is critical habitat for *Gouania meyenii* and is 39 ha (96 ac) on State (Waianae Kai Forest Reserve) land. This unit contains no named natural features. This unit provides habitat for

one population of 300 mature, reproducing individuals of the short-lived perennial *Gouania meyenii* and is currently occupied by 3 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. It provides habitat for the easternmost range of the species. The habitat features contained in this unit that are essential for this species include, but are not limited to, moderate to steep slopes in dry shrubland or mesic lowland forest. This unit is geographically separated from the other units designated on Oahu and Kauai as critical habitat for this multi-island species to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 15—*Gouania meyenii*—c

This unit is critical habitat for *Gouania meyenii* and is 208 ha (515 ac) on Federal (Luualulei Naval Reservation), State, and private (Honouliuli Preserve) land, containing a portion of Puu Hapapa and Puu Kanehoa. This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Gouania meyenii* and is currently unoccupied. This unit is essential to the conservation of the species because it supports habitat that is necessary for the establishment of additional populations on Oahu in order to reach recovery goals. It provides habitat for the easternmost range of the species. The habitat features contained in this unit that are essential for this species include, but are not limited to, moderate to steep slopes in dry shrubland or mesic lowland forest. This unit is geographically separated from the other units designated on Oahu and Kauai as critical habitat for this multi-island species to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 31—*Gouania meyenii*—d

This unit is critical habitat for *Gouania meyenii* and is 116 ha (286 ac) on State (Diamond Head State Park) land, containing a portion of Kuilei Cliffs. This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Gouania meyenii* and is currently unoccupied. This unit is essential to the conservation of the species because it supports habitat that is necessary for the establishment of additional populations

on Oahu in order to reach recovery goals. It provides habitat for the easternmost range of the species. The habitat features contained in this unit that are essential for this species include, but are not limited to, moderate to steep slopes in dry shrubland or mesic lowland forest. This unit is geographically separated from the other units designated on Oahu and Kauai as critical habitat for this multi-island species to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 2—*Gouania vitifolia*—a

This unit is critical habitat for *Gouania vitifolia* and is 20 ha (49 ac) on State (Kaena Point State Park and Kuaokala Forest Reserve) land. This unit contains no named natural features. This unit, along with Oahu 3—*Gouania vitifolia*—b, provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Gouania vitifolia* and is currently unoccupied. This unit is essential to the conservation of the species because it supports habitat that is necessary for the establishment of additional populations on Oahu in order to reach recovery goals. It provides habitat for the westernmost range of the species. The habitat features contained in this unit that are essential for this species include, but are not limited to, sides of ridges or gulches in dry to mesic forests. This unit is geographically separated from critical habitat designated elsewhere on Oahu and Maui for this species in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 3—*Gouania vitifolia*—b

This unit is critical habitat for *Gouania vitifolia* and is 48 ha (120 ac) on State (Kuaokala Forest Reserve) land. This unit contains no named natural features. This unit, along with Oahu 2—*Gouania vitifolia*—a, provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Gouania vitifolia* and is currently unoccupied. This unit is essential to the conservation of the species because it supports habitat that is necessary for the establishment of additional populations on Oahu in order to reach recovery goals. The habitat features contained in this unit that are essential for this species include, but are not limited to, sides of ridges or gulches in dry to mesic forests. This unit is geographically separated from critical habitat designated elsewhere on Oahu and Maui for this species in order to avoid all recovery populations being

destroyed by one naturally-occurring catastrophic event.

Oahu 4—*Gouania vitifolia*—c

This unit is critical habitat for *Gouania vitifolia* and is 196 ha (482 ac) on private and State (Mokuleia Forest Reserve) land. This unit contains no named natural features. This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Gouania vitifolia* and is currently unoccupied. This unit is essential to the conservation of the species because it supports habitat that is necessary for the establishment of additional populations on Oahu in order to reach recovery goals. The habitat features contained in this unit that are essential for this species include, but are not limited to, sides of ridges or gulches in dry to mesic forests. This unit is geographically separated from critical habitat designated elsewhere on Oahu and Maui for this species in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 4—*Gouania vitifolia*—d

This unit is critical habitat for *Gouania vitifolia* and is 85 ha (208 ac) on State (Waianae Kai Forest Reserve) land. This unit contains no named natural features. This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Gouania vitifolia* and is currently unoccupied. This unit is essential to the conservation of the species because it supports habitat that is necessary for the establishment of additional populations on Oahu in order to reach recovery goals. The habitat features contained in this unit that are essential for this species include, but are not limited to, sides of ridges or gulches in dry to mesic forests. This unit is geographically separated from critical habitat designated elsewhere on Oahu and Maui for this species in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 4—*Gouania vitifolia*—e

This unit is critical habitat for *Gouania vitifolia* and is 102 ha (252 ac) on State land in the Waianae Kai area. This unit contains no named natural features. This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Gouania vitifolia* and is currently unoccupied. This unit is essential to the conservation of the species because it supports habitat that is necessary for the establishment of

additional populations on Oahu in order to reach recovery goals. The habitat features contained in this unit that are essential for this species include, but are not limited to, sides of ridges or gulches in dry to mesic forests. This unit is geographically separated from critical habitat designated elsewhere on Oahu and Maui for this species in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 4—*Gouania vitifolia*—f

This unit is critical habitat for *Gouania vitifolia* and is 27 ha (67 ac) on State (Waianae Kai Forest Reserve) land. This unit contains no named natural features. This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Gouania vitifolia* and is currently occupied by one individual. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, sides of ridges or gulches in dry to mesic forests. This unit is geographically separated from critical habitat designated elsewhere on Oahu and Maui for this species in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 5—*Gouania vitifolia*—g

This unit is critical habitat for *Gouania vitifolia* and is 17 ha (43 ac) on private and State land in the Waianae Kai area. This unit contains no named natural features. This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Gouania vitifolia* and is currently unoccupied. This unit is essential to the conservation of the species because it supports habitat that is necessary for the establishment of additional populations on Oahu in order to reach recovery goals. The habitat features contained in this unit that are essential for this species include, but are not limited to, sides of ridges or gulches in dry to mesic forests. This unit is geographically separated from critical habitat designated elsewhere on Oahu and Maui for this species in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 8—*Gouania vitifolia*—h

