

mature, reproducing individuals of the long-lived perennial *Melicope saint-johnii* and is currently occupied by 161 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 20—*Myrsine juddii*—a

This unit is critical habitat for *Myrsine juddii* and is 950 ha (2,347 ac) on private and State (Hauula Forest Reserve, Sacred Falls State Park, Kaipapau Forest Reserve, Kahana Valley State Park, and Ewa Forest Reserve) land, containing the Koolau Summit Trail. This unit provides habitat for 6 populations of 100 mature, reproducing individuals of the long-lived perennial *Myrsine juddii* and is currently occupied by 5,000 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, ridge crests or gulch slopes in wet forests or shrublands dominated by *Metrosideros polymorpha* or a mixture of *Metrosideros polymorpha* and *Dicranopteris linearis*. This unit is extensive and is geographically separated from Army lands at Kawaiiloa and Schofield Barracks that provide habitat for four 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 3—*Neraudia angulata*—a

This unit is critical habitat for *Neraudia angulata* and is 39 ha (97 ac) on State (Kaena Point State Park and 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 *Neraudia angulata* 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 *Neraudia angulata* var. *angulata* include, but are not limited to, slopes, ledges, or gulches in lowland mesic or dry forest. The habitat features contained in this unit that are essential for *Neraudia angulata* var. *dentata* include, but are not limited to, cliffs, rock embankments, gulches, or slopes in mesic or dry forest. This unit is geographically separated from the other five units designated as critical habitat for this island-endemic species, and from habitat for three populations on Army lands at Makua Military Reservation, in order to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 4—*Neraudia angulata*—b

This unit is critical habitat for *Neraudia angulata* and is 90 ha (222 ac) on private and State (Mokuleia Forest Reserve and Pahole NAR) 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 *Neraudia angulata* 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 *Neraudia angulata* var. *angulata* include, but are not limited to, slopes, ledges, or gulches in lowland mesic or dry forest. The habitat features contained in this unit that are essential for *Neraudia angulata* var. *dentata* include, but are not limited to, cliffs, rock embankments, gulches, or slopes in mesic or dry forest. This unit is geographically separated from the other five units designated as critical habitat for this island-endemic species and from habitat for three populations on Army lands at Makua Military Reservation, in order to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 4—*Neraudia angulata*—c

This unit is critical habitat for *Neraudia angulata* and is 298 ha (736 ac) on State land in the Waianae Kai area. This unit contains no named natural features. This unit provides habitat for 2 populations of 300 mature, reproducing individuals of the short-lived perennial *Neraudia angulata* 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 *Neraudia angulata* var. *angulata* include, but are not limited to, slopes, ledges, or gulches in lowland mesic or dry forest. The habitat features contained in this unit that are essential for *Neraudia angulata* var. *dentata* include, but are not limited to, cliffs, rock embankments, gulches, or slopes in mesic or dry forest. This unit is geographically separated from the other five units designated as critical habitat for this island-endemic species and from habitat for three populations on Army lands at Makua Military Reservation, in order to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 4—*Neraudia angulata*—d

This unit is critical habitat for *Neraudia angulata* and is 33 ha (81 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 *Neraudia angulata* 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 *Neraudia angulata* var. *angulata* include, but are not limited to, slopes, ledges, or gulches in lowland mesic or dry forest. The habitat features contained in this unit that are essential for *Neraudia angulata* var. *dentata* include, but are not limited to, cliffs, rock embankments, gulches, or slopes in mesic or dry forest. This unit is geographically separated from the other five units designated as critical habitat for this island-endemic species and from habitat for three populations on Army lands at Makua Military Reservation, in order to avoid all

recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 4—*Neraudia angulata*—e

This unit is critical habitat for *Neraudia angulata* and is 40 ha (98 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 *Neraudia angulata* 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 *Neraudia angulata* var. *angulata* include, but are not limited to, slopes, ledges, or gulches in lowland mesic or dry forest. The habitat features contained in this unit that are essential for *Neraudia angulata* var. *dentata* include, but are not limited to, cliffs, rock embankments, gulches, or slopes in mesic or dry forest. This unit is geographically separated from the other five units designated as critical habitat for this island-endemic species and from habitat for three populations on Army lands at Makua Military Reservation, in order to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 15—*Neraudia angulata*—f

This unit is critical habitat for *Neraudia angulata* and is 83 ha (207 ac) on Federal (Lualualei Naval Reservation) and 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 *Neraudia angulata* 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 *Neraudia angulata* var. *angulata* include, but are not limited to, slopes, ledges, or gulches in lowland mesic or dry forest. The habitat features contained in this unit that are essential for *Neraudia angulata* var. *dentata* include, but are not limited to, cliffs, rock embankments, gulches, or slopes in mesic or dry forest. This unit is

geographically separated from the other five units designated as critical habitat for this island-endemic species and from habitat for three populations on Army lands at Makua Military Reservation, in order to avoid all recovery populations from being destroyed by one naturally occurring catastrophic event.

Oahu 3—*Nototrichium humile*—a

This unit is critical habitat for *Nototrichium humile* and is 20 ha (51 ac) on State (Kaena Point State Park and 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 *Nototrichium humile* and is currently occupied by 900 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, cliff faces, gulches, stream banks, or steep slopes in dry or mesic forest often dominated by *Sapindus oahunensis* or *Diopsiros sandwicensis*. 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—*Nototrichium humile*—b

This unit is critical habitat for *Nototrichium humile* and is 229 ha (568 ac) on private and State (Pahole NAR and Mokuleia Forest Reserve) land, containing a portion of Mokuleia Trail. This unit provides habitat for 2 populations of 300 mature, reproducing individuals of the short-lived perennial *Nototrichium humile* 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, cliff faces, gulches, stream banks, or steep slopes in dry or mesic forest often dominated by *Sapindus oahunensis* or *Diopsiros sandwicensis*. 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—*Nototrichium humile*—c

This unit is critical habitat for *Nototrichium humile* and is 236 ha (586 ac) on private and State (Mokuleia Forest Reserve and Kaala NAR) 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 *Nototrichium humile* and is currently occupied by 54 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, gulches, stream banks, or steep slopes in dry or mesic forest often dominated by *Sapindus oahunensis* or *Diopsiros sandwicensis*. 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—*Nototrichium humile*—d

This unit is critical habitat for *Nototrichium humile* and is 30 ha (75 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 *Nototrichium humile* and is currently occupied by 215 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, gulches, stream banks, or steep slopes in dry or mesic forest often dominated by *Sapindus oahunensis* or *Diopsiros sandwicensis*. 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—*Peucedanum sandwicense*—a

This unit is critical habitat for *Peucedanum sandwicense* and is 76 ha

(186 ac) on State (Waianae Kai Forest Reserve) lands, containing Puu Kawiwi. The unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Peucedanum sandwicense* and is currently occupied by 34 individuals. The unit is important to the species' conservation because it supports an extant colony 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 to *Peucedanum sandwicense* include, but are not limited to, cliffs, slopes, or ridges in *Metrosideros polymorpha* lowland 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 20—*Phlegmariurus nutans*—a

This unit is critical habitat for *Phlegmariurus nutans* and is 1,624 ha (4,014 ac) on State (Hauula Forest Reserve, Sacred Falls State Park, Kaipapau Forest Reserve, Kahana Valley State Park, and Ewa Forest Reserve), and private lands. Natural features found in this unit include Castle Trail, Puu Kaaumakua, and Puu Pauao. The unit provides habitat for 5 populations of 300 mature, reproducing individuals of the short-lived perennial *Phlegmariurus nutans* and is currently occupied by contains 5 individuals. This unit is essential to the species' conservation because it supports an extant colony and includes habitat that is important for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential to *Phlegmariurus nutans* include, but are not limited to, tree trunks on open ridges, forested slopes, or cliffs in *Metrosideros polymorpha*-dominated wet forests, on cliffs, in shrublands, or in mesic forests. 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—*Phyllostegia hirsuta*—a

This unit is critical habitat for *Phyllostegia hirsuta* and is 113 ha (282 ac) on State (Mokuleia Forest Reserve, Kaala NAR, and Waianae Kai Forest Reserve) lands. There are no named natural features in this unit. This unit contains 4 individuals and provides habitat for one population of 300

mature, reproducing individuals of the short-lived perennial *Phyllostegia hirsuta*. The unit is essential to the species' conservation because it supports an extant colony and includes habitat that is important for the expansion of the present population, which is currently considered nonviable. The habitat features contained in this unit that are essential to *Phyllostegia hirsuta* include, but are not limited to, steep, shaded slopes, cliffs, ridges, gullies, or stream banks in mesic or wet forests dominated by *Metrosideros polymorpha* or a mixture of *Metrosideros polymorpha* and *Dicranopteris linearis*. 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 being destroyed by one naturally-occurring catastrophic event.

Oahu 15—*Phyllostegia hirsuta*—b

This unit is critical habitat for *Phyllostegia hirsuta* and is 131 ha (324 ac) on Federal (Lualualei Naval Reservation), State, and private (Honouliuli Preserve) lands, containing Puu Hapapa and Puu Kanehoa. This unit is currently occupied by 50 individuals and provides habitat for 2 populations of 300 mature, reproducing individuals of the short-lived perennial *Phyllostegia hirsuta*. The unit is essential to the species' conservation because it supports an extant colony 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 to *Phyllostegia hirsuta* include, but are not limited to, steep, shaded slopes, cliffs, ridges, gullies, or stream banks in mesic or wet forests dominated by *Metrosideros polymorpha* or a mixture of *Metrosideros polymorpha* and *Dicranopteris linearis*. 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 being destroyed by one naturally-occurring catastrophic event.

Oahu 15—*Phyllostegia hirsuta*—c

This unit is critical habitat for *Phyllostegia hirsuta* and is 69 ha (171 ac) on private (Honouliuli Preserve) lands. There are no named natural features in this unit. The unit is currently occupied by 2 individuals and provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Phyllostegia hirsuta*. The unit is essential to the species' conservation because it

supports an extant colony 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 to *Phyllostegia hirsuta* include, but are not limited to, steep, shaded slopes, cliffs, ridges, gullies, or stream banks in mesic or wet forests dominated by *Metrosideros polymorpha* or a mixture of *Metrosideros polymorpha* and *Dicranopteris linearis*. 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 being destroyed by one naturally-occurring catastrophic event.

Oahu 20—*Phyllostegia hirsuta*—d

This unit is critical habitat for *Phyllostegia hirsuta* and is 1,004 ha (2,483 ac) on State (Hauula Forest Reserve, Sacred Falls State Park, and Kaipapau Forest Reserve) and private lands, containing the Koolau Summit Trail. This unit is occupied by 39 individuals and provides habitat for 2 populations of 300 mature, reproducing individuals of the short-lived perennial *Phyllostegia hirsuta*. The unit is essential to species' conservation because it supports an extant colony 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 to *Phyllostegia hirsuta* include, but are not limited to, steep, shaded slopes, cliffs, ridges, gullies, or stream banks in mesic or wet forests dominated by *Metrosideros polymorpha* or a mixture of *Metrosideros polymorpha* and *Dicranopteris linearis*. 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 being destroyed by one naturally-occurring catastrophic event.

Oahu 4—*Phyllostegia kaalaensis*—a

This unit is critical habitat for *Phyllostegia kaalaensis* and is 57 ha (141 ac) on State (Pahole NAR and Mokuleia Forest Reserve) lands. There are no named natural features in this unit. This unit is occupied by 21 individuals and provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Phyllostegia kaalaensis*. This unit is essential to the species' conservation because it supports an extant colony 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 to *Phyllostegia kaalaensis* include, but are not limited to, gulch slopes or bottoms or almost vertical rock faces in mesic forest or *Sapindus oahuensis* 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 being destroyed by one naturally-occurring catastrophic event.

Oahu 4—*Phyllostegia kaalaensis*—b

This unit is critical habitat for *Phyllostegia kaalaensis* and is 589 ha (1,456 ac) on State (Pahole and Kaala NARs and Mokuleia Forest Reserve) lands and contains Dupont Trail. This unit currently occupied by an unknown number of individuals and provides habitat for 6 populations of 300 mature, reproducing individuals of the short-lived perennial *Phyllostegia kaalaensis*. This unit is essential to the species' conservation because it supports an extant colony 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 to *Phyllostegia kaalaensis* include, but are not limited to, gulch slopes or bottoms or almost vertical rock faces in mesic forest or *Sapindus oahuensis* 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 being destroyed by one naturally-occurring catastrophic event.

Oahu 4—*Phyllostegia kaalaensis*—c

This unit is critical habitat for *Phyllostegia kaalaensis* and is 122 ha (304 ac) on State (Kaala NAR, Mokuleia Forest Reserve) and private lands. There are no named natural features in this unit. The unit is currently occupied by 10 individuals and provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Phyllostegia kaalaensis*. This unit is essential to the species' conservation because it supports an extant colony 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 to *Phyllostegia kaalaensis* include, but are not limited to, gulch slopes or bottoms or almost vertical rock faces in mesic forest or *Sapindus oahuensis* 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 being destroyed by one naturally-occurring catastrophic event.

Oahu 4—*Phyllostegia kaalaensis*—d

This unit is critical habitat for *Phyllostegia kaalaensis* and is 28 ha (69 ac) on State (Waianae Kai Forest Reserve) lands containing Waianae Kai. This unit, combined with Oahu 4—*Phyllostegia kaalaensis*—e, provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Phyllostegia kaalaensis* and is currently unoccupied. This unit is essential to the species' conservation 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 to *Phyllostegia kaalaensis* include, but are not limited to, gulch slopes or bottoms or almost vertical rock faces in mesic forest or *Sapindus oahuensis* 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 being destroyed by one naturally-occurring catastrophic event.

Oahu 4—*Phyllostegia kaalaensis*—e

This unit is critical habitat for *Phyllostegia kaalaensis* and is 16 ha (39 ac) on State (Waianae Kai Forest Reserve) lands containing Waianae Kai. This unit is currently occupied by 8 individuals and, combined with Oahu 4—*Phyllostegia kaalaensis*—d, provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Phyllostegia kaalaensis*. This unit is essential to the species' conservation because it supports an extant colony 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 to *Phyllostegia kaalaensis* include, but are not limited to, gulch slopes or bottoms or almost vertical rock faces in mesic forest or *Sapindus oahuensis* 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 being destroyed by one naturally-occurring catastrophic event.

Oahu 15—*Phyllostegia kaalaensis*—f

This unit is critical habitat for *Phyllostegia kaalaensis* and is 30 ha (74 ac) on private (Honouliuli Preserve)

lands. There are no named natural features in this unit. The unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Phyllostegia kaalaensis* and is currently unoccupied. This unit is essential to the species' conservation because it supports habitat that is important to the establishment of additional populations on Oahu in order to reach recovery goals. The habitat features contained in this unit that are essential to *Phyllostegia kaalaensis* include, but are not limited to, gulch slopes or bottoms or almost vertical rock faces in mesic forest or *Sapindus oahuensis* 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 being destroyed by one naturally-occurring catastrophic event.

Oahu 15—*Phyllostegia mollis*—a

This unit is critical habitat for *Phyllostegia mollis* and is 152 ha (376 ac) on private (Honouliuli Preserve) lands containing Puu Kanehoa. The unit is currently occupied by 7 individuals and provides habitat for 2 populations of 300 mature, reproducing individuals of the short-lived perennial *Phyllostegia mollis*. This unit is essential to the species' conservation because it supports an extant colony 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 to *Phyllostegia hirsuta* include, but are not limited to, steep slopes or gulches in diverse mesic to wet forests. This unit is geographically separated from other 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—*Phyllostegia mollis*—b

This unit is critical habitat for *Phyllostegia mollis* and is 85 ha (210 ac) on private (Honouliuli Preserve) lands. There are no named natural features in this unit. The unit is currently occupied by 7 individuals and provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Phyllostegia mollis*. This unit is essential to the species' conservation because it supports an extant colony 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 to *Phyllostegia hirsuta* include,

but are not limited to, steep slopes or gulches in diverse mesic to wet forests. This unit is geographically separated from other 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—*Phyllostegia parviflora*—a

This unit is critical habitat for *Phyllostegia parviflora* var. *lydgatei* and is 70 ha (173 ac) on private (Honouliuli Preserve) lands. This unit contains no named natural features. The unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Phyllostegia parviflora* var. *lydgatei* and is currently unoccupied. This unit is essential to the species' conservation 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 to *Phyllostegia parviflora* var. *lydgatei* include, but are not limited to, moderate to steep slopes in mesic forests. This unit is geographically separated from other critical habitat designated on Oahu for this species in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 15—*Phyllostegia parviflora*—b

This unit is critical habitat for *Phyllostegia parviflora* var. *lydgatei* and is 21 ha (51 ac) on private (Honouliuli Preserve) lands. There are no named natural features in this unit. The unit is occupied by unknown number of individuals and provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Phyllostegia parviflora* var. *lydgatei*. This unit is essential to the species' conservation because it supports an extant colony 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 to *Phyllostegia parviflora* var. *lydgatei* include, but are not limited to, moderate to steep slopes in mesic forests. This unit is geographically separated from other critical habitat designated on Oahu for this species in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 15—*Phyllostegia parviflora*—c

This unit is critical habitat for *Phyllostegia parviflora* var. *lydgatei* and is 69 ha (171 ac) on private (Honouliuli Preserve) lands. There are no named

natural features in this unit. The unit is occupied by 50 individuals and provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Phyllostegia parviflora* var. *lydgatei*. This unit is essential to the species' conservation because it supports an extant colony 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 to *Phyllostegia parviflora* var. *lydgatei* include, but are not limited to, moderate to steep slopes in mesic forests. This unit is geographically separated from other critical habitat designated on Oahu for this species in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 20—*Phyllostegia parviflora*—d

This unit is critical habitat for *Phyllostegia parviflora* var. *parviflora* and is 1,430 ha (3,534 ac) on State (Hauula Forest Reserve, Sacred Falls State Park, Kaipapau Forest Reserve, Kahana Valley State Park, Ewa Forest Reserve) and private lands, containing Castle Trail, Puu Kaaumakua, Puu Pauao, and the Koolau Summit Trail. The unit is occupied by 30 individuals and provides habitat for 6 populations of 300 mature, reproducing individuals of the short-lived perennial *Phyllostegia parviflora* var. *parviflora*. This unit is essential to the species' conservation because it supports an extant colony 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 to *Phyllostegia parviflora* var. *parviflora* include, but are not limited to, *Metrosideros polymorpha* mixed lowland wet forest. This unit is geographically separated from other critical habitat designated on Oahu for this species in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 4—*Plantago princeps*—a

This unit is critical habitat for *Plantago princeps* var. *longibracteata* and is 15 ha (37 ac) on State lands. There are no named natural features in this unit. The unit, is occupied by 2 individuals and, in combination with Oahu 4—*Plantago princeps*—b, provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Plantago princeps* var. *longibracteata*. This unit is essential to the species' conservation

because it supports an extant colony 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 to *Plantago princeps* var. *longibracteata* include, but are not limited to, sides of waterfalls or wet rock faces. This unit is geographically separated from other critical habitat designated elsewhere on Oahu and on Kauai, Molokai, and Maui in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 4—*Plantago princeps*—b

This unit is critical habitat for *Plantago princeps* var. *longibracteata* and is 52 ha (131 ac) on State (Mokuleia Forest Reserve and Pahole Natural Area Preserve) lands. There are no named natural features in this unit. The unit, in combination with Oahu 4—*Plantago princeps*—a, provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Plantago princeps* var. *longibracteata* and is currently unoccupied. This unit is essential to the species' conservation 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 to *Plantago princeps* var. *longibracteata* include, but are not limited to, sides of waterfalls or wet rock faces. This unit is geographically separated from other critical habitat designated elsewhere on Oahu and on Kauai, Molokai, and Maui in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 15—*Plantago princeps*—c

This unit is critical habitat for *Plantago princeps* var. *longibracteata* and is 63 ha (157 ac) on private (Honouliuli Preserve) lands. There are no named natural features in this unit. The unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Plantago princeps* var. *longibracteata* and is currently occupied by 8 individuals. This unit is essential to the species' conservation because it supports an extant colony 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 to *Plantago princeps* var. *longibracteata* include, but are not limited to, sides of waterfalls or wet rock faces. This unit is

geographically separated from other critical habitat designated elsewhere on Oahu and on Kauai, Molokai, and Maui in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 20—*Plantago princeps*—d

This unit is critical habitat for *Plantago princeps* var. *princeps* and is 992 ha (2,450 ac) on Federal (Oahu Forest National Wildlife Refuge), State (Ewa Forest Reserve, Waiahole Forest Reserve), and private lands, containing Eleao Summit and Kipapa Trail. The unit, in combination with Oahu 20—*Plantago princeps*—e, provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Plantago princeps* var. *princeps* and is currently occupied by 2 individuals. This unit is essential to the species' conservation because it supports an extant colony 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 to *Plantago princeps* var. *princeps* include, but are not limited to, slopes or ledges in *Metrosideros polymorpha* lowland mesic forests or shrublands. This unit is geographically separated from other critical habitat designated elsewhere on Oahu and on Kauai, Molokai, and Maui in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 20—*Plantago princeps*—e

This unit is critical habitat for *Plantago princeps* var. *princeps* and is 297 ha (729 ac) on State (Waiahole Forest Reserve) and private lands, containing Nanaikaalaea Summit, Ulimakoli Summit, and Waiahole Ditch Tunnel. The unit, in combination with Oahu 20—*Plantago princeps*—d, provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Plantago princeps* var. *princeps* and is currently unoccupied. This unit is essential to the species' conservation 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 to *Plantago princeps* var. *princeps* include, but are not limited to, slopes or ledges in *Metrosideros polymorpha* lowland mesic forests or shrublands. This unit is geographically separated from other critical habitat designated elsewhere on Oahu and on Kauai, Molokai, and Maui in order to avoid all recovery

populations being destroyed by one naturally-occurring catastrophic event.

Oahu 20—*Platanthera holochila*—a

This unit is critical habitat for *Platanthera holochila* and is 35 ha (86 ac) on private lands in the Koolau Mountains. There are no named natural features in this unit. The unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Platanthera holochila* and is currently unoccupied. This unit is essential to the species' conservation 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 to *Platanthera holochila* include, but are not limited to, *Metrosideros polymorpha-Dicranopteris linearis* wet forest or *Metrosideros polymorpha* mixed shrubland. 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 20—*Platanthera holochila*—b

This unit is critical habitat for *Platanthera holochila* and is 165 ha (407 ac) on Federal (Oahu Forest National Wildlife Refuge) and State (Ewa Forest Reserve and Keaiwa Heiau State Park) lands. There are no named natural features in this unit. The unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Platanthera holochila* and is currently unoccupied. This unit is essential to the species' conservation 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 to *Platanthera holochila* include, but are not limited to, *Metrosideros polymorpha-Dicranopteris linearis* wet forest or *Metrosideros polymorpha* mixed shrubland. 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 20—*Pteris lidgatei*—a

This unit is critical habitat for *Pteris lidgatei* and is 1,233 ha (3,044 ac) on State (Hauula Forest Reserve, Sacred Falls State Park and Kaipapau Forest Reserve) and private lands, containing the Castle Trail, Sacred Falls, and the Koolau Summit Trail. The unit provides

habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Pteris lidgatei* and is occupied by 2 individuals. This unit is essential to the species' conservation because it supports an extant colony 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 to *Pteris lidgatei* include, but are not limited to, steep stream banks or cliffs in wet *Metrosideros polymorpha-Dicranopteris linearis* forest. 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 20—*Pteris lidgatei*—b

This unit is critical habitat for *Pteris lidgatei* and is 289 ha (711 ac) on State (Kahana Valley State Park) and private lands, containing Puu Kaaumakua. The unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Pteris lidgatei* and is currently unoccupied. This unit is essential to the species' conservation 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 to *Pteris lidgatei* include, but are not limited to, steep stream banks or cliffs in wet *Metrosideros polymorpha-Dicranopteris linearis* forest. 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 20—*Pteris lidgatei*—c

This unit is critical habitat for *Pteris lidgatei* and is 844 ha (2,084 ac) on State (Ewa and Waiahole Forest Reserves) and private lands, containing Eleao and Nanaikaalaea Summits. The unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Pteris lidgatei* and is occupied by 4 individuals. This unit is essential to the species' conservation because it supports an extant colony 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 to *Pteris lidgatei* include, but are not limited to, steep stream banks or cliffs in wet *Metrosideros polymorpha-Dicranopteris linearis* forest. 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—Sanicula mariversa—a

This unit is critical habitat for *Sanicula mariversa* and is 7 ha (17 ac) on State (Makua Keauu Forest Reserve) lands. There are no named natural features in this unit. The unit, in combination with Oahu 6—*Sanicula mariversa—d*, provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Sanicula mariversa* and is currently unoccupied. This unit is essential to the species' conservation 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 to *Sanicula mariversa* include, but are not limited to, well-drained, dry slopes or rock faces in mesic shrublands or open grassy areas. 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 five 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—Sanicula mariversa—b

This unit is critical habitat for *Sanicula mariversa* and is 6 ha (15 ac) on State (Kaala NAR) lands, containing Kamaohanui Summit. The unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Sanicula mariversa* and is currently unoccupied. This unit is essential to the species' conservation 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 to *Sanicula mariversa* include, but are not limited to, well-drained, dry slopes or rock faces in mesic shrublands or open grassy areas. 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 five 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—Sanicula mariversa—c

This unit is critical habitat for *Sanicula mariversa* and is 25 ha (61 ac) on State (Waianae Kai Forest Reserve) lands, containing Puu Kawiwi and Puu Kepauala. The unit provides habitat for 2 populations of 300 mature, reproducing individuals of the short-lived perennial *Sanicula mariversa* and is occupied by 2 individuals. This unit is essential to the species' conservation because it supports an extant colony 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 to *Sanicula mariversa* include, but are not limited to, well-drained, dry slopes or rock faces in mesic shrublands or open grassy areas. 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 five 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 6—Sanicula mariversa—d

This unit is critical habitat for *Sanicula mariversa* and is 3 ha (8 ac) on State (Makua Keauu Forest Reserve) lands. There are no named natural features in this unit. The unit, in combination with Oahu 6—*Sanicula mariversa—a*, provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Sanicula mariversa* and is occupied by 30 individuals. This unit is essential to the species' conservation because it supports an extant colony 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 to *Sanicula mariversa* include, but are not limited to, well-drained, dry slopes or rock faces in mesic shrublands or open grassy areas. 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 five 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—Sanicula mariversa—e

This unit is critical habitat for *Sanicula mariversa* and is 14 ha (34 ac)

on private (Honouliuli Preserve) lands, containing Puu Hapapa. The unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Sanicula mariversa* and is currently unoccupied. This unit is essential to the species' conservation 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 to *Sanicula mariversa* include, but are not limited to, well-drained, dry slopes or rock faces in mesic shrublands or open grassy areas. 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 five 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—Sanicula mariversa—f

This unit is critical habitat for *Sanicula mariversa* and is 39 ha (95 ac) on State and private (Honouliuli Preserve) lands, containing Puu Kanehoa and Puu Kaua. The unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Sanicula mariversa* and is currently unoccupied. This unit is essential to the species' conservation 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 to *Sanicula mariversa* include, but are not limited to, well-drained, dry slopes or rock faces in mesic shrublands or open grassy areas. 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 five 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—Sanicula purpurea—a

This unit is critical habitat for *Sanicula purpurea* and is 704 ha (1,739 ac) on Federal (Oahu Forest National Wildlife Refuge), State (Hauula Forest Reserve, Sacred Falls State Park, Kaipapau Forest Reserve, Kahana Valley State Park, Ewa Forest Reserve, Waiahole Forest Reserve), and private lands, containing Eleao Summit, Puu Kaaumakua, Puu Kahuauili, Puu

Keahiakahoe, Puu Pauao and Koolau Summit Trail. The unit provides habitat for 4 populations of 300 mature, reproducing individuals of the short-lived perennial *Sanicula purpurea* and is occupied by 6 individuals. This unit is essential to the species' conservation because it supports an extant colony 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 to *Sanicula purpurea* include, but are not limited to, open *Metrosideros polymorpha* mixed montane bogs or windswept shrublands within the cloud zone. This unit 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 3—*Schiedea hookeri*—a

This unit is critical habitat for *Schiedea hookeri* and is 22 ha (56 ac) on State (Kaena Point State Park and Kuaokala Forest Reserve) lands. No named natural features are found within this unit. The unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Schiedea hookeri* is occupied by 10 individuals. This unit is essential to the species' conservation because it supports an extant colony 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 to *Schiedea hookeri* include, but are not limited to, slopes, cliffs or cliff bases, rock walls, or ledges in diverse mesic or dry lowland forest, often with *Diospyros hillebrandii*, *Diospyros sandwicensis*, or *Metrosideros polymorpha*. 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 4—*Schiedea hookeri*—b

This unit is critical habitat for *Schiedea hookeri* and is 710 ha (1,755 ac) on State (Mokuleia Forest Reserve and Pahole and Kaala NARs) lands, containing Dupont Trail. The unit provides habitat for 2 populations of 300 mature, reproducing individuals of the short-lived perennial *Schiedea hookeri* and is occupied by 3 individuals. This unit is essential to the species' conservation because it supports an extant colony 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 to *Schiedea hookeri* include, but are not limited to, slopes, cliffs or cliff bases, rock walls, or ledges in diverse mesic or dry lowland forest, often with *Diospyros hillebrandii*, *Diospyros sandwicensis*, or *Metrosideros polymorpha*. 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 4—*Schiedea hookeri*—c

This unit is critical habitat for *Schiedea hookeri* and is 248 ha (612 ac) on State (Waianae Kai Forest Reserve) lands, containing Kamaileunu Ridge and Puu Kawiwi. The unit provides habitat for 2 populations of 300 mature, reproducing individuals of the short-lived perennial *Schiedea hookeri* and is occupied by 57 individuals. This unit is essential to the species' conservation because it supports an extant colony and includes habitat that is necessary for the expansion of the present populations, which are currently considered nonviable. The habitat features contained in this unit that are essential to *Schiedea hookeri* include, but are not limited to, slopes, cliffs or cliff bases, rock walls, or ledges in diverse mesic or dry lowland forest, often with *Diospyros hillebrandii*, *Diospyros sandwicensis*, or *Metrosideros polymorpha*. 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 4—*Schiedea hookeri*—d

This unit is critical habitat for *Schiedea hookeri* and is 31 ha (78 ac) on State (Waianae Kai Forest Reserve) lands. No named natural features are found within this unit. The unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Schiedea hookeri* and is occupied by 50 individuals. This unit is essential to the species' conservation because it supports an extant colony 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 to *Schiedea hookeri* include, but are not limited to, slopes, cliffs or cliff bases, rock walls, or ledges in diverse mesic or dry lowland forest, often with *Diospyros*

hillebrandii, *Diospyros sandwicensis*, or *Metrosideros polymorpha*. 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 15—*Schiedea hookeri*—e

This unit is critical habitat for *Schiedea hookeri* and is 14 ha (34 ac) on Federal lands (Lualualei Naval Reservation). There are no named natural features in this unit. The unit, in combination with Oahu 15—*Schiedea hookeri*—f, provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Schiedea hookeri* and is occupied by 10 individuals. This unit is essential to the species' conservation because it supports an extant colony 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 to *Schiedea hookeri* include, but are not limited to, slopes, cliffs or cliff bases, rock walls, or ledges in diverse mesic or dry lowland forest, often with *Diospyros hillebrandii*, *Diospyros sandwicensis*, or *Metrosideros polymorpha*. 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 15—*Schiedea hookeri*—f

This unit is critical habitat for *Schiedea hookeri* and is 10 ha (25 ac) on private (Honouliuli Preserve) lands. There are no named natural features in this unit. The unit, in combination with Oahu 15—*Schiedea hookeri*—e, provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Schiedea hookeri* and is occupied by 63 individuals. This unit is essential to the species' conservation because it supports an extant colony 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 to *Schiedea hookeri* include, but are not limited to, slopes, cliffs or cliff bases, rock walls, or ledges in diverse mesic or dry lowland forest, often with *Diospyros hillebrandii*, *Diospyros sandwicensis*, or *Metrosideros polymorpha*. 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 15—*Schiedea hookeri*—g

This unit is critical habitat for *Schiedea hookeri* and is 83 ha (204 ac) on Federal (Lualualei Naval Reservation), State, and private lands, containing Puu Kaua. The unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Schiedea hookeri* and is occupied by 42 individuals. This unit is essential to the species' conservation because it supports an extant colony 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 to *Schiedea hookeri* include, but are not limited to, slopes, cliffs or cliff bases, rock walls, or ledges in diverse mesic or dry lowland forest, often with *Diospyros hillebrandii*, *Diospyros sandwicensis*, or *Metrosideros polymorpha*. 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 4—*Schiedea kaalae*—a

This unit is critical habitat for *Schiedea kaalae* and is 426 ha (1,051 ac) on State (Pahole NAR and Mokuleia Forest Reserve) lands. There are no named natural features in this unit. The unit provides habitat for 2 populations of 300 mature, reproducing individuals of the short-lived perennial *Schiedea kaalae* and is occupied by 2 individuals. This unit is essential to the species' conservation because it supports an extant colony and includes habitat that is necessary for the expansion of the present population, which is currently considered to be nonviable. The habitat features contained in this unit that are essential to *Schiedea kaalae* include, but are not limited to, steep slopes, cliffs, stream banks, or deep shade in diverse mesic or wet 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 being destroyed by one naturally-occurring catastrophic event.

Oahu 4—*Schiedea kaalae*—b

This unit is critical habitat for *Schiedea kaalae* and is 134 ha (331 ac) on private (Honouliuli Preserve) lands, containing Puu Kanehoa. The unit provides habitat for 2 populations of 300 mature, reproducing individuals of

the short-lived perennial *Schiedea kaalae* and is occupied by 8 individuals. This unit is essential to the species' conservation because it supports an extant colony and includes habitat that is necessary for the expansion of the present population, which is currently considered to be nonviable. The habitat features contained in this unit that are essential to *Schiedea kaalae* include, but are not limited to, steep slopes, cliffs, stream banks, or deep shade in diverse mesic or wet 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 being destroyed by one naturally-occurring catastrophic event.

Oahu 15—*Schiedea kaalae*—c

This unit is critical habitat for *Schiedea kaalae* and is 22 ha (53 ac) on private (Honouliuli Preserve) lands. There are no named natural features in this unit. The unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Schiedea kaalae* and is occupied by 13 individuals. This unit is essential to the species' conservation because it supports an extant colony and includes habitat that is necessary for the expansion of the present population, which is currently considered to be nonviable. The habitat features contained in this unit that are essential to *Schiedea kaalae* include, but are not limited to, steep slopes, cliffs, stream banks, or deep shade in diverse mesic or wet 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 being destroyed by one naturally-occurring catastrophic event.

Oahu 15—*Schiedea kaalae*—d

This unit is critical habitat for *Schiedea kaalae* and is 39 ha (97 ac) on private (Honouliuli Preserve) lands. There are no named natural features in this unit. The unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Schiedea kaalae* and is occupied by one individual. This unit is essential to the species' conservation because it supports occupied habitat that is important for the expansion of the present population, which is currently considered to be nonviable. The habitat features contained in this unit that are essential to *Schiedea kaalae* include, but are not limited to, steep slopes, cliffs, stream banks, or deep shade in diverse mesic or wet 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 being destroyed by one naturally-occurring catastrophic event.

Oahu 20—*Schiedea kaalae*—e

This unit is critical habitat for *Schiedea kaalae* and is 379 ha (934 ac) on State (Hanuula Forest Reserve, Sacred Falls State Park and Kaipapau Forest Reserve) and private lands, containing Sacred Falls. The unit provides habitat for 3 populations of 300 mature, reproducing individuals of the short-lived perennial *Schiedea kaalae* and is occupied by 15 individuals. This unit is essential to the species' conservation because it supports an extant colony and includes habitat that is necessary for the expansion of the present population, which is currently considered to be nonviable. The habitat features contained in this unit that are essential to *Schiedea kaalae* include, but are not limited to, steep slopes, cliffs, stream banks, or deep shade in diverse mesic or wet 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 being destroyed by one naturally-occurring catastrophic event.

Oahu 21—*Schiedea kaalae*—f

This unit is critical habitat for *Schiedea kaalae* and is 105 ha (206 ac) on State (Kahana Valley State Park) and private lands. There are no named natural features in this unit. The unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Schiedea kaalae* and is occupied by one individual. This unit is essential to the species' conservation because it supports occupied habitat that is important for the expansion of the present population, which is currently considered to be nonviable. The habitat features contained in this unit that are essential to *Schiedea kaalae* include, but are not limited to, steep slopes, cliffs, stream banks, or deep shade in diverse mesic or wet 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 being destroyed by one naturally-occurring catastrophic event.

Oahu 1—*Schiedea kealiae*—a

This unit is critical habitat for *Schiedea kealiae* and is 193 ha (477 ac) on State (Kaena Point State Park and

Kuaokala Forest Reserve) and private lands, containing Alei Pali, Haili Gulch, Mahoe Pali, Manini Pali, Nihoa Gulch, Peacock Flat Trail, Puu Pueo, and Uluhulu Gulch. The unit provides habitat for 4 populations of 300 mature, reproducing individuals of the short-lived perennial *Schiedea kealiae* and is occupied by 320 individuals. This unit is essential to the species' conservation because it supports occupied habitat that is important for the establishment of additional populations. The habitat features contained in this unit that are essential to *Schiedea kealiae* include, but are not limited to, steep slopes and cliff faces in dry remnant *Erythrina sandwicensis* forest. We do not believe that enough habitat currently exists to reach the recovery goal of 8 to 10 populations for this species.

Oahu 4—*Schiedea nuttallii*—a

This unit is critical habitat for *Schiedea nuttallii* and is 527 ha (1,304 ac) on State (Mokuleia Forest Reserve and Pahole and Kaala NARs) lands. There are no named natural features in this unit. The unit provides habitat for 4 populations of 300 mature, reproducing individuals of the short-lived perennial *Schiedea nuttallii* and is occupied by 370 individuals. This unit is essential to the species' conservation because it supports an extant colony and includes habitat that is necessary for the expansion of the present population. The habitat features contained in this unit that are essential to *Schiedea nuttallii* include, but are not limited to, rock walls, forested slopes, or steep walls in *Acacia koa-Metrosideros polymorpha* lowland mesic forest or *Metrosideros polymorpha-Dodonaea viscosa* forest. This unit is geographically separated from critical habitat designated elsewhere on Oahu and on Kauai and Molokai in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 15—*Schiedea nuttallii*—b

This unit is critical habitat for *Schiedea nuttallii* and is 141 ha (347 ac) on State and private (Honouliuli Preserve) lands, containing Puu Kanehoa. The unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Schiedea nuttallii* and is currently unoccupied. This unit is essential to the species' conservation 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 to *Schiedea nuttallii* include,

but are not limited to, rock walls, forested slopes, or steep walls in *Acacia koa-Metrosideros polymorpha* lowland mesic forest or *Metrosideros polymorpha-Dodonaea viscosa* forest. This unit is geographically separated from critical habitat designated elsewhere on Oahu and on Kauai and Molokai in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 15—*Schiedea nuttallii*—c

This unit is critical habitat for *Schiedea nuttallii* and is 41 ha (102 ac) on private (Honouliuli Preserve) lands. There are no named natural features in this unit. The unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Schiedea nuttallii* and is currently unoccupied. This unit is essential to the species' conservation 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 to *Schiedea nuttallii* include, but are not limited to, rock walls, forested slopes, or steep walls in *Acacia koa-Metrosideros polymorpha* lowland mesic forest or *Metrosideros polymorpha-Dodonaea viscosa* forest. This unit is geographically separated from critical habitat designated elsewhere on Oahu and on Kauai and Molokai in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 1—*Sesbania tomentosa*—a

This unit is critical habitat for *Sesbania tomentosa* and is 101 ha (250 ac) on Federal, State (Kaena Point State Park and Kaena Point NAR), and private lands. There are no named natural features in this unit. The unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Sesbania tomentosa* and is occupied by 53 individuals. This unit is essential to the species' conservation because it supports an extant colony 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 to *Sesbania tomentosa* include, but are not limited to, cliff faces, broken basalt, or sand dunes with rock outcrops in *Scaevola sericea* coastal dry shrubland or *Sporobolus virginicus* mixed grasslands. This unit is geographically separated from critical habitat designated elsewhere on Oahu and on Kauai, Molokai, Maui, and the

Northwestern Hawaiian Island in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 18—*Sesbania tomentosa*—b

This unit is critical habitat for *Sesbania tomentosa* and is 5 ha (12 ac) on State (Mokualula State Seabird Sanctuary) lands that contain Mokualula Island. The unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Sesbania tomentosa* and is currently unoccupied. This unit is essential to the species' conservation 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 to *Sesbania tomentosa* include, but are not limited to, cliff faces, broken basalt, or sand dunes with rock outcrops in *Scaevola sericea* coastal dry shrubland or *Sporobolus virginicus* mixed grasslands. This unit is geographically separated from critical habitat designated elsewhere on Oahu and on Kauai, Molokai, Maui, and the Northwestern Hawaiian Island in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 4—*Silene lanceolata*—a

This unit is critical habitat for *Silene lanceolata* and is 113 ha (281 ac) on State (Waianae Kai Forest Reserve) lands, containing Puu Kawiwi. The unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Silene lanceolata* and is occupied by 12 individuals. This unit is essential to the species' conservation because it supports an extant colony and includes habitat that is necessary for the expansion of the present population, which is currently considered to be not viable. The habitat features contained in this unit that are essential to *Silene lanceolata* include, but are not limited to, cliff faces or ledges of gullies in dry to mesic shrubland or cliff communities. This unit is geographically separated from critical habitat designated on Molokai in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 15—*Silene perlmannii*—a

This unit is critical habitat for *Silene perlmannii* and is 65 ha (162 ac) on Federal (Lualualei Naval Reservation) and State lands, containing Puu Kawiwi. The unit provides habitat for one population of 300 mature, reproducing individuals of the short-

lived perennial *Silene perlmanii* and is occupied by at 12 individuals. This unit is essential to the species' conservation because it supports an extant colony 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 to *Silene perlmanii* include, but are not limited to, steep rocky slopes in *Acacia koa-Metrosideros polymorpha* lowland 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 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 15—*Silene perlmanii*—b

This unit is critical habitat for *Silene perlmanii* and is 5 ha (12 ac) on private (Honouliuli Preserve) lands. There are no named natural features in this unit. The unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Silene perlmanii* and is currently unoccupied. This unit is essential to the species' conservation 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 to *Silene perlmanii* include, but are not limited to, steep rocky slopes in *Acacia koa-Metrosideros polymorpha* lowland 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 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 15—*Silene perlmanii*—c

This unit is critical habitat for *Silene perlmanii* and is 49 ha (124 ac) on State and private lands in the Waianae Mountains. There are no named natural features in this unit. The unit provides habitat for 2 populations of 300 mature, reproducing individuals of the short-lived perennial *Silene perlmanii* and is currently unoccupied. This unit is essential to the species' conservation 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 to *Silene perlmanii* include, but are not limited to, steep rocky slopes in *Acacia koa-Metrosideros polymorpha* lowland 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 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 15—*Silene perlmanii*—d

This unit is critical habitat for *Silene perlmanii* and is 52 ha (130 ac) on private (Honouliuli Preserve) lands. There are no named natural features in this unit. The unit provides habitat for 2 populations of 300 mature, reproducing individuals of the short-lived perennial *Silene perlmanii* and is currently unoccupied. This unit is essential to the species' conservation 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 to *Silene perlmanii* include, but are not limited to, steep rocky slopes in *Acacia koa-Metrosideros polymorpha* lowland 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 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—*Solanum sandwicense*—a

This unit is critical habitat for *Solanum sandwicense* and is 104 ha (258 ac) on State (Pahole NAR and Mokuleia Forest Reserve) lands. There are no named natural features in this unit. The unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Solanum sandwicense* and is currently unoccupied. This unit is essential to the species' conservation 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 to *Solanum sandwicense* include, but are not limited to, talus slopes or streambeds in open, sunny areas. 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—*Solanum sandwicense*—b

This unit is critical habitat for *Solanum sandwicense* and is 146 ha (361 ac) on State and private (Honouliuli Preserve) lands, containing Puu Kanehoa. The unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Solanum sandwicense* and is currently unoccupied. This unit is essential to the species' conservation 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 to *Solanum sandwicense* include, but are not limited to, talus slopes or streambeds in open, sunny areas. 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—*Solanum sandwicense*—c

This unit is critical habitat for *Solanum sandwicense* and is 78 ha (192 ac) on State and private (Honouliuli Preserve) lands. There are no named natural features in this unit. The unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Solanum sandwicense* and is currently unoccupied. This unit is essential to the species' conservation 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 to *Solanum sandwicense* include, but are not limited to, talus slopes or streambeds in open, sunny areas. 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—*Spermolepis hawaiiensis*—a

This unit is critical habitat for *Spermolepis hawaiiensis* and is 21 ha (53 ac) on State and private lands, containing Kaneana Cave. The unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Spermolepis hawaiiensis* and is occupied by 32 individuals. This unit is essential to the

species' conservation because it supports an extant colony 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 to *Spermolepis hawaiiensis* include, but are not limited to, steep or vertical cliffs or the base of cliffs or ridges in coastal dry cliff vegetation. 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 31—*Spermolepis hawaiiensis*—b

This unit is critical habitat for *Spermolepis hawaiiensis* and is 116 ha (286 ac) on State (Diamond Head State Park) lands, containing Kuilei Cliffs. The unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Spermolepis hawaiiensis* and is occupied by 10 individuals. This unit is essential to the species' conservation because it supports an extant colony 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 to *Spermolepis hawaiiensis* include, but are not limited to, steep or vertical cliffs or the base of cliffs or ridges in coastal dry cliff vegetation. 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—*Stenogyne kanehoana*—a

This unit is critical habitat for *Stenogyne kanehoana* and is 140 ha (347 ac) on Federal (Lualualei Naval Reservation), State, and private lands (Honouliuli Preserve), containing Puu Hapapa and Puu Kanehoa. The unit provides habitat for 2 populations of 300 mature, reproducing individuals of the short-lived perennial *Stenogyne kanehoana* and is occupied by 6 individuals. This unit is essential to the species' conservation because it supports an extant colony 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 to *Stenogyne kanehoana* include, but are not limited to, lowland 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 unit 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 Schofield Barracks that provide habitat for two populations of this species.