This unit is critical habitat for *Gouania vitifolia* and is 64 ha (158 ac) on private and State (Makua Keaau Forest Reserve) land. This unit contains no named natural features. This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Gouania vitifolia* and is currently occupied by 45 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, sides of ridges or gulches in dry to mesic forests. This unit is geographically separated from critical habitat designated elsewhere on Oahu and Maui for this species in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 15—*Hedyotis coriacea*—a

This unit is critical habitat for *Hedyotis coriacea* and is 185 ha (458 ac) on private (Honouliuli Preserve) land. This unit contains no named natural features. This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Hedyotis coriacea* and is currently unoccupied. This unit is essential to the conservation of the species because it supports habitat that is necessary for the establishment of additional populations on Oahu in order to reach recovery goals. It provides habitat for the westernmost range of the species. The habitat features contained in this unit that are essential for this species include, but are not limited to, steep, rocky slopes in dry to mesic *Dodonaea viscosa* dominated shrublands or forests. This unit is geographically separated from critical habitat designated elsewhere on Oahu and on Maui for this species in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 35—*Hedyotis coriacea*—b

This unit is critical habitat for *Hedyotis coriacea* and is 164 ha (404 ac) on State and private land, containing a portion of Kulepiamo Ridge. This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Hedyotis coriacea* and is currently unoccupied. This unit is essential to the conservation of the species because it supports

habitat that is necessary for the establishment of additional populations on Oahu in order to reach recovery goals. It provides habitat for the westernmost range of the species. The habitat features contained in this unit that are essential for this species include, but are not limited to, steep, rocky slopes in dry to mesic *Dodonaea viscosa* dominated shrublands or forests. This unit is geographically separated from critical habitat designated elsewhere on Oahu and on Maui for this species in order to avoid all recovery populations being destroyed by one naturally occurring catastrophic event.

Oahu 4—*Hedyotis degeneri*—a

This unit is critical habitat for *Hedyotis degeneri* and is 917 ha (2,265 ac) on State (Mokuleia Forest Reserve and Kaala and Pahole NARs) land. This unit contains no named natural features. This unit provides habitat for 8 populations of 300 mature, reproducing individuals of the short-lived perennial *Hedyotis degeneri* and is currently occupied by 201 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, ridge crests in diverse mesic forest. This unit is geographically separated from the other unit designated as critical habitat for this island-endemic species, in order to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event. In addition, this unit is extensive enough that one catastrophic event would be unlikely to affect habitat for all eight populations.

Oahu 4—*Hedyotis degeneri*—b

This unit is critical habitat for *Hedyotis degeneri* and is 12 ha (29 ac) on State (Waianae Kai Forest Reserve) land. This unit contains no named natural features. This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Hedyotis degeneri* and is currently occupied by 6 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are

not limited to, ridge crests in diverse mesic forest. This unit is geographically separated from the other unit designated as critical habitat for this island-endemic species, in order to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 4—*Hedyotis parvula*—a

This unit is critical habitat for *Hedyotis parvula* and is 387 ha (956 ac) on State (Mokuleia Forest Reserve and Kaala NAR) land and contains a portion of Dupont Trail and Kamaohanui Summit. This unit provides habitat for 4 populations of 300 mature, reproducing individuals of the short-lived perennial *Hedyotis parvula* and is currently unoccupied. This unit is essential to the conservation of the species because it supports habitat that is necessary for the establishment of additional populations on Oahu in order to reach recovery goals. The habitat features contained in this unit that are essential for this species include, but are not limited to, cliff faces or their bases, rock outcrops, or ledges in mesic habitat. This unit is geographically separated from the other three units designated as critical habitat for this island-endemic species, in order to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 15—*Hedyotis parvula*—b

This unit is critical habitat for *Hedyotis parvula* and is 8 ha (19 ac) on State land, containing a portion of Puu Hapapa. This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Hedyotis parvula* and is currently unoccupied. This unit is essential to the conservation of the species because it supports habitat that is necessary for the establishment of additional populations on Oahu in order to reach recovery goals. The habitat features contained in this unit that are essential for this species include, but are not limited to, cliff faces or their bases, rock outcrops, or ledges in mesic habitat. This unit is geographically separated from the other three units designated as critical habitat for this island-endemic species, in order to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 15—*Hedyotis parvula*—c

This unit is critical habitat for *Hedyotis parvula* and is 95 ha (236 ac) on Federal (Lualualei Naval Reservation), State, and private (Honouliuli Preserve) land, containing a

portion of Puu Kaua and Puu Kanehoa. This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Hedyotis parvula* and is currently unoccupied. This unit is essential to the conservation of the species because it supports habitat that is necessary for the establishment of additional populations on Oahu in order to reach recovery goals. The habitat features contained in this unit that are essential for this species include, but are not limited to, cliff faces or their bases, rock outcrops, or ledges in mesic habitat. This unit is geographically separated from the other three units designated as critical habitat for this island-endemic species, in order to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 15—*Hedyotis parvula*—d

This unit is critical habitat for *Hedyotis parvula* and is 50 ha (122 ac) on State and Federal (Lualualei Naval Reservation) land, containing a portion of Palikea Summit. This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Hedyotis parvula* and is currently occupied by 4 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, cliff faces or their bases, rock outcrops, or ledges in mesic habitat. This unit is geographically separated from the other three units designated as critical habitat for this island-endemic species, in order to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 4—*Hesperomannia arborescens*—a

This unit is critical habitat for *Hesperomannia arborescens* and is 125 ha (308 ac) on private and State (Kaala NAR) land, containing a portion of Kamaohanui Summit. This unit provides habitat for one population of 100 mature, reproducing individuals of the long-lived perennial *Hesperomannia arborescens* and is currently occupied by 5 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. It provides

habitat for the westernmost range of the species. The habitat features contained in this unit that are essential for this species include, but are not limited to, steep slopes, ridge tops, or gulches in lowland wet forests or shrublands. This unit is geographically separated from critical habitat designated elsewhere on Oahu and on Molokai for this species in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 20—*Hesperomannia arborescens*—b