Oahu 15—*Stenogyne kanehoana*—b

This unit is critical habitat for *Stenogyne kanehoana* and is 43 ha (107 ac) on State and private (Honouliuli Preserve) lands, containing the Palikea Summit and the Laikea Trail. The unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Stenogyne kanehoana* and is currently unoccupied. This unit is essential to the species' conservation 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 to *Stenogyne kanehoana* include, but are not limited to, lowland 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 unit 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 Schofield Barracks that provide habitat for two populations of this species.

Oahu 4—*Tetramolopium filiforme*—a

This unit is critical habitat for *Tetramolopium filiforme* and is 111 ha (273 ac) on State (Waianae Kai Forest Reserve) lands, containing Puu Kawiwi. The unit provides habitat for 2 populations of 300 mature, reproducing individuals of the short-lived perennial *Tetramolopium filiforme* and is occupied by one individual. This unit is essential to the species' conservation because it supports an extant colony and includes habitat that is necessary for the expansion of the present populations, which is currently considered nonviable, and the establishment of one additional population. The habitat features contained in this unit that are essential to *Tetramolopium filiforme* include, but are not limited to, dry cliff faces or

ridges 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. However, this unit is geographically separated from Army lands at Makua and Schofield that provide habitat for four populations of this species, in order to avoid all populations being destroyed by one naturally occurring catastrophic event (see "Analysis of Impacts Under Section 4(b)(2): Other Impacts").

Oahu 4—*Tetramolopium lepidotum* ssp. *lepidotum*—a

This unit is critical habitat for *Tetramolopium lepidotum* ssp. *lepidotum* and is 167 ha (413 ac) on State (Kaala NAR, Mokuleia Forest Reserve) lands, containing Kamaohanui Summit. The unit provides habitat for 2 populations of 300 mature, reproducing individuals of the short-lived perennial *Tetramolopium lepidotum* ssp. *lepidotum* and is currently unoccupied. This unit is essential to the species' conservation 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 to *Tetramolopium lepidotum* ssp. *lepidotum* include, but are not limited to, grassy ridgetops, slopes, or cliffs in windblown dry forests. This unit is geographically separated from the other five units designated as critical habitat on Oahu for this species in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 4—*Tetramolopium lepidotum* ssp. *lepidotum*—b

This unit is critical habitat for *Tetramolopium lepidotum* ssp. *lepidotum* and is 23 ha (56 ac) on State (Waianae Kai Forest Reserve) lands. There are no named natural features in this unit. The unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Tetramolopium lepidotum* ssp. *lepidotum* and is occupied by 8 individuals. This unit is essential to the species' conservation because it supports an extant colony 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 to *Tetramolopium lepidotum* ssp. *lepidotum* include, but are not limited to, grassy ridgetops, slopes, or cliffs in windblown dry forests. This unit is geographically separated from the other five units designated as critical habitat on Oahu for this species in order

to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 15—*Tetramolopium lepidotum* ssp. *lepidotum*—c

This unit is critical habitat for *Tetramolopium lepidotum* ssp. *lepidotum* and is 11 ha (28 ac) on Federal lands (Lualualei Naval Reservation), containing Puu Hapapa. The unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Tetramolopium lepidotum* ssp. *lepidotum* and is currently unoccupied. This unit is essential to the species' conservation 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 to *Tetramolopium lepidotum* ssp. *lepidotum* include, but are not limited to, grassy ridgetops, slopes, or cliffs in windblown dry forests. This unit is geographically separated from the other five units designated as critical habitat on Oahu for this species in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 15—*Tetramolopium lepidotum* ssp. *lepidotum*—d

This unit is critical habitat for *Tetramolopium lepidotum* ssp. *lepidotum* and is 94 ha (233 ac) on Federal (Lualualei Naval Reservation), State, and private (Honouliuli Preserve) lands, containing Puu Kanehoa. The unit, in combination with Oahu 15—*Tetramolopium lepidotum* ssp. *lepidotum*—e, provides habitat for 2 populations of 300 mature, reproducing individuals of the short-lived perennial *Tetramolopium lepidotum* ssp. *lepidotum* and is currently unoccupied. This unit is essential to the species' conservation 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 to *Tetramolopium lepidotum* ssp. *lepidotum* include, but are not limited to, grassy ridgetops, slopes, or cliffs in windblown dry forests. This unit is geographically separated from the other five units designated as critical habitat on Oahu for this species in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 15—*Tetramolopium lepidotum* ssp. *lepidotum*—e

This unit is critical habitat for *Tetramolopium lepidotum* ssp.

lepidotum and is 1 ha (3 ac) on State and private (Honouliuli Preserve) lands. There are no named natural features in this unit. The unit, in combination with Oahu 15—*Tetramolopium lepidotum* ssp. *lepidotum*—d, provides habitat for 2 populations of 300 mature, reproducing individuals of the short-lived perennial *Tetramolopium lepidotum* ssp. *lepidotum*. It is currently unoccupied. This unit is essential to the species' conservation 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 to *Tetramolopium lepidotum* ssp. *lepidotum* include, but are not limited to, grassy ridgetops, slopes, or cliffs in windblown dry forests. This unit is geographically separated from the other five units designated as critical habitat on Oahu for this species in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 15—*Tetramolopium lepidotum* ssp. *lepidotum*—f

This unit is critical habitat for *Tetramolopium lepidotum* ssp. *lepidotum* and is 259 ha (641 ac) on Federal (Lualualei Naval Reservation), State, and private lands, containing Palikea Summit. The unit provides habitat for 2 populations of 300 mature, reproducing individuals of the short-lived perennial *Tetramolopium lepidotum* ssp. *lepidotum* and is currently unoccupied. This unit is essential to the species' conservation 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 to *Tetramolopium lepidotum* ssp. *lepidotum* include, but are not limited to, grassy ridgetops, slopes, or cliffs in windblown dry forests. This unit is geographically separated from the other five units designated as critical habitat on Oahu for this species in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 20—*Tetraplasandra gymnocarpa*—a

This unit is critical habitat for *Tetraplasandra gymnocarpa* and is 457 ha (1,129 ac) on State (Sacred Falls State Park, Hauula Forest Reserve, and Kaipapau Forest Reserve) and private lands, containing the Koolau Summit Trail. The unit provides habitat for one population of 100 mature, reproducing individuals of the long-lived perennial

Tetraplasandra gymnocarpa and is occupied by 24 individuals. This unit is essential to the species' conservation because it supports an extant colony 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 to *Tetraplasandra gymnocarpa* include, but are not limited to, windswept summit ridges, slopes, or gullies in wet or sometimes mesic lowland forests or shrublands. 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 being destroyed by one naturally-occurring catastrophic event.

Oahu 20—*Tetraplasandra gymnocarpa*—b

This unit is critical habitat for *Tetraplasandra gymnocarpa* and is 235 ha (581 ac) on State (Kahana Valley State Park), and private lands, containing Puu Kaaumakua. The unit provides habitat for one population of 100 mature, reproducing individuals of the long-lived perennial *Tetraplasandra gymnocarpa* and is occupied by 5 individuals. This unit is essential to the species' conservation because it supports an extant colony 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 to *Tetraplasandra gymnocarpa* include, but are not limited to, windswept summit ridges, slopes, or gullies in wet or sometimes mesic lowland forests or shrublands. 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 being destroyed by one naturally-occurring catastrophic event.

Oahu 20—*Tetraplasandra gymnocarpa*—c

This unit is critical habitat for *Tetraplasandra gymnocarpa* and is 411 ha (1,018 ac) on State (Waiahole Forest Reserve and Ewa Forest Reserve) and private lands, containing Eleao Summit. The unit provides habitat for one population of 100 mature, reproducing individuals of the long-lived perennial *Tetraplasandra gymnocarpa* and is occupied by 2 individuals. This unit is essential to the species' conservation because it supports an extant colony 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 to *Tetraplasandra gymnocarpa* include, but are not limited to, windswept summit ridges, slopes, or gullies in wet or sometimes mesic lowland forests or shrublands. 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 being destroyed by one naturally-occurring catastrophic event.

Oahu 20—*Tetraplasandra gymnocarpa*—d

This unit is critical habitat for *Tetraplasandra gymnocarpa* and is 362 ha (894 ac) on Federal, State (Waiahole Forest Reserve and Kaneohe Forest Reserve), and private lands, containing Puu Kahualuli and Puu Keahiakahoe. The unit provides habitat for one population of 100 mature, reproducing individuals of the long-lived perennial *Tetraplasandra gymnocarpa* and is occupied by 28 individuals. This unit is essential to the species' conservation because it supports an extant colony 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 to *Tetraplasandra gymnocarpa* include, but are not limited to, windswept summit ridges, slopes, or gullies in wet or sometimes mesic lowland forests or shrublands. 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 being destroyed by one naturally-occurring catastrophic event.

Oahu 35—*Tetraplasandra gymnocarpa*—e

This unit is critical habitat for *Tetraplasandra gymnocarpa* and is 152 ha (377 ac) on State (Honolulu Watershed Forest Reserve) lands, containing Konahuanui Summit. The unit provides habitat for one population of 100 mature, reproducing individuals of the long-lived perennial *Tetraplasandra gymnocarpa* and is occupied by 5 individuals. This unit is essential to the species' conservation because it supports an extant colony 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 to *Tetraplasandra gymnocarpa* include, but are not limited to, windswept summit ridges, slopes, or gullies in wet or sometimes mesic

lowland forests or shrublands. 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 being destroyed by one naturally-occurring catastrophic event.

Oahu 35—*Tetraplasandra gymnocarpa*—f

This unit is critical habitat for *Tetraplasandra gymnocarpa* and is 213 ha (528 ac) on State (Honolulu Watershed Forest Reserve) and private lands. There are no named natural features in this unit. The unit provides habitat for one population of 100 mature, reproducing individuals of the long-lived perennial *Tetraplasandra gymnocarpa* and is occupied by 15 individuals. This unit is essential to the species' conservation because it supports an extant colony 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 to *Tetraplasandra gymnocarpa* include, but are not limited to, windswept summit ridges, slopes, or gullies in wet or sometimes mesic lowland forests or shrublands. 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 being destroyed by one naturally-occurring catastrophic event.

Oahu 20—*Trematolobelia singularis*—a

This unit is critical habitat for *Trematolobelia singularis* and is 86 ha (219 ac) on Federal, State (Waiahole Forest Reserve and Ewa Forest Reserve), and private lands, containing Eleao Summit. The unit provides habitat for 2 populations of 300 mature, reproducing individuals of the short-lived perennial *Trematolobelia singularis* and is currently unoccupied. This unit is essential to the species' conservation 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 to *Trematolobelia singularis* include, but are not limited to, steep, windswept cliff faces or slopes in *Metrosideros polymorpha-Dicranopteris linearis* lowland wet 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—*Trematolobelia singularis*—b

This unit is critical habitat for *Trematolobelia singularis* and is 10 ha (26 ac) on Federal, State, and private lands, containing Puu Keahiakahoe. The unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Trematolobelia singularis* and is occupied by 50 individuals. This unit is essential to the species' conservation because it supports an extant colony 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 to *Trematolobelia singularis* include, but are not limited to, steep, windswept cliff faces or slopes in *Metrosideros polymorpha-Dicranopteris linearis* lowland wet 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 34—*Trematolobelia singularis*—c

This unit is critical habitat for *Trematolobelia singularis* and is 2 ha (5 ac) on State (Honolulu Watershed Forest Reserve) and private lands, containing Kainawaunui Summit, Mount Olympus, Palikea Summit, and Puu Lanipo. The unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Trematolobelia singularis* and is currently unoccupied. This unit is essential to the species' conservation 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 to *Trematolobelia singularis* include, but are not limited to, steep, windswept cliff faces or slopes in *Metrosideros polymorpha-Dicranopteris linearis* lowland wet 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—*Trematolobelia singularis*—d

This unit is critical habitat for *Trematolobelia singularis* and is 13 ha (33 ac) on State lands, containing Puu Lanihuli. The unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Trematolobelia singularis* and is occupied by 100 individuals. This unit is essential to the species' conservation because it supports an extant colony 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 to *Trematolobelia singularis* include, but are not limited to, steep, windswept cliff faces or slopes in *Metrosideros polymorpha-Dicranopteris linearis* lowland wet 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—*Trematolobelia singularis*—e

This unit is critical habitat for *Trematolobelia singularis* and is 26 ha (64 ac) on State (Honolulu Watershed Forest Reserve) and private lands, containing Konahuanui Summit. The unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Trematolobelia singularis* and is occupied by 15 individuals. This unit is essential to the species' conservation because it supports an extant colony 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 to *Trematolobelia singularis* include, but are not limited to, steep, windswept cliff faces or slopes in *Metrosideros polymorpha-Dicranopteris linearis* lowland wet 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—*Ureera kaalae*—a

This unit is critical habitat for *Ureera kaalae* and is 53 ha (133 ac) on State (Waianae Kai Forest Reserve) lands. There are no named natural features in this unit. The unit, in combination with Oahu 4—*Ureera kaalae*—b, provides habitat for 2 populations of 300 mature, reproducing individuals of the short-lived perennial *Ureera kaalae* and is currently unoccupied. This unit is essential to the species' conservation 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 to *Ureera kaalae* include, but are not limited to, slopes or gulches in diverse mesic 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 being destroyed by one naturally-occurring catastrophic event.

Oahu 4—*Ureera kaalae*—b

This unit is critical habitat for *Ureera kaalae* and is 17 ha (43 ac) on State (Honolulu Watershed Forest Reserve) lands. There are no named natural features in this unit. The unit, in combination with Oahu 4—*Ureera kaalae*—a, provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Ureera kaalae* and is occupied by 3 individuals. This unit is essential to the species' conservation because it supports an extant colony 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 to *Ureera kaalae* include, but are not limited to, slopes or gulches in diverse mesic 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 being destroyed by one naturally-occurring catastrophic event.

Oahu 15—*Ureera kaalae*—c

This unit is critical habitat for *Ureera kaalae* and is 224 ha (555 ac) on Federal (Lualualei Naval Reservation) and private (Honouliuli Preserve) lands, containing Puu Hapapa and Puu Kanehoa. The unit provides habitat for 2 populations of 300 mature, reproducing individuals of the short-lived perennial *Ureera kaalae* and is occupied by 4 individuals. This unit is essential to the species' conservation

because it supports an extant colony 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 to *Ureera kaalae* include, but are not limited to, slopes or gulches in diverse mesic 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 being destroyed by one naturally-occurring catastrophic event.

Oahu 15—*Ureera kaalae*—d

This unit is critical habitat for *Ureera kaalae* and is 35 ha (87 ac) on private (Honouliuli Preserve) lands. There are no named natural features in this unit. The unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Ureera kaalae* and is occupied by 7 individuals. This unit is essential to the species' conservation because it supports an extant colony 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 to *Ureera kaalae* include, but are not limited to, slopes or gulches in diverse mesic 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 being destroyed by one naturally-occurring catastrophic event.

Oahu 15—*Ureera kaalae*—e

This unit is critical habitat for *Ureera kaalae* and is 51 ha (125 ac) on Federal (Lualualei Naval Reservation) and State lands. There are no named natural features in this unit. The unit, in combination with Oahu 15—*Ureera kaalae*—f, provides habitat for 2 populations of 300 mature, reproducing individuals of the short-lived perennial *Ureera kaalae* and is occupied by 6 individuals. This unit is essential to the species' conservation because it supports an extant colony 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 to *Ureera kaalae* include, but are not limited to, slopes or gulches in diverse mesic 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 being

destroyed by one naturally-occurring catastrophic event.

Oahu 15—*Urera kaalae*—f

This unit is critical habitat for *Urera kaalae* and is 82 ha (202 ac) on State and private (Honouliuli Preserve) lands, containing Palikea Summit. The unit, in combination with Oahu 15—*Urera kaalae*—e, provides habitat for 2 populations of 300 mature, reproducing individuals of the short-lived perennial *Urera kaalae* and is occupied by 31 individuals. This unit is essential to the species' conservation because it supports an extant colony 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 to *Urera kaalae* include, but are not limited to, slopes or gulches in diverse mesic 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 being destroyed by one naturally-occurring catastrophic event.

Oahu 1—*Vigna o-wahuensis*—a

This unit is critical habitat for *Vigna o-wahuensis* and is 180 ha (447 ac) on State (Kaena Point State Park) lands, containing Alau Gulch, Alei Pali, Nihoa Gulch, Puu Pueo, and Uluhulu Gulch. The unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Vigna o-wahuensis* and is currently unoccupied. This unit is essential to the species' conservation 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 to *Vigna o-wahuensis* include, but are not limited to, open dry fossil reef, with shrubs or grasses or fairly steep slopes. This unit is geographically separated from critical habitat designated elsewhere on Oahu and on Maui and Kahoolawe for this species in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 24—*Vigna o-wahuensis*—b

This unit is critical habitat for *Vigna o-wahuensis* and is 4 ha (12 ac) on State (Mokulua Island State Seabird Sanctuary) lands, containing the Mokulua Islands. The unit, in combination with Oahu 25—*Vigna o-wahuensis*—c, provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Vigna o-wahuensis* and is currently unoccupied. This unit

is essential to the species' conservation 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 to *Vigna o-wahuensis* include, but are not limited to, open dry fossil reef with shrubs or grasses or fairly steep slopes. This unit is geographically separated from critical habitat designated elsewhere on Oahu and on Maui and Kahoolawe for this species in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 25—*Vigna o-wahuensis*—c

This unit is critical habitat for *Vigna o-wahuensis* and is 4 ha (9 ac) on State (Mokulua Island State Seabird Sanctuary) lands, containing the Mokulua Islands. The unit, in combination with Oahu 24—*Vigna o-wahuensis*—b, provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Vigna o-wahuensis* and is currently unoccupied. This unit is essential to the species' conservation 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 to *Vigna o-wahuensis* include, but are not limited to, open dry fossil reef with shrubs or grasses or fairly steep slopes. This unit is geographically separated from critical habitat designated elsewhere on Oahu and on Maui and Kahoolawe for this species in order to avoid all recovery populations being destroyed by one naturally-occurring catastrophic event.

Oahu 26—*Vigna o-wahuensis*—d

This unit is critical habitat for *Vigna o-wahuensis* and is 26 ha (63 ac) on State (Manana Island State Seabird Sanctuary) lands, containing Manana Island. The unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Vigna o-wahuensis* and is currently unoccupied. This unit is essential to the species' conservation 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 to *Vigna o-wahuensis* include, but are not limited to, open dry fossil reef with shrubs or grasses or fairly steep slopes. This unit is geographically separated from critical habitat designated elsewhere on Oahu and on Maui and Kahoolawe for this species in order to avoid all recovery

populations being destroyed by one naturally-occurring catastrophic event.

Oahu 4—*Viola chamissoniana* ssp. *chamissoniana*—a

This unit is critical habitat for *Viola chamissoniana* ssp. *chamissoniana* and is 199 ha (491 ac) on State (Kaala NAR and Mokuleia Forest Reserve) lands. There are no named natural features in this unit. The unit provides habitat for 4 populations of 300 mature, reproducing individuals of the short-lived perennial *Viola chamissoniana* ssp. *chamissoniana* and is currently unoccupied. This unit is essential to the species' conservation 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 to *Viola chamissoniana* ssp. *chamissoniana* include, but are not limited to, dry cliffs, rocky ledges, or steep slopes in mesic shrubland or cliff vegetation. 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 being destroyed by one naturally-occurring catastrophic event.

Oahu 4—*Viola chamissoniana* ssp. *chamissoniana*—b

This unit is critical habitat for *Viola chamissoniana* ssp. *chamissoniana* and is 10 ha (25 ac) on State (Waianae Kai Forest Reserve) lands. There are no named natural features in this unit. The unit, in combination with Oahu 4—*Viola chamissoniana* ssp. *chamissoniana*—c, provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Viola chamissoniana* ssp. *chamissoniana* and is currently unoccupied. This unit is essential to the species' conservation 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 to *Viola chamissoniana* ssp. *chamissoniana* include, but are not limited to, dry cliffs, rocky ledges, or steep slopes in mesic shrubland or cliff vegetation. 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 being destroyed by one naturally-occurring catastrophic event.

Oahu 4—*Viola chamissoniana* ssp. *chamissoniana*—c

This unit is critical habitat for *Viola chamissoniana* ssp. *chamissoniana* and

is 22 ha (55 ac) on State (Waianae Kai Forest Reserve) lands, containing Puu Kawiwi. The unit, in combination with Oahu 4—*Viola chamissoniana* ssp. *chamissoniana*—b, provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Viola chamissoniana* ssp. *chamissoniana* and is occupied by 5 individuals. This unit is essential to the species' conservation because it supports an extant colony 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 to *Viola chamissoniana* ssp. *chamissoniana* include, but are not limited to, dry cliffs, rocky ledges, or steep slopes in mesic shrubland or cliff vegetation. 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 being destroyed by one naturally-occurring catastrophic event.

Oahu 10—*Viola chamissoniana* ssp. *chamissoniana*—d

This unit is critical habitat for *Viola chamissoniana* ssp. *chamissoniana* and is 6 ha (15 ac) on Federal lands (Lualualei Naval Reservation). There are no named natural features in this unit. The unit, in combination with Oahu 15—*Viola chamissoniana* ssp. *chamissoniana*—e, provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Viola chamissoniana* ssp. *chamissoniana* and is currently unoccupied. This unit is essential to the species' conservation 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 to *Viola chamissoniana* ssp. *chamissoniana* include, but are not limited to, dry cliffs, rocky ledges, or steep slopes in mesic shrubland or cliff vegetation. 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 being destroyed by one naturally-occurring catastrophic event.

Oahu 15—*Viola chamissoniana* ssp. *chamissoniana*—e

This unit is critical habitat for *Viola chamissoniana* ssp. *chamissoniana* and is 13 ha (31 ac) on Federal lands (Lualualei Naval Reservation). There are no named natural features in this unit. The unit, in combination with Oahu

10—*Viola chamissoniana* ssp. *chamissoniana*—d, provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Viola chamissoniana* ssp. *chamissoniana* and is currently unoccupied. This unit is essential to the species' conservation 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 to *Viola chamissoniana* ssp. *chamissoniana* include, but are not limited to, dry cliffs, rocky ledges, or steep slopes in mesic shrubland or cliff vegetation. 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 being destroyed by one naturally-occurring catastrophic event.

Oahu 15—*Viola chamissoniana* ssp. *chamissoniana*—f

This unit is critical habitat for *Viola chamissoniana* ssp. *chamissoniana* and is 29 ha (72 ac) on Federal (Lualualei Naval Reservation) and private lands. There are no named natural features in this unit. The unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Viola chamissoniana* ssp. *chamissoniana* and is occupied by 3 individuals. This unit is essential to the species' conservation because it supports an extant colony 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 to *Viola chamissoniana* ssp. *chamissoniana* include, but are not limited to, dry cliffs, rocky ledges, or steep slopes in mesic shrubland or cliff vegetation. 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 being destroyed by one naturally-occurring catastrophic event.

Oahu 20—*Viola oahuensis*—a

This unit is critical habitat for *Viola oahuensis* and is 903 ha (2,232 ac) on Federal (Oahu Forest National Wildlife Refuge), State (Hauula Forest Reserve, Sacred Falls State Park, Kaipapau Forest Reserve, Kahana Valley State Park, Ewa Forest Reserve, and Waiahole Forest Reserve), and private lands, containing Eleao Summit, Puu Kahuauuli, Puu Keahiakahoe, Puu Pauao, and the Koolau Summit Trail. The unit provides habitat for 6 populations of 300 mature,

reproducing individuals of the short-lived perennial *Viola oahuensis* and is occupied by 67 individuals. This unit is essential to the species' conservation because it supports an extant colony 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 to *Viola oahuensis* include, but are not limited to, exposed, windswept ridges of moderate to steep slope in wet *Metrosideros polymorpha-Dicranopteris linearis* shrublands or *Metrosideros polymorpha* mixed montane bogs in the cloud zone. 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 being destroyed by one naturally-occurring catastrophic event.

Oahu 35—*Viola oahuensis*—b

This unit is critical habitat for *Viola oahuensis* and is 74 ha (186 ac) on State (Honolulu Watershed Forest Reserve) lands, containing Konahuanui Summit and Mount Olympus. The unit provides habitat for one population of 300 mature, reproducing individuals of the short-lived perennial *Viola oahuensis* and is currently unoccupied. This unit is essential to the species' conservation 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 to *Viola oahuensis* include, but are not limited to, exposed, windswept ridges of moderate to steep slope in wet *Metrosideros polymorpha-Dicranopteris linearis* shrublands or *Metrosideros polymorpha* mixed montane bogs in the cloud zone. 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 being destroyed by one naturally-occurring catastrophic event.

Effects of Critical Habitat Designation

Section 7 Consultation

Section 7(a) of the Act requires Federal agencies, including the Service, to ensure that actions they fund, authorize, or carry out are not likely to destroy or adversely modify critical habitat. Destruction or adverse modification of critical habitat occurs when a Federal action directly or indirectly alters critical habitat to the extent that it appreciably diminishes the value of critical habitat for the conservation of the species. Individuals,

organizations, States, local governments, and other non-Federal entities are affected by the designation of critical habitat when their actions occur on Federal lands, require a Federal permit, license, or other authorization, or involve Federal funding.

Section 7(a)(2) of the Act requires Federal agencies, including the Service, to evaluate their actions with respect to any species that is listed as endangered or threatened and with respect to its critical habitat, if any is designated. If a Federal action may affect a listed species or its critical habitat, the responsible Federal action agency must enter into consultation with us. Through this consultation, the action agency would ensure that the permitted actions do not destroy or adversely modify critical habitat. Section 7(a)(4) of the Act requires Federal agencies (action agency) to confer with us on any action that is likely to jeopardize the continued existence of a species proposed for listing or result in destruction or adverse modification of proposed critical habitat. Regulations implementing this interagency cooperation provision of the Act are codified at 50 CFR part 402.

Regulations at 50 CFR 402.16 require Federal agencies to reinstate formal consultation on previously reviewed actions under certain circumstances, including instances where critical habitat is subsequently designated and the Federal agency has retained discretionary involvement, or control has been retained or is authorized by law. Consequently, some Federal agencies may request reinstatement of consultation or conferencing with us on actions for which formal consultation has been completed, if those actions may affect designated critical habitat or adversely modify or destroy proposed critical habitat.

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

relocation of the project. Costs associated with implementing a reasonable and prudent alternative are similarly variable.

Activities on Federal lands that may affect critical habitat of one or more of the 99 plant species from Oahu will require section 7 consultation. Activities on private or State lands requiring a permit from a Federal agency, such as a permit from the U.S. Army Corps of Engineers (Corps) under section 404 of the Clean Water Act (33 U.S.C. 1344 *et seq.*), the Department of Housing and Urban Development, or a section 10(a)(1)(B) permit from us; or some other Federal action, including funding (*e.g.*, from the Federal Highway Administration, Federal Aviation Administration (FAA), Federal Emergency Management Agency (FEMA), Environmental Protection Agency (EPA), or Department of Energy); regulation of airport improvement activities by the FAA; and construction of communication sites licensed by the Federal Communications Commission (FCC) will also continue to be subject to the section 7 consultation process. Federal actions not affecting critical habitat and actions on non-Federal lands that are not federally funded, authorized, or permitted do not require section 7 consultation.

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

Activities that, when carried out, funded, or authorized by a Federal agency, may directly or indirectly destroy or adversely modify critical habitat include, but are not limited to:

(1) Activities that appreciably degrade or destroy the primary constituent elements including, but not limited to: Overgrazing; maintenance of feral ungulates; clearing or cutting of native live trees and shrubs, whether by burning or mechanical, chemical, or other means (*e.g.*, woodcutting, bulldozing, construction, road building, mining, herbicide application); introducing or enabling the spread of nonnative species; and taking actions that pose a risk of fire;

(2) Activities that alter watershed characteristics in ways that would appreciably reduce groundwater recharge or alter natural, dynamic wetland or other vegetative communities. 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;

(3) Rural residential construction that includes concrete pads for foundations and the installation of septic systems in wetlands where a permit under section 404 of the Clean Water Act would be required by the Corps;

(4) Recreational activities that appreciably degrade vegetation;

(5) Mining of sand or other minerals;

(6) Introducing or encouraging the spread of nonnative plant species into critical habitat units; and

(7) Importation of nonnative species for research, agriculture, and aquaculture, and the release of biological control agents that would have unanticipated effects on the listed species and the primary constituent elements of their habitat.

If you have questions regarding whether specific activities will likely constitute adverse modification of critical habitat, contact the Field Supervisor, Pacific Islands Ecological Services Field Office (see **ADDRESSES** section). Requests for copies of the regulations on listed plants and animals, and inquiries about prohibitions and permits may be addressed to the U.S. Fish and Wildlife Service, Branch of Endangered Species/Permits, 911 N.E. 11th Ave., Portland, OR 97232-4181 (telephone 503/231-2063; facsimile 503/231-6243).

Analysis of Managed Lands Under Section 3(5)(A)

The need for "special management considerations or protections" of the essential habitat features (primary constituent elements) included in a designation is required by the definition of critical habitat in section 3(5)(A) of the Act. If the primary constituent elements are being adequately managed then they do not need "special management considerations or protections." Adequate management or protection is provided by a legally operative plan that addresses the maintenance and improvement of the essential elements and provides for the long-term conservation of the species. We consider a plan adequate when it (1) provides a conservation benefit to the species (*i.e.*, the plan must maintain or provide for an increase in the species' population or the enhancement or restoration of its habitat within the area covered by the plan); (2) provides assurances that the management plan will be implemented (*i.e.*, those

responsible for implementing the plan are capable of accomplishing the objectives, have an implementation schedule and have adequate funding for the management plan); and, (3) provides assurances that the conservation plan will be effective (*i.e.*, it identifies biological goals, has provisions for reporting progress, and is of a duration sufficient to implement the plan and achieve the plan's goals and objectives). If an area is covered by a plan that meets these criteria, it does not constitute critical habitat as defined by the Act because the primary constituent elements found there are not considered to be in need of special management or protection.

Currently occupied and historically known sites containing one or more of the primary constituent elements considered essential to the conservation of these 99 plant species were examined to determine the adequacy of special management considerations or protection and, consequently, whether such areas meet the definition of critical habitat under section 3(5)(A). We reviewed all available management information on these plants at these sites, including published reports and surveys; annual performance and progress reports; management plans; grants; memoranda of understanding and cooperative agreements; DOFAW planning documents; internal letters and memos; biological assessments and environmental impact statements; and section 7 consultations. We reviewed all biological information received during the public comment periods, public meeting, and public hearing. When clarification was required on the information provided to us, we followed up with a telephone contact. We also met with staff from the Oahu District DOFAW office to discuss management activities they are conducting on Oahu.

In determining whether a management plan or agreement provides adequate management or protection, we first consider whether that plan provides a conservation benefit to the species. We considered the following threats and associated recommended management actions:

(1) The factors that led to the listing of the species, as described in the final rules for listing each of the species. Effects of clearing and burning for agricultural purposes and of invasive nonnative plant and animal species have contributed to the decline of nearly all endangered and threatened plants in Hawaii (Cuddihy and Stone 1990; Howarth 1985; Loope 1998; Scott *et al.* 1986; Service 1994, 1995a, 1995b, 1996a, 1996b, 1996c, 1996d, 1997, 1998a, 1998b, 1999; Smith 1985; Stone

1985; Vitousek 1992; Wagner *et al.* 1985).

Current threats to these species include nonnative grass- and shrub-carried wildfire; browsing, digging, rooting, and trampling from feral ungulates (including goats, cattle, and pigs); direct and indirect effects of nonnative plant invasions, including alteration of habitat structure and microclimate; and disruption of pollination and gene-flow processes by adverse effects of mosquito-borne avian disease on forest bird pollinators, direct competition between native and nonnative insect pollinators for food, and predation of native insect pollinators by nonnative hymenopteran insects (ants). In addition, physiological processes such as reproduction and establishment, continue to be negatively affected by fruit- and flower-eating pests such as nonnative arthropods, mollusks, and rats, and photosynthesis and water transport are affected by nonnative insects, pathogens, and diseases. Many of these factors interact with one another, thereby compounding effects. Such interactions include nonnative plant invasions altering wildfire regimes; feral ungulates carry weeds and disturbing vegetation and soils, thereby facilitating dispersal and establishment of nonnative plants; and numerous nonnative insect species feeding on native plants, thereby increasing their vulnerability and exposure to pathogens and disease (Bruegmann *et al.* 2001; Cuddihy and Stone 1990; D'Antonio and Vitousek 1992; Howarth 1985; Mack 1992; Scott *et al.* 1986; Service 1994, 1995a, 1995b, 1996a, 1996b, 1996c, 1996d, 1997, 1998a, 1998b, 1999; Smith 1985; Tunison *et al.* 1992);

(2) The recommendations from the HPPRCC in their 1998 report to us ("Habitat Essential to the Recovery of Hawaiian Plants"). As summarized in this report, recovery goals for endangered Hawaiian plant species cannot be achieved without the effective control of nonnative species threats, wildfire, and land use changes; and

(3) The management actions needed for assurance of survival and ultimate recovery of these plants. These actions are described in our recovery plans for these 99 species (Service 1994, 1995a, 1995b, 1996a, 1996b, 1996c, 1996d, 1997, 1998a, 1998b, 1999), in the 1998 HPPRCC report to us, and in various other documents and publications relating to plant conservation in Hawaii (Cuddihy and Stone 1990; Mueller-Dombois 1985; Smith 1985; Stone 1985; Stone *et al.* 1992).

In general, taking all of the above recommended management actions into account, the following management

actions are important in providing a conservation benefit to the species: Feral ungulate control; wildfire management; nonnative plant control; rodent control; invertebrate pest control; maintenance of genetic material of the endangered and threatened plant species; propagation, reintroduction, and augmentation of existing populations into areas essential for the recovery of the species; ongoing management of the wild, outplanted, and augmented populations; maintenance of natural pollinators and pollinating systems, when known; habitat management and restoration in areas essential for the recovery of the species; monitoring of the wild, outplanted, and augmented populations; rare plant surveys; and control of human activities/access (Service 1994, 1995a, 1995b, 1996a, 1996b, 1996c, 1996d, 1997, 1998a, 1998b, 1999). On a case-by-case basis, these actions may rise to different levels of importance for a particular species or area, depending on the biological and physical requirements of the species and the location(s) of the individual plants.

As shown in Table 2, the 99 species of plants are found on Federal, State, and private lands on the island of Oahu. Information received in response to our public notices; meetings with Oahu District DOFAW staff; the May 28, 2002, proposal; public comment periods; and the November 19, 2002, public hearing; as well as information in our files, indicated that there is limited ongoing conservation management action for these plants, except as noted below. Without management plans and assurances that the plans will be implemented, we are unable to find that the lands in question do not require special management or protection.

The following discussion analyzes current management plans that provide a conservation benefit to the species on lands under U.S. Army jurisdiction to assess whether they meet the Service's requirements for adequate management or protection.

The Sikes Act Improvements Act of 1997 (Sikes Act) requires each military installation that includes land and water suitable for the conservation and management of natural resources to complete, by November 17, 2001, an Integrated Natural Resources Management Plan (INRMP). An INRMP integrates implementation of the military mission of the installation with stewardship of the natural resources found there. Each INRMP includes an assessment of the ecological needs on the installation, including needs to provide for the conservation of listed species; a statement of goals and

priorities; a detailed description of management actions to be implemented to provide for these ecological needs; and a monitoring and adaptive management plan. We consult with the military on the development and implementation of INRMPs for installations with listed species. Bases that have completed and approved INRMPs that adequately address the needs of the species may not meet the definition of critical habitat discussed above, because they may not require special management or protection. We would not include these areas in critical habitat designations if they meet the following three criteria: (1) A current INRMP must be complete and provide a conservation benefit to the species, (2) there must be assurances that the conservation management strategies will be implemented, and (3) there must be assurances that the conservation management strategies will be effective, by providing for periodic monitoring and revisions as necessary. If all of these criteria are met, then the lands covered under the plan would not meet the definition of critical habitat.

Lands Under U.S. Army Jurisdiction

The Army has six installations under its jurisdiction on Oahu: Dillingham Military Reservation (DMR), Kawaiiloa Training Area (KLOA), Kahuku Training Area (KTA), Makua Military Reservation (MMR), Schofield Barracks Military Reservation (SBMR), and Schofield Barracks East Range (SBER). All of these lands are administered by the Army Garrison, Hawaii, for various types of routine military training. The Army has completed an INRMP (Army 2002), an Ecosystem Management Plan (Army 1998), and an Endangered Species Management Plan (Research Corporation of Hawaii (RCUH) 1998) for all of the Oahu training areas. These plans encompass management actions that will benefit all 76 listed plant species for which critical habitat has been proposed on these Army lands. They have a completed Wildland Fire Management Plan (WFMP) for MMR (Army 2000) and a draft plan which includes the other five installations (Army 2003). The goal of the WFMP is to reduce the threat of wildfire which adversely affects threatened and endangered species on all six installations. The Army also provides monthly and annual summary reports (Col. W.E. Ryan III, Army, *in litt.* 2000–2002; Col. F.A. Quintana, Army, *in litt.* 2002–2003) regarding the natural resources management projects performed under the Ecosystems Management Program for all six installations (RCUH 1998, 1999, 2000,

2001 and 2002). These reports provide information on management actions which have been implemented and which of these have proven beneficial to populations of listed species.

The INRMP describes specific actions for each installation, including anticipated implementation schedules. It includes hundreds of ongoing and proposed actions within the time frame of the INRMP designed to address the variety of threats faced by these plant species at appropriate scales: Species-specific, small areas, watersheds, and installation-wide. Examples of management activities directed towards the conservation of listed plants and their habitat include: (1) Field surveys to identify new populations of threatened and endangered plant species in previously unsurveyed areas and areas of suitable habitat; (2) development of a web-based system for a rare plant database; (3) establishment of a GIS database to store data to be used to monitor threatened and endangered plant species; (4) maintenance a GIS database updated with results of field surveys; (5) determining effects of military actions on threatened and endangered plants species through monitoring known populations of threatened and endangered plant species; (6) evaluation and determination of plant propagation needs and storage facilities; (7) identification of research needs regarding pollination biology and establishment of a GIS database to store data to be used to monitor threatened and endangered plant species; (8) propagation and outplanting of threatened and endangered plant species; and (9) creation of a full-time horticulturist position to identify and implement management actions for threatened and endangered plant species (Army 2002).

The list of ongoing and proposed actions detailed in the INRMP focuses management activities into the areas of wildfire management, nonmilitary human land use, feral ungulate control, invasive plant control, and other nonnative species control. As an example, some of the management actions that address feral ungulate control include: (1) The establishment and evaluation of permanent ungulate monitoring transects; (2) development and establishment of a GIS database to maintain these transect data; (3) implementation of ungulate control measures as necessary in areas where there are populations or occurrences of threatened and endangered species; (4) evaluation of ungulate control efforts to determine if permanent management units are required; and (5) monitoring

and maintenance of existing fenced units. In addition, management actions for control of nonnative plant species include: (1) The control and eradication of nonnative incipient plant species, particularly in areas where threatened and endangered species occur; (2) control of widespread nonnative plant species where they threaten native plant communities; and (3) establishment of a GIS database for nonnative plant location data, and updating nonnative plant location maps to track and prioritize control efforts (Army 2002).

The comprehensive list of ongoing and proposed management activities detailed in the INRMP addresses each of the management actions detailed above that the Service considers are important in providing a conservation benefit to the species, therefore, the plan provides a conservation benefit to the species.

In terms of providing assurances that the management plan will be implemented, the INRMP provides implementation schedules and identifies funding needs for each installation through the year 2006. Examples of those programs identified for funding include the Endangered Species Management, Biodiversity and Ecosystem Integrity, Watershed Management, Conservation Education and Outreach, and Pest Management. The Army has committed to increased funding for their wildland fire program to ensure proactive fire management that will benefit threatened and endangered plant species through increased protection of habitat on their lands. They have also committed to continued funding of actions that benefit habitat restoration, species stabilization, and threat abatement (Anderson, *in litt.* 2003).

The plan does provide assurances that the conservation effort will be effective. The Army will fund and engage in activities that have been demonstrated to benefit threatened and endangered species (*e.g.*, ungulate and invasive weed control). In addition to the extensive monitoring provisions contained in the INRMP and provided by the reporting procedures, the Army has agreed to amend their existing INRMP to include additional monitoring of federally listed plants and their habitat at all of their Oahu installations to determine the success of identified management activities. Based upon this information, activities will be revised to provide for the optimum conservation benefit to the listed plant species and their habitat (Col. David L. Anderson, Army, *in litt.* 2003). Thus, the Army will monitor the effectiveness of its management actions and modify them,

as necessary, to ensure their effectiveness.

As all three criteria above have been met, the Service has determined that lands on the island of Oahu which fall under U.S. Army jurisdiction do not meet the definition of critical habitat in the Act. According to the Service's published recovery plans, the major extinction threats to Oahu plants involve the persistent and expanding presence of alien species and their associated impacts. In general, for most of these species there is less relative concern associated with Federal activities or proposed development. Recovery of these listed species will require active management such as plant propagation and reintroduction, management of fire risk, alien species removal, and ungulate and rat management. Failure to implement these management measures, all of which require active intervention and participation, virtually assures the extinction of these species. The Army is carrying out many of these actions on their lands, in some cases to a degree that surpasses that of other Federal, State, and private landowners in Hawaii. We are, therefore, not designating critical habitat on these lands. Should the status of these commitments change, the Service will reconsider whether these lands meet the definition of critical habitat. If the definition is met, we have the authority to propose to amend critical habitat to include identified areas at that time (50 CFR section 424.14(g)). Although these areas are removed from the final critical habitat designation, the number of populations that habitat on these installations provides is applied toward the overall conservation goal of 8 to 10 populations for each species because these lands will be managed under the INRMP consistent with recovery goals.

Analysis of Impacts Under Section 4(b)(2)

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

Economic Impacts

Following the publication of the proposed critical habitat designation on May 28, 2002, a draft economic analysis was prepared to estimate the potential direct and indirect economic impacts associated with the designation, in accordance with recent decisions in the *N.M. Cattlegrowers Ass'n v. U.S. Fish and Wildlife Serv.*, 248 F.3d 1277 (10th Cir. 2001). The draft analysis was made available for review on December 26, 2002 (67 FR 78763). Following the close of the comment period, an addendum was completed that incorporated public comments on the draft analysis and made other changes as necessary. These changes were primarily the result of modifications made to the proposed critical habitat designation based on biological information received during the comment periods. Together, the draft economic analysis and the addendum constitute our final economic analysis.

Our economic analysis evaluated the potential direct and indirect economic impacts associated with the proposed critical habitat designation for the 99 plant species from the island of Oahu over the next 10 years. Direct impacts are those related to consultations under section 7 of the Act. They include the cost of completing the section 7 consultation process and potential project modifications resulting from the consultation. Indirect impacts are secondary costs and benefits not directly related to operation of the Act. Examples of indirect impacts include potential effects to property values, redistricting of land from agricultural or urban to conservation, and social welfare benefits of ecological improvements.

The categories of potential direct and indirect costs considered in the analysis included the costs associated with: (1) Conducting section 7 consultations, including incremental consultations and technical assistance; (2) modifications to projects, activities, or land uses resulting from the section 7 consultations; (3) uncertainty and public perceptions resulting from the designation of critical habitat including potential effects on property values and potential indirect costs resulting from the loss of hunting opportunities and the interaction of State and local laws; and (4) potential offsetting beneficial costs associated with critical habitat, including educational benefits. The most likely economic effects of critical habitat designation are on activities funded, authorized, or carried out by a Federal agency (*i.e.*, direct costs).

The analysis in the DEA incorporated two baselines: one that addressed the impact of the proposed critical habitat designation that may be attributable coextensively to the listing of the species, and one that addressed the incremental impact of the proposed designation.

The Addendum utilizes only the first of the two baselines. Because of the uncertainty about the benefits and economic costs resulting solely from critical habitat designations, the Service believes that it is reasonable to estimate the economic impacts of a designation utilizing this single baseline. It is important to note that the inclusion of impacts attributable coextensively to the listing does not convert the economic analysis into a tool to be used in deciding whether or not a species should be added to the Federal list of threatened and endangered species.

The final economic analysis estimates that, over the next 10 years, the designation (co-extensive with the listing in some instances) may result in potential direct economic effects from implementation of section 7 ranging from approximately \$8.3 million to \$20.3 million in quantifiable costs. This is an increase from the range of \$1.1 to \$2.4 million in the draft economic analysis. The increase is primarily due to revised estimates associated with section 7 consultations on Army lands. All other direct costs stay the same or decrease, due primarily to the exclusion of proposed units Oahu C, Oahu M, Oahu P, and Oahu V from final designation and the significant reduction in size to proposed units Oahu A, Oahu G, Oahu L, and Oahu W because they lacked the primary constituent elements or were not essential to the conservation of the species. Overall, the largest portion of this estimate includes Army lands that were proposed as critical habitat but have been removed from the final designation. Therefore, the direct cost of designating critical habitat for these 99 plant species will be far less than this estimate.

While our final economic analysis includes an evaluation of potential indirect costs associated with the designation of critical habitat for 99 plant species on Oahu, the reported costs are often unquantifiable and discussed in qualitative terms. In general, most of the potential indirect effects are thought to have a low probability of occurrence. The final economic analysis concludes the probability that some land within the Urban and Agricultural Districts would be redistricted to Conservation is considered moderate to high. However,

the analysis concludes it is unlikely that all lands within the Urban and Agricultural Districts would be redistricted to Conservation. In addition, such redistricting is not expected to have a significant economic impact because the land most likely converted to the Conservation District are those with a high value for conservation and low economic value (*i.e.*, not suitable for development). The final economic analysis also discusses economic benefits in qualitative terms rather than providing quantitative estimates because of the lack of information available to estimate the economic benefits of endangered species preservation and ecosystem improvements.

A more detailed discussion of our economic analysis is contained in the draft economic analysis and the addendum. Both documents are available for inspection at the Pacific Islands Fish and Wildlife Office (see **ADDRESSES** section).

Other than the Army lands discussed below, no critical habitat units in the proposed rule were excluded or modified due to a determination that the benefits of excluding the lands, taking into account the economic and other relevant impacts, exceeded the benefits of specifying them as critical habitat.

Other Impacts

As described in the "Analysis of Managed Lands Under Section 3(5)(A)" section above, based on our evaluation of the adequacy of special management and protection that is provided in the Army's Final Integrated Natural Resources Management Plan (INRMP) for Oahu Training Areas (Department of the Army 2002) for the plant species addressed in this proposal which are found on Army lands, in accordance with section 3(5)(A)(i) of the Act, we have not included the Army's Dillingham Military Reservation (DMR), Kawaihoa Training Area (KLOA), Kahuku Training Area (KTA), Makua Military Reservation (MMR), Schofield Barracks Military Reservation (SBMR), and Schofield Barracks East Range (SBER), in this final designation of critical habitat. However, to the extent that special management considerations and protection may be required for these areas and they, therefore, would meet the definition of critical habitat according to section 3(5)(A)(i), they are properly excluded from designation under section 4(b)(2) of the Act, based on the following analysis.

As explained below, we believe the benefits of designating critical habitat for the 76 species listed above at DMR, KLOA, KTA, MMR, SBMR, and SBER

are relatively low and outweighed by the benefits of excluding these areas from critical habitat. We also have concerns that a critical habitat designation may negatively impact the Army's ability to effectively carry out a recently proposed training and equipment conversion program on Oahu and otherwise adversely impact national security.

The Army's DMR, KLOA, KTA, MMR, SBMR, and SBER are occupied habitat for 53 species and unoccupied habitat for 23 species, as referenced above. A total of 10,905 hectares (26,946 acres) are excluded from final critical habitat; of this total, 6,208 hectares (15,340 acres) are considered occupied by one or more listed species, while 4,697 hectares (11,606 acres) are considered unoccupied. The unoccupied habitat is located in the northern portion of the Koolau Mountains.

According to our published recovery plans, recovery of these 76 species will require reproducing, self-sustaining populations located in a geographic array across the landscape, with population numbers and population locations of sufficient robustness to withstand periodic threats due to natural disaster or biological threats (Service 1994, 1995a, 1995b, 1996a, 1996b, 1996c, 1996d, 1997, 1998a, 1998b, 1999). The highest priority recovery tasks include proactive management such as plant propagation and reintroduction, fire control, nonnative species removal, and ungulate fencing. Failure to implement these active management measures, all of which require voluntary landowner support and participation, increases the likelihood that species will go extinct or not recover. The Army is undertaking many of these types of conservation actions on their lands on Oahu as part of the implementation of the INRMP for Oahu Training Areas. These activities, which are described in more detail in the "Analysis of Managed Lands Under Section 3(5)(A)" section, require substantial financial obligations by the Army and cooperation with other agencies, landowners, and local residents.

The following analysis describes the likely positive and negative impacts of a critical habitat designation on Army lands compared to the likely positive and negative impacts of a critical habitat exclusion of those lands. The Service paid particular attention to the following issues: To what extent a critical habitat designation would confer additional regulatory, educational, and social benefits; and to what extent would critical habitat interfere with the

Army's ongoing proactive conservation actions.

(1) Benefits of Designating U.S. Army Lands as Critical Habitat

The six Army Oahu installations contain habitat essential to the conservation of the 76 species listed above. The primary regulatory benefit provided by a critical habitat designation on Army lands is the requirement under section 7 of the Act that any actions authorized, funded, or carried out by the Army would not destroy or adversely modify any critical habitat, which includes an evaluation on the effects of the action on recovery of the species. Most of the Army areas are occupied by listed species and thus section 7 consultation would already be required. However, since areas without listed species present or without a critical habitat designation do not always receive section 7 evaluation (*e.g.*, see 50 CFR 402.12, biological assessments are based on a list of species present in the action area), a critical habitat designation in unoccupied areas may provide additional regulatory benefits.

The net benefit of this aspect of critical habitat, however, has been significantly minimized by the Army's commitment to coordinate with the Service on any of its activities that may adversely affect areas whether occupied or unoccupied by listed species that are considered essential to their conservation (*i.e.*, proposed as critical habitat) (Anderson, *in litt.*, March 20, 2003). In fact, for the current consultation at the six Oahu installations, the Army is evaluating impacts of its ongoing and future training activities on habitat considered essential to the conservation, including habitat unoccupied by listed species.

Moreover, the section 7 mandate to avoid destroying critical habitat does not extend to requiring plant reintroductions or other proactive conservation measures (*e.g.*, ungulate control, etc.) considered essential to the conservation of the species. As discussed above, the major threat to these species is the persistent and expanding presence of alien species. Failure to implement proactive management measures such as alien species removal and ungulate and rat management, as well as management of fire risk and plant propagation and reintroduction, may result in extinction of these species even with a critical habitat designation. These actions are, however, included in the Army's INRMP for Oahu Training Areas and will provide tangible benefits that will

reduce the likelihood of extinction and increase the chances of recovery.

Another potential benefit of a critical habitat designation on these Army lands is the education of the Army and the general public concerning the conservation value of these lands. While we believe these educational benefits are important for the conservation of these species, we believe it has already been achieved through the Army's INRMP (for example most of the INRMP's biologically sensitive areas overlap with proposed critical habitat), publication of the proposed critical habitat rule, the many public and interagency meetings that have been held to discuss the proposal, and discussion contained in this final rule.

In sum, the Army will manage for the conservation of all of these species through their INRMP process; this management will confer significant conservation benefits to the species that would not necessarily result from the section 7 consultation process. In addition, the Army has agreed to coordinate with the Service on any actions that may affect essential habitat areas (whether occupied or unoccupied by the listed species) even if these areas are not designated as final critical habitat. Taken together, these two management commitments by the Army lead the Service to conclude that any additional, incremental regulatory benefits provided by a final critical habitat designation on Army lands would be relatively small.

(2) Benefits of Excluding U.S. Army Lands from Critical Habitat

When evaluating the potential negative impacts of a critical habitat designation and the potential benefits of excluding Army lands from final critical habitat, the Service considered whether critical habitat designation would affect Army's military mission on its Oahu installations and adversely impact national security.

As noted above, these plants will need actions that proactively remove existing threats and that include propagation and reintroduction into unoccupied areas if they are to recover. Neither section 7 consultations nor a critical habitat designation would necessarily result in the implementation of actions needed for recovery of these species.

The Army is engaged in or has committed to engage in a wide variety of proactive conservation management activities that are set out in the "Analysis of Managed Lands Under Section 3(5)(A)" section of this rule.

The Service also considered whether a final critical habitat designation would

negatively impact the Army's military mission and thus national security. Overall, the Service believes it has been able to work closely and in a positive collaborative fashion with the Army to minimize potential negative impacts to the Army's military training activities as a consequence of Endangered Species Act regulation.

However, the 25th Infantry Division (Light) based on Oahu has recently been selected to participate in the experimental "Transformation" of its force to a lighter, rapid response force known as a Stryker Brigade Combat Team.

The Army has stated that a final critical habitat designation may lead to disruption to training and a delay of construction of required training facilities if the Army has to consult on the impacts to newly designated critical habitat. The active training areas allow the troops to attain skills to respond to enemy fire quickly and accurately and to train in offensive operations. The natural and physical attributes of the training areas in Hawaii realistically mirror the battlefield conditions found in other nations in the Pacific region. As these training conditions are not found anywhere else in the continental United States, the Army states that it is imperative that the utilization of the military training installations in Hawaii not be impeded by additional requirements associated with section 7 consultations on critical habitat designations.

(3) The Benefits of Excluding Army Lands from Critical Habitat Outweigh the Benefits of Inclusion

Based on the above considerations, and in accordance with section 4(b)(2) of the Act, we have determined that the benefits of excluding the Army's Oahu training areas from critical habitat due to adverse impacts to national security and other relevant factors, as set forth above, outweigh the benefits of including these lands in critical habitat for the 76 species listed above. We acknowledge that the benefits for either inclusion or exclusion of Army lands appear to be relatively limited. Therefore, we have carefully weighed the relative benefits of each option.

Although these areas within Army lands are removed from the final critical habitat designation, the Service still considers them essential to the conservation of these species. The number of populations that the habitat on these installations provides is applied towards the overall recovery goal of 8 to 10 populations for each species (see discussion below), and it is anticipated that these lands will be

managed under the Army's INRMP for Oahu Training Areas consistent with the conservation goals for these species.

(4) Exclusion of This Unit Will Not Cause Extinction of the Species

For both the 44 endemic and the 32 multi-island species, it is the Service's conclusion that the Army's mission and management plans (e.g., INRMP) will provide more net conservation benefits than would be provided if these areas were designated as critical habitat. These management plans, which are described above, will provide tangible proactive conservation benefits that will reduce the likelihood of extinction for the listed plants in these areas of Oahu and increase their likelihood of recovery. Further, the majority of these areas are already occupied by 53 of the 76 species and thereby benefit from the section 7 protections of the Act. The Army has agreed to coordinate with the Service on any actions that may adversely affect habitat in remaining unoccupied areas that are essential to the conservation of these species. The exclusion of these areas will not increase the risk of extinction to any of these species, and it may increase the likelihood these species will recover by encouraging other landowners to implement discretionary conservation activities as the Army has done.

In addition, critical habitat is being designated on other areas of Oahu for all 44 of the endemic species, and critical habitat has been designated elsewhere on Oahu, and/or designated or proposed on other islands, for the remaining 32 multi-island species consistent with the guidance in recovery plans. These other designations identify conservation areas for the maintenance and expansion of the existing populations.

In sum, the above analysis concludes that the exclusion of these lands will not cause extinction and should in fact improve the chances of recovery for all 76 species.

Lands Under U.S. Navy Jurisdiction

The U.S. Navy (Navy) manages several areas which contain proposed critical habitat: Naval Magazine Pearl Harbor Lualualei Branch and Naval Computer and Telecommunication Area Master Station Pacific Transmitting Facility at Lualualei. The following discussion explains why portions of these Navy areas are included in final critical habitat.

The U.S. Navy owns or leases much of Lualualei Valley, which is operated as a naval magazine and transmitting facility. One listed species, *Marsilea villosa*, occurs on land at the Naval Computer and Telecommunications

Area Master Station Pacific Radio Transmitting Facility at Lualualei. The Navy regularly mows this area, which benefits the species by keeping the grasses from taking over the habitat (HINHP Database 2001; Navy 2001a; Navy 2001c). Twenty-three species, *Abutilon sandwicense*, *Alectryon macrococcus*, *Bonamia menziesii*, *Chamaesyce kuwaleana*, *Diellia falcata*, *Flueggea neowawraea*, *Hedyotis parvula*, *Lepidium arbuscula*, *Lipochaeta lobata*, *Lipochaeta tenuifolia*, *Lobelia niihauensis*, *Marsilea villosa*, *Melicope saint-johnii*, *Neraudia angulata*, *Nototrichium humile*, *Phyllostegia hirsuta*, *Plantago princeps*, *Sanicula mariversa*, *Schiedea hookeri*, *Tetramolopium filiforme*, *Tetramolopium lepidotum*, *Urera kaalae*, and *Viola chamissoniana* ssp. *chamissoniana*, are reported from lands at the Naval Magazine Pearl Harbor Lualualei Branch (HINHP Database 2001; Navy 2001b; Navy 2001d). One fenced enclosure at the Halona management area has been erected to protect *Abutilon sandwicense* from feral ungulates, and another enclosure at Puu Hapapa protects *Abutilon sandwicense*, *Bonamia menziesii*, *Flueggea neowawraea*, *Lipochaeta lobata* var. *leptophylla*, and *Nototrichium humile* from browsing by feral ungulates. Other management actions include some monitoring of rare plants, surveying for rare plants, and controlling some invasive plants in rare plant habitats (The Traverse Group 1988; Navy 1997, 2001a, 2001b; Navy 2001c; Navy 2001d).

The Service conducted an analysis for U.S. Navy lands similar to that described above for Army lands. We were not able to exclude Navy lands from final critical habitat for the following reasons:

- The Navy's INRMP fails to address 17 of the 20 listed species for which critical habitat has been proposed on Navy lands. Therefore, absent explicit beneficial management plans for these species, and absent a reasonable likelihood that such plans for these species will be funded and implemented in the future, the Service cannot identify compelling conservation benefits that temper the regulatory benefits of a critical habitat designation on these Navy lands.
- Since the time critical habitat was first proposed on Navy lands, the Service has worked closely with Navy staff to scientifically refine the proposed critical habitat. The changes from the proposed critical habitat to final critical habitat reflect our attempt to ensure that we have included on those lands that contain features essential to the species or, if unoccupied, are themselves

essential to the conservation of the species. In doing so, we have also been able to minimize the potential for negative impacts to military activities. Therefore, at this time we cannot identify any relevant negative impacts to the Navy's military mission as a consequence of this critical habitat designation.

In conclusion, the Service believes that it is necessary to include these Navy lands in final critical habitat when the above factors are considered. The Navy is an important partner of the Service and, as described above, is carrying out some conservation activities on Oahu for some of these listed plant species. The current Navy management practices for the areas that are designated as critical habitat, including mowing and fire suppression, are consistent with the conservation of the listed plants and maintenance of their habitat. For example, Navy mowing has benefitted listed species by keeping grasses from taking over their habitat. Similarly, Navy fire management practices, such as restricting access, can further the conservation of listed plants. Although some areas on Navy lands are included in the final critical habitat designation, the Service will consider amending this critical habitat designation if new information becomes available regarding potential impacts to military readiness, or if there is a change in Navy INRMP planning and implementation that was not previously considered and that addresses the conservation needs of these species. For one listed species, *Marsilea villosa*, occurs on land at the Naval Computer and Telecommunications Area Master Station Pacific Radio Transmitting Facility at Lualualei. The Navy regularly mows this area, which benefits the species by keeping the grasses from taking over the habitat (HINHP Database 2001; Navy 2001a; Navy 2001c).

Taxonomic Changes

At the time we listed *Hibiscus brackenridgei*, *Phyllostegia parviflora*, and *Mariscus pennatifloris*, we followed the taxonomic treatments in Wagner *et al.* (1990), the widely used and accepted *Manual of the Flowering Plants of Hawaii*. Subsequent to the final listings for these three species, we became aware of new taxonomic treatments for these species. Also, the recently published book *Hawaii's Ferns and Fern Allies* (Palmer 2003) has followed the family name for *Ctenitis squamigera* (from Aspleniaceae to Dryopteridaceae). Due to the court-ordered deadlines, we are required to publish this final rule to designate

critical habitat on Oahu before we can prepare and publish a notice of taxonomic changes for these four species. We will prepare a taxonomic change notice for these four species after we have published the final critical habitat designations on Oahu.

Required Determinations

Regulatory Planning and Review

In accordance with Executive Order 12866, the Office of Management and Budget (OMB) has determined that this critical habitat designation is not a significant regulatory action. This rule will not have an annual economic effect of \$100 million or more or adversely affect any economic sector, productivity, competition, jobs, the environment, or other units of government. This designation will not create inconsistencies with other agencies' actions or otherwise interfere with an action taken or planned by another agency. It will not materially affect entitlements, grants, user fees, loan programs, or the rights and obligations of their recipients. Finally, this designation will not raise novel legal or policy issues. Accordingly, OMB has not formally reviewed this final critical habitat designation.

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

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

Based on the information in our economic analysis (draft economic analysis and addendum), we are certifying that the critical habitat designation for 99 Oahu plant species will not have a significant effect on a substantial number of small entities because a substantial number of small

entities are not affected by the designation.

Federal courts and Congress have indicated that an RFA/SBREFEA analysis may be limited to entities directly subject to the requirements of the regulation (Service 2002). As such, entities not directly regulated by the listing or critical habitat designation are not considered in this section of the analysis.

Small entities include small organizations, such as independent nonprofit organizations, and small governmental jurisdictions, including school boards and city and town governments that serve fewer than 50,000 residents, as well as small businesses. Small businesses include manufacturing and mining concerns with fewer than 500 employees, wholesale trade entities with fewer than 100 employees, retail and service businesses with less than \$5 million in annual sales, general and heavy construction businesses with less than \$27.5 million in annual business, special trade contractors doing less than \$11.5 million in annual business, and agricultural businesses with annual sales less than \$750,000. The RFA/SBREFEA defines "small governmental jurisdiction" as the government of a city, county, town, school district, or special district with a population of less than 50,000. By this definition, Honolulu County is not a small governmental jurisdiction because its population was 876,156 in 2000. Although certain State agencies, such as DLNR, Department of Agriculture (DOA), and Department of Transportation (DOT), may be affected by the critical habitat designation, State governments are not considered small governments, for the purposes of the RFA. To determine if potential economic impacts to these small entities are significant, we consider the types of activities that might trigger regulatory impacts under this rule as well as the types of project modifications that may result. In general, the term "significant economic impact" is meant to apply to a typical small business firm's business operations.

To determine if the rule would affect a substantial number of small entities, we consider the number of small entities affected within particular types of economic activities (e.g., housing development, grazing, oil and gas production, timber harvesting, etc.). We apply the "substantial number" test individually to each industry to determine if certification is appropriate. SBREFEA does not explicitly define either "substantial number" or "significant economic impact."

Consequently, to assess whether a "substantial number" of small entities is affected by this designation, this analysis considers the relative number of small entities likely to be impacted in the area. Similarly, this analysis considers the relative cost of compliance on the revenues/profit margins of small entities in determining whether or not entities incur a "significant economic impact." Only small entities that are expected to be directly affected by the designation are considered in this portion of the analysis. This approach is consistent with several judicial opinions related to the scope of the RFA (*Mid-Tex Electric Co-op Inc. v. F.E.R.C.*, 249 U.S. App. D.C. 64, 773 F.2d 327 (1985) and *American Trucking Associations, Inc. v. U.S. E.P.A.*, 175 F.3d 1027, 336 U.S.App.D.C. 16 (D.C.Cir., May 14, 1999)).

The primary projects and activities that might be affected by the designation that could affect small entities include ranching operations and conservation projects. Based on our draft economic analysis and addendum, there were 100 cattle livestock operations in Honolulu County in 2000. The combined cattle sales of all of these operations in 2000 was about \$556,000 (State Department of Agriculture 2002). Since this implies average annual cattle sales per business of \$9,267, it is likely that all or almost all of the Honolulu County cattle operations meet the definition of a small business (annual sales less than \$750,000). Thus, our draft economic analysis concluded that the proposed critical habitat designation might affect a half dozen out of 100 (or 12 percent) of the small businesses in the cattle industry in Honolulu County.

The actual impacts of the final rule will be even smaller. The final rule designates less land used for ranching as critical habitat. In turn, both the number of affected ranches and the number of Section 7 consultations involving ranching will be lower. As discussed in the addendum, the final designation could have a negative impact on about three ranches (about three percent of the total ranches on Oahu). These estimates were based on the proposed designations. However, this final rule designates 22,767 hectares (56,258 acres) less than had been proposed, or a 49 percent reduction.

These conclusions are supported by the history of consultations on Oahu. Since these 99 plant species were listed (between 1991 and 1996), we have conducted 2 formal consultations and 24 informal consultations, in addition to consultations on Federal grants to State wildlife programs that do not affect

small entities. The two formal consultations were conducted on behalf of the Army, for review of the "Biological Assessment for Programmatic Section 7 Consultation on Routine Military Training at Makua Military Reservation, and Makua Endangered Species Mitigation Plan." Thirty-nine of the 99 species, *Alectryon macrococcus*, *Abutilon sandwicense*, *Alsinidendron obovatum*, *Bonamia menziesii*, *Cenchrus agrimonioides*, *Chamaesyce celastroides* var. *kaenana*, *Chamaesyce herbstii*, *Colubrina oppositifolia*, *Ctenitis squamigera*, *Cyanea grimesiana* ssp. *grimesiana*, *Cyanea longiflora*, *Cyanea superba*, *Cyrtandra dentata*, *Delissea subcordata*, *Diellia falcata*, *Dubautia herbstobatae*, *Euphorbia haeleleana*, *Flueggea neowawraea*, *Hedyotis degeneri*, *Hedyotis parvula*, *Hesperomannia arbuscula*, *Hibiscus brackenridgei*, *Lepidium arbuscula*, *Lipochaeta tenuifolia*, *Lobelia niihauensis*, *Lobelia oahuensis*, *Neraudia angulata*, *Nototrichium humile*, *Peucedanum sandwicense*, *Phyllostegia kaalaensis*, *Plantago princeps*, *Sanicula marivera*, *Schiedea hookeri*, *Schiedea kaalae*, *Schiedea nuttallii*, *Silene lanceolata*, *Spermolepis hawaiiensis*, *Tetramolopium filiforme*, and *Viola chamissoniana* ssp. *chamissoniana*, were reported from the action area. We conducted 24 informal consultations with the Army, U.S. Air Force, Navy, FAA, Department of Transportation, U.S. Coast Guard, Department of Land and Natural Resources Division of State Parks, Hawaii Army National Guard, U.S. Department of Agriculture's Animal and Plant Health Inspection Service, and U.S. Department of Energy.

None of these consultations affected or concerned small entities. We have determined that the State of Hawaii and Honolulu County are not small entities. The Army, Navy, NRCS, Corps, FCC, Department of Transportation, Environmental Protection Agency, FAA, FEMA, Dole Food Company, local television stations, and cellular, paging, and wireless services are not small entities. In 21 of the 24 informal consultations, we concurred with each agency's determination that the project, as proposed, was not likely to adversely affect listed species. We initiated formal consultation for the remaining three. For both formal consultations, we found that routine military training at Makua Military Reservation, which included an indepth list of conservation measures the Army would carry out in the action area, was not likely to jeopardize listed species.

For these reasons, we are certifying that the designation of critical habitat

for *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 crispata*, *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* will not have a significant economic impact on a substantial number of small entities. Therefore, a regulatory flexibility analysis is not required.

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

Under the Small Business Regulatory Enforcement Fairness Act (5 U.S.C. 801 *et seq.*), this rule is not a major rule. Our detailed assessment of the economic effects of this designation are described in the draft economic analysis and the final addendum to the economic analysis. Based on the effects identified in these documents, we believe that this rule will not have an effect on the economy of \$100 million or more, will not cause a major increase in costs or prices for consumers, and will not have significant adverse effects on competition, employment, investment, productivity, innovation, or the ability of U.S.-based enterprises to compete with foreign-based enterprises. Refer to the final addendum to the economic analysis for a discussion of the effects of this determination.

Executive Order 13211

On May 18, 2001, the President issued Executive Order 13211, on regulations that significantly affect energy supply, distribution, and use. Executive Order 13211 requires agencies to prepare Statements of Energy Effects when undertaking certain actions. This rule is not a significant regulatory action under Executive Order 12866, and it is not expected to significantly affect energy production supply and distribution facilities because no significant energy production, supply, and distribution facilities are included within designated critical habitat. Further, for the reasons described in the economic analysis, we do not believe that designation of critical habitat for the 99 plant species will affect future energy production. Therefore, this action is not a significant energy action, and no Statement of Energy Effects is required.

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

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

(a) For the reasons described in our economic analysis, this rule will not produce a Federal mandate on State or local governments or the private sector that may result in the expenditure of \$100 million or greater in any year. Therefore, a statement pursuant to 2 U.S.C. 1532 is not required.

(b) This rule will not “significantly or uniquely” affect small governments, so a Small Government Agency Plan is not required. Small governments will not be directly affected unless they propose an action requiring Federal funds, permits, or other authorizations. Any such

activities will require that the Federal agency ensure that the action will not adversely modify or destroy designated critical habitat.

Takings

In accordance with Executive Order 12630 (“Government Actions and Interference with Constitutionally Protected Private Property Rights”), we have analyzed the potential takings implications of designating critical habitat for the 99 species from Oahu in a takings implications assessment. The takings implications assessment concludes that this final rule does not pose significant takings implications.

Federalism

In accordance with Executive Order 13132, this final rule does not have significant Federalism effect and does not impose substantial direct compliance costs on State and local governments. In addition, this regulation is required by statute. See 16 U.S.C. 1533(a)(3). Therefore, a Federalism assessment is not required.

This rule imposes no regulatory requirements unless an agency is seeking Federal funding or authorization. In addition, for the reasons contained in the economic analysis, this rule will not have substantial direct compliance costs on State and local governments.

In fact, the designations may have some benefit to these governments, in that the areas essential to the conservation of these species are more clearly defined, and the primary constituent elements of the habitat necessary to the survival of the species are specifically identified. While this definition and identification do not alter where and what federally sponsored activities may occur, they may assist these local governments in long range planning, rather than waiting for case-by-case section 7 consultation to occur. Nevertheless, keeping with Department of the Interior policy, we requested information from appropriate State and local officials in Hawaii.

Civil Justice Reform

In accordance with Executive Order 12988, the Department of the Interior’s Office of the Solicitor has determined that this rule does not unduly burden the judicial system and does meet the requirements of sections 3(a) and 3(b)(2) of the Order. We have designated critical habitat in accordance with the provisions of the Endangered Species Act. The rule uses standard property descriptions and identifies the primary constituent elements within the designated areas to assist the public in

understanding the habitat needs of 99 plant species from Oahu.

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

This rule does not contain any information collection requirements for which OMB approval under the Paperwork Reduction Act is required. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a valid OMB control number.

National Environmental Policy Act

We have determined that we do not need to prepare an Environmental Assessment and/or an Environmental Impact Statement as defined by the National Environmental Policy Act of 1969 in connection with regulations adopted pursuant to section 4(a) of the Endangered Species Act. We published a notice outlining our reason for this determination in the **Federal Register** on October 25, 1983 (48 FR 49244).

Government-to-Government Relationship With Tribes

In accordance with the President's memorandum of April 29, 1994, "Government-to-Government Relations with Native American Tribal Governments" (59 FR 22951) Executive Order 13175 and the Department of the Interior's manual at 512 DM 2, we readily acknowledge our responsibility to communicate meaningfully with recognized Federal Tribes on a government-to-government basis. We have determined that there are no Tribal lands essential for the conservation of these 99 plant species. Therefore, designation of critical habitat for these 99 species does not involve any Tribal lands.

References Cited

A complete list of all references cited in this final rule is available upon request from the Pacific Islands Fish

and Wildlife Office (see **ADDRESSES** section).

Authors

The authors of this final rule are staff of the Pacific Islands Fish and Wildlife Office (see **ADDRESSES** section).

List of Subjects in 50 CFR Part 17

Endangered and threatened species, Exports, Imports, Reporting and recordkeeping requirements, Transportation.

Regulation Promulgation

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

PART 17—[AMENDED]

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

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

■ 2. Amend § 17.12(h), the List of Endangered and Threatened Plants, as set forth below:

■ a. Under the table's heading **FLOWERING PLANTS**, by revising the entries for *Abutilon sandwicense*, *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*, *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, *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 pyrifolium*, *Labordia cyrtandrae*, *Lepidium arbuscula*, *Lipochaeta lobata* var. *leptophylla*, *Lipochaeta tenuifolia*, *Lobelia gaudichaudii* ssp. *koolauensis*, *Lobelia monostachya*, *Lobelia niihauensis*, *Lobelia oahuensis*, *Lysimachia filifolia*, *Mariscus pennatifolius*, *Melicope lydgatei*, *Melicope pallida*, *Melicope saint-johnii*, *Myrsine juddii*, *Neraudia angulata*, *Nototrichium humile*, *Peucedanum sandwicense*, *Phyllostegia hirsuta*, *Phyllostegia kaalaensis*, *Phyllostegia mollis*, *Phyllostegia parviflora*, *Plantago princeps*, *Platanthera holochila*, *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* to read as follows; and

■ b. Under the table's heading **FERNS AND ALLIES**, by revising the entries for *Adenophorus periens*, *Ctenitis squamigera*, *Diellia erecta*, *Diellia falcata*, *Diellia unisora*, *Diplazium molokaiense*, *Marsilea villosa*, *Phlegmariurus nutans*, and *Pteris lidgatei* to read as follows.

§ 17.12 Endangered and threatened plants.

* * * * *
(h) * * *

Species		Historic range	Family	Status	When listed	Critical habitat	Special rules
Scientific name	Common name						
FLOWERING PLANTS							
* <i>Abutilon sandwicense</i>	* None	* U.S.A. (HI)	* Malvaceae	E	* 448	* 17.99(i)	NA
* <i>Alectryon macrococcus</i>	* Mahoe	* U.S.A. (HI)	* Sapindaceae	E	* 467	* 17.99(a)(1), (c), (e)(1), and (i).	NA
* <i>Alsinidendron obovatum</i>	* None	* U.S.A. (HI)	* Caryophyllaceae	E	* 448	* 17.99(i)	NA

Species		Historic range	Family	Status	When listed	Critical habitat	Special rules
Scientific name	Common name						
<i>Alsindendron trinerve.</i>	None	U.S.A. (HI)	Caryophyllaceae	E	448	17.99(i)	NA
*	*	*	*	*		*	
<i>Bonamia menziesii</i> ..	None	U.S.A. (HI)	Convolvulaceae	E	559	17.99(a)(1), (e)(1), and (i).	NA
*	*	*	*	*		*	
<i>Cenchrus agrimonioides.</i>	Kamanomano	U.S.A. (HI)	Poaceae	E	592	17.99(e)(1) and (i).	NA
*	*	*	*	*		*	
<i>Centaurium sebaeoides.</i>	Awiwi	U.S.A. (HI)	Gentianaceae	E	448	17.99(a)(1), (c), (e)(1), and (i).	NA
*	*	*	*	*		*	
<i>Chamaesyce celastroides</i> var. <i>kaenana.</i>	Akoko	U.S.A. (HI)	Euphorbiaceae	E	448	17.99(i)	NA
*	*	*	*	*		*	
<i>Chamaesyce deppeana.</i>	Akoko	U.S.A. (HI)	Euphorbiaceae	E	536	17.99(i)	NA
*	*	*	*	*		*	
<i>Chamaesyce herbstii</i>	Akoko	U.S.A. (HI)	Euphorbiaceae	E	591	17.99(i)	NA
*	*	*	*	*		*	
<i>Chamaesyce kuwaleana.</i>	Akoko	U.S.A. (HI)	Euphorbiaceae	E	448	17.99(i)	NA
<i>Chamaesyce rockii</i> ..	Akoko	U.S.A. (HI)	Euphorbiaceae	E	591	17.99(i)	NA
*	*	*	*	*		*	
<i>Colubrina oppositifolia.</i>	Kauila	U.S.A. (HI)	Rhamnaceae	E	532	17.99(e)(1) and (i).	NA
*	*	*	*	*		*	
<i>Cyanea acuminata</i> ...	HaHa	U.S.A. (HI)	Campanulaceae	E	591	17.99(i)	NA
*	*	*	*	*		*	
<i>Cyanea (=Rollandia) crista.</i>	None	U.S.A. (HI)	Campanulaceae	E	536	17.99(i)	NA
*	*	*	*	*		*	
<i>Cyanea grimesiana</i> ssp. <i>grimesiana.</i>	HaHa	U.S.A. (HI)	Campanulaceae	E	592	17.99(c), (e)(1), and (i).	NA
<i>Cyanea grimesiana</i> ssp. <i>obatae.</i>	HaHa	U.S.A. (HI)	Campanulaceae	E	541	17.99(i)	NA
*	*	*	*	*		*	
<i>Cyanea humboldtiana</i>	HaHa	U.S.A. (HI)	Campanulaceae	E	591	17.99(i)	NA
<i>Cyanea koolauensis</i>	HaHa	U.S.A. (HI)	Campanulaceae	E	591	17.99(i)	NA
*	*	*	*	*		*	
<i>Cyanea longiflora</i>	HaHa	U.S.A. (HI)	Campanulaceae	E	591	17.99(i)	NA
*	*	*	*	*		*	
<i>Cyanea pinnatifida</i> ...	HaHa	U.S.A. (HI)	Campanulaceae	E	448	17.99(i)	NA
*	*	*	*	*		*	
<i>Cyanea st.-johnii</i>	HaHa	U.S.A. (HI)	Campanulaceae	E	591	17.99(i)	NA
*	*	*	*	*		*	
<i>Cyanea superba</i>	None	U.S.A. (HI)	Campanulaceae	E	434	17.99(i)	NA
<i>Cyanea truncata</i>	Haha	U.S.A. (HI)	Campanulaceae	E	536	17.99(i)	NA
*	*	*	*	*		*	
<i>Cyperus trachyanthos.</i>	Puukaa	U.S.A. (HI)	Cyperaceae	E	592	17.99(a)(1) and (i).	NA

Species		Historic range	Family	Status	When listed	Critical habitat	Special rules
Scientific name	Common name						
<i>Cyrtandra dentata</i>	Haiwale	U.S.A. (HI)	Gesneriaceae	E	591	17.99(i)	NA
<i>Cyrtandra polyantha</i>	Haiwale	U.S.A. (HI)	Gesneriaceae	E	536	17.99(i)	NA
<i>Cyrtandra subumbellata</i> .	Haiwale	U.S.A. (HI)	Gesneriaceae	E	591	17.99(i)	NA
<i>Cyrtandra viridiflora</i>	Haiwale	U.S.A. (HI)	Gesneriaceae	E	591	17.99(i)	NA
<i>Delissea subcordata</i>	Oha	U.S.A. (HI)	Campanulaceae	E	591	17.99(i)	NA
<i>Dubautia herbstobatae</i> .	Naenae	U.S.A. (HI)	Asteraceae	E	448	17.99(i)	NA
<i>Eragrostis fosbergii</i> ..	Fosberg's love grass.	U.S.A. (HI)	Poaceae	E	591	17.99(i)	NA
<i>Eugenia koolauensis</i>	Nioi	U.S.A. (HI)	Myrtaceae	E	536	17.99(c) and (i).	NA
<i>Euphorbia haeleeleana</i> .	Akoko	U.S.A. (HI)	Euphorbiaceae	E	592	17.99(a)(1) and (i).	NA
<i>Flueggea neowawraea</i> .	Mehamehame	U.S.A. (HI)	Euphorbiaceae	E	559	17.99(a)(1), (c), (e)(1), and (i).	NA
<i>Gardenia mannii</i>	Nanu	U.S.A. (HI)	Rubiaceae	E	591	17.99(i)	NA
<i>Gouania meyenii</i>	None	U.S.A. (HI)	Rhamnaceae	E	448	17.99(a)(1) and (i).	NA
<i>Gouania vitifolia</i>	None	U.S.A. (HI)	Rhamnaceae	E	541	17.99(e)(1) and (i).	NA
<i>Hedyotis coriacea</i>	Kioele	U.S.A. (HI)	Rubiaceae	E	467	17.99(e)(1) and (i).	NA
<i>Hedyotis degeneri</i>	None	U.S.A. (HI)	Rubiaceae	E	448	17.99(i)	NA
<i>Hedyotis parvula</i>	None	U.S.A. (HI)	Rubiaceae	E	448	17.99(i)	NA
<i>Hesperomannia arborescens</i> .	None	U.S.A. (HI)	Asteraceae	E	536	17.99(c) and (i).	NA
<i>Hesperomannia arbuscula</i> .	None	U.S.A. (HI)	Asteraceae	E	448	17.99(e)(1) and (i).	NA
<i>Hibiscus brackenridgei</i> ..	Mao hau hele	U.S.A. (HI)	Malvaceae	E	559	17.99(c), (e)(1), and (i).	NA
<i>Isodendron laurifolium</i> .	Aupaka	U.S.A. (HI)	Violaceae	E	592	17.99(a)(1) and (i).	NA
<i>Isodendron longifolium</i> .	Aupaka	U.S.A. (HI)	Violaceae	T	592	17.99(a)(1) and (i).	NA
<i>Isodendron pyrifolium</i> .	Wahine noho kula ..	U.S.A. (HI)	Violaceae	E	532	17.99(c), (e)(1), and (i).	NA

Species		Historic range	Family	Status	When listed	Critical habitat	Special rules
Scientific name	Common name						
*	*	*	*	*	*	*	*
<i>Labordia cyrtandrae</i>	Kamakahala	U.S.A. (HI)	Loganiaceae	E	591	17.99(i)	NA
*	*	*	*	*	*	*	*
<i>Lepidium arbuscula</i>	Anaunau	U.S.A. (HI)	Brassicaceae	E	591	17.99(i)	NA
*	*	*	*	*	*	*	*
<i>Lipochaeta lobata</i> var. <i>leptophylla</i> .	Nehe	U.S.A. (HI)	Asteraceae	E	448	17.99(i)	NA
*	*	*	*	*	*	*	*
<i>Lipochaeta tenuifolia</i>	Nehe	U.S.A. (HI)	Asteraceae	E	448	17.99(i)	NA
*	*	*	*	*	*	*	*
<i>Lobelia gaudichaudii</i> ssp. <i>koolauensis</i> .	None	U.S.A. (HI)	Campanulaceae	E	591	17.99(i)	NA
<i>Lobelia monostachya</i>	None	U.S.A. (HI)	Campanulaceae	E	591	17.99(i)	NA
<i>Lobelia niihauensis</i> ..	None	U.S.A. (HI)	Campanulaceae	E	448	17.99(i)	NA
<i>Lobelia oahuensis</i>	None	U.S.A. (HI)	Campanulaceae	E	536	17.99(i)	NA
*	*	*	*	*	*	*	*
<i>Lysimachia filifolia</i>	None	U.S.A. (HI)	Primulaceae	E	530	17.99(a)(1) and (i).	NA
*	*	*	*	*	*	*	*
<i>Mariscus pennatiformis</i> .	None	U.S.A. (HI)	Cyperaceae	E	559	17.99(a)(1), (e)(1), (g), and (i).	NA
*	*	*	*	*	*	*	*
<i>Melicope lydgatei</i>	Alani	U.S.A. (HI)	Rutaceae	E	536	17.99(i)	NA
*	*	*	*	*	*	*	*
<i>Melicope pallida</i>	Alani	U.S.A. (HI)	Rutaceae	E	530	17.99(a)(1) and (i).	NA
*	*	*	*	*	*	*	*
<i>Melicope saint-johnii</i>	Alani	U.S.A. (HI)	Rutaceae	E	591	17.99(i)	NA
*	*	*	*	*	*	*	*
<i>Myrsine juddii</i>	Kolea	U.S.A. (HI)	Myrsinaceae	E	591	17.99(i)	NA
*	*	*	*	*	*	*	*
<i>Neraudia angulata</i> ...	None	U.S.A. (HI)	Urticaceae	E	448	17.99(i)	NA
*	*	*	*	*	*	*	*
<i>Nototrichium humile</i>	Kului	U.S.A. (HI)	Amaranthaceae	E	448	17.99(e)(1) and (i).	NA
*	*	*	*	*	*	*	*
<i>Peucedanum sandwicense</i> .	Makou	U.S.A. (HI)	Apiaceae	T	530	17.99(a)(1), (c), (e)(1), and (i).	NA
*	*	*	*	*	*	*	*
<i>Phyllostegia hirsuta</i>	None	U.S.A. (HI)	Lamiaceae	E	591	17.99(i)	NA
<i>Phyllostegia kaalaensis</i> .	None	U.S.A. (HI)	Lamiaceae	E	591	17.99(i)	NA
*	*	*	*	*	*	*	*
<i>Phyllostegia mollis</i> ...	None	U.S.A. (HI)	Lamiaceae	E	448	17.99(e)(1) and (i).	NA
<i>Phyllostegia parviflora</i> .	None	U.S.A. (HI)	Lamiaceae	E	592	17.99(i)	NA
*	*	*	*	*	*	*	*
<i>Plantago princeps</i>	Laukahi kuahiwi	U.S.A. (HI)	Plantaginaceae	E	559	17.99(a)(1), (c), (e)(1), and (i).	NA

Species		Historic range	Family	Status	When listed	Critical habitat	Special rules
Scientific name	Common name						
<i>Platanthera holochila</i>	None	U.S.A. (HI)	Orchidaceae	E	592	17.99(a)(1), (e)(1), and (i).	NA
*	*	*	*	*	*		*
<i>Sanicula mariversa</i>	None	U.S.A. (HI)	Apiaceae	E	448	17.99(i)	NA
<i>Sanicula purpurea</i>	None	U.S.A. (HI)	Apiaceae	E	592	17.99(e)(1) and (i).	NA
*	*	*	*	*	*		*
<i>Schiedea hookeri</i>	None	U.S.A. (HI)	Caryophyllaceae	E	592	17.99(i)	NA
<i>Schiedea kaalae</i>	None	U.S.A. (HI)	Caryophyllaceae	E	448	17.99(i)	NA
*	*	*	*	*	*		*
<i>Schiedea kealiae</i>	Maolioli	U.S.A. (HI)	Caryophyllaceae	E	591	17.99(i)	NA
*	*	*	*	*	*		*
<i>Schiedea nuttallii</i>	None	U.S.A. (HI)	Caryophyllaceae	E	592	17.99(a)(1), (c), and (i).	NA
*	*	*	*	*	*		*
<i>Sesbania tomentosa</i>	Ohai	U.S.A. (HI)	Fabaceae	E	559	17.99(a)(1), (c), (e)(1), (g), and (i).	NA
*	*	*	*	*	*		*
<i>Silene lanceolata</i>	None	U.S.A. (HI)	Caryophyllaceae	E	480	17.99(c) and (i).	NA
<i>Silene perlmantii</i>	None	U.S.A. (HI)	Caryophyllaceae	E	448	17.99(i)	NA
*	*	*	*	*	*		*
<i>Solanum sandwicense</i>	Aiakeakua, popolo	U.S.A. (HI)	Solanaceae	E	530	17.99(a)(1) and (i).	NA
*	*	*	*	*	*		*
<i>Spermolepis hawaiiensis</i>	None	U.S.A. (HI)	Apiaceae	E	559	17.99(a)(1), (c), (e)(1), and (i).	NA
*	*	*	*	*	*		*
<i>Stenogyne kanehoana</i>	None	U.S.A. (HI)	Lamiaceae	E	466	17.99(i)	NA
*	*	*	*	*	*		*
<i>Tetramolopium filiforme</i>	None	U.S.A. (HI)	Asteraceae	E	448	17.99(i)	NA
<i>Tetramolopium lepidotum</i> ssp. <i>lepidotum</i>	None	U.S.A. (HI)	Asteraceae	E	448	17.99(i)	NA
*	*	*	*	*	*		*
<i>Tetraplasandra gymnocarpa</i>	Oheohe	U.S.A. (HI)	Araliaceae	E	536	17.99(i)	NA
*	*	*	*	*	*		*
<i>Trematolobelia singularis</i>	None	U.S.A. (HI)	Campanulaceae	E	591	17.99(i)	NA
*	*	*	*	*	*		*
<i>Urera kaalae</i>	Opuhe	U.S.A. (HI)	Urticaceae	E	448	17.99(i)	NA
*	*	*	*	*	*		*
<i>Vigna o-wahuensis</i>	None	U.S.A. (HI)	Fabaceae	E	559	17.99(e)(1) and (i).	NA
<i>Viola chamissoniana</i> ssp. <i>chamissoniana</i>	Pamakani	U.S.A. (HI)	Violaceae	E	448	17.99(i)	NA
*	*	*	*	*	*		*
<i>Viola oahuensis</i>	None	U.S.A. (HI)	Violaceae	E	591	17.99(i)	NA

Species		Historic range	Family	Status	When listed	Critical habitat	Special rules
Scientific name	Common name						
* * * * *							
FERNS AND ALLIES							
<i>Adenophorus periens</i>	Pendent kihi fern	U.S.A. (HI)	Grammitidaceae	E	559	17.99(a)(1), (c), and (i).	NA
<i>Ctenitis squamigera</i>	Pauoa	U.S.A. (HI)	Aspleniaceae	E	553	17.99(a)(1), (c), (e)(1), and (i).	NA
<i>Diellia erecta</i>	Asplenium-leaved diellia.	U.S.A. (HI)	Aspleniaceae	E	559	17.99(a)(1), (c), (e)(1), and (i).	NA
<i>Diellia falcata</i>	None	U.S.A. (HI)	Aspleniaceae	E	448	17.99(i)	NA
<i>Diellia unisora</i>	None	U.S.A. (HI)	Aspleniaceae	E	541	17.99(i)	NA
<i>Diplazium molokaiense</i> .	None	U.S.A. (HI)	Aspleniaceae	E	553	17.99(a)(1), (c), (e)(1), and (i).	NA
<i>Marsilea villosa</i>	Ihihi	U.S.A. (HI)	Marsileaceae	E	474	17.99(i)	NA
<i>Phlegmariurus nutans</i> .	Wawaeiole	U.S.A. (HI)	Lycopodiaceae	E	536	17.99(a)(1) and (i).	NA
<i>Pteris lidgatei</i>	None	U.S.A. (HI)	Adiantaceae	E	553	17.99(c), (e)(1), and (i).	NA
* * * * *							

- 3. Amend § 17.99 as set forth below:
- a. By revising the section heading to read as follows; and
- b. By adding new paragraphs (i) and (j) to read as follows.