This unit is critical habitat for *Hesperomannia arborescens* and is 589 ha (1,456 ac) on private and State (Hauula Forest Reserve, Sacred Falls State Park, and Kaipapau Forest Reserve) land, containing a portion of Sacred Falls. This unit provides habitat for 2 populations of 100 mature, reproducing individuals of the long-lived perennial *Hesperomannia arborescens* and is currently occupied by 24 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. It provides habitat for the westernmost range of the species. The habitat features contained in this unit that are essential for this species include, but are not limited to, steep slopes, ridge tops, or gulches in lowland wet forests or shrublands. This unit is geographically separated from critical habitat designated elsewhere on Oahu and on Molokai for this species in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 4—*Hesperomannia arbuscula*—a

This unit is critical habitat for *Hesperomannia arbuscula* and is 597 ha (1,472 ac) on State (Mokuleia Forest Reserve and Pahole and Kaala NARs) land. This unit contains no named natural features. This unit provides habitat for 2 populations of 100 mature, reproducing individuals of the long-lived perennial *Hesperomannia arbuscula* and is currently occupied by 13 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. It provides habitat for the westernmost range of the species. The habitat features contained in this unit that are essential for this species include, but are not limited to, slopes or ridges in dry to wet forest

dominated by *Acacia koa* or *Metrosideros polymorpha*. This unit is geographically separated from critical habitat designated elsewhere on Oahu and on Maui for this species in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 4—*Hesperomannia arbuscula*—b

This unit is critical habitat for *Hesperomannia arbuscula* and is 32 ha (78 ac) on State (Waianae Kai Forest Reserve) land. This unit contains no named natural features. This unit provides habitat for one population of 100 mature, reproducing individuals of the long-lived perennial *Hesperomannia arbuscula* and is currently occupied by 70 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. It provides habitat for the westernmost range of the species. The habitat features contained in this unit that are essential for this species include, but are not limited to, slopes or ridges in dry to wet forest dominated by *Acacia koa* or *Metrosideros polymorpha*. This unit is geographically separated from critical habitat designated elsewhere on Oahu and on Maui for this species in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 15—*Hesperomannia arbuscula*—c

This unit is critical habitat for *Hesperomannia arbuscula* and is 163 ha (402 ac) on Federal, State, and private (Honouliuli Preserve) land, containing a portion of Puu Kanehoa. This unit provides habitat for one population of 100 mature, reproducing individuals of the long-lived perennial *Hesperomannia arbuscula* and is currently occupied by 7 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. It provides habitat for the westernmost range of the species. The habitat features contained in this unit that are essential for this species include, but are not limited to, slopes or ridges in dry to wet forest dominated by *Acacia koa* or *Metrosideros polymorpha*. This unit is geographically separated from critical habitat designated elsewhere on Oahu and on Maui for this species in order to avoid all recovery populations being

destroyed by one naturally-occurring catastrophic event.

Oahu 15—*Hesperomannia arbuscula*—d

This unit is critical habitat for *Hesperomannia arbuscula* and is 25 ha (60 ac) on State and private (Honouliuli Preserve) land, containing a portion of Puu Kaua. This unit, in combination with Oahu 15—*Hesperomannia arbuscula*—e, provides habitat for one population of 100 mature, reproducing individuals of the long-lived perennial *Hesperomannia arbuscula* and is currently unoccupied. This unit is essential to the conservation of the species because it supports habitat that is necessary for the establishment of additional populations on Oahu in order to reach recovery goals. It provides habitat for the westernmost range of the species. The habitat features contained in this unit that are essential for this species include, but are not limited to, slopes or ridges in dry to wet forest dominated by *Acacia koa* or *Metrosideros polymorpha*. This unit is geographically separated from critical habitat designated elsewhere on Oahu and on Maui for this species in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 15—*Hesperomannia arbuscula*—e

This unit is critical habitat for *Hesperomannia arbuscula* and is 70 ha (172 ac) on State and private (Honouliuli Preserve) land, containing a portion of Palikea Summit and Palikea Trail. This unit, in combination with Oahu 15—*Hesperomannia arbuscula*—d, provides habitat for one population of 100 mature, reproducing individuals of the long-lived perennial *Hesperomannia arbuscula* and is currently occupied by 12 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. It provides habitat for the westernmost range of the species. The habitat features contained in this unit that are essential for this species include, but are not limited to, slopes or ridges in dry to wet forest dominated by *Acacia koa* or *Metrosideros polymorpha*. This unit is geographically separated from critical habitat designated elsewhere on Oahu and on Maui for this species in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 1—*Hibiscus brackenridgei*—a

This unit is critical habitat for *Hibiscus brackenridgei* and is 78 ha (193 ac) on State and private land, containing a portion of Peacock Flat Trail. This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Hibiscus brackenridgei* and is currently occupied by 3 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. It provides habitat for the westernmost range of the species. The habitat features contained in this unit that are essential for *Hibiscus brackenridgei* ssp. *mokuleianus* include, but are not limited to, slopes, cliffs, or arid ledges in lowland dry forest or shrubland. This unit is geographically separated from critical habitat designated elsewhere on Oahu and on Molokai and Maui for this species in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 4—*Hibiscus brackenridgei*—b

This unit is critical habitat for *Hibiscus brackenridgei* and is 560 ha (1,385 ac) on private and State (Mokuleia Forest Reserve) land, containing a portion of Puu Iki. This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Hibiscus brackenridgei* and is currently occupied by 158 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. It provides habitat for the westernmost range of the species. The habitat features contained in this unit that are essential for *Hibiscus brackenridgei* ssp. *mokuleianus* include, but are not limited to, slopes, cliffs, or arid ledges in lowland dry forest or shrubland. This unit is geographically separated from critical habitat designated elsewhere on Oahu and on Molokai and Maui for this species in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 5—*Hibiscus brackenridgei*—c

This unit is critical habitat for *Hibiscus brackenridgei* and is 23 ha (56 ac) on State and private land in the Waianae Kai area. This unit contains no named natural features. This unit

provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Hibiscus brackenridgei* and is currently occupied by 4 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. It provides habitat for the westernmost range of the species. The habitat features contained in this unit that are essential for *Hibiscus brackenridgei* ssp. *mokokaiana* include, but are not limited to, dry shrublands. This unit is geographically separated from critical habitat designated elsewhere on Oahu and on Molokai and Maui for this species in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 4—*Isodendron laurifolium*—a