§ 17.99 Critical habitat; plants on the islands of Kauai, Niihau, Molokai, Maui, Kahoolawe, and Oahu, HI, and on the Northwest Hawaiian Islands.

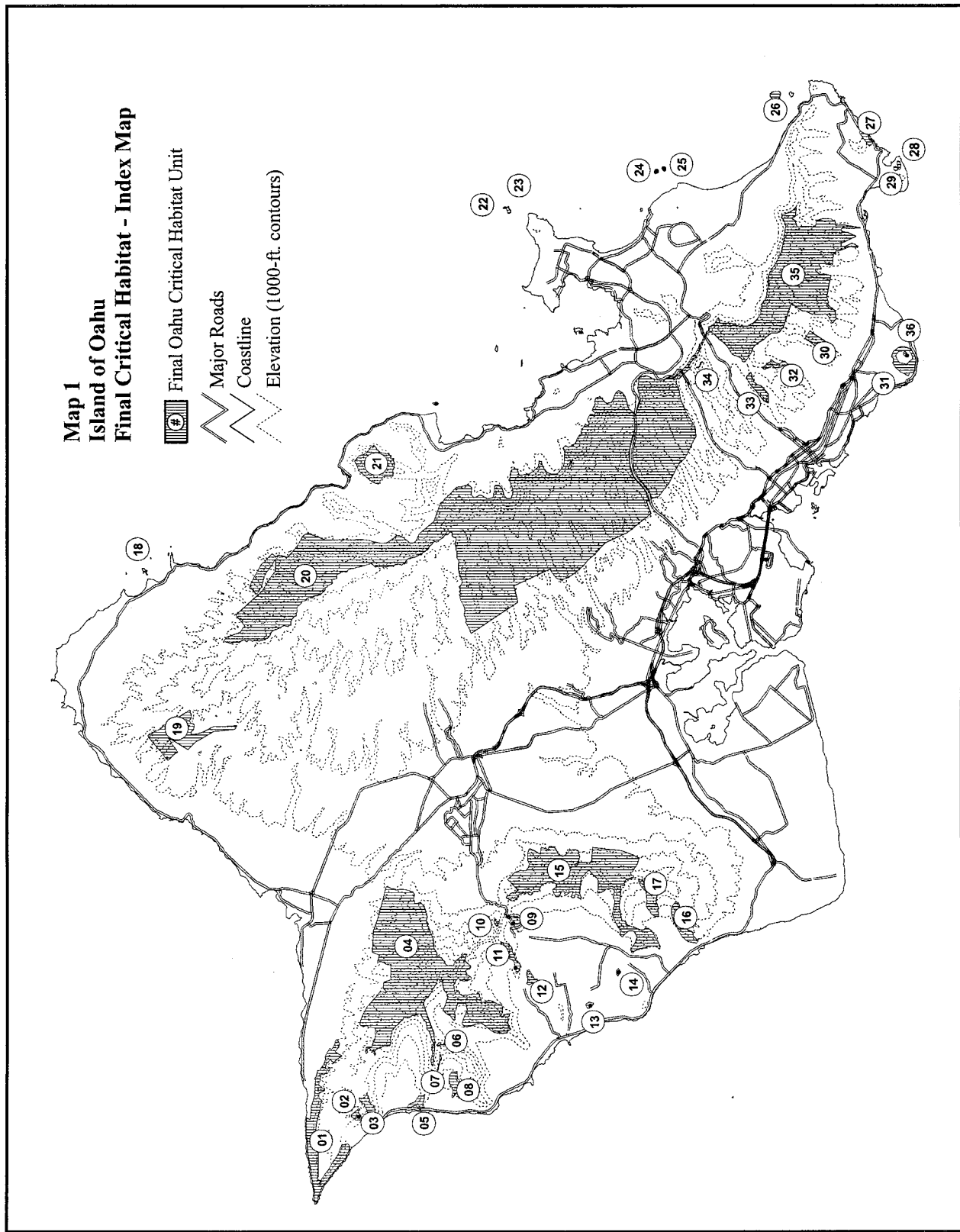
* * * * *

(i) *Maps and critical habitat unit descriptions for the island of Oahu, HI.* The following paragraphs contain the legal descriptions of the critical habitat units designated for the Hawaiian island of Oahu. Existing manmade features and structures within the boundaries of the mapped units, 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 lookouts; remote helicopter landing sites; existing fences; telecommunications equipment towers and associated structures, electrical power transmission and distribution lines, 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; and lawns and other rural residential landscaped areas do not contain one or more of the primary constituent elements described for each species in paragraph (j) of this section and therefore are not included in the critical habitat designations. Critical habitat units are described below. Coordinates in UTM Zone 4 with units in meters using North American Datum of 1983 (NAD83). The following map shows the general locations of the 317 critical habitat units designated on the island of Oahu.

(1) **Note:** Map 1—Index map follows:
BILLING CODE 4310-55-U



(2) Oahu 1—*Centaurium sebaeoides*—a (61 ha; 151 ac)

(i) Unit consists of the following 41 boundary points: Start at 575051,

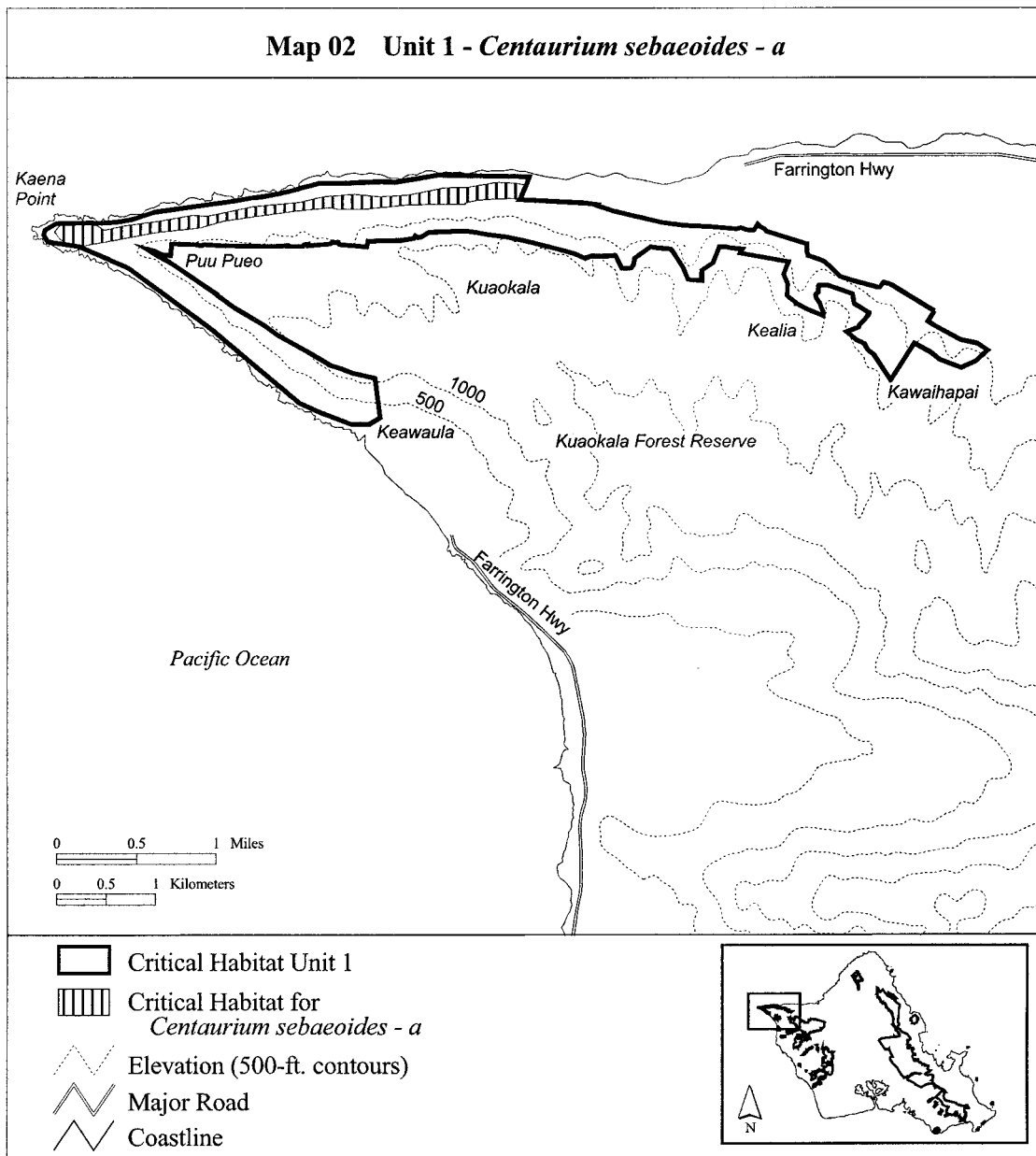
2385984; 575168, 2385907; 575381, 2385957; 575728, 2386002; 576060, 2386059; 576211, 2386052; 576675, 2386146; 577140, 2386190; 577385, 2386247; 577692, 2386272; 577943,

2386247; 578245, 2386266; 578596, 2386335; 578835, 2386341; 579136, 2386391; 579331, 2386379; 579418, 2386363; 579365, 2386234; 579326, 2386224; 579284, 2386229; 579083,

2386225; 578934, 2386215; 578812,
 2386182; 578812, 2386173; 578242,
 2386164; 577779, 2386117; 577527,
 2386117; 577448, 2386136; 577102,

2386103; 576728, 2386052; 576378,
 2386005; 576135, 2385935; 575699,
 2385884; 575419, 2385832; 575157,
 2385789; 574970, 2385752; 574806,

2385766; 574722, 2385822; 574666,
 2385892; 574727, 2385962; 574813,
 2385980; return to starting point.
 (ii) Note: Map 2 follows:



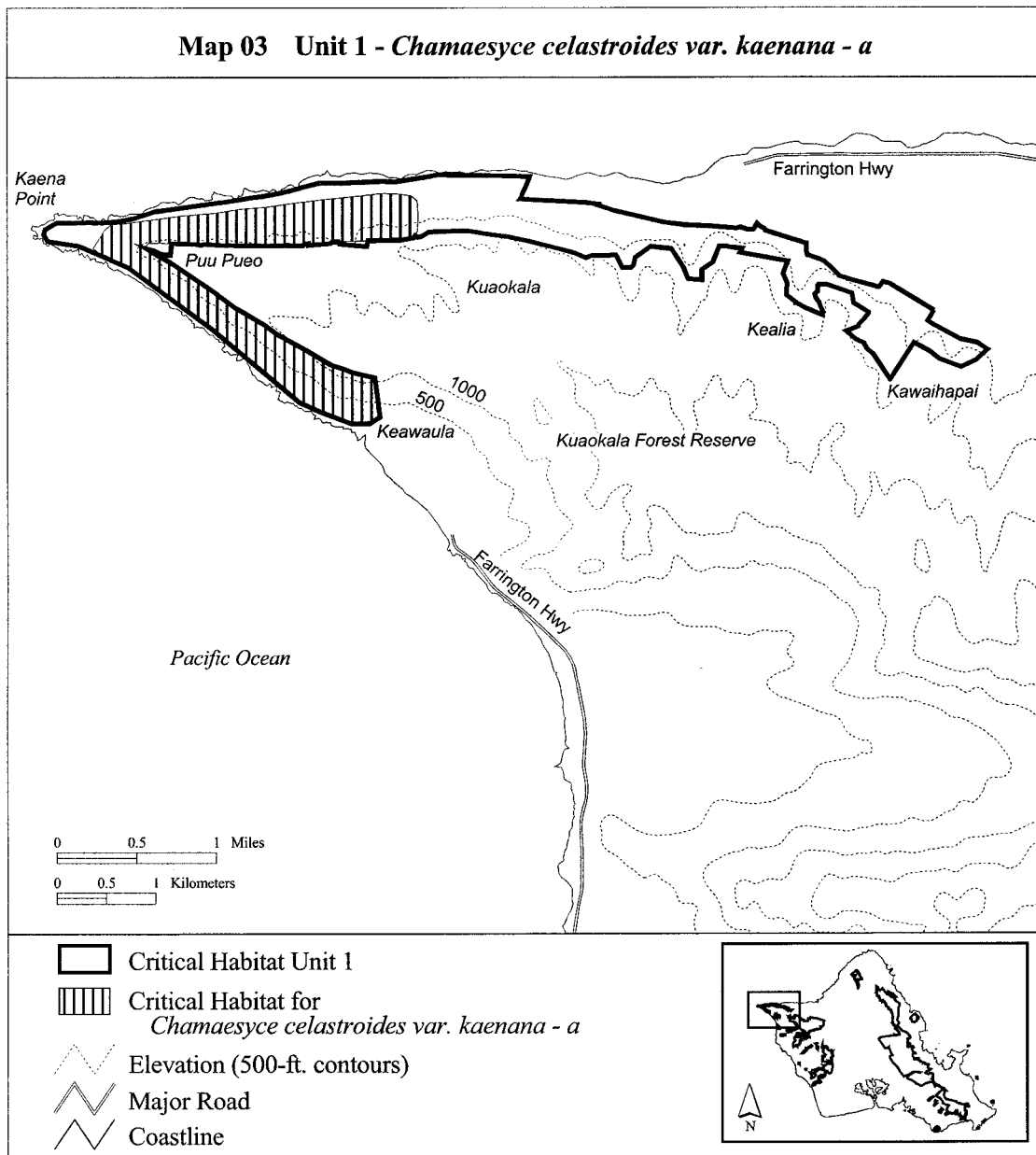
(3) Oahu 1—*Chamaesyce celastroides* var. *kaenana*—a (231 ha; 571 ac)

(i) Unit consists of the following 51 boundary points: Start at 576308, 2385257; 576310, 2385255; 576482, 2385122; 576596, 2385060; 576780, 2384950; 576915, 2384849; 577201, 2384696; 577456, 2384543; 577457, 2384543; 577566, 2384511; 577687, 2384461; 577875, 2384421; 577897,

2384415; 577947, 2384017; 577842, 2383950; 577659, 2383950; 577365, 2384061; 577132, 2384164; 576278, 2384884; 575413, 2385523; 575412, 2385523; 575247, 2385596; 575153, 2385648; 575059, 2385726; 575131, 2385837; 575170, 2385898; 575237, 2385959; 575392, 2385976; 575949, 2386049; 576293, 2386077; 576565, 2386121; 576787, 2386138; 577037, 2386171; 577343, 2386210; 577704,

2386249; 577970, 2386277; 578126, 2386271; 578265, 2386255; 578320, 2386199; 578331, 2386071; 578326, 2385899; 578293, 2385827; 578155, 2385804; 577627, 2385796; 576867, 2385746; 576360, 2385755; 575731, 2385777; 575614, 2385777; 575581, 2385727; 575692, 2385660; 575835, 2385580; return to starting point.

(ii) Note: Map 3 follows:



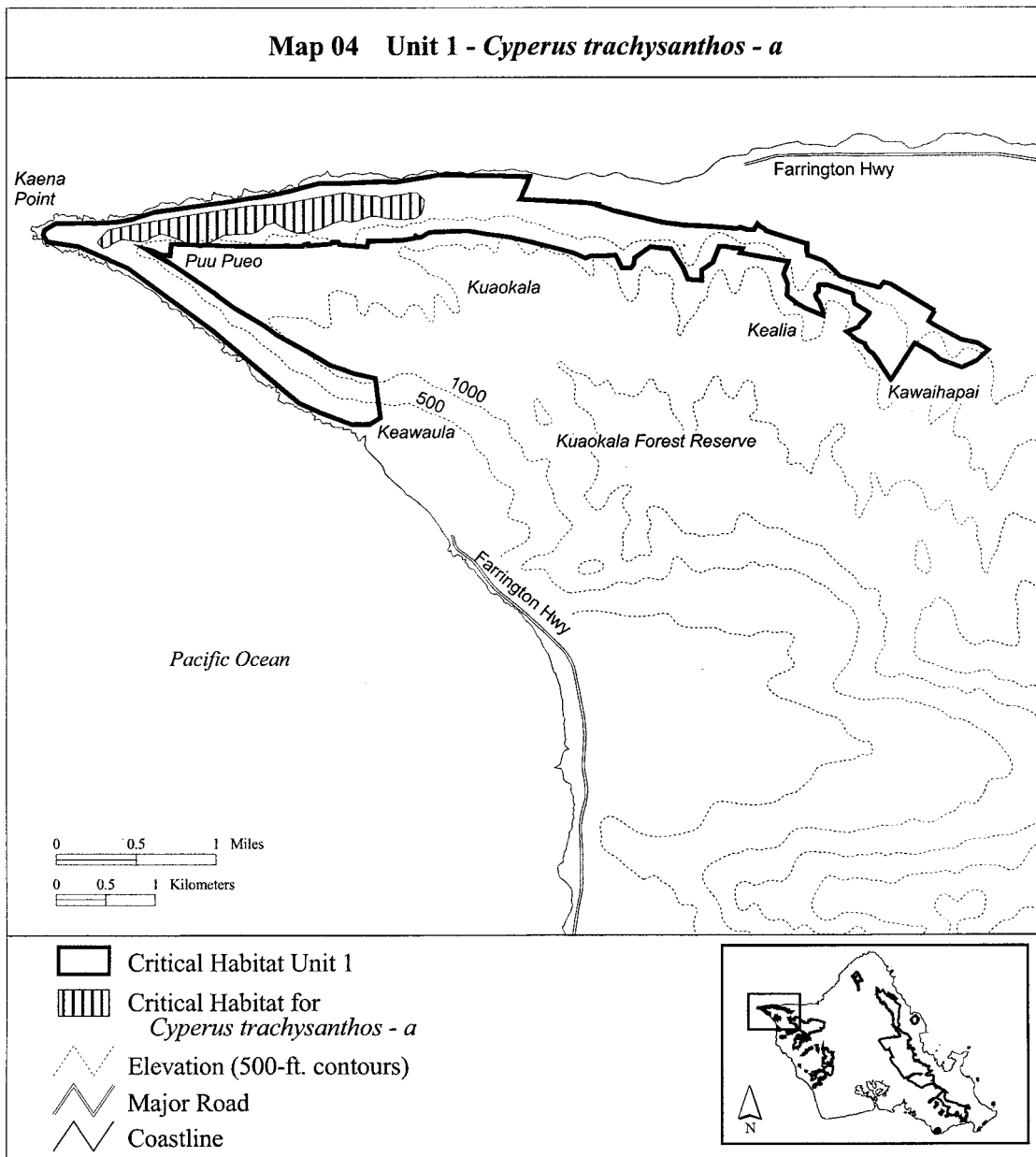
(4) Oahu 1—*Cyperus trachysanthos*—a
(78 ha; 193 ac)

(i) Unit consists of the following 56 boundary points: Start at 575111, 2385777; 575104, 2385794; 575138, 2385842; 575212, 2385916; 575474, 2385967; 576015, 2386059; 576440, 2386124; 576662, 2386160; 576954, 2386170; 577298, 2386235; 577591, 2386291; 577777, 2386257; 577916, 2386253; 577974, 2386238; 578056,

2386253; 578228, 2386278; 578229, 2386286; 578316, 2386286; 578383, 2386219; 578383, 2386161; 578364, 2386074; 578302, 2386026; 578206, 2386022; 578205, 2386017; 578022, 2386026; 577902, 2386050; 577835, 2386045; 577738, 2386012; 577652, 2385993; 577570, 2386007; 577469, 2385973; 577363, 2385930; 577204, 2385882; 577112, 2385882; 577002, 2385920; 576891, 2385983; 576804, 2385964; 576771, 2385935; 576703,

2385887; 576650, 2385877; 576501, 2385867; 576385, 2385863; 576313, 2385824; 576241, 2385790; 576150, 2385752; 575996, 2385786; 575866, 2385838; 575754, 2385872; 575672, 2385853; 575619, 2385810; 575547, 2385795; 575451, 2385805; 575349, 2385818; 575268, 2385780; 575215, 2385741; 575157, 2385730; return to starting point.

(ii) **Note:** Map 4 follows:



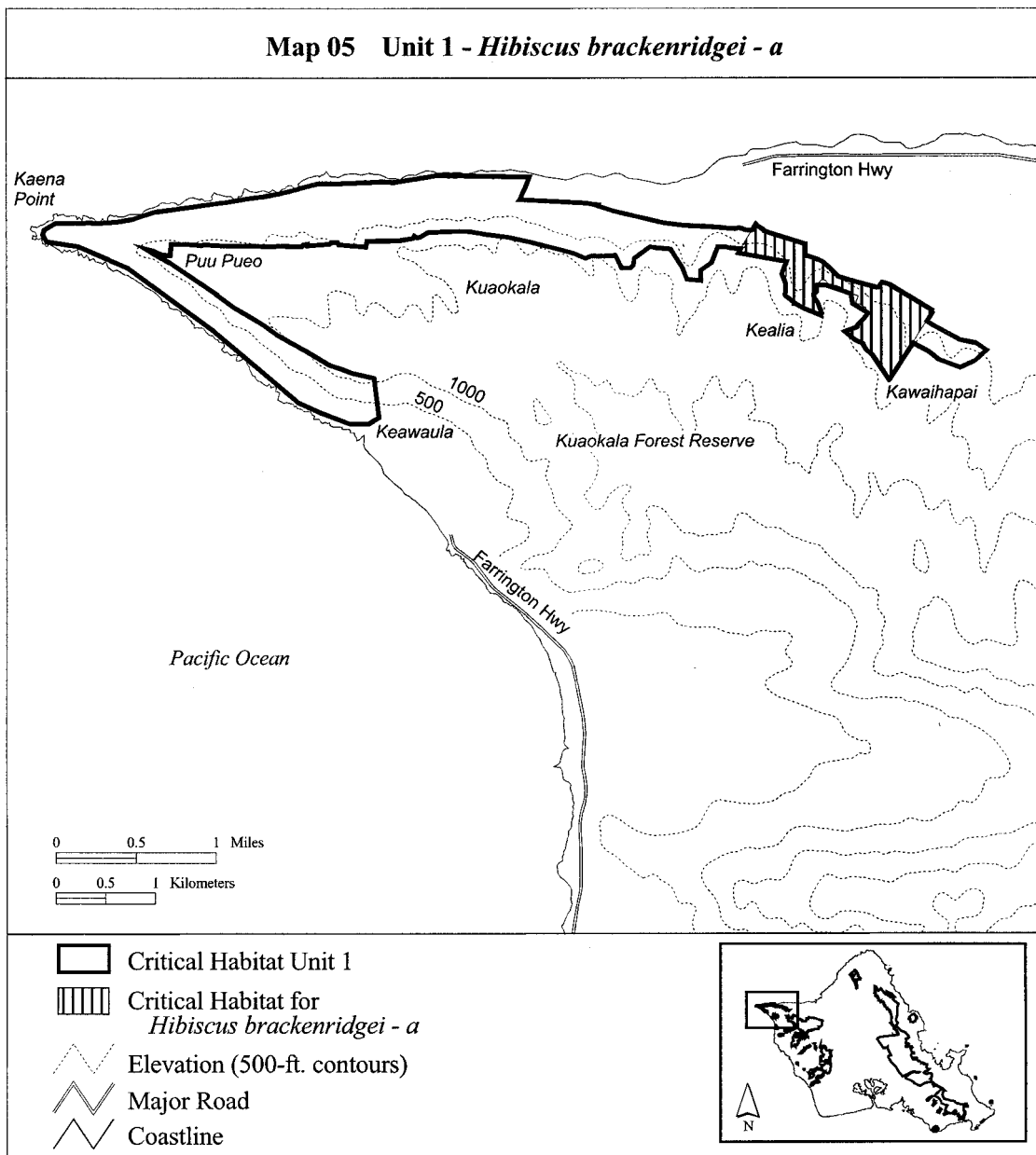
(5) Oahu 1—*Hibiscus brackenridgei*—a (78 ha; 193 ac)

(i) Unit consists of the following 89 boundary points: Start at 582235, 2385764; 582235, 2385703; 582245, 2385655; 582239, 2385640; 582361, 2385607; 582365, 2385614; 582376, 2385611; 582406, 2385591; 582466, 2385542; 582534, 2385473; 582530, 2385467; 582583, 2385397; 582622, 2385387; 582697, 2385368; 582698, 2385368; 582771, 2385349; 582837, 2385333; 582969, 2385301; 583028, 2385287; 583040, 2385330; 583050, 2385369; 583082, 2385357; 583521, 2385089; 583077, 2384390; 582908,

2384650; 582852, 2384698; 582818, 2384756; 582818, 2384757; 582738, 2384795; 582634, 2384882; 582757, 2384928; 582765, 2384950; 582790, 2384982; 582816, 2385003; 582835, 2385024; 582849, 2385043; 582861, 2385069; 582859, 2385082; 582842, 2385102; 582842, 2385127; 582830, 2385134; 582818, 2385138; 582801, 2385156; 582777, 2385158; 582758, 2385154; 582747, 2385186; 582750, 2385199; 582765, 2385221; 582764, 2385241; 582725, 2385262; 582711, 2385280; 582648, 2385284; 582600, 2385323; 582564, 2385342; 582544, 2385348; 582504, 2385341; 582466, 2385365; 582444, 2385398; 582407,

2385408; 582368, 2385363; 582325, 2385320; 582322, 2385255; 582331, 2385214; 582361, 2385178; 582377, 2385126; 582395, 2385086; 582398, 2385049; 582397, 2385046; 582219, 2385118; 582126, 2385175; 582038, 2385247; 582055, 2385587; 581567, 2385679; 581565, 2385680; 581743, 2385970; 581764, 2385946; 581812, 2385925; 581815, 2385913; 581815, 2385912; 581825, 2385902; 581826, 2385901; 581834, 2385899; 581833, 2385898; 581835, 2385886; 581903, 2385869; 581908, 2385875; 582076, 2385822; 582074, 2385807; 582080, 2385801; return to starting point.

(ii) Note: Map 5 follows:



(6) Oahu 1—*Schiedea kealiae*—a (193 ha; 477 ac)

(i) Area consists of the following 138 boundary points: Start at 582365, 2385614; 582376, 2385611; 582406, 2385591; 582466, 2385542; 582534, 2385473; 582530, 2385467; 582583, 2385397; 582622, 2385387; 582697, 2385368; 582698, 2385368; 582771, 2385349; 582837, 2385333; 582969, 2385301; 582970, 2385301; 583021, 2385255; 583270, 2385092; 583519, 2384945; 583786, 2384799; 583958, 2384765; 584061, 2384696; 583941, 2384592; 583795, 2384523; 583571, 2384600; 583476, 2384678; 583287, 2384782; 583055, 2384902; 582917, 2385040; 582711, 2385169; 582694, 2385264; 582444, 2385350; 582350,

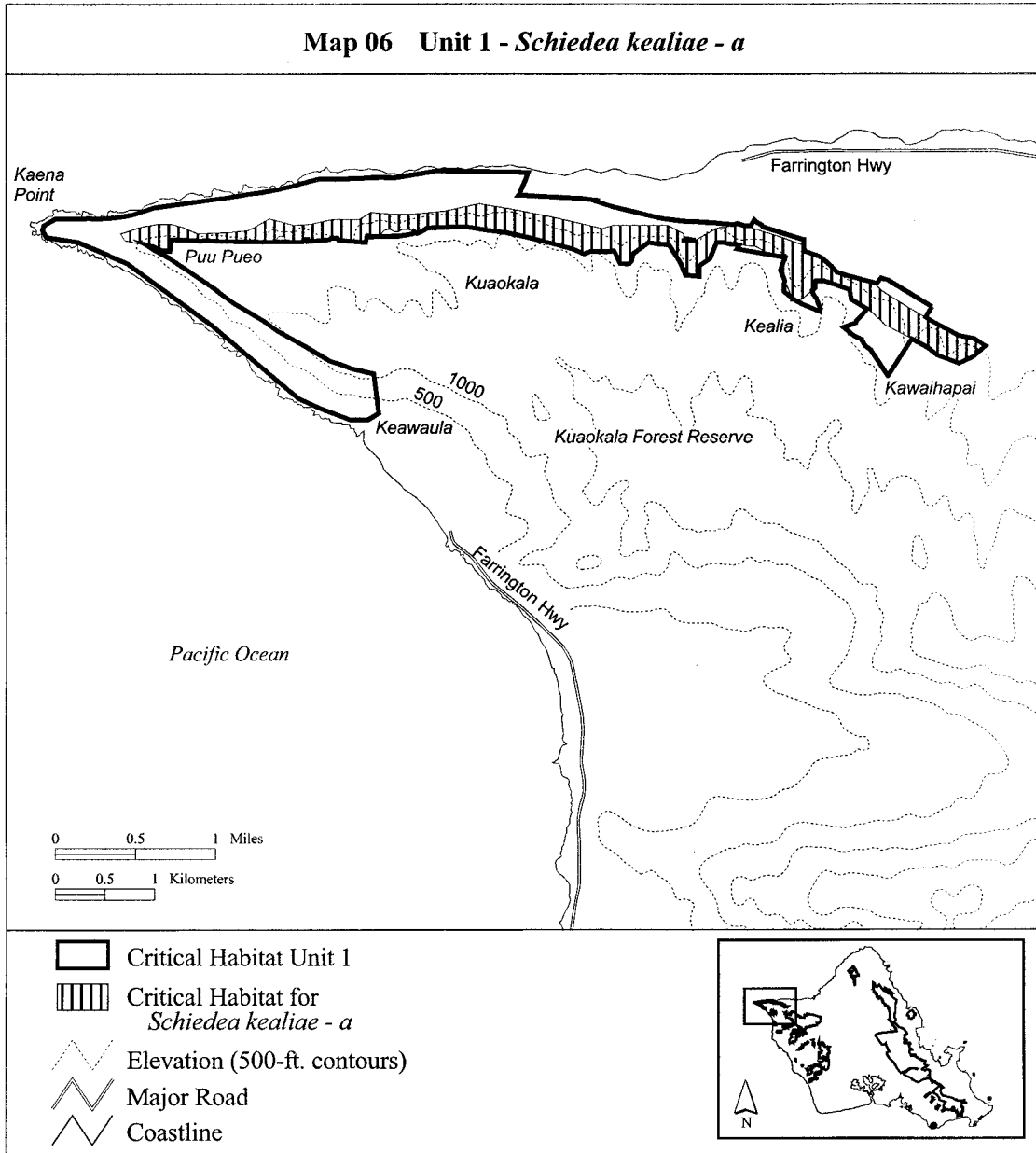
2385350; 582350, 2385281; 582221, 2385169; 582126, 2385169; 582040, 2385367; 582003, 2385463; 582059, 2385623; 581885, 2385625; 581766, 2385701; 581470, 2385733; 581363, 2385753; 581292, 2385582; 581180, 2385504; 581180, 2385401; 581043, 2385410; 580993, 2385527; 580876, 2385719; 580742, 2385732; 580671, 2385739; 580587, 2385684; 580505, 2385625; 580495, 2385553; 580475, 2385529; 580380, 2385529; 580313, 2385654; 580235, 2385648; 580148, 2385650; 580071, 2385650; 580011, 2385624; 579890, 2385675; 579718, 2385727; 579460, 2385787; 579228, 2385839; 579039, 2385865; 578841, 2385899; 578703, 2385899; 578439, 2385890; 578359, 2385838; 578331,

2385837; 578270, 2385867; 578185, 2385874; 578150, 2385855; 578104, 2385853; 578068, 2385878; 578011, 2385870; 577970, 2385822; 577909, 2385815; 577831, 2385831; 577818, 2385744; 577543, 2385765; 577529, 2385794; 577493, 2385800; 577450, 2385768; 577228, 2385755; 577224, 2385793; 577196, 2385796; 577178, 2385750; 577021, 2385746; 576991, 2385803; 576939, 2385805; 576897, 2385750; 576337, 2385757; 576119, 2385765; 575852, 2385776; 575844, 2385705; 575830, 2385704; 575829, 2385702; 575833, 2385655; 575753, 2385658; 575667, 2385701; 575384, 2385766; 575344, 2385828; 575555, 2385899; 575712, 2385925; 575847, 2385925; 575972, 2385894; 576115,

2385830; 576442, 2385848; 576631,
 2385865; 576837, 2385977; 577095,
 2385916; 577259, 2385925; 577482,
 2385977; 577757, 2385977; 577869,
 2386045; 578093, 2386028; 578291,
 2386028; 578609, 2386054; 578961,

2386131; 579314, 2386071; 579727,
 2385994; 580200, 2385882; 580303,
 2385916; 580578, 2385916; 580862,
 2385916; 581025, 2385831; 581025,
 2385763; 581146, 2385763; 581266,
 2385831; 581387, 2385892; 581447,

2385892; 581571, 2385935; 582039,
 2385788; 582235, 2385711; 582235,
 2385703; 582245, 2385655; 582239,
 2385640; 582361, 2385607; return to
 starting point.
 (ii) Note: Map 6 follows:



(7) Oahu 1—*Sesbania tomentosa*—a
 (101 ha; 250 ac)

(i) Unit consists of the following 70 boundary points: Start at 574558,
 2385864; 574569, 2385910; 574683,
 2385977; 574741, 2385979; 574788,
 2385979; 574998, 2385979; 575206,
 2385987; 575263, 2385988; 575282,
 2385993; 575451, 2386022; 575668,
 2386087; 575699, 2386094; 576319,
 2386183; 576376, 2386186; 576495,

2386204; 576637, 2386230; 576767,
 2386248; 576923, 2386277; 576926,
 2386277; 576928, 2386275; 576929,
 2386275; 576980, 2386288; 577035,
 2386298; 577098, 2386318; 577139,
 2386329; 577140, 2386329; 577141,
 2386331; 577151, 2386335; 577321,
 2386378; 577336, 2386381; 577539,
 2386380; 577539, 2386381; 577540,
 2386381; 577540, 2386382; 577979,
 2386400; 578097, 2386392; 578439,

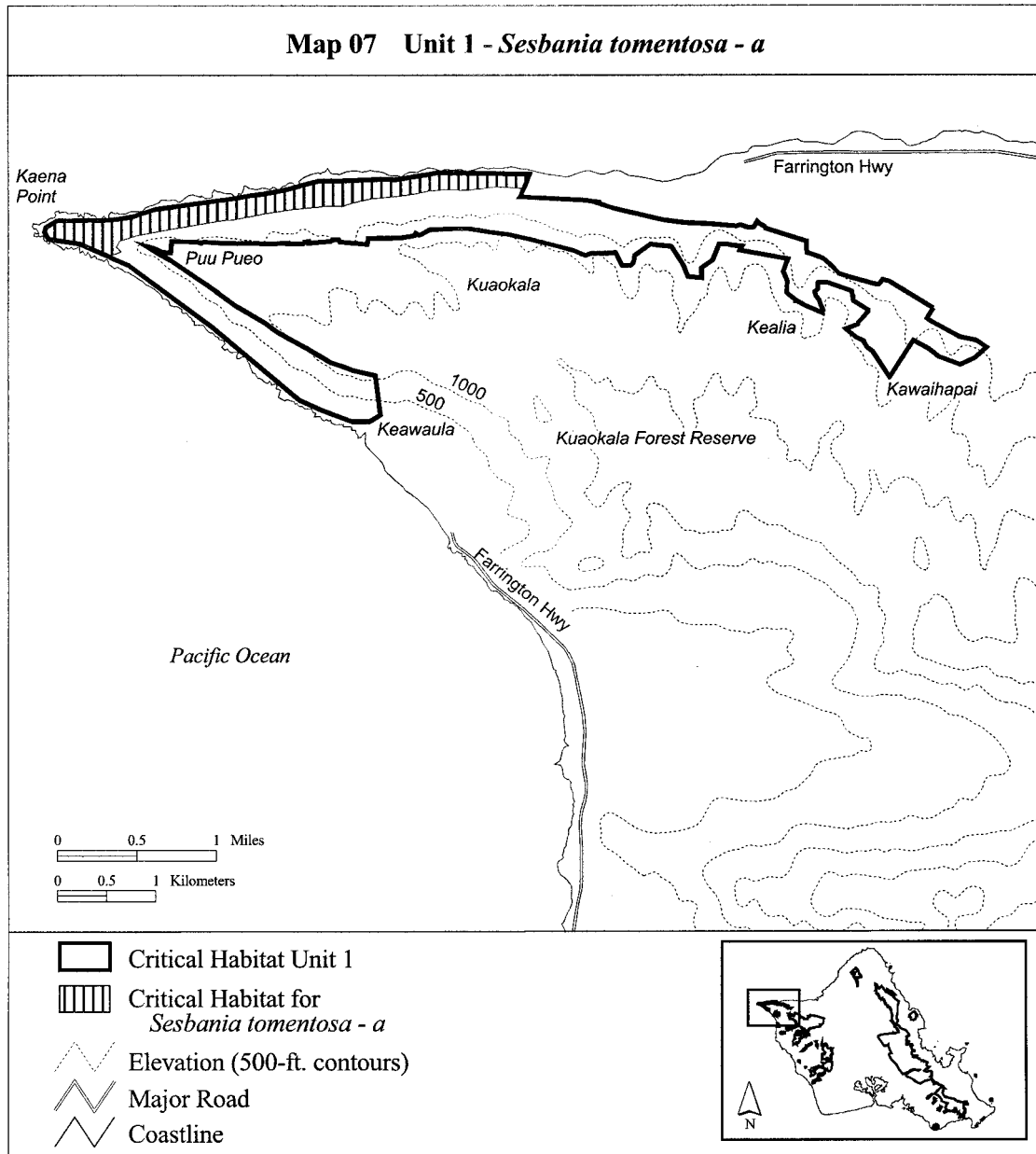
2386448; 578534, 2386462; 579452,
 2386445; 579394, 2386306; 579354,
 2386308; 579179, 2386315; 579092,
 2386315; 578836, 2386286; 578783,
 2386286; 578606, 2386293; 578434,
 2386274; 578294, 2386249; 578107,
 2386224; 577860, 2386199; 577676,
 2386162; 577589, 2386131; 577590,
 2386124; 577571, 2386125; 577561,
 2386121; 577561, 2386125; 577412,
 2386128; 577050, 2386092; 576800,

2386052; 576463, 2385983; 576365,
2385980; 575843, 2385893; 575502,
2385827; 575324, 2385776; 575292,

2385710; 575339, 2385664; 575295,
2385646; 575203, 2385616; 574908,

2385748; 574601, 2385795; return to
starting point.