This unit is critical habitat for *Isodendron laurifolium* and is 616 ha (1,524 ac) on State (Mokuleia Forest Reserve and Pahole and Kaala NARs) land, containing a portion of Dupont Trail. This unit provides habitat for 4 populations of 300 mature, reproducing individuals of the short-lived perennial *Isodendron laurifolium* and is currently occupied by 19 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, gulch slopes, ravines, or ridges in diverse mesic or dry forest dominated by *Metrosideros polymorpha*, *Acacia koa*, *Eugenia reinwardtiana*, or *Diospyros sandwicensis*. This unit is geographically separated from critical habitat designated elsewhere on Oahu and on Kauai for this species in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 4—*Isodendron laurifolium*—b

This unit is critical habitat for *Isodendron laurifolium* and is 62 ha (154 ac) on State (Waianae Kai Forest Reserve) land. This unit contains no named natural features. This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Isodendron laurifolium* and is currently occupied by 46 individuals. This unit is essential to the conservation of the species because

it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, gulch slopes, ravines, or ridges in diverse mesic or dry forest dominated by *Metrosideros polymorpha*, *Acacia koa*, *Eugenia reinwardtiana*, or *Diospyros sandwicensis*. This unit is geographically separated from critical habitat designated elsewhere on Oahu and on Kauai for this species in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 35—*Isodendron laurifolium*—c

This unit is critical habitat for *Isodendron laurifolium* and is 277 ha (684 ac) on private and State (Honolulu Watershed Forest Reserve) land, containing a portion of Laulaupoe Gulch. This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Isodendron laurifolium* and is currently unoccupied. This unit is essential to the conservation of the species because it supports habitat that is necessary for the establishment of additional populations on Oahu in order to reach recovery goals. It provides habitat for the easternmost range of the species. The habitat features contained in this unit that are essential for this species include, but are not limited to, gulch slopes, ravines, or ridges in diverse mesic or dry forest dominated by *Metrosideros polymorpha*, *Acacia koa*, *Eugenia reinwardtiana*, or *Diospyros sandwicensis*. This unit is geographically separated from critical habitat designated elsewhere on Oahu and on Kauai for this species in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 4—*Isodendron longifolium*—a

This unit is critical habitat for *Isodendron longifolium* and is 552 ha (1,363 ac) on private and State (Mokuleia Forest Reserve and Kaala NAR) land, containing a portion of Dupont Trail. This unit provides habitat for 3 populations of 300 mature, reproducing individuals of the short-lived perennial *Isodendron longifolium* and is currently occupied by 40 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently

considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, steep slopes or stream banks in mixed mesic or lowland wet *Metrosideros polymorpha-Dicranopteris linearis* forest. This unit is geographically separated from critical habitat designated elsewhere on Oahu and on Kauai for this species in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 20—*Isodendron longifolium*—b

This unit is critical habitat for *Isodendron longifolium* and is 162 ha (399 ac) on private land. This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Isodendron longifolium* and is currently unoccupied. This unit is essential to the conservation of the species because it supports habitat that is necessary for the establishment of additional populations on Oahu in order to reach recovery goals. It provides habitat for the easternmost range of the species. The habitat features contained in this unit that are essential for this species include, but are not limited to, steep slopes or stream banks in mixed mesic or lowland wet *Metrosideros polymorpha-Dicranopteris linearis* forest. This unit is geographically separated from critical habitat designated elsewhere on Oahu and on Kauai for this species in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 5—*Isodendron pyriformis*—a

This unit is critical habitat for *Isodendron pyriformis* and is 30 ha (74 ac) on State and private land in the Waianae Kai area. This unit contains no named natural features. This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Isodendron pyriformis* and is currently unoccupied. This unit is essential to the conservation of the species because it supports habitat that is necessary for the establishment of additional populations on Oahu in order to reach recovery goals. It provides habitat for the westernmost range of the species. The habitat features contained in this unit that are essential for this species include, but are not limited to, bare, rocky hills or wooded ravines in dry shrublands. This unit provides is geographically separated from critical habitat designated elsewhere on Oahu and on Molokai and Maui for this species in order to avoid all recovery

populations being destroyed by one naturally-occurring catastrophic event.

Oahu 16—*Isodendron pyriformis*—b

This unit is critical habitat for *Isodendron pyriformis* and is 130 ha (318 ac) on private and State (Nanakuli Forest Reserve) land. This unit contains no named natural features. This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Isodendron pyriformis* and is currently unoccupied. This unit is essential to the conservation of the species because it supports habitat that is necessary for the establishment of additional populations on Oahu in order to reach recovery goals. It provides habitat for the westernmost range of the species. The habitat features contained in this unit that are essential for this species include, but are not limited to, bare, rocky hills or wooded ravines in dry shrublands. This unit provides is geographically separated from critical habitat designated elsewhere on Oahu and on Molokai and Maui for this species in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 17—*Isodendron pyriformis*—c

This unit is critical habitat for *Isodendron pyriformis* and is 73 ha (181 ac) on State (Nanakuli Forest Reserve) land. This unit contains no named natural features. This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Isodendron pyriformis* and is currently unoccupied. This unit is essential to the conservation of the species because it supports habitat that is necessary for the establishment of additional populations on Oahu in order to reach recovery goals. It provides habitat for the westernmost range of the species. The habitat features contained in this unit that are essential for this species include, but are not limited to, bare, rocky hills or wooded ravines in dry shrublands. This unit provides is geographically separated from critical habitat designated elsewhere on Oahu and on Molokai and Maui for this species in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 4—*Labordia cyrtandrae*—a

This unit is critical habitat for *Labordia cyrtandrae* and is 161 ha (397 ac) on State (Mokuleia Forest Reserve, Kaala NAR, and Waianae Kai Forest Reserve) land, containing a portion of Kamaohanui Summit. This unit provides habitat for 4 populations of

300 mature, reproducing individuals of the short-lived perennial *Labordia cyrtandrae* and is currently occupied by 17 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, shady gulches, slopes, or glens in mesic to wet forests and shrublands dominated by *Metrosideros polymorpha*, *Diplopterygium pinnatum*, and/or *Acacia koa*. This unit is geographically separated from the other two units designated as critical habitat for this island-endemic species, in order to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 20—*Labordia cyrtandrae*—b

This unit is critical habitat for *Labordia cyrtandrae* and is 595 ha (1,473 ac) on private and State (Hauula Forest Reserve, Sacred Falls State Park, and Kaipapau Forest Reserve) land, containing a portion of the Koolau Summit Trail. This unit provides habitat for 4 populations of 300 mature, reproducing individuals of the short-lived perennial *Labordia cyrtandrae* and is currently unoccupied. This unit is essential to the conservation of the species because it supports habitat that is necessary for the establishment of additional populations on Oahu in order to reach recovery goals. The habitat features contained in this unit that are essential for this species include, but are not limited to, shady gulches, slopes, or glens in mesic to wet forests and shrublands dominated by *Metrosideros polymorpha*, *Diplopterygium pinnatum*, and/or *Acacia koa*. This unit is geographically separated from the other two units designated as critical habitat for this island-endemic species, in order to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 20—*Labordia cyrtandrae*—c

This unit is critical habitat for *Labordia cyrtandrae* and is 617 ha (1,525 ac) on private and State (Waiahole Forest Reserve and Ewa Forest Reserve) land, containing a portion of Eleao, Nanaikaalaea, and Ulimakoli Summits. This unit provides habitat for 2 populations of 300 mature, reproducing individuals of the short-lived perennial *Labordia cyrtandrae* and is currently occupied by one individual. This unit is essential to the conservation of the species because it supports an

extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, shady gulches, slopes, or glens in mesic to wet forests and shrublands dominated by *Metrosideros polymorpha*, *Diplopterygium pinnatum*, and/or *Acacia koa*. This unit is geographically separated from the other two units designated as critical habitat for this island-endemic species, in order to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 4—*Lepidium arbuscula*—a

This unit is critical habitat for *Lepidium arbuscula* and is 330 ha (813 ac) on State (Waianae Kai Forest Reserve) land, containing a portion of Kamaileunu Ridge, Puu Kawiwi, and Puu Kepauala. This unit provides habitat for 4 populations of 300 mature, reproducing individuals of the short-lived perennial *Lepidium arbuscula* and is currently occupied by 51 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, exposed ridge tops and cliff faces in mesic and dry vegetation communities. This unit is geographically separated from the other two units designated as critical habitat for this island-endemic species, in order to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 15—*Lepidium arbuscula*—b

This unit is critical habitat for *Lepidium arbuscula* and is 118 ha (293 ac) on Federal (Lualualei Naval Reservation), State, and private (Honouliuli Preserve) land, containing a portion of Puu Kaua. This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Lepidium arbuscula* and is currently occupied by 150 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are

not limited to, exposed ridge tops and cliff faces in mesic and dry vegetation communities. This unit is geographically separated from the other two units designated as critical habitat for this island-endemic species, in order to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 15—*Lepidium arbuscula*—c

This unit is critical habitat for *Lepidium arbuscula* and is 99 ha (244 ac) on Federal (Lualualei Naval Reservation) and State land. This unit contains no named natural features. This unit provides habitat for 2 populations of 300 mature, reproducing individuals of the short-lived perennial *Lepidium arbuscula* and is currently occupied by 613 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population. The habitat features contained in this unit that are essential for this species include, but are not limited to, exposed ridge tops and cliff faces in mesic and dry vegetation communities. This unit is geographically separated from the other two units designated as critical habitat for this island-endemic species, in order to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 4—*Lipochaeta lobata* var. *leptophylla*—a

This unit is critical habitat for *Lipochaeta lobata* var. *leptophylla* and is 139 ha (345 ac) on State (Waianae Kai Forest Reserve) land, containing a portion of Puu Kawiwi. This unit provides habitat for 2 populations of 300 mature, reproducing individuals of the short-lived perennial *Lipochaeta lobata* var. *leptophylla* and is currently occupied by 2 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, cliffs, ridges, or slopes in dry or mesic shrubland. This unit is geographically separated from the other unit designated as critical habitat for this island-endemic species, in order to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 15—*Lipochaeta lobata* var. *leptophylla*—b

This unit is critical habitat for *Lipochaeta lobata* var. *leptophylla* and is 534 ha (1,321 ac) on Federal (Lualualei Naval Reservation), State, and private (Honouliuli Preserve) land, containing a portion of Palikea Summit, Pohakea Pass, Puu Hapapa, Puu Kanehoa, and Puu Kaua. This unit provides habitat for 8 populations of 300 mature, reproducing individuals of the short-lived perennial *Lipochaeta lobata* var. *leptophylla* and is currently occupied by 144 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, cliffs, ridges, or slopes in dry or mesic shrubland. This unit is geographically separated from the other unit designated as critical habitat for this island-endemic species, in order to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 4—*Lipochaeta tenuifolia*—a

This unit is critical habitat for *Lipochaeta tenuifolia* and is 23 ha (57 ac) on State (Makua Keau Forest Reserve) land. This unit contains no named natural features. This unit provides habitat for 2 populations of 300 mature, reproducing individuals of the short-lived perennial *Lipochaeta tenuifolia* and is currently occupied by 50 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, ridge tops or bluffs in open areas or protected pockets of dry to mesic forest or shrublands. Although we do not believe that enough critical habitat currently exists to reach the recovery goal of 8 to 10 populations for this species, this unit is geographically separated from the other two units designated as critical habitat for this island-endemic species to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event. In addition, this unit is separated from Army lands at Makua Military Reservation that provide

habitat for one population of this species.

Oahu 4—*Lipochaeta tenuifolia*—b

This unit is critical habitat for *Lipochaeta tenuifolia* and is 66 ha (167 ac) on State (Kaala NAR) land. This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Lipochaeta tenuifolia* and is currently occupied by 100 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, ridge tops or bluffs in open areas or protected pockets of dry to mesic forest or shrublands. Although we do not believe that enough critical habitat currently exists to reach the recovery goal of 8 to 10 populations for this species, this unit is geographically separated from the other two units designated as critical habitat for this island-endemic species to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event. In addition, this unit is separated from Army lands at Makua Military Reservation that provide habitat for one population of this species.

Oahu 4—*Lipochaeta tenuifolia*—c

This unit is critical habitat for *Lipochaeta tenuifolia* and is 118 ha (292 ac) on State (Waianaes Kai Forest Reserve) land. This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Lipochaeta tenuifolia* and is currently occupied by 150 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, ridge tops or bluffs in open areas or protected pockets of dry to mesic forest or shrublands. Although we do not believe that enough critical habitat currently exists to reach the recovery goal of 8 to 10 populations for this species, this unit is geographically separated from the other two units designated as critical habitat for this island-endemic species to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event. In addition, this unit

is separated from Army lands at Makua Military Reservation that provide habitat for one population of this species.