(ii) **Note:** Map 7 follows:



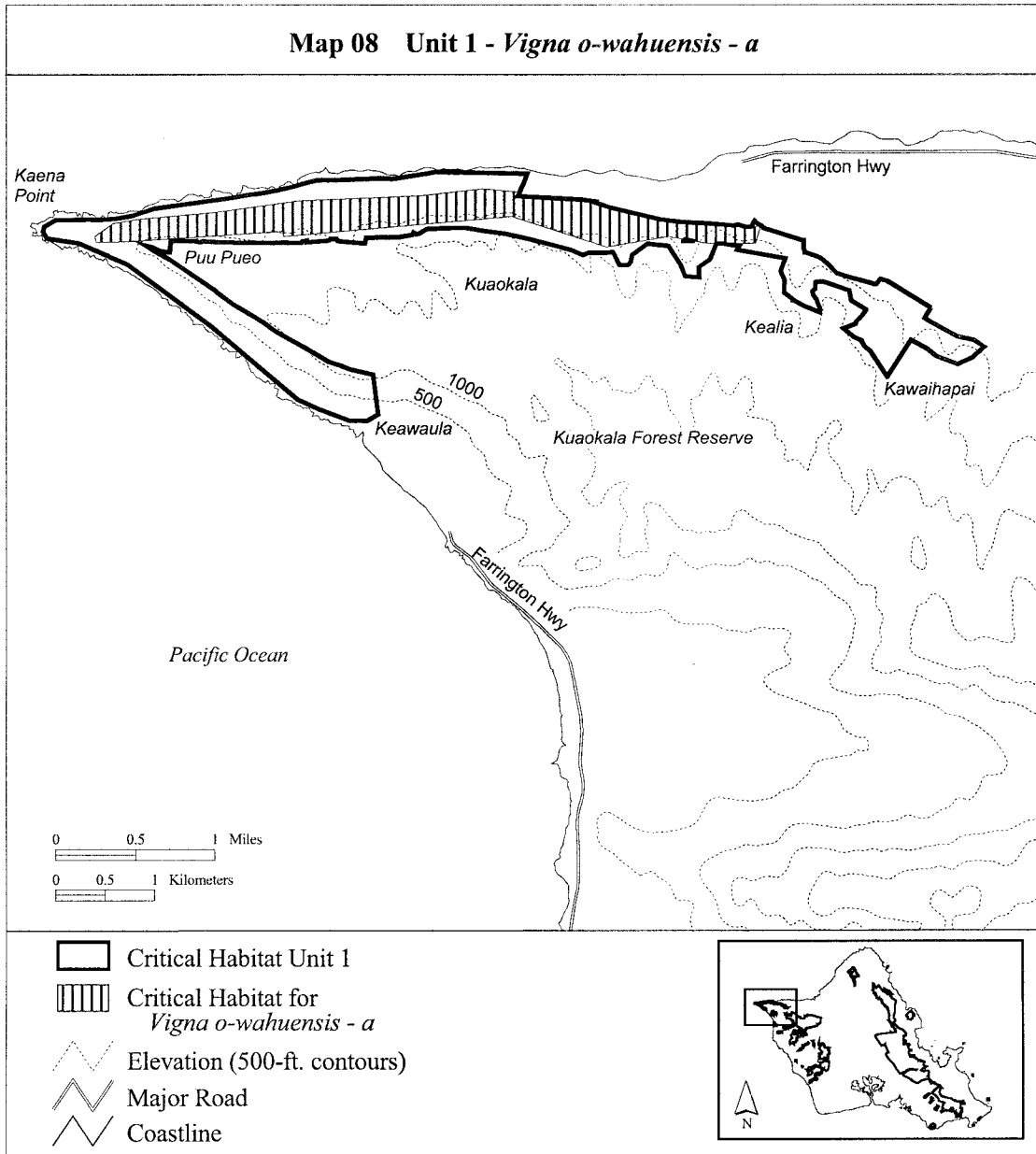
(8) Oahu 1—*Vigna o-wahuensis*—a (181 ha; 448 ac)

(i) Unit consists of the following 31 boundary points: Start at 575092, 2385751; 575081, 2385809; 575265, 2385942; 575531, 2385987; 576306, 2386058; 577144, 2386172; 578381,

2386223; 579003, 2386292; 579376, 2386260; 579359, 2386220; 579359, 2386219; 579360, 2386219; 579360, 2386218; 579361, 2386218; 580020, 2386181; 580139, 2386165; 580137, 2386157; 580278, 2386108; 580792, 2385988; 581014, 2385956; 581268,

2385944; 581636, 2385913; 581801, 2385913; 581750, 2385741; 581268, 2385741; 580873, 2385809; 580253, 2385706; 579290, 2386015; 576993, 2385810; 576984, 2385861; 575400, 2385757; return to starting point.

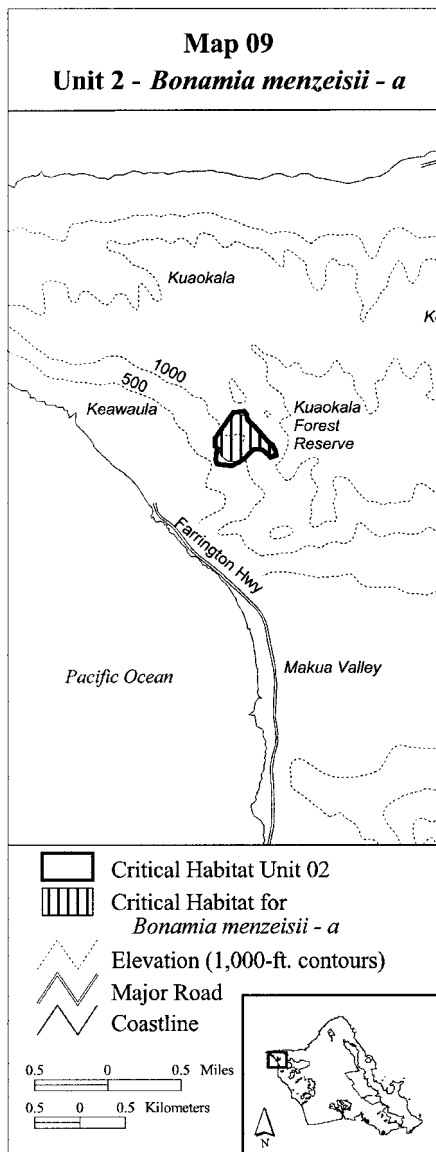
(ii) **Note:** Map 8 follows:



(9) Oahu 2—*Bonamia menziesii*—a (21 ha; 51 ac)

(i) Unit consists of the following 21 boundary points: Start at 579334, 2383456; 579333, 2383554; 579526, 2383824; 579661, 2383800; 579690, 2383768; 579693, 2383749; 579693, 2383748; 579792, 2383655; 579844, 2383597; 579988, 2383419; 579988, 2383385; 579968, 2383366; 579925, 2383371; 579833, 2383424; 579771, 2383438; 579703, 2383400; 579670, 2383342; 579588, 2383284; 579477, 2383294; 579395, 2383356; 579367, 2383424; return to starting point.

(ii) Note: Map 9 follows:

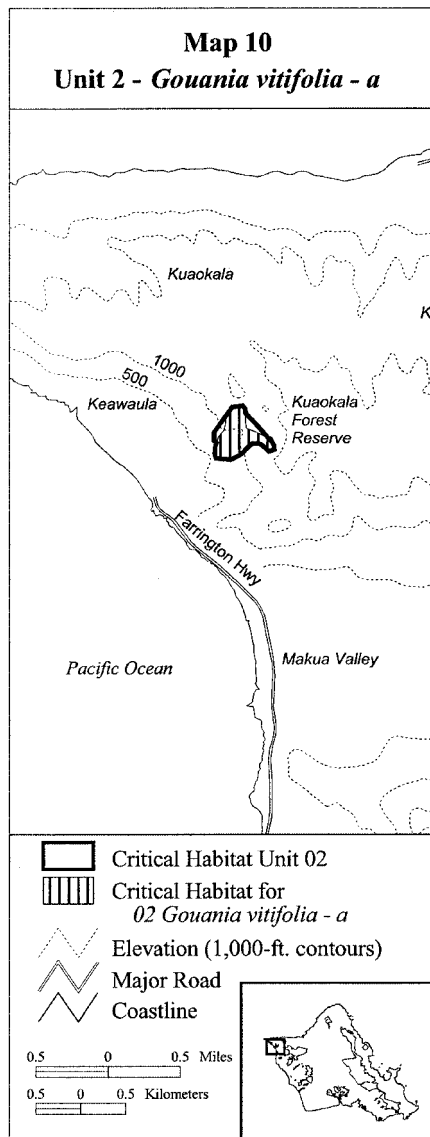


(10) Oahu 2—*Gouania vitifolia*—a (20 ha; 49 ac)

(i) Unit consists of the following 29 boundary points: Start at 579610, 2383845; 579650, 2383848; 579684, 2383810; 579684, 2383807; 579684,

2383736; 579684, 2383672; 579693, 2383598; 579800, 2383560; 579963, 2383474; 580001, 2383409; 580006, 2383353; 579941, 2383336; 579898, 2383379; 579842, 2383422; 579760, 2383426; 579704, 2383375; 579649, 2383319; 579580, 2383271; 579515, 2383241; 579352, 2383263; 579339, 2383310; 579343, 2383379; 579383, 2383499; 579443, 2383573; 579460, 2383641; 579469, 2383702; 579482, 2383736; 579503, 2383795; 579534, 2383838; return to starting point.

(ii) Note: Map 10 follows:

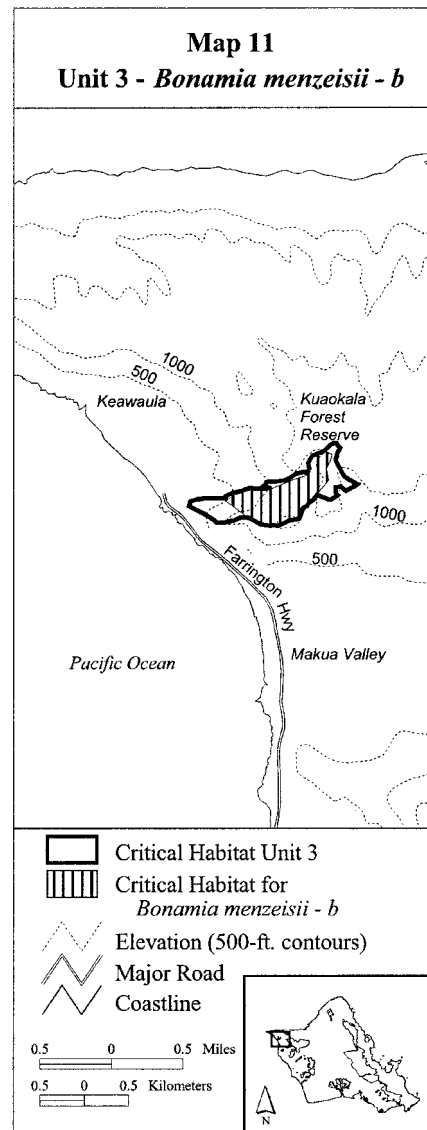


(11) Oahu 3—*Bonamia menziesii*—b (42 ha; 104 ac)

(i) Unit consists of the following 35 boundary points: Start at 579371, 2382797; 579436, 2382825; 579544, 2382850; 579623, 2382881; 579630, 2382883; 579645, 2382884; 579886, 2382879; 580161, 2382995; 580267, 2383024; 580298, 2383084; 580303,

2383086; 580304, 2383086; 580304, 2383087; 580304, 2383088; 580303, 2383095; 580306, 2383101; 580290, 2383172; 580359, 2383241; 580504, 2383303; 580566, 2383265; 580542, 2383178; 580504, 2383106; 580523, 2382971; 580393, 2382812; 580344, 2382744; 580214, 2382657; 580200, 2382575; 580137, 2382527; 580079, 2382532; 579993, 2382474; 579872, 2382460; 579769, 2382469; 579763, 2382471; 579592, 2382571; 579366, 2382744; return to starting point.

(ii) Note: Map 11 follows:

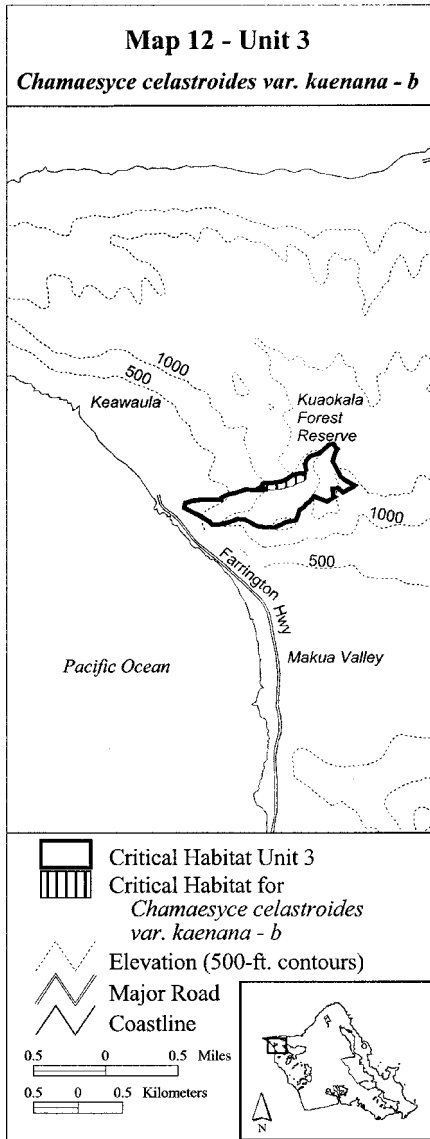


(12) Oahu 3—*Chamaesyce celastroides* var. *kaenana*—b (4 ha; 11 ac)

(i) Unit consists of the following 20 boundary points: Start at 579828, 2382953; 579860, 2382962; 579931, 2382959; 580028, 2382975; 580069, 2382994; 580111, 2383020; 580161, 2383047; 580238, 2383068; 580259, 2383068; 580304, 2383043; 580308,

2383004; 580285, 2382981; 580243, 2382969; 580166, 2382930; 580057, 2382895; 579931, 2382878; 579857, 2382888; 579796, 2382907; 579815, 2382923; 579823, 2382946; return to starting point.

(ii) Note: Map 12 follows:

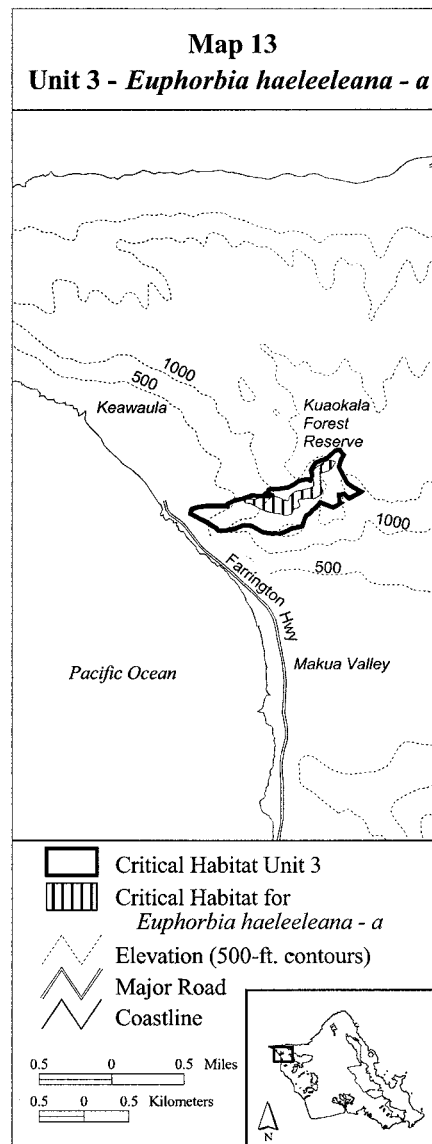


(13) Oahu 3—*Euphorbia haeleeleana*—a (15 ha; 37 ac)

(i) Unit consists of the following 67 boundary points: Start at 580326, 2382991; 580322, 2383035; 580313, 2383069; 580310, 2383096; 580312, 2383132; 580323, 2383169; 580360, 2383211; 580417, 2383248; 580464, 2383276; 580516, 2383287; 580559, 2383266; 580564, 2383251; 580546, 2383221; 580522, 2383183; 580490, 2383164; 580454, 2383149; 580419, 2383145; 580393, 2383120; 580393, 2383077; 580406, 2383031; 580409, 2382985; 580422, 2382939; 580407, 2382899; 580365, 2382870; 580322,

2382845; 580267, 2382852; 580241, 2382852; 580202, 2382842; 580161, 2382847; 580152, 2382821; 580166, 2382787; 580174, 2382763; 580147, 2382744; 580118, 2382744; 580095, 2382727; 580073, 2382677; 580047, 2382666; 580005, 2382663; 579971, 2382672; 579925, 2382689; 579891, 2382690; 579846, 2382692; 579777, 2382718; 579718, 2382747; 579667, 2382769; 579623, 2382795; 579573, 2382802; 579548, 2382821; 579550, 2382828; 579557, 2382839; 579597, 2382844; 579681, 2382847; 579726, 2382858; 579772, 2382862; 579828, 2382868; 579872, 2382878; 579935, 2382868; 579964, 2382850; 580008, 2382836; 580034, 2382829; 580048, 2382839; 580053, 2382855; 580066, 2382884; 580094, 2382917; 580131, 2382934; 580231, 2382955; 580294, 2382975; return to starting point.

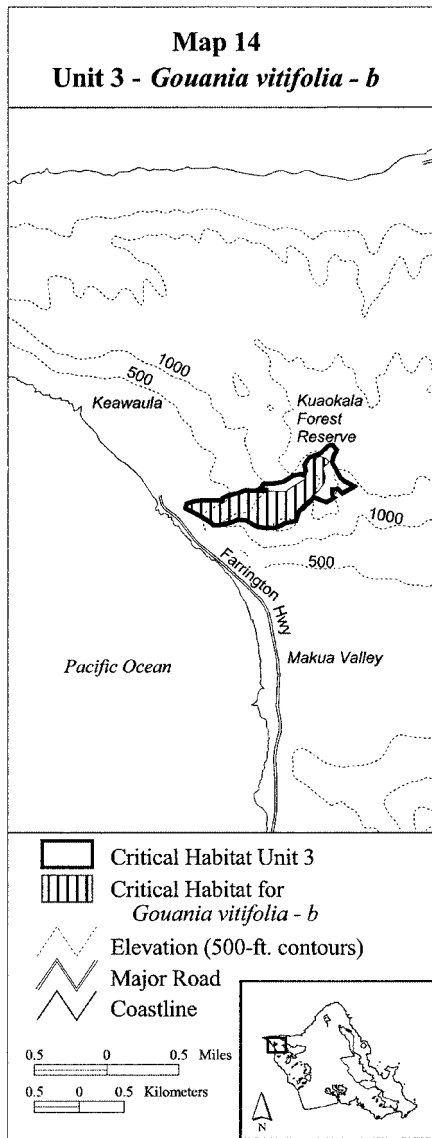
(ii) Note: Map 13 follows:



(14) Oahu 3—*Gouania vitifolia*—b (49 ha; 121 ac)

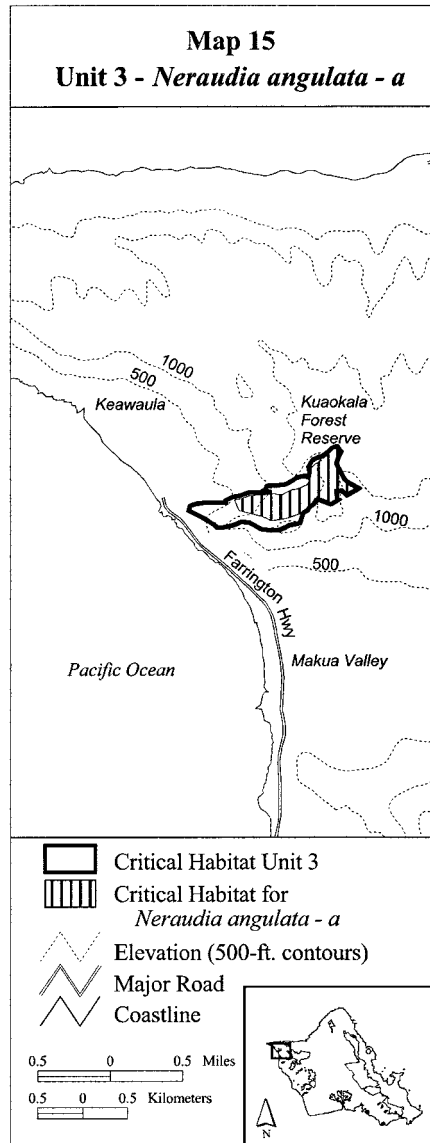
(i) Unit consists of the following 54 boundary points: Start at 580193, 2382540; 580147, 2382527; 580079, 2382519; 580044, 2382497; 579950, 2382459; 579881, 2382463; 579756, 2382502; 579653, 2382545; 579541, 2382553; 579451, 2382519; 579335, 2382489; 579270, 2382493; 579231, 2382532; 579115, 2382600; 579038, 2382639; 578960, 2382682; 578969, 2382730; 579038, 2382760; 579128, 2382773; 579253, 2382768; 579356, 2382768; 579455, 2382807; 579519, 2382828; 579614, 2382871; 579709, 2382871; 579859, 2382876; 580001, 2382871; 580083, 2382871; 580165, 2382927; 580298, 2383009; 580303, 2383086; 580304, 2383086; 580304, 2383087; 580304, 2383088; 580303, 2383094; 580307, 2383155; 580324, 2383211; 580371, 2383246; 580470, 2383263; 580526, 2383250; 580569, 2383211; 580500, 2383147; 580505, 2383104; 580526, 2383039; 580517, 2382970; 580453, 2382876; 580371, 2382811; 580302, 2382751; 580255, 2382708; 580229, 2382635; 580196, 2382544; 580195, 2382544; 580195, 2382543; 580194, 2382543; return to starting point.

(ii) Note: Map 14 follows:



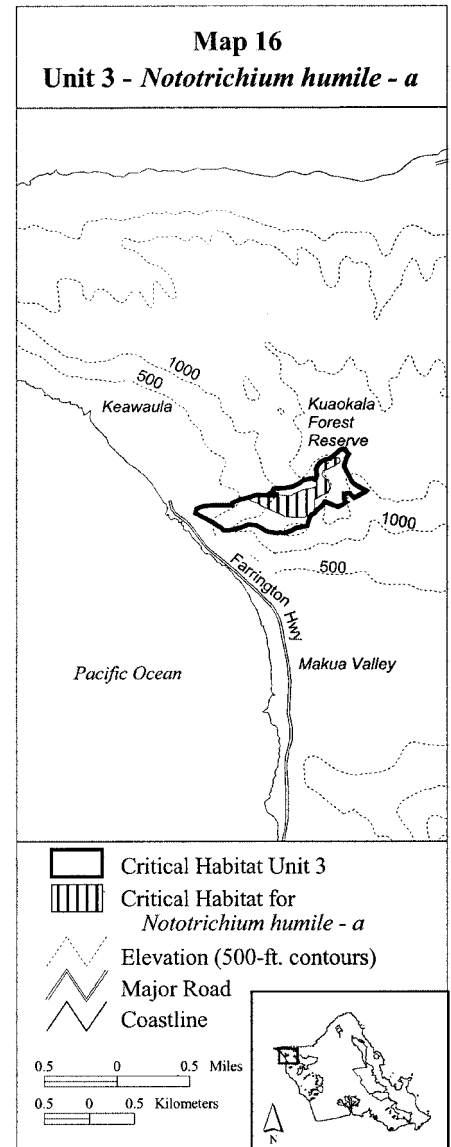
2383029; 580739, 2382994; 580852, 2382929; 580845, 2382924; 580718, 2382852; 580660, 2382901; 580632, 2382899; 580606, 2382898; 580606, 2382894; 580609, 2382810; 580623, 2382799; 580595, 2382784; return to starting point.

(ii) Note: Map 15 follows:



2382813; 580281, 2382750; 580265, 2382695; 580218, 2382650; 580160, 2382628; 580091, 2382628; 580010, 2382634; 579947, 2382642; 579922, 2382662; 579890, 2382677; 579853, 2382687; 579792, 2382717; 579691, 2382762; 579644, 2382794; 579561, 2382819; 579561, 2382843; 579581, 2382861; 579617, 2382879; 579628, 2382882; 579768, 2382880; 579863, 2382888; 579924, 2382880; 580020, 2382873; 580066, 2382904; 580174, 2382951; 580227, 2382953; 580281, 2382965; 580302, 2382995; 580302, 2383046; 580303, 2383086; 580304, 2383086; 580304, 2383087; 580304, 2383088; 580303, 2383093; 580304, 2383147; 580308, 2383210; return to starting point.

(ii) Note: Map 16 follows:



(15) Oahu 3—*Neraudia angulata*—a (39 ha; 98 ac)

(i) Unit consists of the following 52 boundary points: Start at 580537, 2382749; 580366, 2382818; 580282, 2382681; 580238, 2382660; 580091, 2382603; 580004, 2382584; 579879, 2382569; 579829, 2382591; 579784, 2382609; 579516, 2382681; 579463, 2382801; 579522, 2382810; 579632, 2382847; 579785, 2382860; 579904, 2382869; 579948, 2382857; 579998, 2382857; 580038, 2382875; 580110, 2382916; 580163, 2382925; 580204, 2382938; 580279, 2382972; 580314, 2383035; 580317, 2383119; 580317, 2383154; 580360, 2383194; 580401, 2383222; 580470, 2383301; 580555, 2383380; 580572, 2383390; 580608, 2383398; 580643, 2383357; 580653, 2383344; 580646, 2383327; 580623, 2383279; 580607, 2383228; 580600, 2383211; 580600, 2383210; 580600, 2383209; 580617, 2383205; 580695,

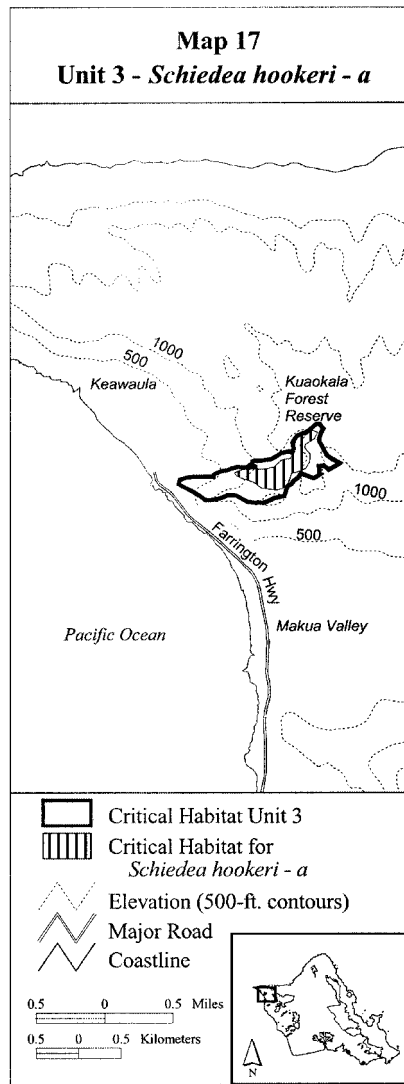
(16) Oahu 3—*Nototrichium humile*—a (21 ha; 51 ac)

(i) Unit consists of the following 58 boundary points: Start at 580322, 2383229; 580383, 2383263; 580458, 2383302; 580500, 2383306; 580555, 2383298; 580559, 2383275; 580557, 2383245; 580527, 2383226; 580494, 2383200; 580456, 2383192; 580423, 2383170; 580379, 2383157; 580361, 2383115; 580379, 2383082; 580427, 2383050; 580440, 2383016; 580448, 2382967; 580436, 2382930; 580411, 2382904; 580356, 2382875; 580328, 2382861; 580281, 2382833; 580277,

(17) Oahu 3—*Schiedea hookeri*—a (22 ha; 55 ac)

(i) Unit consists of the following 29 boundary points: Start at 580264, 2382989; 580304, 2383047; 580326, 2383118; 580326, 2383171; 580340, 2383251; 580415, 2383282; 580526, 2383322; 580592, 2383299; 580552, 2383224; 580446, 2383149; 580446, 2383104; 580499, 2383038; 580495, 2382994; 580495, 2382940; 580459, 2382870; 580397, 2382839; 580282, 2382808; 580247, 2382701; 580184, 2382630; 580100, 2382613; 579932, 2382639; 579843, 2382701; 579648, 2382772; 579613, 2382816; 579697, 2382852; 579839, 2382861; 579963, 2382861; 580074, 2382883; 580171, 2382971; return to starting point.

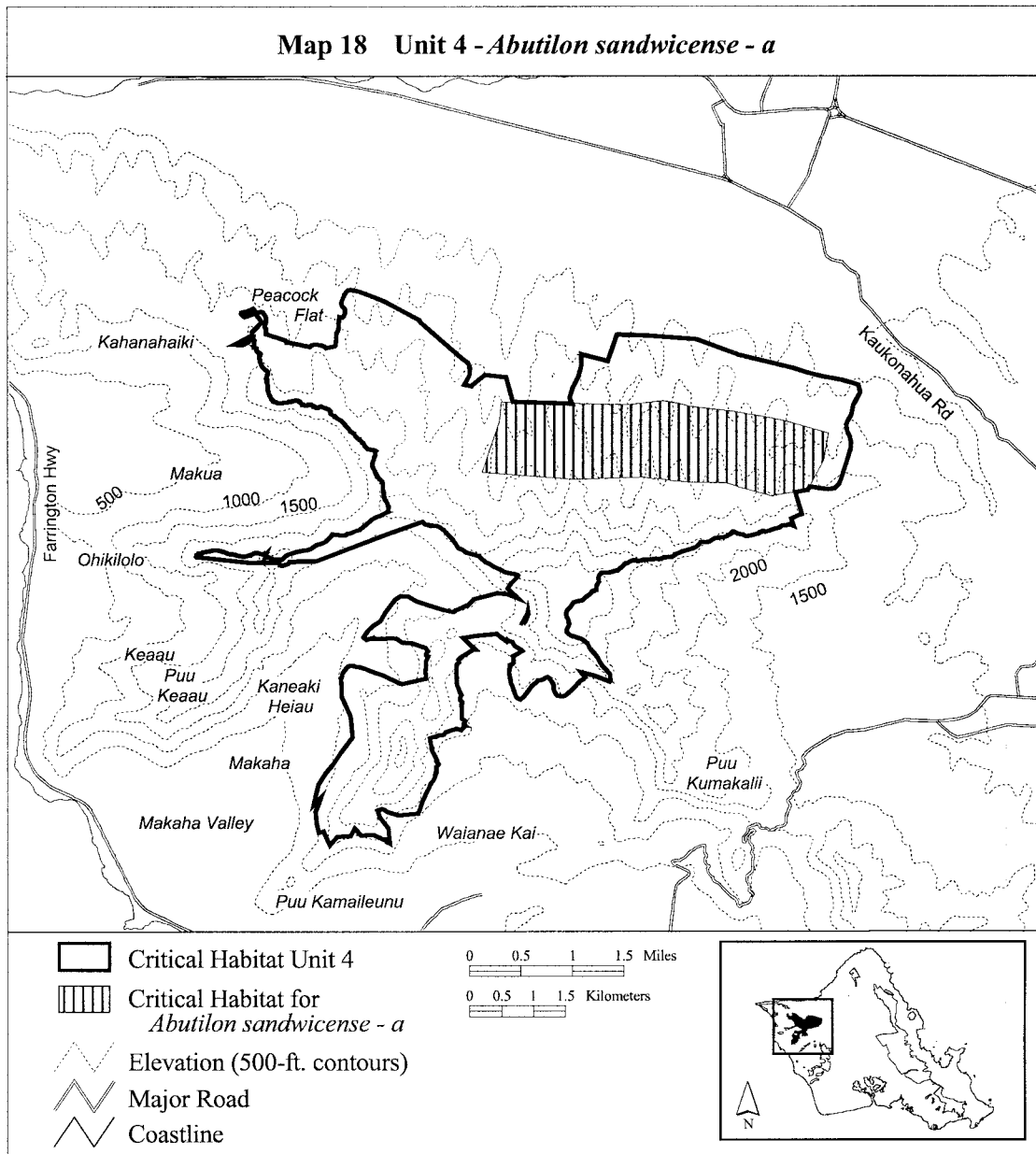
(ii) **Note:** Map 17 follows:



(18) Oahu 4—*Abutilon sandwicense*—a (617 ha; 1,492 ac)

(i) Unit consists of the following 25 boundary points: Start at 587021, 2380442; 587295, 2381250; 587320, 2381565; 589332, 2381513; 589879, 2381584; 590161, 2381525; 590284, 2381494; 590979, 2381406; 591581, 2381305; 591815, 2381256; 592481, 2381064; 592408, 2380627; 592166, 2380161; 591586, 2380069; 591071, 2380209; 590944, 2380253; 590851, 2380280; 590618, 2380280; 590310, 2380289; 590051, 2380311; 589743, 2380355; 589745, 2380336; 589576, 2380372; 588446, 2380333; 587034, 2380442; return to starting point.

(ii) **Note:** Map 18 follows:



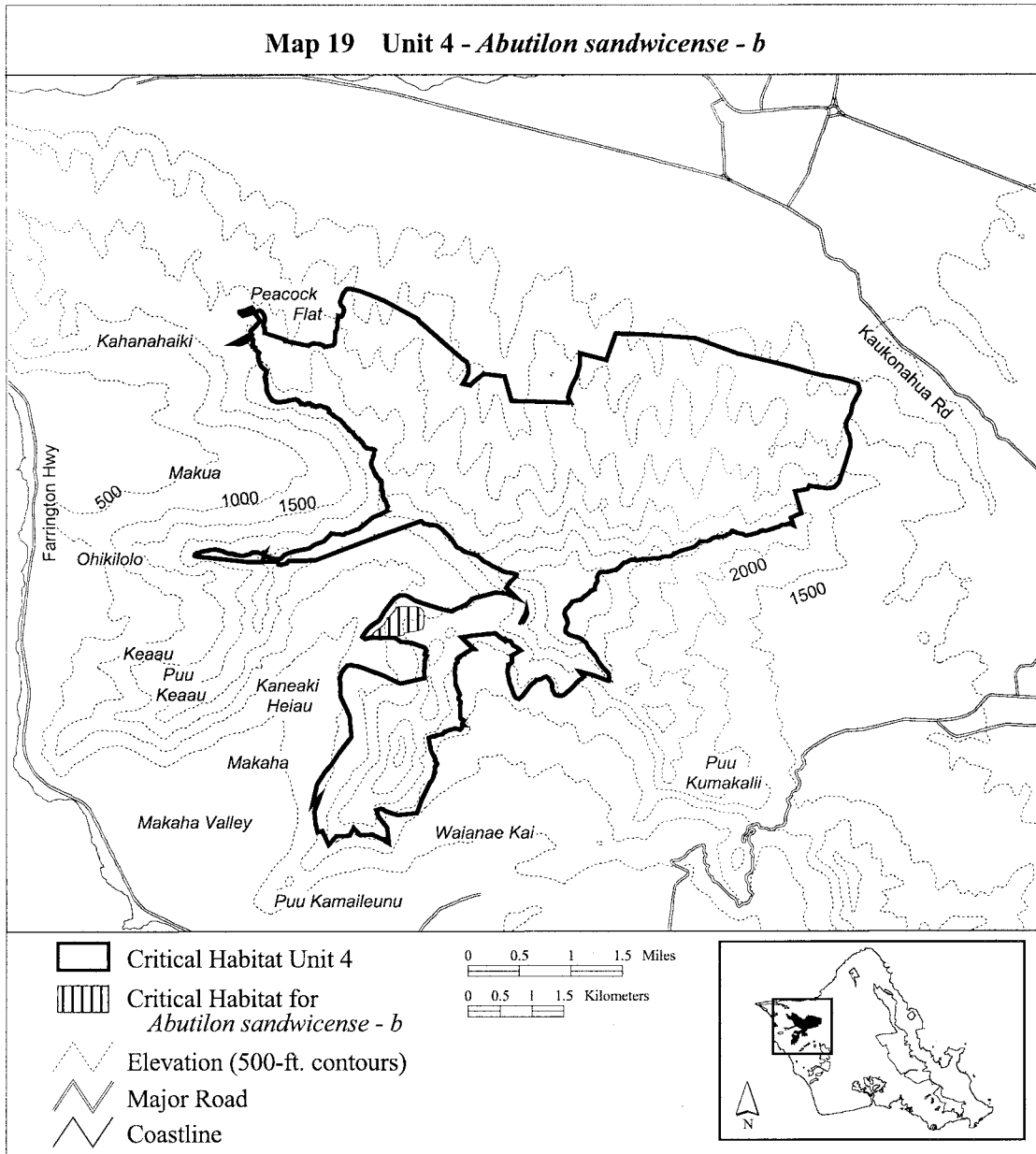
(19) Oahu 4—*Abutilon sandwicense*—b
 (26 ha; 65 ac)

(i) Unit consists of the following 21 boundary points: Start at 585770, 2377843; 585514, 2377812; 585309,

2377812; 585302, 2377855; 585352, 2377905; 585502, 2378018; 585513, 2378023; 585503, 2378027; 585585, 2378144; 585675, 2378254; 585726, 2378312; 585921, 2378312; 586058, 2378297; 586124, 2378234; 586128,

2378117; 586128, 2378007; 586101, 2377945; 586050, 2377925; 585968, 2377914; 585837, 2377895; 585819, 2377855; return to starting point.

(ii) **Note:** Map 19 follows:



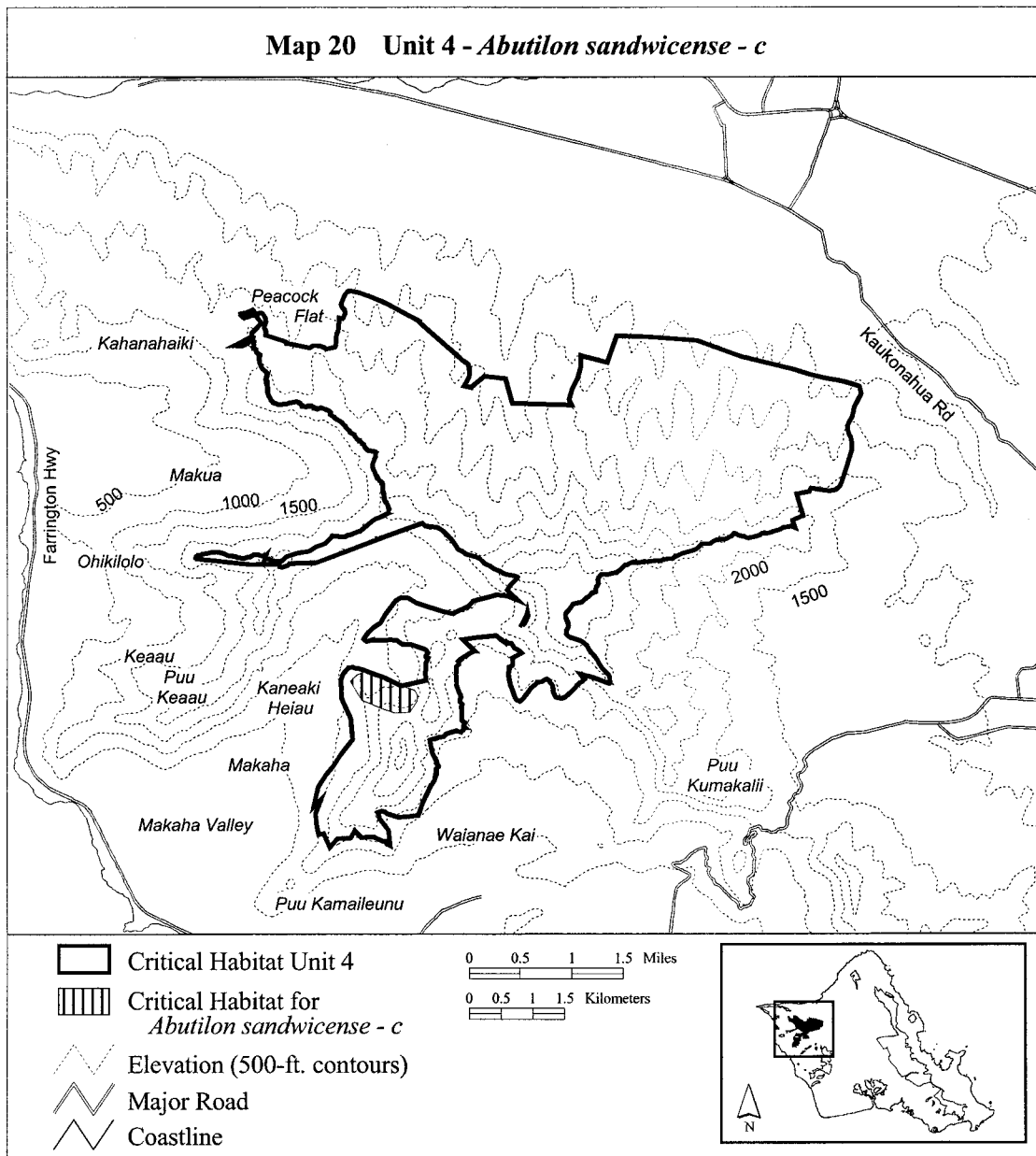
(20) Oahu 4—*Abutilon sandwicense*—c
 (41 ha; 102 ac)

(i) Unit consists of the following 13
 boundary points: Start at 584947,

2377163; 585056, 2377267; 585189,
 2377317; 585523, 2377179; 585815,
 2377075; 585970, 2377021; 586011,
 2376941; 586000, 2376834; 585894,

2376679; 585790, 2376674; 585652,
 2376670; 585444, 2376741; 585135,
 2376865; return to starting point.

(ii) **Note:** Map 20 follows:



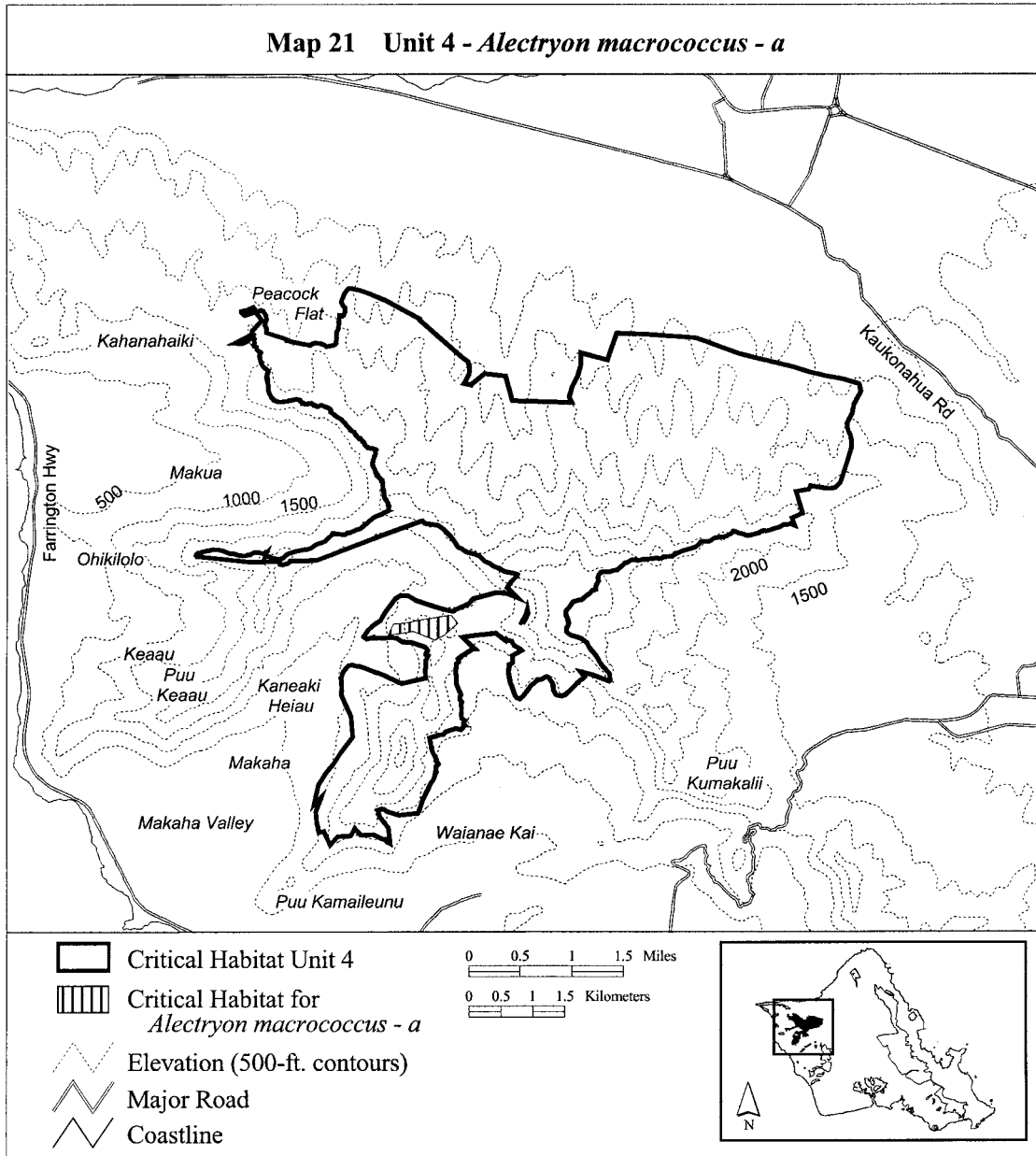
(21) Oahu 4—*Alectryon macrococcus*—
a (23 ha; 58 ac)

(i) Unit consists of the following 11
boundary points: Start at 585550,

2377860; 585633, 2378026; 585845,
2378046; 586046, 2378091; 586234,
2378115; 586538, 2378174; 586652,
2378034; 586437, 2377855; 586289,

2377772; 585951, 2377906; 585637,
2377869; return to starting point.

(ii) **Note:** Map 21 follows:



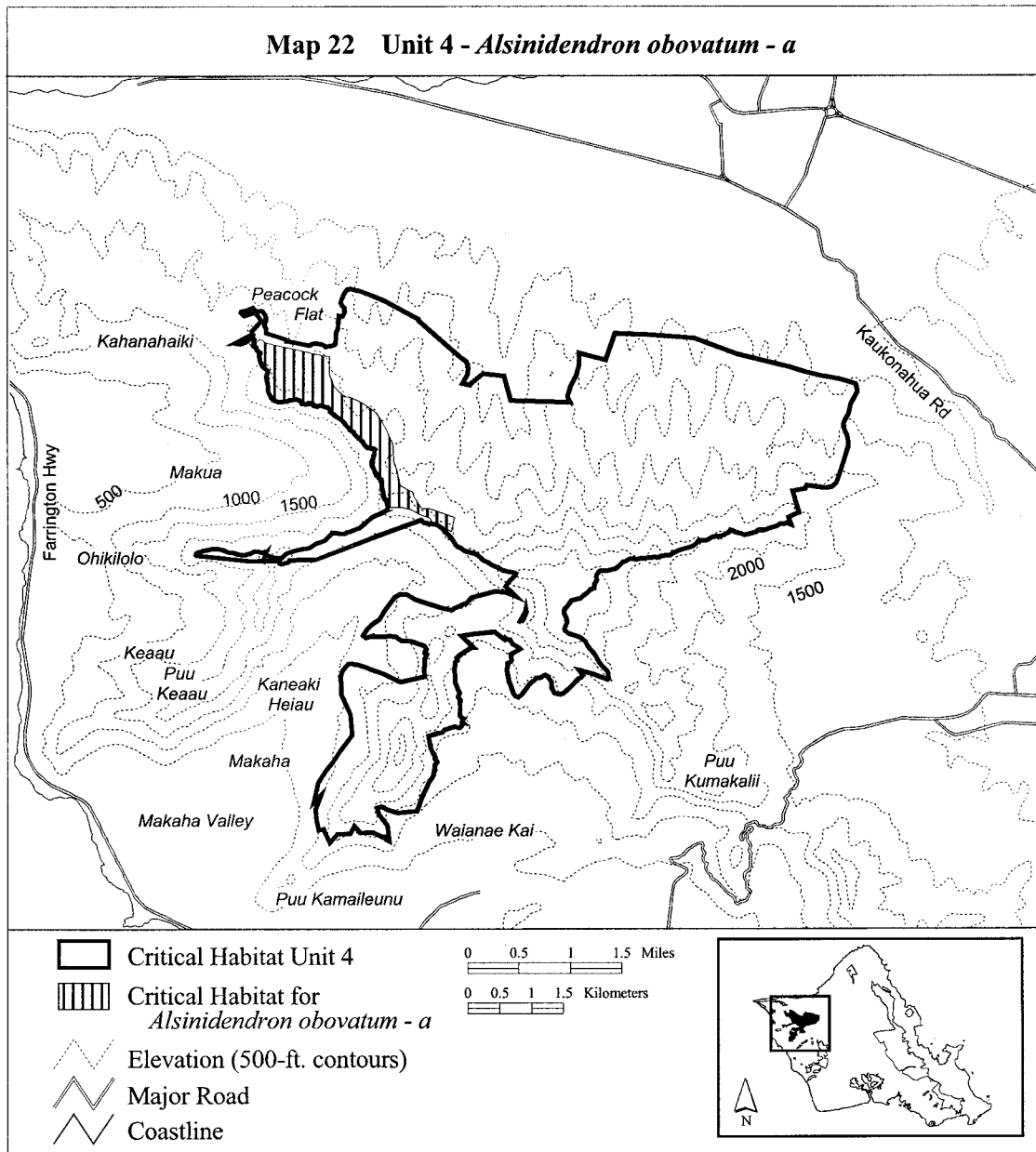
(22) Oahu 4—*Alsinidendron obovatum*—a (176 ha; 435 ac)

(i) Unit consists of the following 74 boundary points: Start at 584301, 2381528; 584276, 2381533; 584200, 2381533; 584168, 2381552; 584167, 2381553; 584150, 2381572; 584130, 2381584; 584129, 2381584; 584104, 2381586; 584065, 2381583; 584024, 2381575; 583997, 2381574; 583936, 2381555; 583934, 2381555; 583897, 2381549; 583890, 2381547; 583758, 2381567; 583747, 2381571; 583744, 2381574; 583679, 2381692; 583645,

2381923; 583660, 2382029; 583547, 2382173; 583547, 2382317; 583445, 2382468; 583526, 2382533; 583573, 2382527; 583625, 2382480; 584375, 2382308; 584634, 2382266; 584637, 2381962; 584681, 2381851; 584707, 2381777; 584869, 2381626; 584974, 2381615; 585148, 2381528; 585352, 2381394; 585415, 2381313; 585514, 2381138; 585630, 2380889; 585648, 2380581; 585694, 2380470; 585751, 2380215; 585885, 2380133; 585885, 2380132; 585887, 2380133; 585949, 2380115; 585967, 2380042; 586095, 2379844; 586223, 2379842; 586612,

2379713; 586570, 2379480; 586280, 2379613; 586221, 2379703; 586082, 2379747; 585944, 2379824; 585787, 2379865; 585584, 2379862; 585528, 2379995; 585464, 2380301; 585339, 2380521; 585359, 2380809; 585275, 2380813; 585134, 2380949; 585024, 2381070; 584865, 2381245; 584659, 2381371; 584615, 2381487; 584427, 2381499; 584329, 2381521; 584325, 2381523; 584324, 2381523; 584310, 2381528; 584309, 2381528; return to starting point.

(ii) **Note:** Map 22 follows:



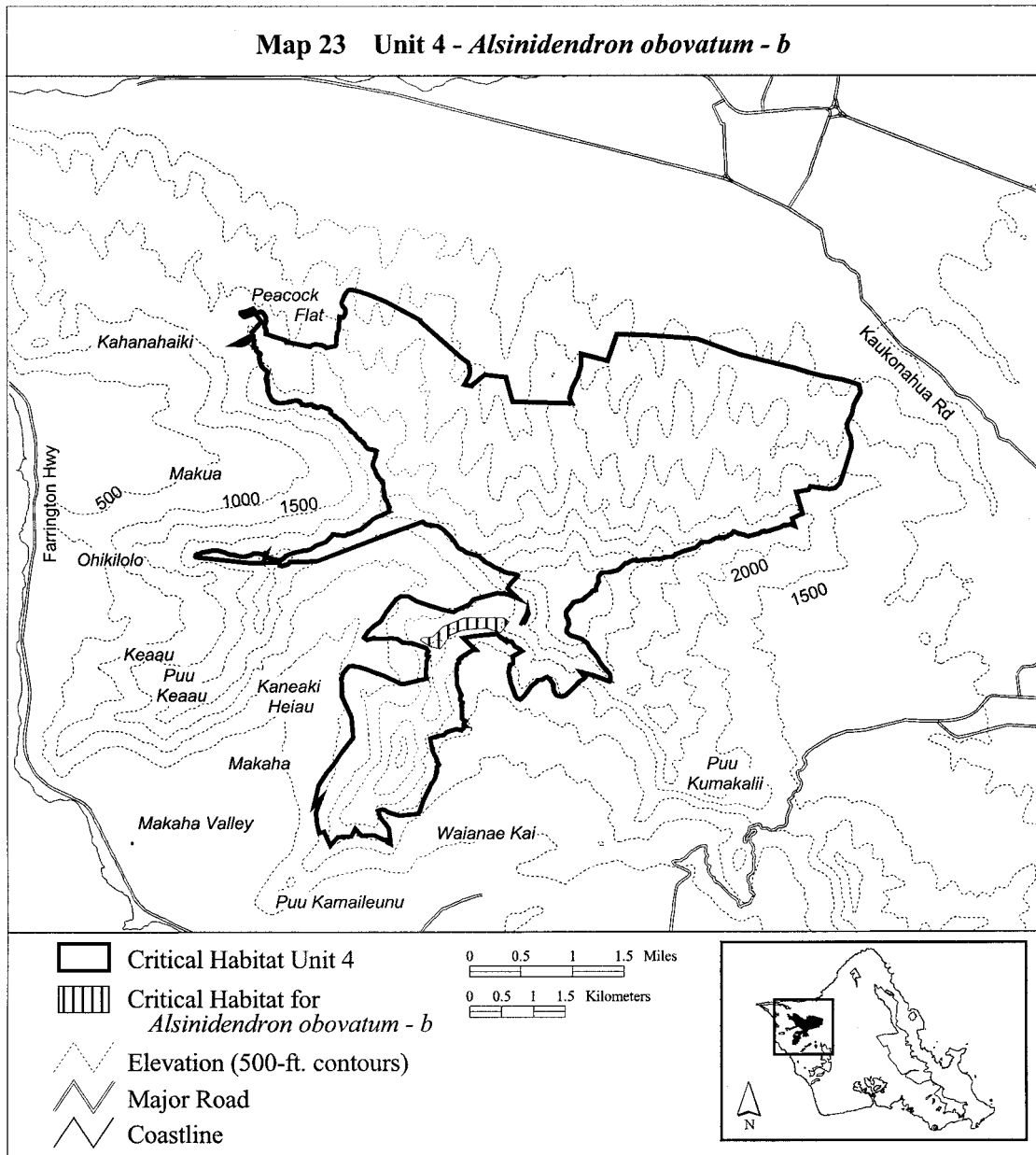
(23) Oahu 4—*Alsinidendron obovatum*—b (25 ha; 62 ac)

(i) Unit consists of the following 15 boundary points: Start at 587357,

2378140; 587448, 2378072; 587324, 2377899; 587184, 2377944; 587092, 2377970; 586908, 2377966; 586707, 2377940; 586523, 2377861; 586365, 2377651; 586207, 2377681; 586050,

2377786; 586076, 2377826; 586251, 2377839; 586413, 2378001; 586751, 2378133; return to starting point.

(ii) **Note:** Map 23 follows:



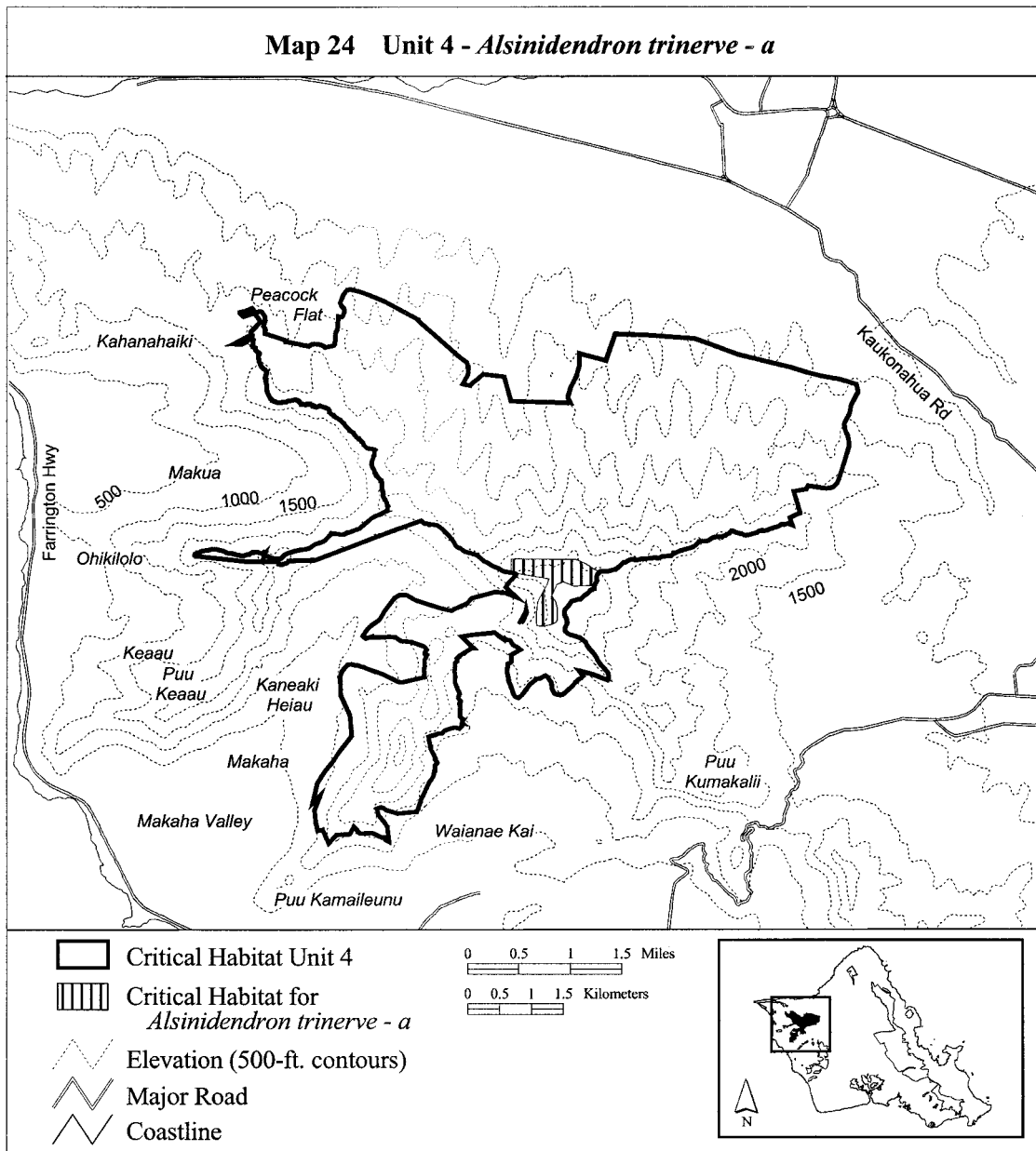
(24) Oahu 4—*Alsinidendron trinerve*—a (60 ha; 149 ac)

(i) Area consists of the following 40 boundary points: Start at 588752, 2378628; 588489, 2378617; 588334, 2378694; 588233, 2378647; 588153, 2378468; 588202, 2378374; 588233, 2378276; 588229, 2378073; 588222,

2378078; 588219, 2378044; 588144, 2378012; 588014, 2377985; 587916, 2377994; 587902, 2378173; 587902, 2378177; 587924, 2378356; 587992, 2378504; 588072, 2378629; 588108, 2378741; 587501, 2378835; 587501, 2379053; 588336, 2379045; 588528, 2379045; 588681, 2378969; 588828, 2378880; 588897, 2378847; 588887,

2378841; 588887, 2378840; 588862, 2378802; 588851, 2378772; 588851, 2378763; 588851, 2378746; 588855, 2378710; 588838, 2378677; 588825, 2378656; 588815, 2378615; 588815, 2378614; 588814, 2378597; 588767, 2378640; 588765, 2378640; return to starting point.

(ii) **Note:** Map 24 follows:

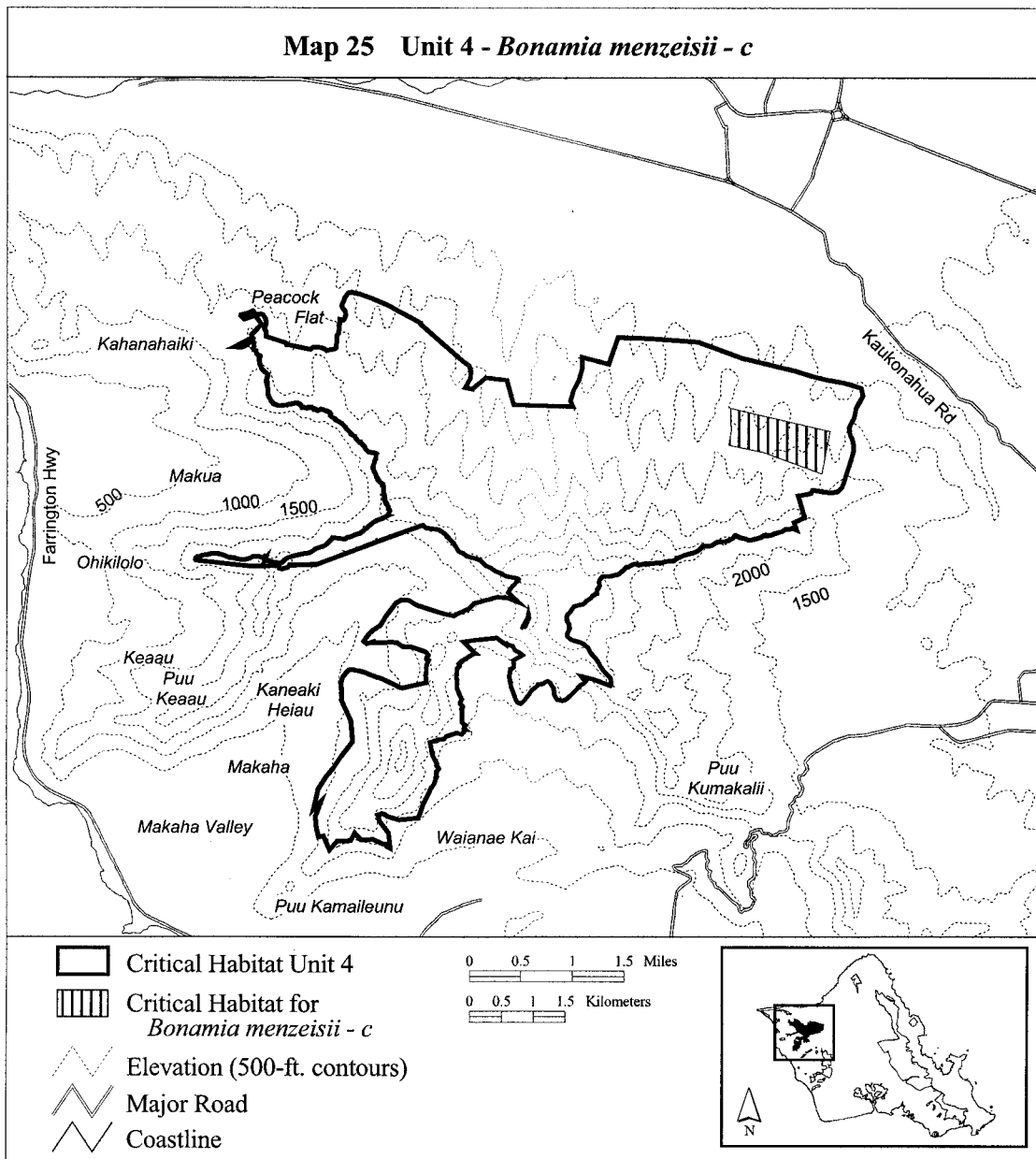


(25) Oahu 4—*Bonamia menziesii*—c (94 ha; 232 ac)

(i) Unit consists of the following 6 boundary points: Start at 592338,

2380469; 591431, 2380805; 590871, 2380923; 590910, 2381148; 590905, 2381506; 592466, 2381148; return to starting point.

(ii) **Note:** Map 25 follows:



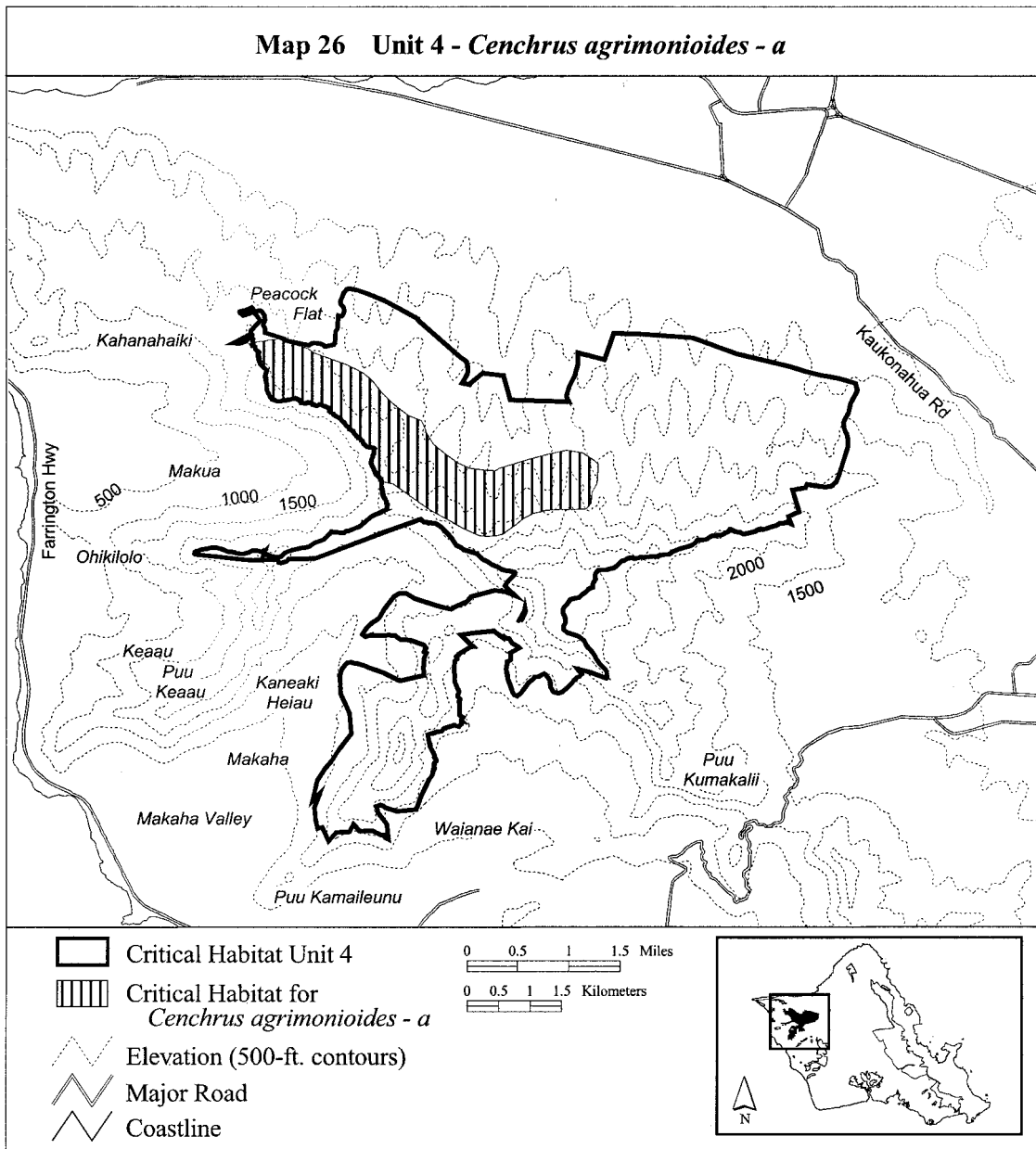
(26) Oahu 4—*Cenchrus agrimonioides*— a (529 ha; 1,306 ac)

(i) Unit consists of the following 80 boundary points: Start at 584380, 2381495; 584309, 2381544; 584196, 2381530; 584133, 2381606; 584005, 2381571; 583859, 2381553; 583750, 2381576; 583661, 2381729; 583665, 2382023; 583590, 2382108; 583548, 2382313; 583444, 2382478; 583845, 2382532; 583983, 2382483; 584310, 2382381; 584391, 2382319; 584901, 2382133; 585166, 2382001; 585317, 2381881; 585494, 2381655; 585649, 2381496; 585884, 2381318; 586097,

2381239; 586168, 2381079; 586162, 2381175; 586171, 2381058; 586289, 2380863; 586469, 2380706; 586684, 2380553; 586871, 2380472; 587093, 2380442; 587276, 2380438; 587334, 2380476; 587793, 2380622; 588077, 2380690; 588398, 2380767; 588651, 2380725; 588834, 2380606; 588896, 2380541; 588880, 2380231; 588800, 2380078; 588788, 2379921; 588712, 2379826; 588482, 2379822; 588260, 2379822; 588088, 2379810; 587881, 2379753; 587725, 2379680; 587593, 2379577; 587479, 2379489; 587406, 2379428; 587287, 2379401; 587130, 2379389; 587016, 2379397; 586817,

2379489; 586606, 2379600; 586605, 2379606; 586243, 2379810; 585639, 2380229; 585613, 2380224; 585480, 2380264; 585418, 2380357; 585368, 2380447; 585302, 2380567; 585354, 2380735; 585352, 2380808; 585224, 2380843; 585126, 2380959; 585063, 2380995; 585033, 2381030; 585027, 2381040; 585011, 2381059; 585004, 2381064; 584970, 2381105; 584845, 2381251; 584687, 2381354; 584639, 2381441; 584496, 2381498; 584403, 2381483; 584383, 2381494; return to starting point.

(ii) **Note:** Map 26 follows:



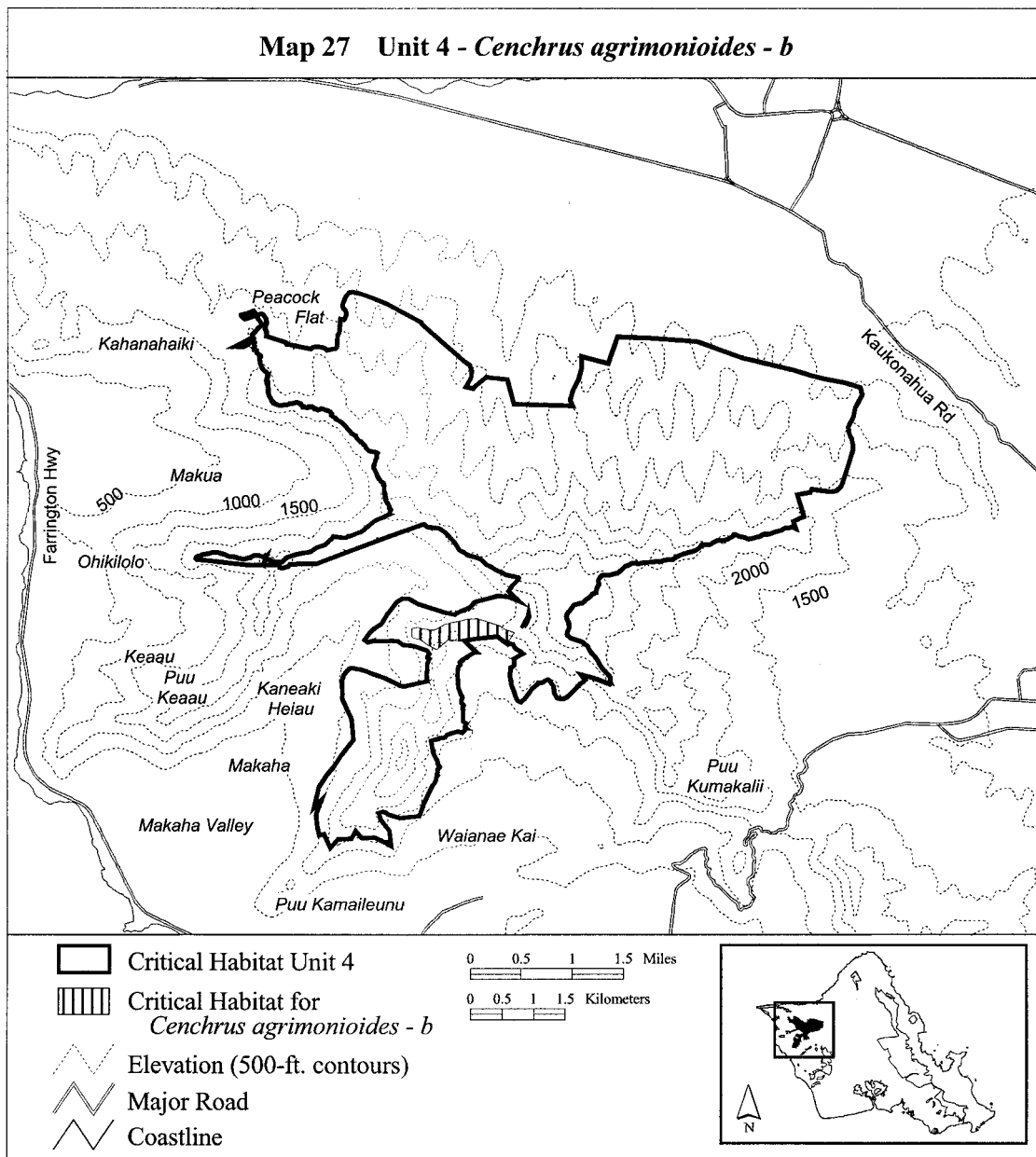
(27) Oahu 4—*Cenchrus agrimonioides*—
b (40 ha; 99 ac)

(i) Unit consists of the following 23
boundary points: Start at 585892,
2378006; 585994, 2378031; 586109,

2378000; 586254, 2377981; 586430,
2378084; 586652, 2378126; 586778,
2378153; 586924, 2378161; 587115,
2378107; 587291, 2378046; 587356,
2378004; 587511, 2377943; 587402,
2377764; 587254, 2377883; 586893,

2377844; 586663, 2377808; 586470,
2377840; 586296, 2377671; 586162,
2377751; 586055, 2377824; 585921,
2377862; 585902, 2377863; 585897,
2377973; return to starting point.

(ii) **Note:** Map 27 follows:



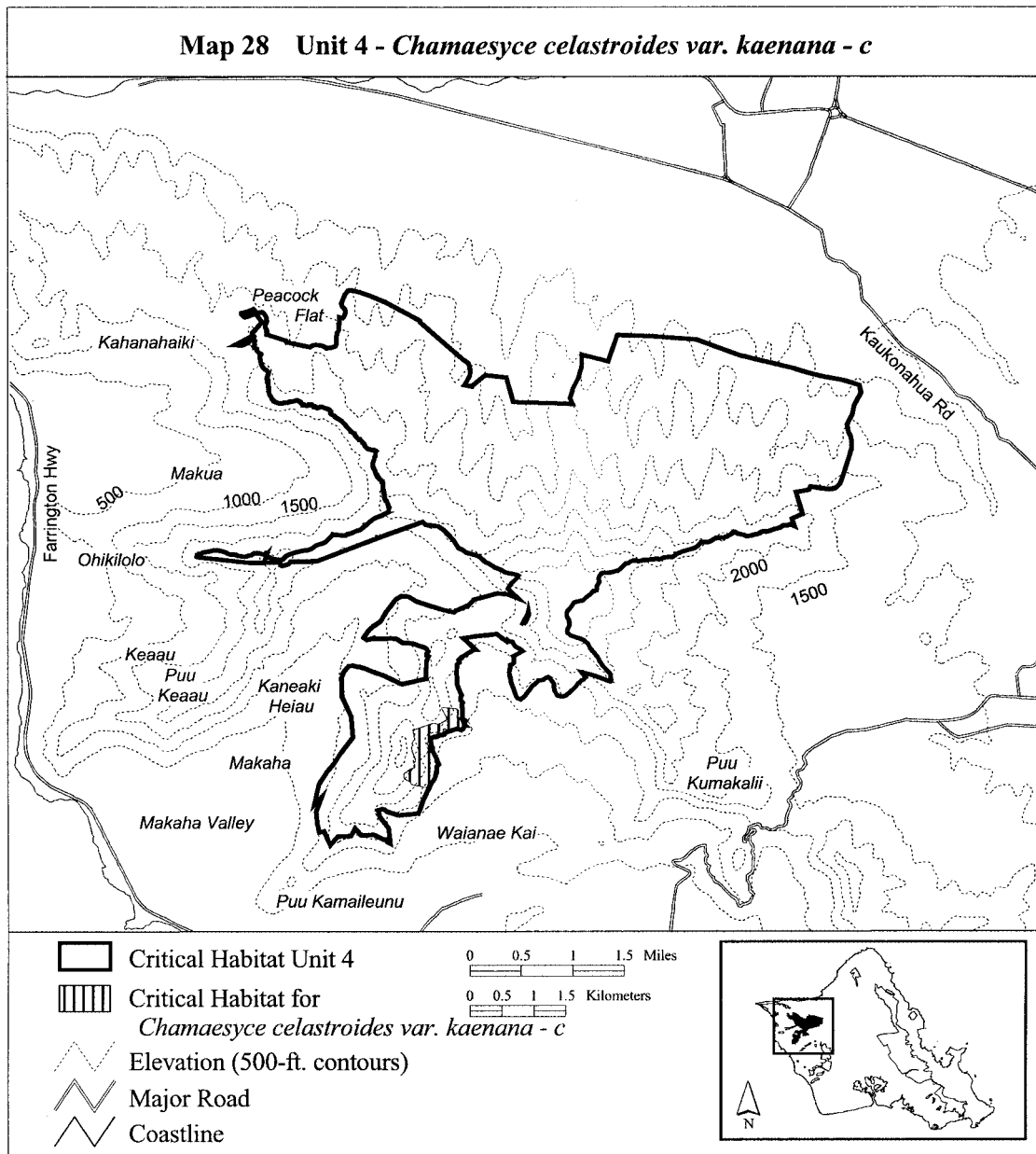
(28) Oahu 4—*Chamaesyce celastroides* var. *kaenana*—c (43 ha; 106 ac)

(i) Unit consists of the following 92 boundary points: Start at 586651, 2376680; 586644, 2376585; 586662, 2376562; 586667, 2376542; 586680, 2376519; 586696, 2376493; 586724, 2376470; 586726, 2376435; 586706, 2376405; 586669, 2376382; 586630, 2376383; 586563, 2376392; 586533, 2376380; 586508, 2376373; 586466, 2376373; 586443, 2376383; 586410, 2376382; 586403, 2376346; 586403, 2376327; 586364, 2376295; 586313, 2376302; 586251, 2376288; 586192, 2376262; 586184, 2376253; 586182, 2376218; 586178, 2376179; 586155,

2376159; 586182, 2376126; 586212, 2376096; 586237, 2376071; 586242, 2376022; 586270, 2375970; 586277, 2375925; 586291, 2375896; 586327, 2375856; 586343, 2375826; 586335, 2375810; 586302, 2375782; 586302, 2375752; 586309, 2375725; 586298, 2375700; 586281, 2375681; 586286, 2375646; 586277, 2375614; 586253, 2375556; 586226, 2375533; 586161, 2375490; 586104, 2375475; 586129, 2375453; 585970, 2375490; 585915, 2375515; 585884, 2375547; 585799, 2375607; 585799, 2375676; 585815, 2375693; 585841, 2375704; 585864, 2375723; 585878, 2375752; 585935, 2375768; 585960, 2375778; 585961, 2375806; 585960, 2375824; 585938,

2375854; 585965, 2375866; 585981, 2375888; 585970, 2375907; 585958, 2375933; 585926, 2376030; 585910, 2376082; 585935, 2376119; 585926, 2376156; 585935, 2376172; 585958, 2376221; 585951, 2376263; 585942, 2376308; 585937, 2376368; 586021, 2376392; 586166, 2376447; 586251, 2376479; 586302, 2376470; 586360, 2376466; 586406, 2376489; 586448, 2376512; 586459, 2376535; 586438, 2376601; 586415, 2376652; 586388, 2376699; 586388, 2376724; 586461, 2376724; 586537, 2376714; 586572, 2376710; 586623, 2376698; return to starting point.

(ii) **Note:** Map 28 follows:



(29) Oahu 4—*Chamaesyce herbstii*—a (429 ha; 159 ac)

(i) Unit consists of the following 138 boundary points: Start at 583503, 2382342; 583526, 2382341; 583439, 2382511; 583414, 2382604; 583400, 2382650; 583402, 2382658; 583548, 2382823; 583450, 2382963; 583283, 2382906; 583228, 2382952; 583228, 2382973; 583336, 2382995; 583416, 2383033; 583475, 2382968; 583545, 2382989; 583567, 2382984; 583615, 2382909; 583626, 2382833; 583610, 2382785; 583594, 2382753; 583626, 2382704; 583626, 2382656; 583615, 2382564; 583734, 2382500; 583798, 2382440; 583863, 2382349; 583992, 2382327; 584046, 2382327; 584191, 2382354; 584397, 2382322; 584709,

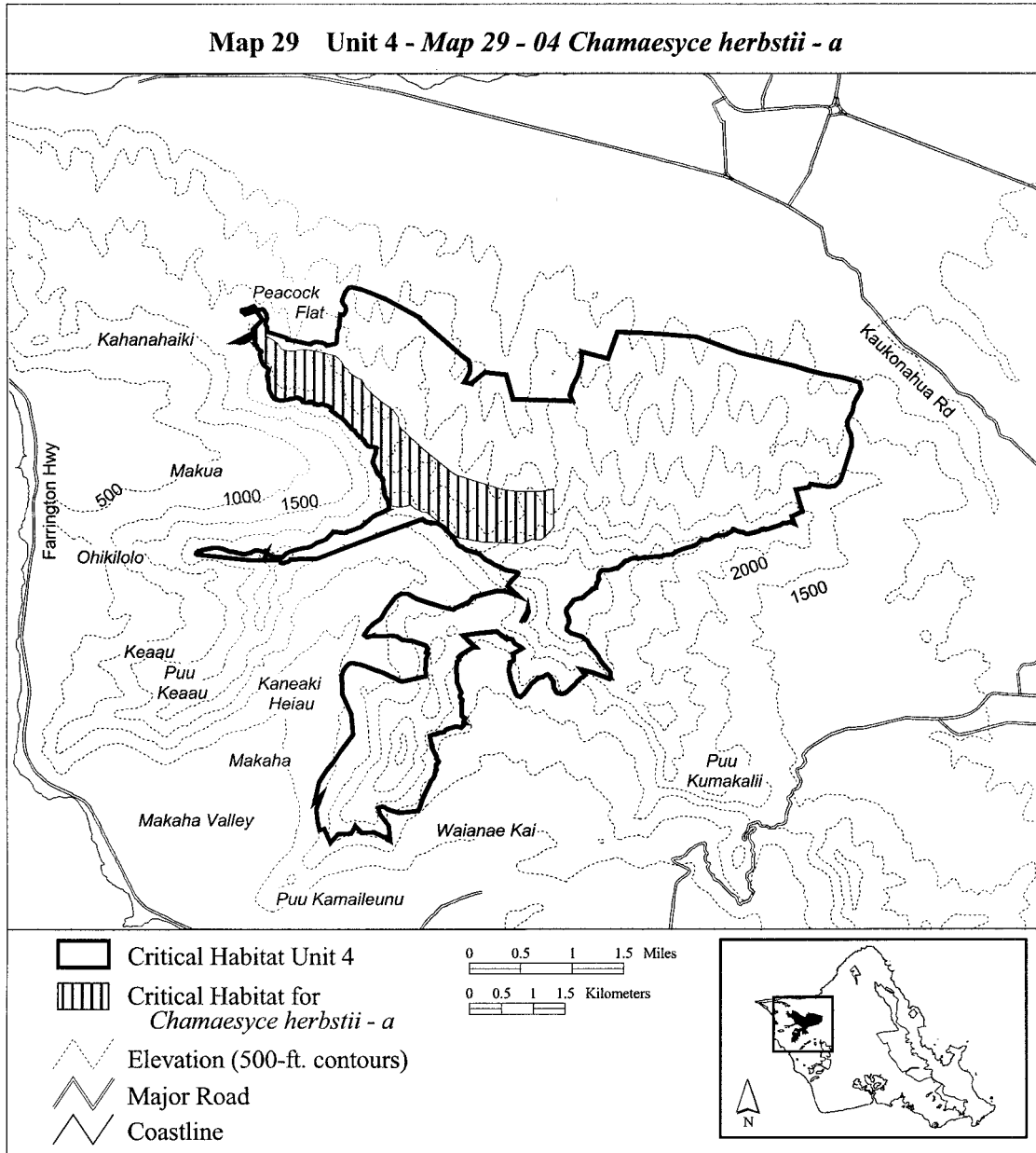
2382257; 584779, 2382188; 584865, 2382064; 584903, 2382037; 584913, 2381999; 585043, 2381908; 585134, 2381865; 585177, 2381762; 585290, 2381644; 585425, 2381536; 585618, 2381396; 585710, 2381273; 585710, 2381176; 585753, 2381090; 585791, 2381066; 586087, 2380777; 586572, 2380389; 586597, 2380385; 586588, 2380370; 587339, 2380124; 587577, 2380104; 587951, 2380104; 588137, 2380136; 588137, 2380089; 588137, 2379981; 588137, 2379900; 588148, 2379825; 588148, 2379749; 588136, 2379529; 588072, 2379437; 587948, 2379340; 587899, 2379330; 587792, 2379346; 587652, 2379273; 587015, 2379301; 586634, 2379377; 586153, 2379776; 586086, 2379776; 585962,

2379836; 585897, 2379895; 585817, 2379862; 585704, 2379852; 585567, 2379876; 585549, 2379925; 585550, 2379928; 585550, 2379929; 585549, 2379929; 585549, 2379930; 585548, 2379930; 585547, 2379930; 585530, 2379977; 585483, 2380072; 585475, 2380117; 585474, 2380125; 585474, 2380128; 585472, 2380137; 585471, 2380141; 585460, 2380200; 585470, 2380286; 585383, 2380376; 585375, 2380388; 585365, 2380405; 585342, 2380472; 585303, 2380562; 585321, 2380656; 585324, 2380666; 585354, 2380756; 585347, 2380782; 585348, 2380789; 585348, 2380790; 585344, 2380798; 585344, 2380799; 585341, 2380800; 585340, 2380806; 585339, 2380804; 585215, 2380832; 585126,

2380952; 584993, 2381079; 584873,
2381226; 584724, 2381332; 584654,
2381380; 584630, 2381442; 584504,
2381496; 584422, 2381483; 584333,
2381519; 584325, 2381523; 584324,
2381523; 584317, 2381526; 584298,

2381533; 584261, 2381516; 584201,
2381520; 584133, 2381595; 584041,
2381579; 583935, 2381560; 583809,
2381569; 583723, 2381622; 583658,
2381762; 583655, 2381883; 583645,
2381972; 583657, 2382042; 583554,

2382141; 583527, 2382291; 583550,
2382324; 583523, 2382333; 583523,
2382334; 583522, 2382334; 583517,
2382336; 583508, 2382339; return to
starting point.
(ii) Note: Map 29 follows:



(30) Oahu 4—*Colubrina oppositifolia*—
a (783 ha; 1,935 ac)

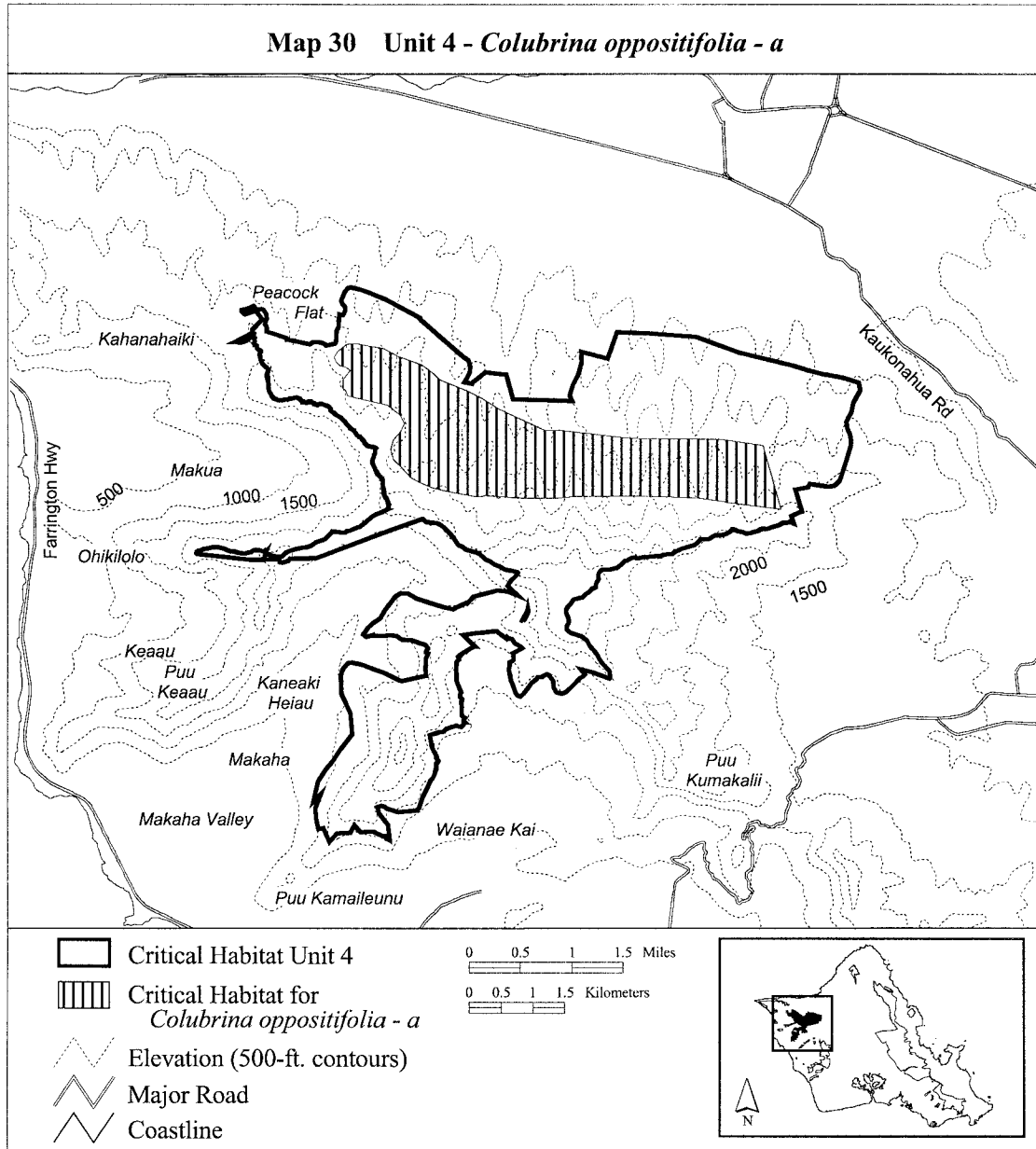
(i) Unit consists of the following 58
boundary points: Start at 588008,
2381069; 588057, 2381074; 588245,
2381074; 588704, 2381020; 589182,
2380963; 589495, 2380938; 590771,
2380923; 591455, 2380827; 591742,
2379816; 590859, 2379924; 590856,
2379925; 590854, 2379936; 590431,
2379992; 589977, 2380011; 589432,

2380031; 588699, 2380021; 588491,
2380021; 588192, 2379992; 587883,
2379987; 587661, 2379987; 587047,
2380034; 587048, 2380026; 586956,
2380011; 586559, 2380084; 586255,
2380156; 586047, 2380238; 585907,
2380320; 585773, 2380460; 585624,
2380620; 585590, 2380760; 585624,
2380909; 585744, 2381049; 585807,
2381170; 585735, 2381320; 585532,
2381474; 585218, 2381547; 584909,

2381619; 584875, 2381701; 584827,
2381745; 584837, 2381860; 584924,
2381976; 584948, 2382020; 584895,
2382063; 584793, 2382092; 584730,
2382140; 584701, 2382227; 584764,
2382329; 584899, 2382435; 585054,
2382445; 585237, 2382411; 585469,
2382367; 585706, 2382247; 586068,
2382107; 586270, 2381962; 586353,
2381875; 586779, 2381699; 587016,

2381581; 587278, 2381406; return to starting point.