Oahu 20—*Lobelia gaudichaudii* ssp. *koolauensis*—a

This unit is critical habitat for *Lobelia gaudichaudii* ssp. *koolauensis* and is 926 ha (2,287 ac) on private and State (Oahu Forest National Wildlife Refuge, Hauula Forest Reserve, Sacred Falls State Park, Kaipapau Forest Reserve, Kahana Valley State Park, Ewa Forest Reserve, and Waiahole Forest Reserve) land, containing a portion of Eleao, Puu Kaaumakua, and Puu Pauao Summits, and the Koolau Summit Trail. This unit provides habitat for 7 populations of 300 mature, reproducing individuals of the short-lived perennial *Lobelia gaudichaudii* ssp. *koolauensis* and is currently occupied by 247 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, moderate to steep slopes in *Metrosideros polymorpha* lowland wet shrublands or bogs. This unit is extensive and is geographically separated from Army lands at Kawaiiloa Training Area that provide habitat for two populations of this species (see “*Analysis of Impacts Under Section 4(b)(2): Other Impacts*”). It is therefore unlikely that all populations would be destroyed by one naturally occurring catastrophic event.

Oahu 30—*Lobelia monostachya*—a

This unit is critical habitat for *Lobelia monostachya* and is 59 ha (150 ac) on private and State (Honolulu Watershed Forest Reserve) land. This unit contains no named natural features. This unit provides habitat for one population of 100 mature, reproducing individuals of the long-lived perennial *Lobelia monostachya* and is currently unoccupied. This unit is essential to the conservation of the species because it supports habitat that is necessary for the establishment of additional populations on Oahu in order to reach recovery goals. The habitat features contained in this unit that are essential for this species include, but are not limited to, steep, sparsely vegetated cliffs in mesic shrubland. Although we do not believe that enough critical habitat currently exists to reach the recovery goal of 8 to 10 populations for this species, this unit is geographically separated from the

other three units designated as critical habitat for this island-endemic species to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 32—*Lobelia monostachya*—b

This unit is critical habitat for *Lobelia monostachya* and is 47 ha (115 ac) on private and State (Honolulu Watershed Forest Reserve) land, containing a portion of Kulepiamo, Mauumae, and Wiliwilinui Ridges. This unit provides habitat for 4 populations of 100 mature, reproducing individuals of the long-lived perennial *Lobelia monostachya* and is currently occupied by 3 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, steep, sparsely vegetated cliffs in mesic shrubland. Although we do not believe that enough critical habitat currently exists to reach the recovery goal of 8 to 10 populations for this species, this unit is geographically separated from the other three units designated as critical habitat for this island-endemic species to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 33—*Lobelia monostachya*—c

This unit is critical habitat for *Lobelia monostachya* and is 70 ha (174 ac) on private and State (Honolulu Watershed Forest Reserve and Waahila Ridge State Park) land, containing a portion of Waahila Ridge. This unit provides habitat for one population of 100 mature, reproducing individuals of the long-lived perennial *Lobelia monostachya* and is currently unoccupied. This unit is essential to the conservation of the species because it supports habitat that is necessary for the establishment of additional populations on Oahu in order to reach recovery goals. The habitat features contained in this unit that are essential for this species include, but are not limited to, steep, sparsely vegetated cliffs in mesic shrubland. Although we do not believe that enough critical habitat currently exists to reach the recovery goal of 8 to 10 populations for this species, this unit is geographically separated from the other three units designated as critical habitat for this island-endemic species to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 35—*Lobelia monostachya*—d

This unit is critical habitat for *Lobelia monostachya* and is 493 ha (1,217 ac) on private, Federal, and State (Honolulu Watershed Forest Reserve) land. This unit contains no named natural features. This unit provides habitat for one population of 100 mature, reproducing individuals of the long-lived perennial *Lobelia monostachya* and is currently unoccupied. This unit is essential to the conservation of the species because it supports habitat that is necessary for the establishment of additional populations on Oahu in order to reach recovery goals. The habitat features contained in this unit that are essential for this species include, but are not limited to, steep, sparsely vegetated cliffs in mesic shrubland. Although we do not believe that enough critical habitat currently exists to reach the recovery goal of 8 to 10 populations for this species, this unit is geographically separated from the other three units designated as critical habitat for this island-endemic species to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 4—*Lobelia niihauensis*—a

This unit is critical habitat for *Lobelia niihauensis* and is 44 ha (108 ac) on State (Waianae Kai Forest Reserve) land, containing a portion of Puu Kawiwi. This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Lobelia niihauensis* and is currently occupied by 14 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. It provides habitat for the easternmost range of the species. The habitat features contained in this unit that are essential for this species include, but are not limited to, exposed mesic or dry cliffs or ledges. This unit is geographically separated from critical habitat designated elsewhere on Oahu and on Kauai for this species in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 17—*Lobelia niihauensis*—b

This unit is critical habitat for *Lobelia niihauensis* and is 41 ha (102 ac) on State (Nanakuli Forest Reserve) land. This unit contains no named natural features. This unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Lobelia niihauensis* and

is currently occupied by 37 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. It provides habitat for the easternmost range of the species. The habitat features contained in this unit that are essential for this species include, but are not limited to, exposed mesic or dry cliffs or ledges. This unit is geographically separated from critical habitat designated elsewhere on Oahu and on Kauai for this species in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 20—*Lobelia oahuensis*—a

This unit is critical habitat for *Lobelia oahuensis* and is 493 ha (1,218 ac) on private, Federal, and State (Oahu Forest National Wildlife Refuge, Kahana Valley State Park, Ewa Forest Reserve, and Waiahole Forest Reserve) land, containing a portion of Puu Pauao, and Eleao, Puu Kaaumakua, Puu Kahuauli, and Puu Keahiakahoe Summits. This unit provides habitat for 7 populations of 300 mature, reproducing individuals of the short-lived perennial *Lobelia oahuensis* and is currently occupied by 13 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, steep slopes on summit cliffs in cloudswet wet forests or in lowland wet shrublands that are frequently exposed to heavy wind and rain. This unit is rather extensive and is geographically separated from the other unit designated as critical habitat for this island-endemic species, in order to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 35—*Lobelia oahuensis*—b

This unit is critical habitat for *Lobelia oahuensis* and is 152 ha (374 ac) on private and State (Honolulu Watershed Forest Reserve and Kuliouou Forest Reserve) land, containing a portion of Kaiawaunui, Konahuanui, and Palike Summits, Mount Olympus, and Puu o Kona. This unit provides habitat for 3 populations of 300 mature, reproducing individuals of the short-lived perennial *Lobelia oahuensis* and is currently occupied by 38 individuals. This unit is essential to the conservation of the

species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, steep slopes on summit cliffs in cloudswet wet forests or in lowland wet shrublands that are frequently exposed to heavy wind and rain. This unit is geographically separated from the other unit designated as critical habitat for this island-endemic species, in order to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 20—*Lysimachia filifolia*—a

This unit is critical habitat for *Lysimachia filifolia* and is 1,512 ha (3,734 ac) on private, Federal, and State (Hauula Forest Reserve, Sacred Falls State Park, Kaipapau Forest Reserve, Kahana Valley State Park, Waiahole Forest Reserve, and Kaneohe Forest Reserve) land, containing a portion of Castle Trail, Keaahala Spring, Nanaikaalaea Summit, Nuanu Pali, Puu Kaaumakua, Puu Kahuauli, Puu Keahiakahoe, Puu Pauao, Sacred Falls, Waiahole Ditch, and the Luluku Tunnels. This unit provides habitat for 6 populations of 300 mature, reproducing individuals of the short-lived perennial *Lysimachia filifolia* and is currently occupied by 160 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. It provides habitat for the easternmost range of the species. The habitat features contained in this unit that are essential for this species include, but are not limited to, mossy banks at the base of cliff faces within the spray zone of waterfalls or along streams. This unit is geographically separated from critical habitat designated on Kauai for this species in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 4—*Mariscus pennatiformis*—a

This unit is critical habitat for *Mariscus pennatiformis* and is 166 ha (410 ac) on State (Pahole NAR and Mokuleia Forest Reserve) land. This unit contains no named natural features. This unit provides habitat for 2 populations of 300 mature, reproducing individuals of the short-lived perennial *Mariscus pennatiformis* and is currently

unoccupied. This unit is essential to the conservation of the species because it supports habitat that is necessary for the establishment of additional populations on Oahu in order to reach recovery goals. The habitat features contained in this unit that are essential for this species include, but are not limited to, mesic and wet *Metrosideros polymorpha* forest and *Metrosideros polymorpha-Acacia koa* forest. This unit is geographically separated from critical habitat designated elsewhere on Oahu and on Kauai, Maui, and the Northwestern Hawaiian Islands for this species in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 4—*Mariscus pennatiformis*—b

This unit is critical habitat for *Mariscus pennatiformis* and is 171 ha (421 ac) on State (Mokuleia Forest Reserve) land. This unit contains no named natural features. This unit provides habitat for 2 populations of 300 mature, reproducing individuals of the short-lived perennial *Mariscus pennatiformis* and is currently unoccupied. This unit is essential to the conservation of the species because it supports habitat that is necessary for the establishment of additional populations on Oahu in order to reach recovery goals. The habitat features contained in this unit that are essential for this species include, but are not limited to, mesic and wet *Metrosideros polymorpha* forest and *Metrosideros polymorpha-Acacia koa* forest. This unit is geographically separated from critical habitat designated elsewhere on Oahu and on Kauai, Maui, and the Northwestern Hawaiian Islands for this species in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 13—*Marsilea villosa*—a

This unit is critical habitat for *Marsilea villosa* and is 10 ha (25 ac) on Federal (Lualualei Naval Reservation) land. This unit contains no named natural features. This unit provides habitat for one population of an unknown number of mature, reproducing individuals of the annual *Marsilea villosa* and is currently occupied by 50 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. It provides habitat for the westernmost range of the species. The habitat features contained in this unit that are essential for this species

include, but are not limited to, seasonal wetlands in cinder craters, vernal pools surrounded by lowland dry forest vegetation, mud flats, and lowland grasslands. This unit is geographically separated from critical habitat designated elsewhere on Oahu for this species in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 14—*Marsilea villosa*—b

This unit is critical habitat for *Marsilea villosa* and is 7 ha (18 ac) on State (Lualualei Naval Reservation) land. This unit contains no named natural features. This unit provides habitat for one population of an unknown number of mature, reproducing individuals of the annual *Marsilea villosa* and is currently occupied by one individual. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. It provides habitat for the westernmost range of the species. The habitat features contained in this unit that are essential for this species include, but are not limited to, seasonal wetlands in cinder craters, vernal pools surrounded by lowland dry forest vegetation, mud flats, and lowland grasslands. This unit is geographically separated from critical habitat designated elsewhere on Oahu for this species in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 28—*Marsilea villosa*—c

This unit is critical habitat for *Marsilea villosa* and is 7 ha (18 ac) on State land, containing a portion of the flanks of Koko Head Crater. This unit, in combination with unit Oahu 29—*Marsilea villosa*—d, provides habitat for one population of an unknown number of mature, reproducing individuals of the annual *Marsilea villosa* and is currently occupied by 10 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, seasonal wetlands in cinder craters, vernal pools surrounded by lowland dry forest vegetation, mud flats, and lowland grasslands. This unit is geographically separated from critical habitat designated elsewhere on Oahu

for this species in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 29—*Marsilea villosa*—d

This unit is critical habitat for *Marsilea villosa* and is 5 ha (11 ac) on State land, containing a portion of the flanks of Koko Head Crater. This unit, in combination with unit Oahu 28—*Marsilea villosa*—c, provides habitat for one population of an unknown number of mature, reproducing individuals of the annual *Marsilea villosa* and is currently unoccupied. This unit is essential to the conservation of the species because it supports habitat that is necessary for the establishment of additional populations on Oahu in order to reach recovery goals. The habitat features contained in this unit that are essential for this species include, but are not limited to, seasonal wetlands in cinder craters, vernal pools surrounded by lowland dry forest vegetation, mud flats, and lowland grasslands. This unit is geographically separated from critical habitat designated elsewhere on Oahu for this species in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 36—*Marsilea villosa*—e