(ii) **Note:** Map 30 follows:



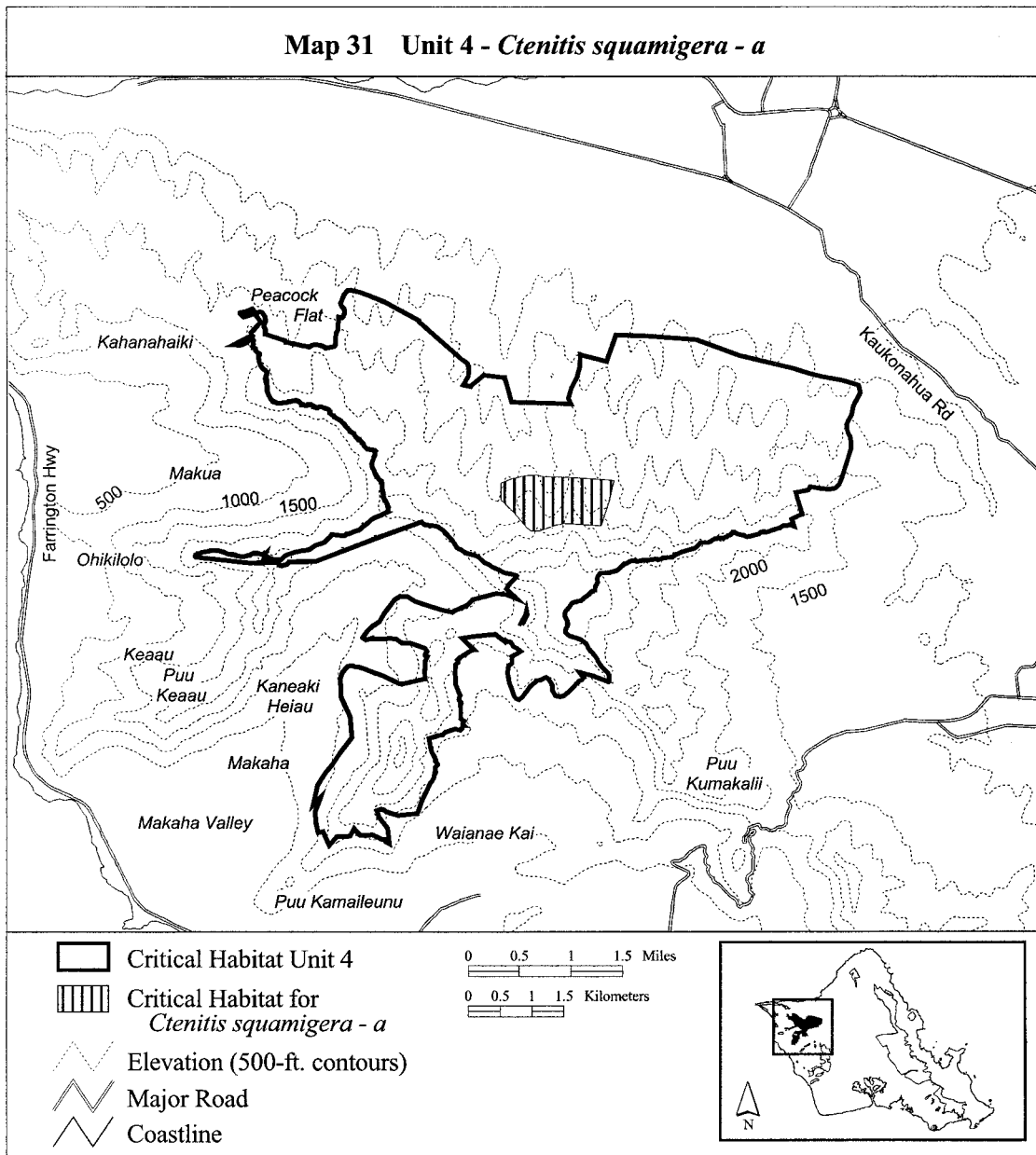
(31) Oahu 4—*Ctenitis squamigera*—a
(120 ha; 298 ac)

(i) Unit consists of the following 22 boundary points: Start at 588909, 2379603; 588766, 2379609; 588486,

2379632; 588342, 2379636; 588233, 2379618; 588055, 2379564; 587942, 2379523; 587815, 2379523; 587752, 2379573; 587549, 2379813; 587345, 2380007; 587345, 2380130; 587341, 2380284; 587504, 2380347; 587726,

2380397; 587907, 2380406; 588016, 2380383; 588396, 2380370; 588613, 2380356; 588885, 2380333; 589113, 2380315; 589032, 2379960; return to starting point.

(ii) **Note:** Map 31 follows:



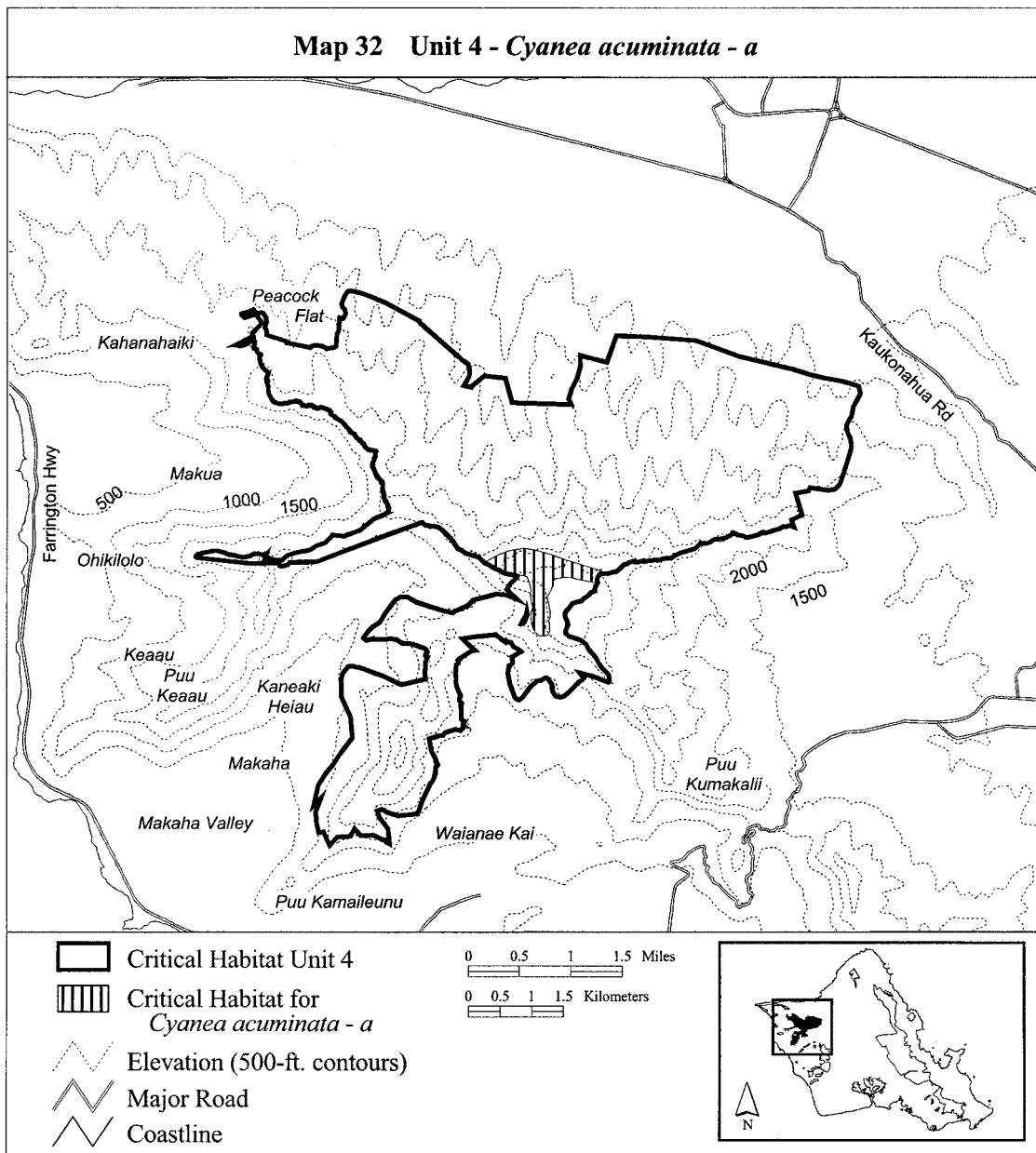
(32) Oahu 4—*Cyanea acuminata*—a (83 ha; 205 ac)

(i) Unit consists of the following 64 boundary points: Start at 588849, 2378698; 588770, 2378723; 588704, 2378726; 588538, 2378764; 588421, 2378792; 588320, 2378789; 588186, 2378769; 588157, 2378735; 588154, 2378666; 588120, 2378592; 588085, 2378517; 588062, 2378488; 588079, 2378402; 588091, 2378339; 588111, 2378245; 588111, 2378176; 588085,

2378090; 588102, 2378038; 588105, 2377972; 588105, 2377921; 588079, 2377875; 588071, 2377872; 588014, 2377866; 587936, 2377866; 587882, 2377912; 587830, 2377995; 587810, 2378079; 587804, 2378147; 587804, 2378216; 587830, 2378316; 587816, 2378388; 587799, 2378500; 587804, 2378594; 587790, 2378695; 587736, 2378798; 587675, 2378815; 587584, 2378835; 587437, 2378844; 587372, 2378861; 587311, 2378898; 587225, 2378941; 587154, 2378981; 587111,

2379036; 587108, 2379047; 587283, 2379145; 587472, 2379222; 587687, 2379257; 587856, 2379228; 588097, 2379168; 588340, 2379070; 588581, 2378999; 588879, 2378910; 588987, 2378856; 588910, 2378852; 588910, 2378851; 588899, 2378848; 588898, 2378848; 588887, 2378841; 588887, 2378840; 588862, 2378802; 588851, 2378772; 588851, 2378763; 588851, 2378746; 588855, 2378710; return to starting point.

(ii) **Note:** Map 32 follows:



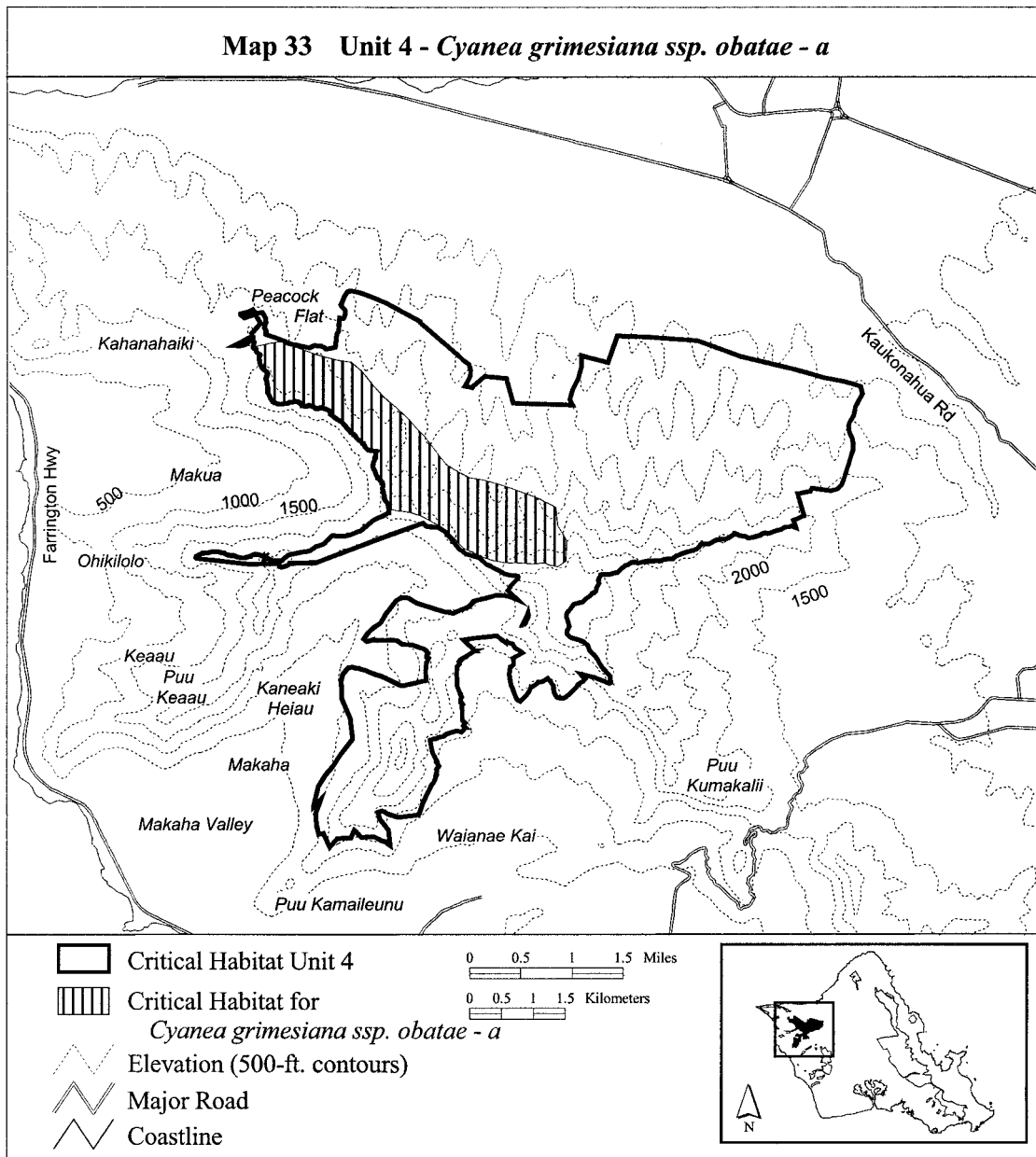
(33) Oahu 4—*Cyanea grimesiana* ssp. *obatae*—a (522 ha; 1,291 ac)

(i) Unit consists of the following 102 boundary points: Start at 584251, 2381509; 584192, 2381525; 584170, 2381549; 584167, 2381553; 584150, 2381572; 584148, 2381573; 584141, 2381581; 584117, 2381595; 583876, 2381561; 583789, 2381568; 583745, 2381584; 583733, 2381605; 583700, 2381659; 583663, 2381752; 583647, 2381925; 583667, 2382028; 583560, 2382137; 583530, 2382267; 583557, 2382327; 583487, 2382367; 583487, 2382400; 583454, 2382430; 583451, 2382446; 583505, 2382460; 583690, 2382504; 583864, 2382531; 584038, 2382468; 584255, 2382393; 584421,

2382326; 584745, 2382247; 584970, 2382204; 585143, 2382054; 585301, 2381856; 585475, 2381651; 585648, 2381505; 585857, 2381316; 586011, 2381138; 586134, 2381024; 586124, 2381013; 586441, 2380602; 586583, 2380511; 586836, 2380381; 587002, 2380353; 587250, 2380290; 587554, 2380188; 587893, 2380065; 588177, 2379919; 588201, 2379631; 588350, 2379387; 588346, 2379296; 588338, 2379063; 588204, 2378976; 588097, 2378996; 587975, 2379035; 587841, 2379020; 587604, 2379035; 587411, 2379035; 587218, 2379059; 587008, 2379134; 586724, 2379276; 586535, 2379469; 586365, 2379608; 586073, 2379769; 585884, 2379832; 585659, 2379860; 585562, 2379890; 585549,

2379924; 585550, 2379928; 585550, 2379929; 585549, 2379929; 585549, 2379930; 585548, 2379930; 585547, 2379930; 585478, 2380107; 585457, 2380302; 585395, 2380362; 585299, 2380563; 585336, 2380704; 585338, 2380712; 585339, 2380712; 585340, 2380721; 585345, 2380739; 585346, 2380751; 585346, 2380754; 585346, 2380756; 585350, 2380801; 585223, 2380827; 585174, 2380878; 585167, 2380888; 585157, 2380904; 585146, 2380918; 585118, 2380959; 585065, 2380985; 585023, 2381051; 584965, 2381104; 584807, 2381274; 584709, 2381333; 584646, 2381382; 584631, 2381444; 584500, 2381495; 584452, 2381482; 584301, 2381534; return to starting point.

(ii) Note: Map 33 follows:



(34) Oahu 4—*Cyanea longiflora*—a
 (362 ha; 896 ac)

(i) Unit consists of the following 163 boundary points: Start at 589322, 2379008; 589227, 2379030; 589144, 2378934; 588984, 2378856; 588910, 2378852; 588910, 2378851; 588899, 2378848; 588898, 2378848; 588887, 2378841; 588887, 2378840; 588866, 2378808; 588853, 2378830; 588638, 2378825; 588557, 2378780; 588549, 2378779; 588522, 2378764; 588468, 2378783; 588294, 2378820; 588097, 2378901; 588099, 2378909; 588092, 2378911; 588079, 2378910; 587994, 2378891; 587795, 2378868; 587551,

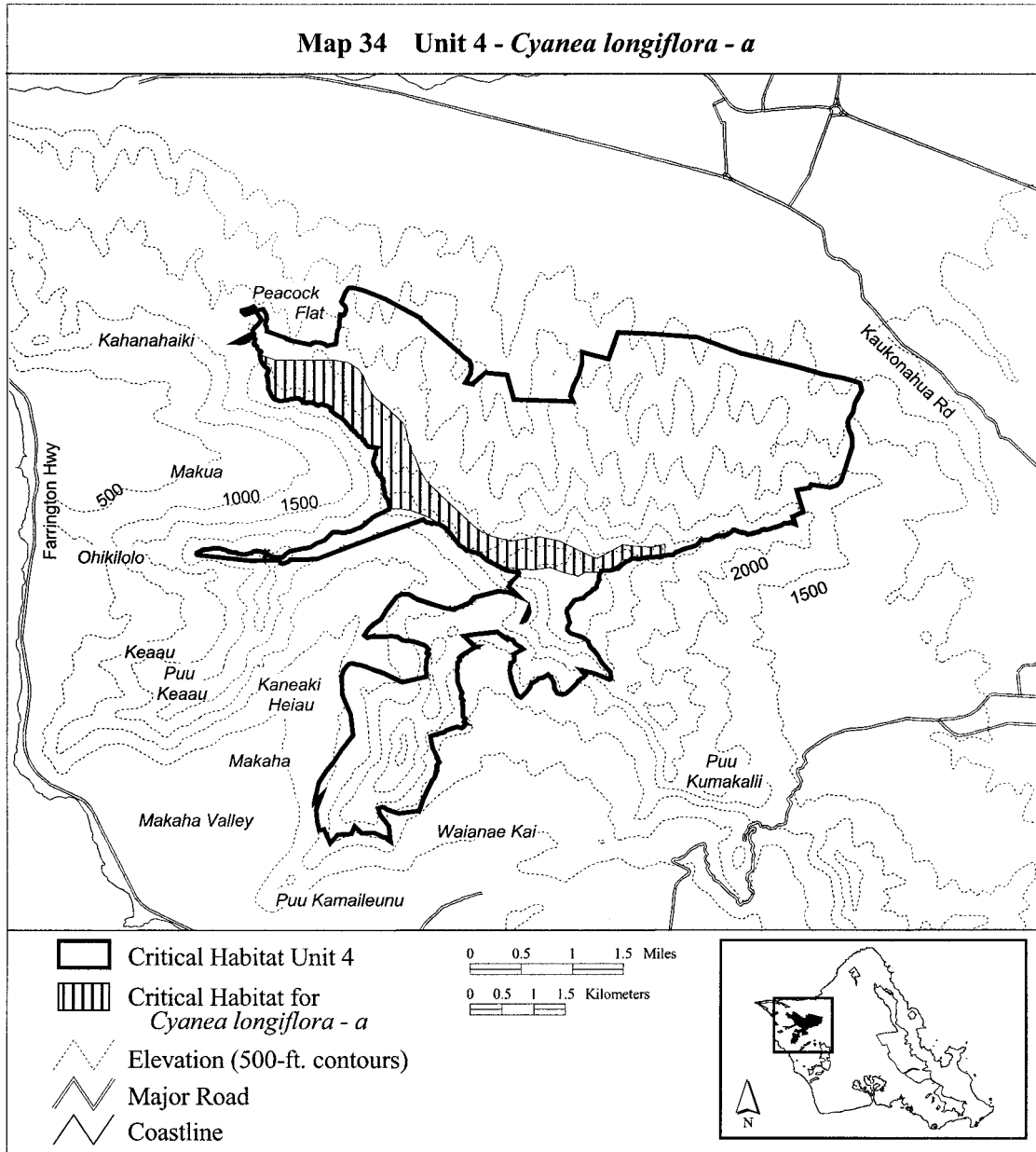
2378882; 587485, 2378896; 587399, 2378901; 587322, 2378929; 587266, 2378941; 587232, 2378962; 587081, 2379017; 586980, 2379113; 586772, 2379174; 586781, 2379184; 586778, 2379185; 586637, 2379321; 586447, 2379529; 586294, 2379624; 586135, 2379719; 585918, 2379796; 585737, 2379832; 585556, 2379836; 585574, 2379901; 585531, 2379987; 585481, 2380116; 585466, 2380282; 585337, 2380490; 585308, 2380573; 585327, 2380678; 585338, 2380712; 585339, 2380712; 585344, 2380738; 585346, 2380754; 585345, 2380767; 585345, 2380777; 585347, 2380785; 585348,

2380789; 585348, 2380790; 585352, 2380813; 585215, 2380831; 585132, 2380968; 585086, 2380996; 585028, 2381065; 584964, 2381101; 584881, 2381216; 584729, 2381329; 584626, 2381453; 584497, 2381510; 584462, 2381482; 584344, 2381514; 584325, 2381523; 584324, 2381523; 584310, 2381528; 584309, 2381528; 584295, 2381527; 584259, 2381537; 584134, 2381603; 584046, 2381591; 583951, 2381568; 583888, 2381564; 583811, 2381577; 583728, 2381611; 583670, 2381715; 583652, 2381855; 583660, 2382042; 583584, 2382099; 583545, 2382178; 583530, 2382274; 583616,

2382242; 583770, 2382188; 583933,
 2382192; 584155, 2382192; 584490,
 2382188; 584676, 2382188; 584911,
 2382156; 585065, 2382052; 585141,
 2381944; 585178, 2381835; 585254,
 2381699; 585340, 2381577; 585435,
 2381519; 585630, 2381329; 585770,
 2381193; 585806, 2381121; 585833,
 2381017; 585847, 2380890; 585888,
 2380845; 585910, 2380736; 585955,
 2380664; 586023, 2380469; 586133,
 2380279; 586136, 2380279; 586407,
 2380013; 586900, 2379542; 587025,

2379450; 587040, 2379467; 587126,
 2379412; 587224, 2379382; 587447,
 2379321; 587646, 2379357; 587816,
 2379378; 587895, 2379391; 588218,
 2379331; 588742, 2379076; 588826,
 2379041; 589211, 2379253; 589214,
 2379255; 589215, 2379255; 589224,
 2379260; 589280, 2379255; 589300,
 2379255; 589347, 2379249; 589636,
 2379223; 589701, 2379230; 589887,
 2379275; 589886, 2379260; 589892,
 2379260; 589892, 2379189; 589892,
 2379098; 589882, 2379095; 589882,

2379089; 589881, 2379089; 589839,
 2379075; 589839, 2379074; 589806,
 2379068; 589790, 2379069; 589787,
 2379069; 589747, 2379069; 589705,
 2379066; 589675, 2379063; 589616,
 2379059; 589604, 2379058; 589557,
 2379052; 589519, 2379042; 589496,
 2379035; 589462, 2379034; 589441,
 2379042; 589424, 2379047; 589391,
 2379048; 589370, 2379041; 589369,
 2379041; 589348, 2379025; 589324,
 2379009; return to starting point.
 (ii) Note: Map 34 follows:



(35) Oahu 4—*Cyanea longiflora*—b (61 ha; 150 ac)
 (i) Unit consists of the following 24 boundary points: Start at 586477,

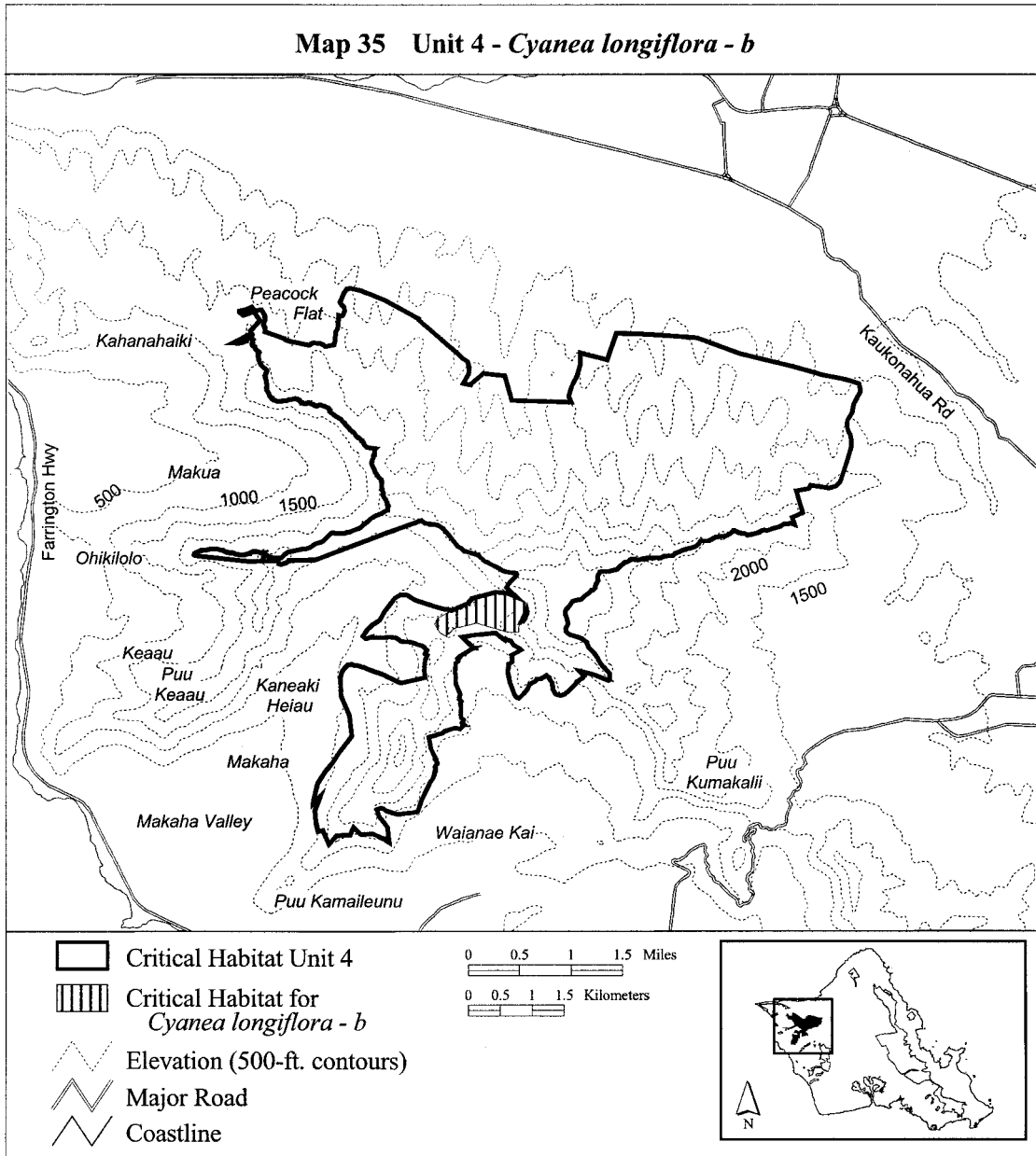
2377825; 586452, 2377842; 586384,
 2377878; 586334, 2377946; 586298,
 2378018; 586330, 2378113; 586610,
 2378253; 586813, 2378347; 586800,

2378330; 586827, 2378353; 586882,
 2378430; 587085, 2378484; 587257,
 2378529; 587429, 2378511; 587659,
 2378421; 587718, 2378371; 587759,

2378299; 587727, 2378199; 587655,
2378068; 587610, 2377973; 587610,
2377887; 587449, 2377887; 586953,

2378038; 586608, 2377955; return to
starting point.

(ii) **Note:** Map 35 follows:



(36) Oahu 4—*Cyanea superba*—a (302 ha; 747 ac)

(i) Unit consists of the following 142 boundary points: Start at 583837, 2381543; 583777, 2381576; 583739, 2381579; 583731, 2381587; 583731, 2381589; 583658, 2381724; 583662, 2381803; 583646, 2381892; 583638, 2381956; 583650, 2381985; 583658, 2382035; 583567, 2382120; 583523, 2382284; 583540, 2382309; 583544, 2382321; 583480, 2382363; 583480, 2382413; 583434, 2382429; 583434, 2382473; 583434, 2382474; 583642,

2382522; 583867, 2382536; 584015, 2382467; 584112, 2382425; 584164, 2382418; 584268, 2382405; 584352, 2382460; 584393, 2382474; 584490, 2382463; 584552, 2382432; 584617, 2382373; 584631, 2382363; 584687, 2382353; 584718, 2382349; 584745, 2382297; 584766, 2382246; 584814, 2382239; 584832, 2382225; 584870, 2382177; 584880, 2382142; 584922, 2382156; 584977, 2382111; 585017, 2382080; 585022, 2382069; 585179, 2382021; 585084, 2381969; 585111, 2381938; 585129, 2381938; 585167,

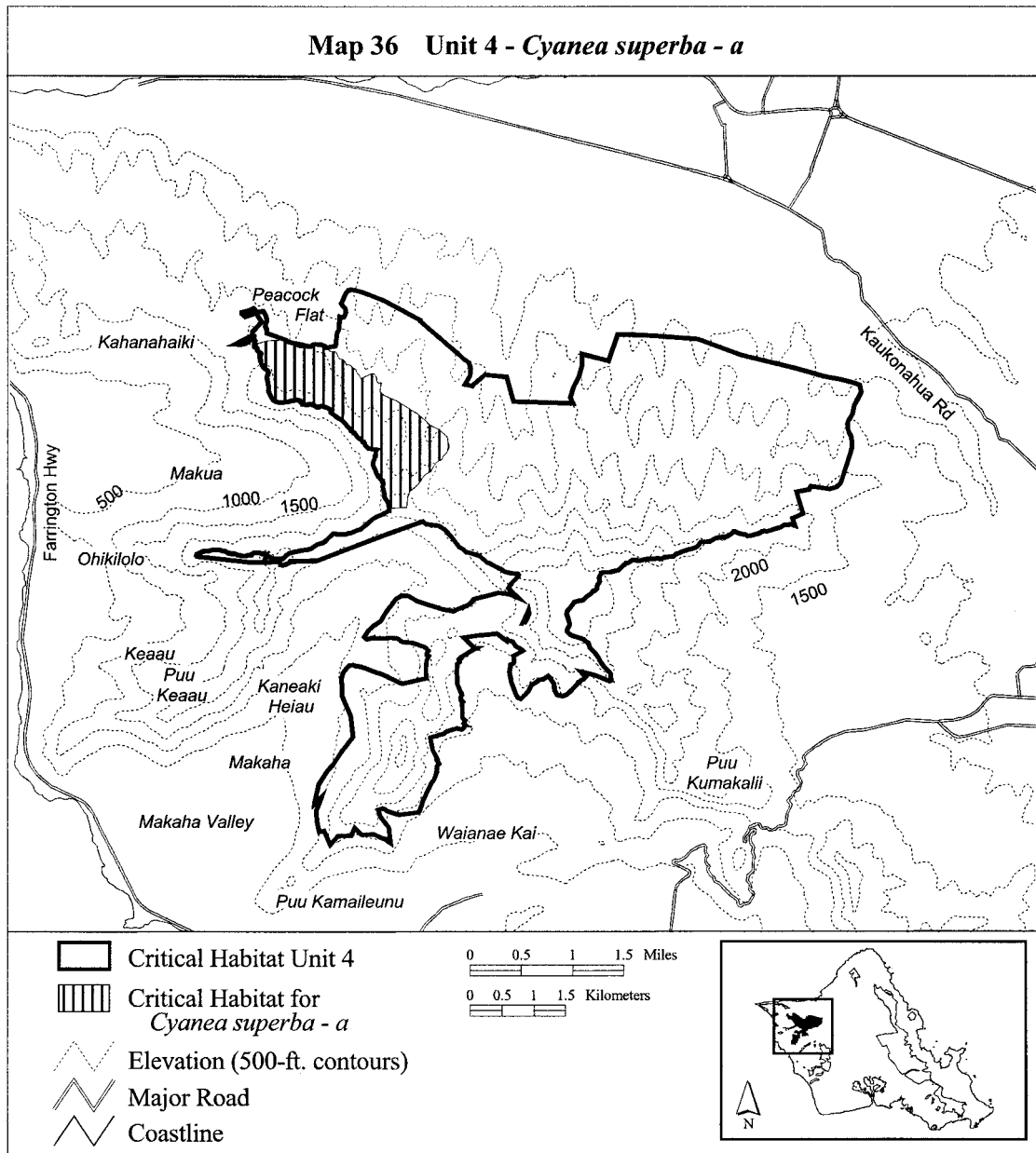
2381952; 585212, 2381969; 585281, 2382017; 585326, 2382011; 585353, 2381955; 585357, 2381883; 585391, 2381855; 585433, 2381862; 585412, 2381779; 585409, 2381727; 585436, 2381703; 585464, 2381683; 585462, 2381673; 585661, 2381576; 585844, 2381475; 585999, 2381368; 586120, 2381258; 586210, 2381178; 586338, 2381120; 586462, 2381009; 586497, 2380847; 586486, 2380809; 586462, 2380757; 586393, 2380691; 586386, 2380643; 586310, 2380595; 586248, 2380522; 586213, 2381753; 586127,

2381705; 586086, 2380367; 586051,
 2380294; 585971, 2380217; 585926,
 2380170; 585870, 2380121; 585843,
 2380028; 585836, 2379883; 585791,
 2379883; 585587, 2379869; 585538,
 2379948; 585531, 2379962; 585531,
 2379963; 585523, 2379982; 585522,
 2379982; 585518, 2379989; 585515,
 2379997; 585500, 2380019; 585475,
 2380122; 585474, 2380125; 585474,
 2380128; 585472, 2380135; 585461,
 2380273; 585440, 2380319; 585405,

2380348; 585366, 2381717; 585320,
 2380510; 585299, 2380563; 585334,
 2380698; 585338, 2380712; 585339,
 2380712; 585342, 2380729; 585347,
 2380750; 585347, 2380785; 585348,
 2380789; 585348, 2380790; 585347,
 2380792; 585347, 2380802; 585212,
 2380834; 585116, 2380960; 585069,
 2380992; 585025, 2381174; 584900,
 2381178; 584809, 2381270; 584709,
 2381331; 584646, 2381394; 584629,
 2381439; 584609, 2381458; 584546,

2381479; 584484, 2381495; 584447,
 2381479; 584418, 2381479; 584387,
 2381500; 584349, 2381516; 584326,
 2381533; 584295, 2381535; 584250,
 2381516; 584202, 2381527; 584180,
 2381542; 584177, 2381551; 584140,
 2381589; 584073, 2381589; 583961,
 2381562; 583916, 2381554; 583853,
 2381551; 583839, 2381543; return to
 starting point.

(ii) Note: Map 36 follows:



(37) Oahu 4—*Cyanea superba*—b (116 ha; 286 ac)

(i) Unit consists of the following 36 boundary points: Start at 587772, 2380274; 588060, 2379997; 588137,

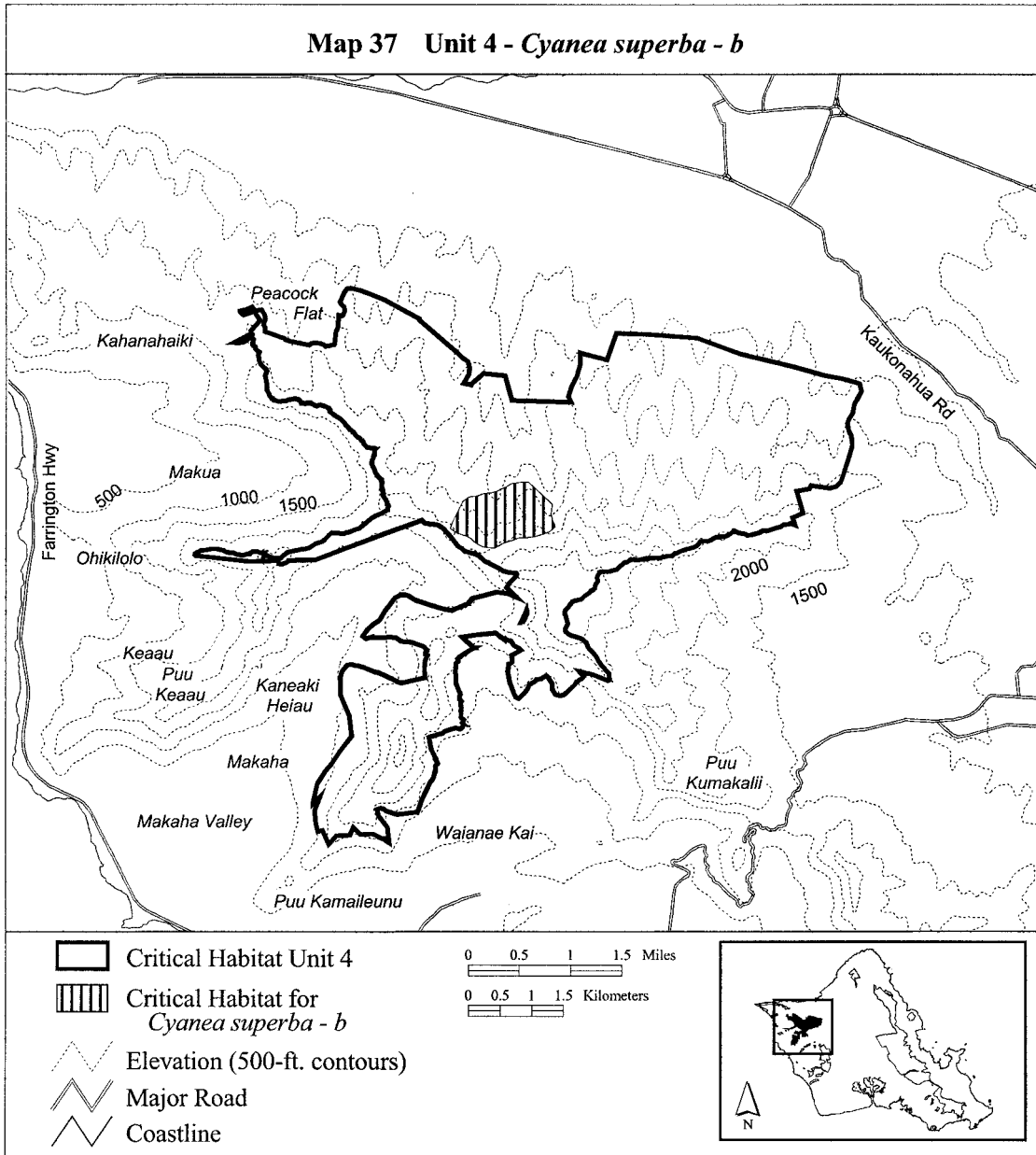
2379927; 588144, 2379905; 588122,
 2379765; 588141, 2379680; 588174,
 2379610; 588189, 2379551; 588092,
 2379477; 587911, 2379415; 587741,
 2379393; 587627, 2379389; 587505,

2379341; 587424, 2379315; 587369,
 2379297; 587232, 2379216; 587041,
 2379249; 586926, 2379308; 586871,
 2379370; 586797, 2379411; 586639,
 2379459; 586532, 2379536; 586565,

2379636; 586639, 2379776; 586709,
2379898; 586731, 2379961; 586824,
2380031; 586879, 2380049; 586942,

2380049; 587082, 2380086; 587186,
2380101; 587285, 2380123; 587326,
2380156; 587411, 2380193; 587503,

2380244; 587639, 2380267; return to
starting point.
(ii) **Note:** Map 37 follows:

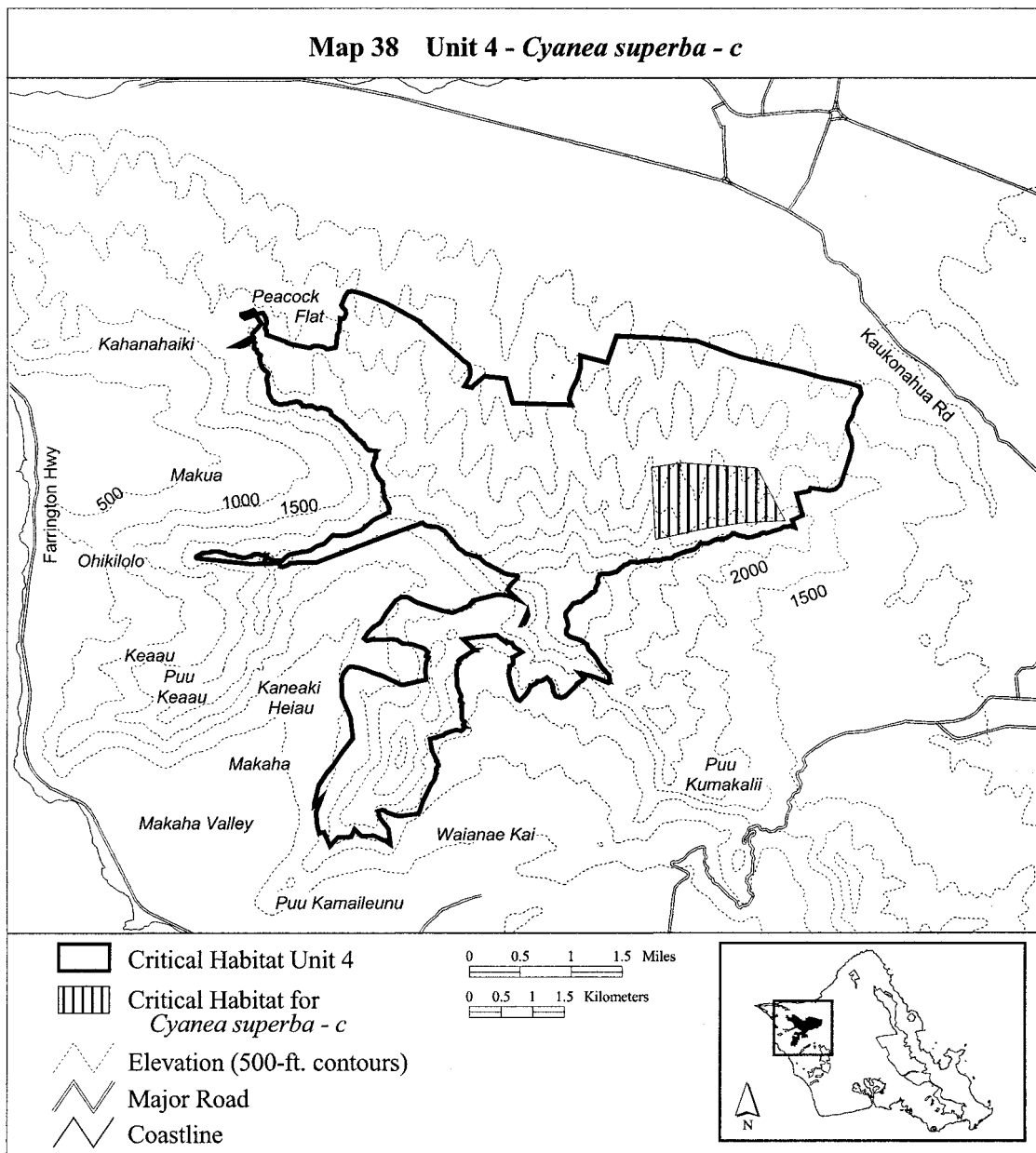


(38) Oahu 4—*Cyanea superba*—c (184 ha; 455 ac)

(i) Unit consists of the following 7 boundary points: Start at 589757,

2379400; 589699, 2380542; 590166,
2380613; 591361, 2380532; 591790,
2379700; 591135, 2379667; 590578,
2379579; return to starting point.