This unit is critical habitat for *Marsilea villosa* and is 6 ha (14 ac) on State (Diamond Head State Park) land. This unit contains no named natural features. This unit provides habitat for one population of an unknown number of mature, reproducing individuals of the annual *Marsilea villosa* and is currently unoccupied. This unit is essential to the conservation of the species because it supports habitat that is necessary for the establishment of additional populations on Oahu in order to reach recovery goals. The habitat features contained in this unit that are essential for this species include, but are not limited to, seasonal wetlands in cinder craters, vernal pools surrounded by lowland dry forest vegetation, mud flats, and lowland grasslands. This unit is geographically separated from critical habitat designated elsewhere on Oahu for this species in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 20—*Melicope lydgatei*—a

This unit is critical habitat for *Melicope lydgatei* and is 3,499 ha (8,645 ac) on private and State (Ewa Forest Reserve and Keaiwa Heiau State Park) land, containing a portion of Puu Uau, and Aiea, Kipapa, and Waimano Trails.

This unit provides habitat for 6 populations of 100 mature, reproducing individuals of the long-lived perennial *Melicope lydgatei* and is currently occupied by 2 individuals. This unit is essential to the conservation of the species because it supports habitat that is necessary for the establishment of additional populations on Oahu in order to reach recovery goals. The habitat features contained in this unit that are essential for this species include, but are not limited to, ridges in mesic or wet forests. This unit is geographically separated from Army lands at Kawaiiloa Training Area that provide habitat for five populations of this species, in order to avoid all populations from being destroyed by one naturally occurring catastrophic event (see "Analysis of Impacts Under Section 4(b)(2): Other Impacts").

Oahu 4—*Melicope pallida*—a

This unit is critical habitat for *Melicope pallida* and is 855 ha (2,110 ac) on private and State (Mokuleia Forest Reserve and Kaala and Pahole NARs) land, containing a portion of Dupont Trail. This unit provides habitat for 3 populations of 100 mature, reproducing individuals of the long-lived perennial *Melicope pallida* and is currently unoccupied. This unit is essential to the conservation of the species because it supports habitat that is necessary for the establishment of additional populations on Oahu in order to reach recovery goals. The habitat features contained in this unit that are essential for this species include, but are not limited to, steep rock faces in lowland dry or mesic forest. This unit is geographically separated from critical habitat designated elsewhere on Oahu and on Kauai for this species in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 15—*Melicope pallida*—b

This unit is critical habitat for *Melicope pallida* and is 174 ha (431 ac) on private (Honouliuli Preserve) land. This unit contains no named natural features. This unit provides habitat for one population of 100 mature, reproducing individuals of the long-lived perennial *Melicope pallida* and is currently unoccupied. This unit is essential to the conservation of the species because it supports habitat that is necessary for the establishment of additional populations on Oahu in order to reach recovery goals. It provides habitat for the easternmost range of the species. The habitat features contained in this unit that are essential for this species include, but are not limited to,

steep rock faces in lowland dry or mesic forest. This unit is geographically separated from critical habitat designated elsewhere on Oahu and on Kauai for this species in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 15—*Melicope pallida*—c

This unit is critical habitat for *Melicope pallida* and is 29 ha (71 ac) on Federal (Lualualei Naval Reservation) and State land. This unit contains no named natural features. This unit, in combination with unit Oahu 15—*Melicope pallida*—d, provides habitat for one population of 100 mature, reproducing individuals of the long-lived perennial *Melicope pallida* and is currently unoccupied. This unit is essential to the conservation of the species because it supports habitat that is necessary for the establishment of additional populations on Oahu in order to reach recovery goals. The habitat features contained in this unit that are essential for this species include, but are not limited to, steep rock faces in lowland dry or mesic forest. This unit is geographically separated from critical habitat designated elsewhere on Oahu and on Kauai for this species in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 15—*Melicope pallida*—d

This unit is critical habitat for *Melicope pallida* and is 20 ha (51 ac) on State and Federal (Lualualei Naval Reservation) land. This unit, in combination with unit Oahu 15—*Melicope pallida*—c, contains no named natural features. This unit provides habitat for one population of 100 mature, reproducing individuals of the long-lived perennial *Melicope pallida* and is currently unoccupied. This unit is essential to the conservation of the species because it supports habitat that is necessary for the establishment of additional populations on Oahu in order to reach recovery goals. The habitat features contained in this unit that are essential for this species include, but are not limited to, steep rock faces in lowland dry or mesic forest. This unit is geographically separated from critical habitat designated elsewhere on Oahu and on Kauai for this species in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 15—*Melicope pallida*—e

This unit is critical habitat for *Melicope pallida* and is 243 ha (602 ac) on private (Honouliuli Preserve) land.

This unit contains no named natural features. This unit provides habitat for one population of 100 mature, reproducing individuals of the long-lived perennial *Melicope pallida* and is currently occupied by one individual. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. It provides habitat for the easternmost range of the species. The habitat features contained in this unit that are essential for this species include, but are not limited to, steep rock faces in lowland dry or mesic forest. This unit is geographically separated from critical habitat designated elsewhere on Oahu and on Kauai for this species in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 15—*Melicope saint-johnii*—a

This unit is critical habitat for *Melicope saint-johnii* and is 244 ha (604 ac) on Federal (Lualualei Naval Reservation), State, and private (Honouliuli Preserve) land, containing a portion of Puu Hapapa, Puu Kanehoa, and Puu Kaua. This unit provides habitat for 2 populations of 100 mature, reproducing individuals of the long-lived perennial *Melicope saint-johnii* and is currently occupied by 4 individuals. This unit is essential to the conservation of the species because it supports an extant colony of this species and includes habitat that is necessary for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential for this species include, but are not limited to, ridges or gulch bottoms in mesic forest. Although we do not believe that enough critical habitat currently exists to reach the recovery goal of 8 to 10 populations for this species, this unit is geographically separated from the other unit designated as critical habitat for this island-endemic species to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 15—*Melicope saint-johnii*—b

This unit is critical habitat for *Melicope saint-johnii* and is 214 ha (529 ac) on Federal (Lualualei Naval Reservation), State (Nanakuli Forest Reserve), and private (Honouliuli Preserve) land, containing a portion of Palikea Summit. This unit provides habitat for one population of 100