(ii) **Note:** Map 38 follows:



(39) Oahu 4—*Cyrtandra dentata*—a (306 ha; 757 ac)

(i) Unit consists of the following 208 boundary points: Start at 584020, 2381575; 583738, 2381581; 583730, 2381588; 583709, 2381612; 583707, 2381614; 583694, 2381639; 583685, 2381655; 583672, 2381685; 583659, 2381711; 583652, 2381731; 583651, 2381742; 583651, 2381757; 583651, 2381773; 583651, 2381774; 583651, 2381789; 583651, 2381805; 583651, 2381806; 583649, 2381820; 583644, 2381847; 583642, 2381874; 583639, 2381896; 583638, 2381897; 583634, 2381907; 583631, 2381919; 583629, 2381934; 583630, 2381951; 583633, 2381969; 583638, 2381979; 583645,

2381993; 583645, 2381994; 583649, 2382013; 583649, 2382018; 583648, 2382029; 583647, 2382030; 583641, 2382045; 583640, 2382045; 583626, 2382059; 583625, 2382059; 583610, 2382073; 583590, 2382091; 583570, 2382107; 583561, 2382120; 583552, 2382135; 583546, 2382153; 583536, 2382180; 583529, 2382214; 583523, 2382238; 583523, 2382239; 583518, 2382254; 583517, 2382264; 583517, 2382276; 583518, 2382287; 583521, 2382299; 583528, 2382305; 583535, 2382312; 583535, 2382313; 583535, 2382319; 583531, 2382326; 583523, 2382334; 583522, 2382334; 583511, 2382337; 583498, 2382345; 583497, 2382345; 583486, 2382351; 583477, 2382362; 583474, 2382370; 583475,

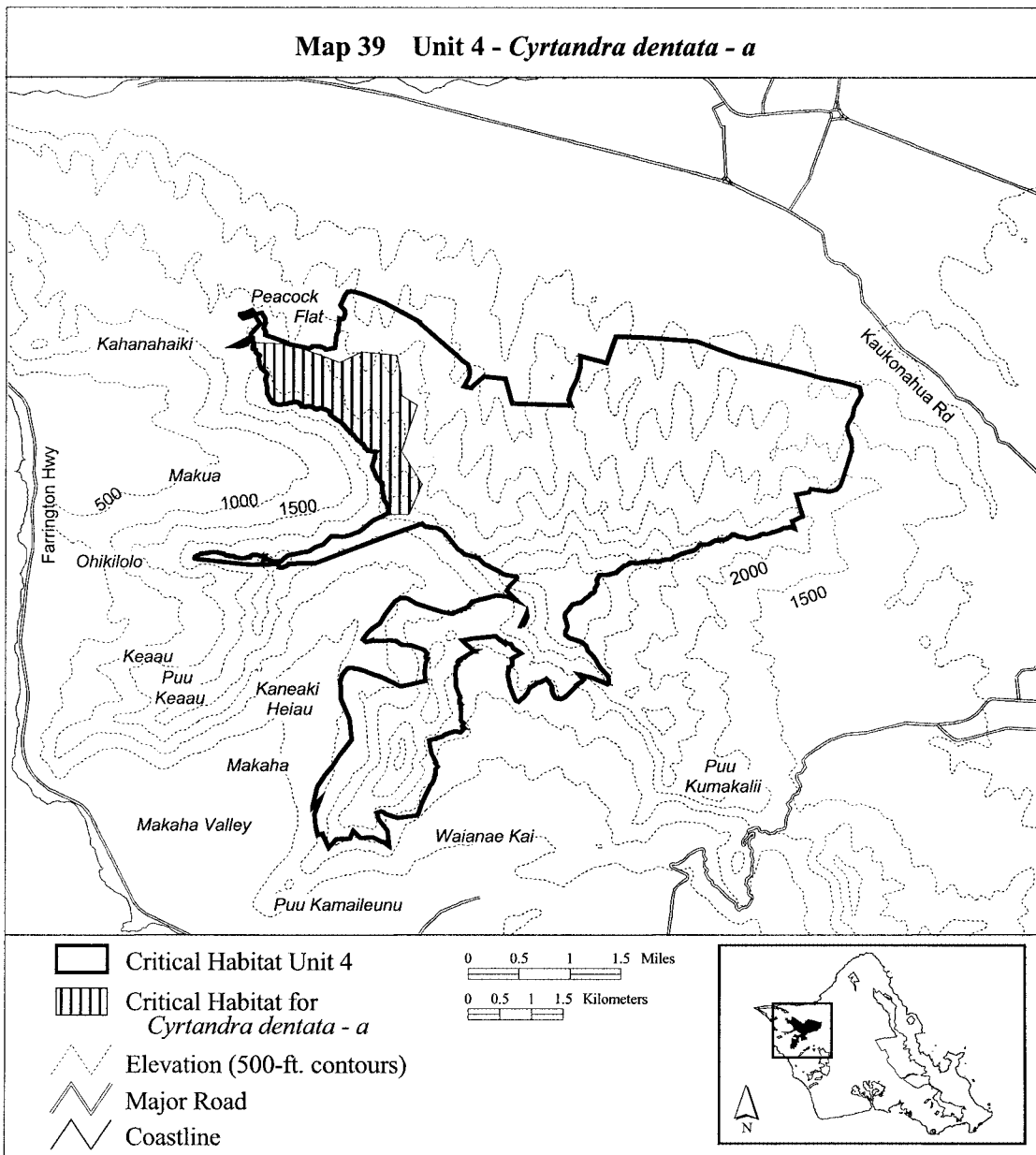
2382383; 583475, 2382397; 583474, 2382404; 583474, 2382405; 583469, 2382411; 583468, 2382411; 583457, 2382416; 583443, 2382421; 583435, 2382424; 583430, 2382430; 583429, 2382440; 583431, 2382460; 583433, 2382477; 583433, 2382478; 583431, 2382497; 583428, 2382521; 583969, 2382511; 584493, 2382321; 584788, 2382210; 585130, 2382381; 585675, 2382326; 585742, 2382055; 585760, 2381692; 586008, 2381531; 585763, 2380810; 586087, 2380293; 585882, 2379812; 585591, 2379807; 585555, 2379900; 585548, 2379922; 585550, 2379928; 585550, 2379929; 585549, 2379929; 585549, 2379930; 585548, 2379930; 585547, 2379930; 585546, 2379929; 585545, 2379931; 585539,

2379943; 585531, 2379963; 585523,
 2379982; 585476, 2380102; 585476,
 2380103; 585474, 2380125; 585474,
 2380128; 585472, 2380137; 585468,
 2380149; 585465, 2380160; 585461,
 2380173; 585457, 2380185; 585456,
 2380203; 585456, 2380223; 585459,
 2380252; 585459, 2380269; 585456,
 2380281; 585451, 2380295; 585443,
 2380310; 585430, 2380325; 585430,
 2380326; 585408, 2380344; 585393,
 2380361; 585375, 2380388; 585364,
 2380407; 585353, 2380428; 585342,
 2380452; 585330, 2380478; 585322,
 2380497; 585318, 2380512; 585308,
 2380533; 585299, 2380553; 585297,
 2380570; 585300, 2380580; 585303,
 2380592; 585309, 2380613; 585315,

2380636; 585320, 2380654; 585379,
 2380773; 585345, 2380796; 585344,
 2380798; 585344, 2380799; 585338,
 2380802; 585335, 2380803; 585130,
 2380939; 585119, 2380952; 585119,
 2380953; 585107, 2380962; 585106,
 2380963; 585097, 2380967; 585034,
 2381029; 585027, 2381040; 585011,
 2381059; 584993, 2381074; 584993,
 2381075; 584973, 2381090; 584971,
 2381091; 584909, 2381153; 584905,
 2381157; 584891, 2381175; 584867,
 2381205; 584852, 2381221; 584844,
 2381230; 584813, 2381261; 584796,
 2381273; 584778, 2381284; 584774,
 2381287; 584771, 2381289; 584718,
 2381341; 584638, 2381397; 584636,
 2381408; 584633, 2381420; 584628,

2381430; 584618, 2381442; 584617,
 2381442; 584601, 2381452; 584581,
 2381462; 584562, 2381467; 584539,
 2381475; 584519, 2381483; 584494,
 2381489; 584478, 2381486; 584461,
 2381479; 584387, 2381491; 584383,
 2381494; 584357, 2381507; 584350,
 2381511; 584325, 2381523; 584324,
 2381523; 584310, 2381528; 584309,
 2381528; 584291, 2381527; 584290,
 2381527; 584281, 2381521; 584275,
 2381516; 584266, 2381511; 584260,
 2381512; 584167, 2381553; 584150,
 2381572; 584130, 2381584; 584129,
 2381584; 584104, 2381586; 584065,
 2381583; 584021, 2381575; return to
 starting point.

(ii) Note: Map 39 follows:



(40) Oahu 4—*Delissea subcordata*—a
(763 ha; 1,887 ac)

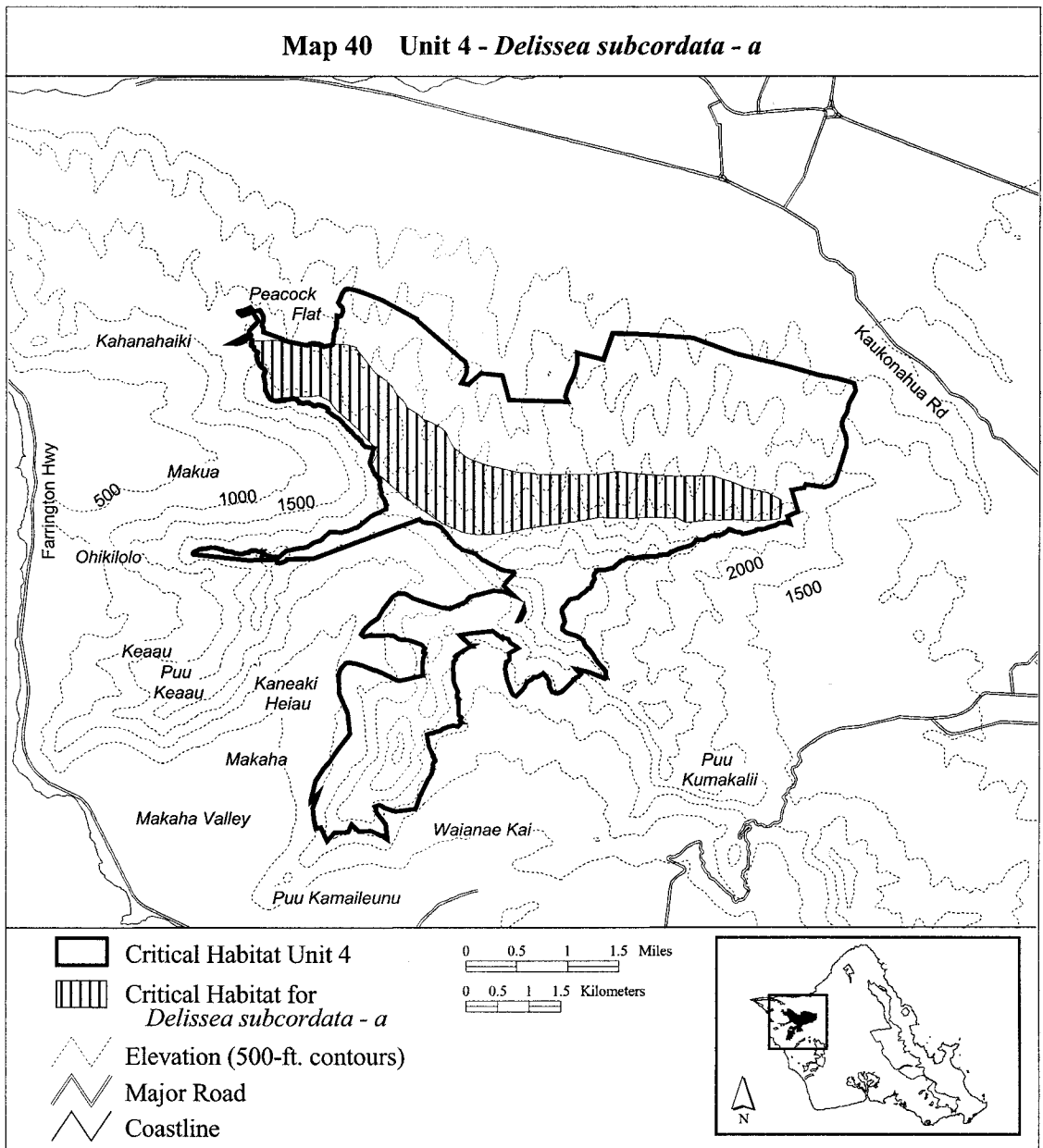
(i) Unit consists of the following 169
boundary points: Start at 585089,

2382409; 585090, 2382377; 585381,
2382000; 585498, 2381921; 585544,
2381879; 585651, 2381776; 585704,
2381680; 585829, 2381548; 585893,
2381445; 586067, 2381331; 586131,
2381264; 586262, 2381214; 586430,
2381114; 586518, 2381036; 586524,
2380998; 586623, 2380811; 586860,
2380636; 587154, 2380527; 587552,
2380437; 587670, 2380401; 587841,
2380404; 587950, 2380380; 588168,
2380376; 588504, 2380385; 588518,
2380385; 588684, 2380385; 588935,
2380385; 589191, 2380423; 589521,
2380390; 589966, 2380357; 590137,
2380342; 590715, 2380357; 591046,
2380243; 591241, 2380167; 591582,
2380082; 591804, 2379973; 591809,
2379855; 591780, 2379675; 591681,
2379656; 591430, 2379637; 591056,
2379651; 590810, 2379646; 590667,
2379646; 590298, 2379608; 590156,
2379679; 589701, 2379694; 589578,
2379689; 589464, 2379675; 589147,
2379679; 588923, 2379692; 588518,
2379622; 588234, 2379585; 587925,

2379537; 587868, 2379523; 587792,
2379518; 587636, 2379480; 587352,
2379424; 586987, 2379414; 586774,
2379452; 586442, 2379599; 586149,
2379798; 585912, 2379968; 585913,
2379978; 585907, 2379963; 585505,
2380319; 585513, 2380319; 585405,
2380393; 585348, 2380460; 585330,
2380538; 585415, 2380698; 585406,
2380748; 585359, 2380830; 585224,
2380972; 585100, 2381114; 585100,
2381117; 584986, 2381217; 584775,
2381402; 584654, 2381559; 584498,
2381633; 584352, 2381619; 584217,
2381619; 583982, 2381609; 583901,
2381598; 583773, 2381573; 583732,
2381587; 583730, 2381588; 583709,
2381612; 583707, 2381614; 583694,
2381639; 583685, 2381655; 583672,
2381685; 583659, 2381711; 583652,
2381731; 583651, 2381742; 583651,
2381757; 583651, 2381773; 583651,
2381789; 583651, 2381805; 583651,
2381806; 583649, 2381820; 583644,
2381847; 583642, 2381874; 583639,
2381896; 583638, 2381897; 583634,
2381907; 583631, 2381919; 583629,
2381934; 583630, 2381951; 583633,
2381969; 583638, 2381979; 583645,
2381993; 583645, 2381994; 583649,

2382013; 583649, 2382018; 583648,
2382029; 583647, 2382030; 583641,
2382175; 583640, 2382175; 583626,
2382059; 583610, 2382073; 583590,
2382091; 583570, 2382107; 583561,
2382120; 583552, 2382135; 583546,
2382153; 583536, 2382180; 583529,
2382214; 583523, 2382238; 583518,
2382254; 583517, 2382264; 583517,
2382276; 583518, 2382287; 583521,
2382299; 583528, 2382305; 583535,
2382312; 583535, 2382313; 583535,
2382319; 583531, 2382326; 583523,
2382334; 583522, 2382334; 583511,
2382337; 583498, 2382345; 583497,
2382345; 583486, 2382351; 583477,
2382362; 583474, 2382370; 583475,
2382383; 583475, 2382397; 583474,
2382404; 583474, 2382405; 583469,
2382411; 583468, 2382411; 583457,
2382416; 583443, 2382421; 583435,
2382424; 583430, 2382430; 583429,
2382440; 583431, 2382460; 583433,
2382477; 583433, 2382478; 583432,
2382490; 583506, 2382508; 583805,
2382519; 584043, 2382487; 584403,
2382423; 584513, 2382409; 584616,
2382423; 584769, 2382455; 584936,
2382441; return to starting point.

(ii) **Note:** Map 40 follows:



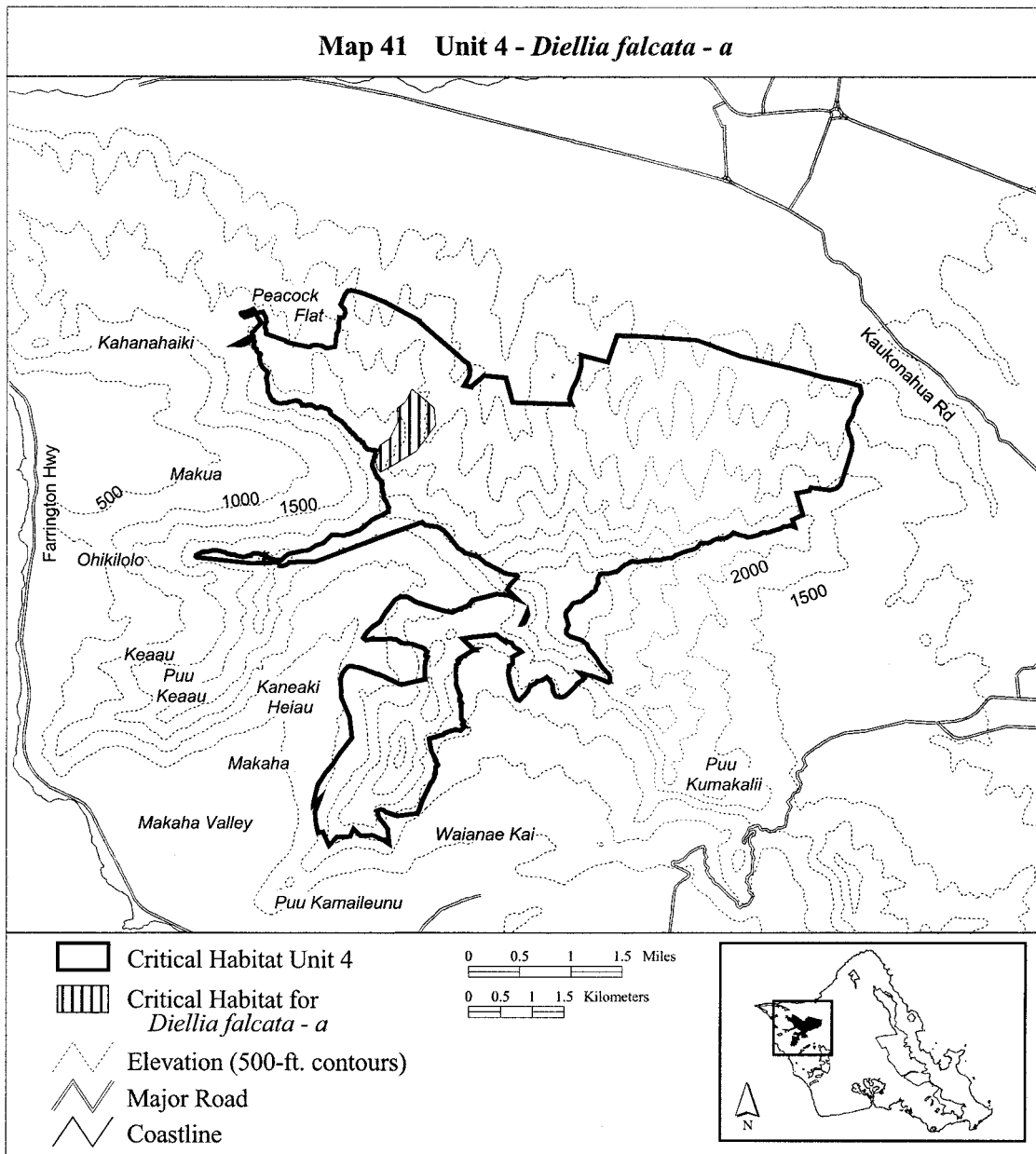
(41) Oahu 4—*Diellia falcata*—a (60 ha; 147 ac)

(i) Unit consists of the following 21 boundary points: Start at 585421, 2380455; 585383, 2380524; 585356,

2380641; 585411, 2380778; 585389, 2380782; 585417, 2380883; 585579, 2380991; 585706, 2381244; 585697, 2381470; 585824, 2381570; 585926, 2381770; 585950, 2381757; 585979, 2381715; 585978, 2381713; 586014,

2381706; 586260, 2381493; 586273, 2381458; 586277, 2381451; 586294, 2381199; 585995, 2380792; 585643, 2380575; return to starting point.

(ii) **Note:** Map 41 follows:



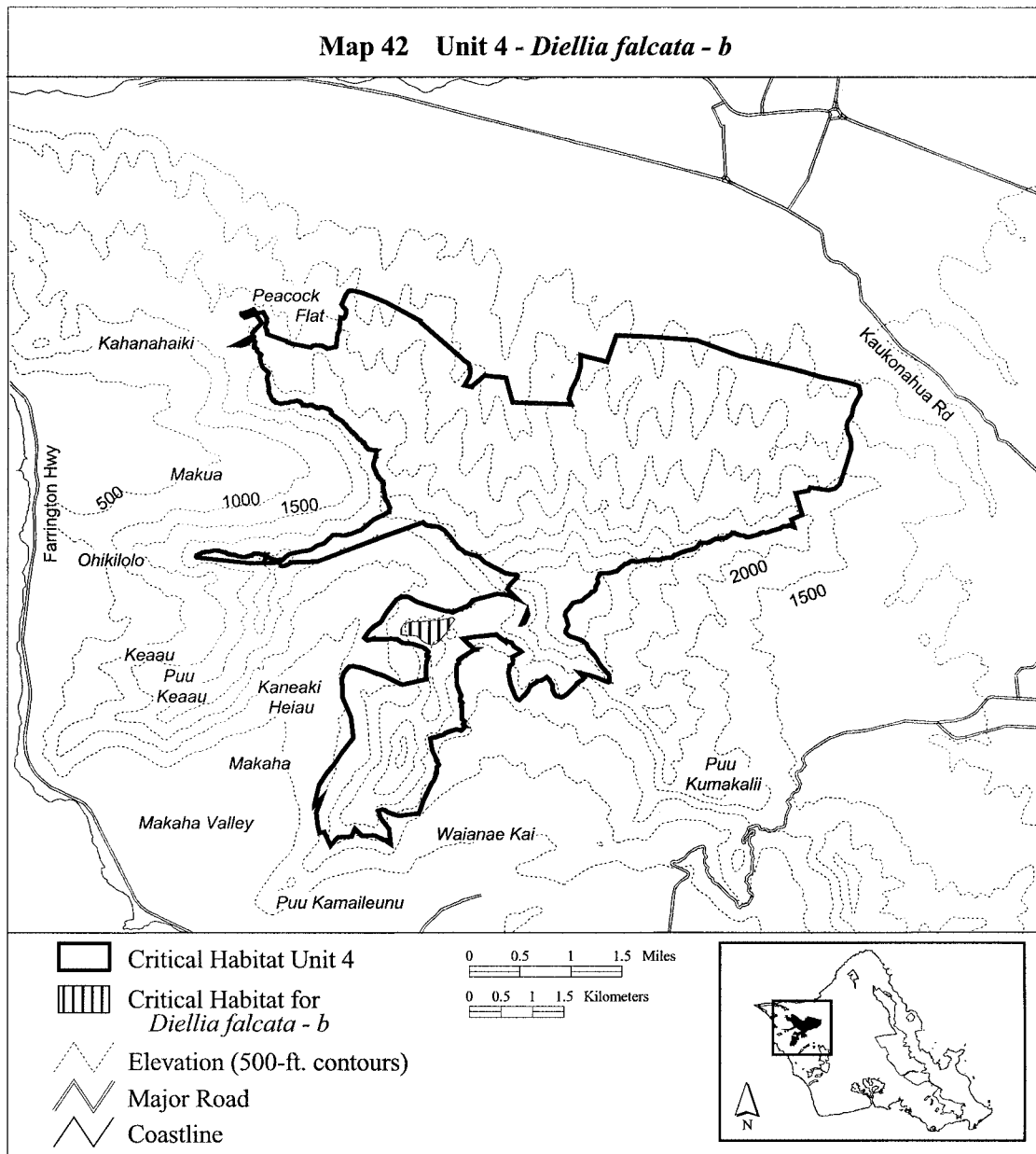
(42) Oahu 4—*Diellia falcata*—b (22 ha; 54 ac)

(i) Unit consists of the following 18 boundary points: Start at 585820, 2378037; 585847, 2378081; 586055,

2378092; 586289, 2378108; 586398, 2378114; 586562, 2378152; 586595, 2378119; 586546, 2378043; 586464, 2377906; 586349, 2377781; 586306, 2377743; 586218, 2377721; 586104,

2377764; 585984, 2377863; 585836, 2377873; 585733, 2377884; 585733, 2377961; 585798, 2378059; return to starting point.

(ii) **Note:** Map 42 follows:



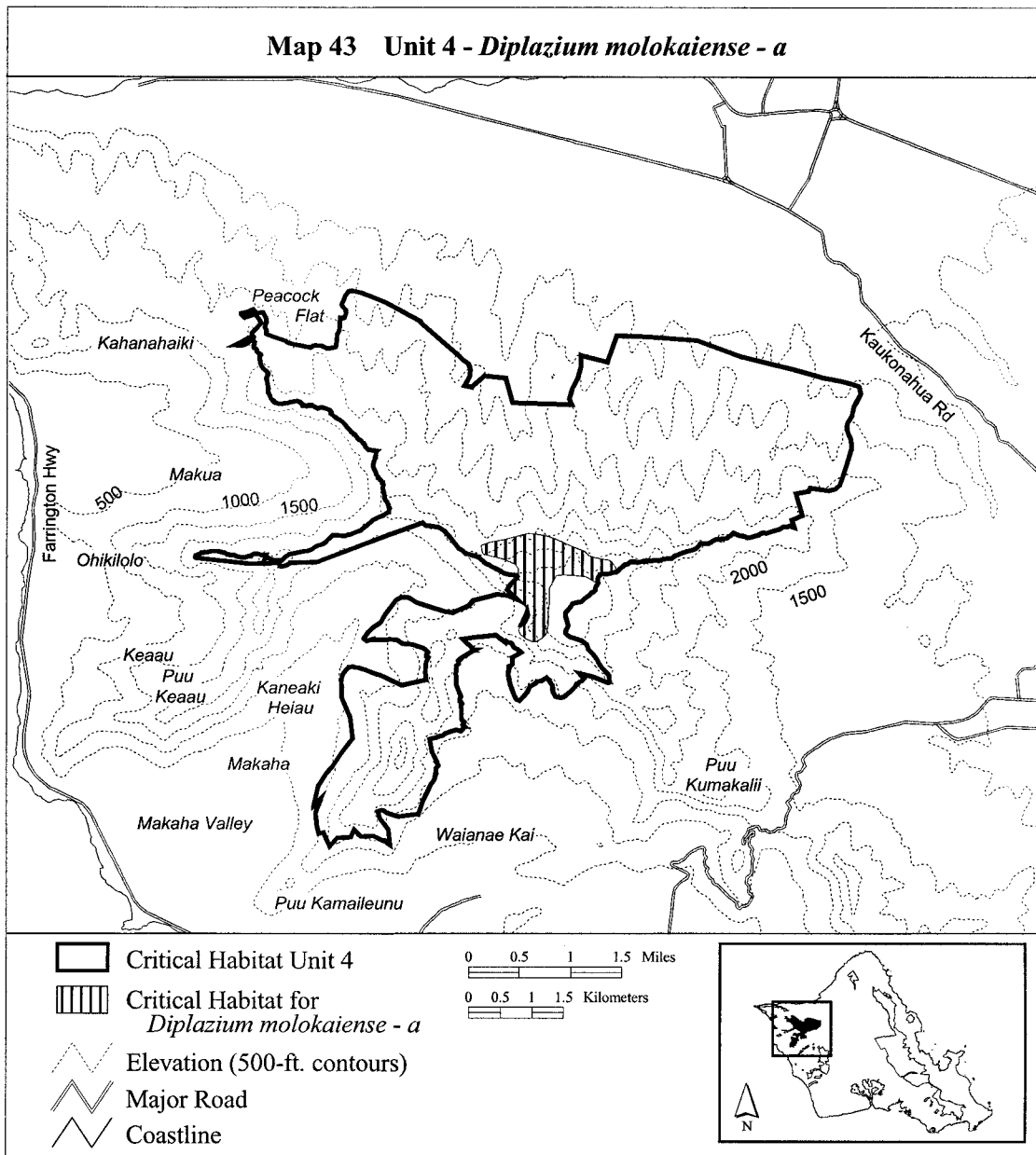
(43) Oahu 4—*Diplazium molokaiense*—
a (138 ha; 340 ac)

(i) Unit consists of the following 63 boundary points: Start at 588852, 2378704; 588669, 2378805; 588490, 2378830; 588311, 2378838; 588207, 2378826; 588141, 2378709; 588091, 2378605; 588091, 2378489; 588099, 2378389; 588070, 2378227; 588066, 2378019; 588037, 2377894; 587972, 2377824; 587897, 2377786; 587845, 2377777; 587712, 2377827; 587625,

2377911; 587608, 2377977; 587692, 2378073; 587754, 2378202; 587721, 2378327; 587579, 2378456; 587496, 2378530; 587425, 2378601; 587467, 2378676; 587575, 2378780; 587600, 2378863; 587608, 2378930; 587550, 2379009; 587367, 2379079; 587201, 2379125; 587038, 2379167; 587022, 2379213; 587013, 2379304; 587155, 2379350; 587400, 2379404; 587633, 2379466; 587758, 2379491; 587887, 2379479; 588066, 2379446; 588195, 2379400; 588457, 2379283; 588640,

2379208; 588723, 2379134; 588831, 2379104; 589002, 2379075; 589064, 2379050; 589135, 2378959; 589135, 2378882; 589123, 2378879; 589060, 2378862; 589009, 2378857; 588910, 2378852; 588910, 2378851; 588899, 2378848; 588898, 2378848; 588887, 2378841; 588887, 2378840; 588862, 2378802; 588851, 2378772; 588851, 2378763; 588851, 2378746; 588855, 2378710; return to starting point.

(ii) **Note:** Map 43 follows:



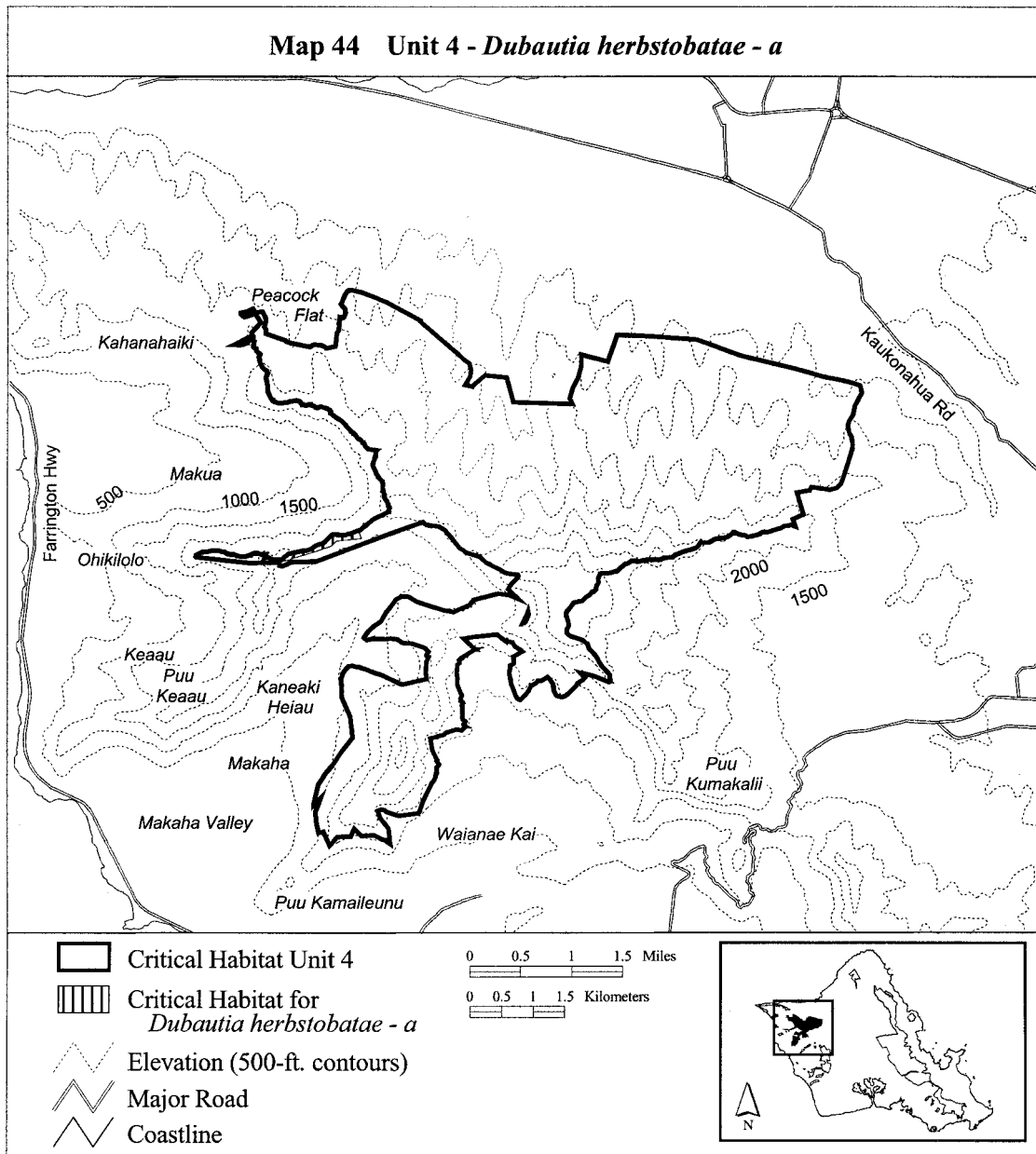
(44) Oahu 4—*Dubautia herbstobatae*—a
(12 ha; 29 ac)

(i) Unit consists of the following 30 boundary points: Start at 585068, 2379524; 585080, 2379506; 585126, 2379404; 584736, 2379361; 584661, 2379278; 584406, 2379187; 584106,

2379096; 583936, 2379044; 583909, 2379048; 583909, 2379076; 583899, 2379083; 583947, 2379131; 583977, 2379150; 584086, 2379180; 584226, 2379210; 584256, 2379210; 584326, 2379230; 584327, 2379230; 584417, 2379290; 584526, 2379330; 584527,

2379330; 584557, 2379350; 584657, 2379450; 584667, 2379460; 584836, 2379450; 584866, 2379450; 584867, 2379450; 584906, 2379470; 584936, 2379470; 584937, 2379470; return to starting point.

(ii) **Note:** Map 44 follows:



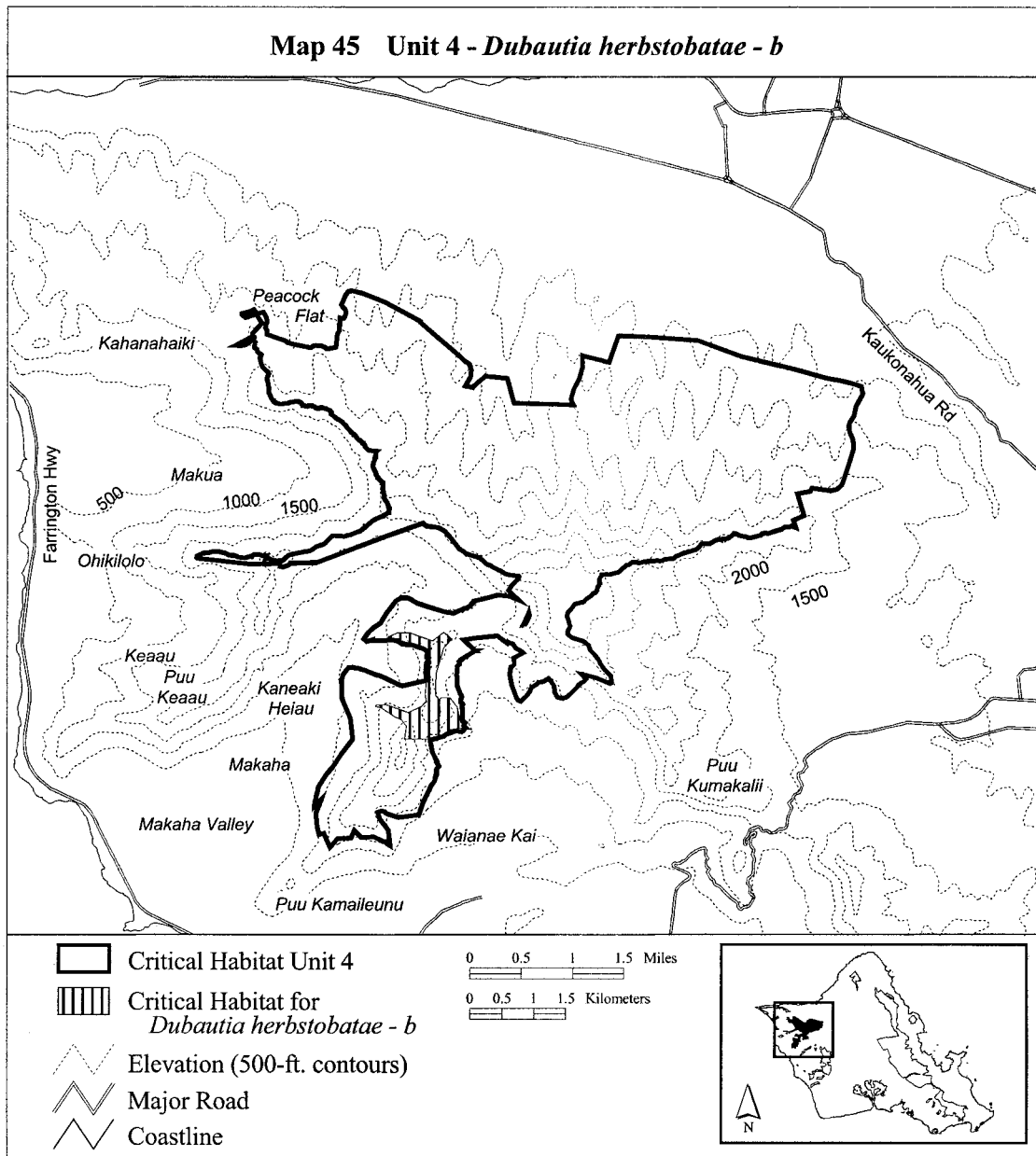
(45) Oahu 4—*Dubautia herbstobatae*—b (77 ha; 190 ac)

(i) Unit consists of the following 35 boundary points: Start at 586413, 2377940; 586540, 2377836; 586415, 2377693; 586296, 2377282; 586288, 2376942; 586343, 2376878; 586377,

2376897; 586514, 2376901; 586627, 2376764; 586675, 2376521; 586749, 2376437; 586505, 2376404; 586426, 2376297; 586148, 2376252; 585803, 2376258; 585833, 2376452; 585749, 2376553; 585646, 2376609; 585450, 2376733; 585354, 2376763; 585361, 2376789; 585529, 2376789; 585862,

2376670; 586066, 2376763; 586138, 2376846; 586128, 2376969; 586145, 2377104; 586133, 2377283; 586144, 2377443; 586202, 2377576; 586102, 2377698; 585538, 2377868; 585699, 2377929; 585886, 2377929; 586246, 2377799; return to starting point.

(ii) **Note:** Map 45 follows:



(46) Oahu 4—*Eragrostis fosbergii*—a (81 ha; 199 ac)

(i) Unit consists of the following 219 boundary points: Start at 586573, 2377994; 586653, 2377994; 586691, 2377987; 586747, 2378005; 586782, 2378016; 586811, 2378015; 586774, 2378020; 586836, 2378053; 586919, 2378070; 587065, 2378070; 587207, 2378064; 587332, 2378050; 587490, 2378035; 587605, 2378023; 587629, 2377978; 587677, 2377964; 587733, 2377922; 587784, 2377877; 587819, 2377865; 587864, 2377809; 587885, 2377738; 587935, 2377666; 587997, 2377601; 588084, 2377539; 588158, 2377494; 588293, 2377456; 588479, 2377399; 588563, 2377350; 588569,

2377252; 588569, 2377240; 588563, 2377191; 588559, 2377135; 588546, 2377121; 588525, 2377106; 588476, 2377103; 588456, 2377072; 588428, 2377047; 588396, 2377013; 588338, 2376982; 588294, 2376983; 588289, 2377024; 588291, 2377065; 588278, 2377088; 588263, 2377129; 588252, 2377191; 588234, 2377235; 588213, 2377250; 588195, 2377283; 588165, 2377289; 588132, 2377281; 588113, 2377276; 588098, 2377294; 588090, 2377325; 588090, 2377348; 588060, 2377332; 588036, 2377323; 588026, 2377341; 588038, 2377395; 588036, 2377415; 588008, 2377392; 587997, 2377364; 587969, 2377343; 587951, 2377328; 587931, 2377305; 587925, 2377287; 587895, 2377289; 587879,

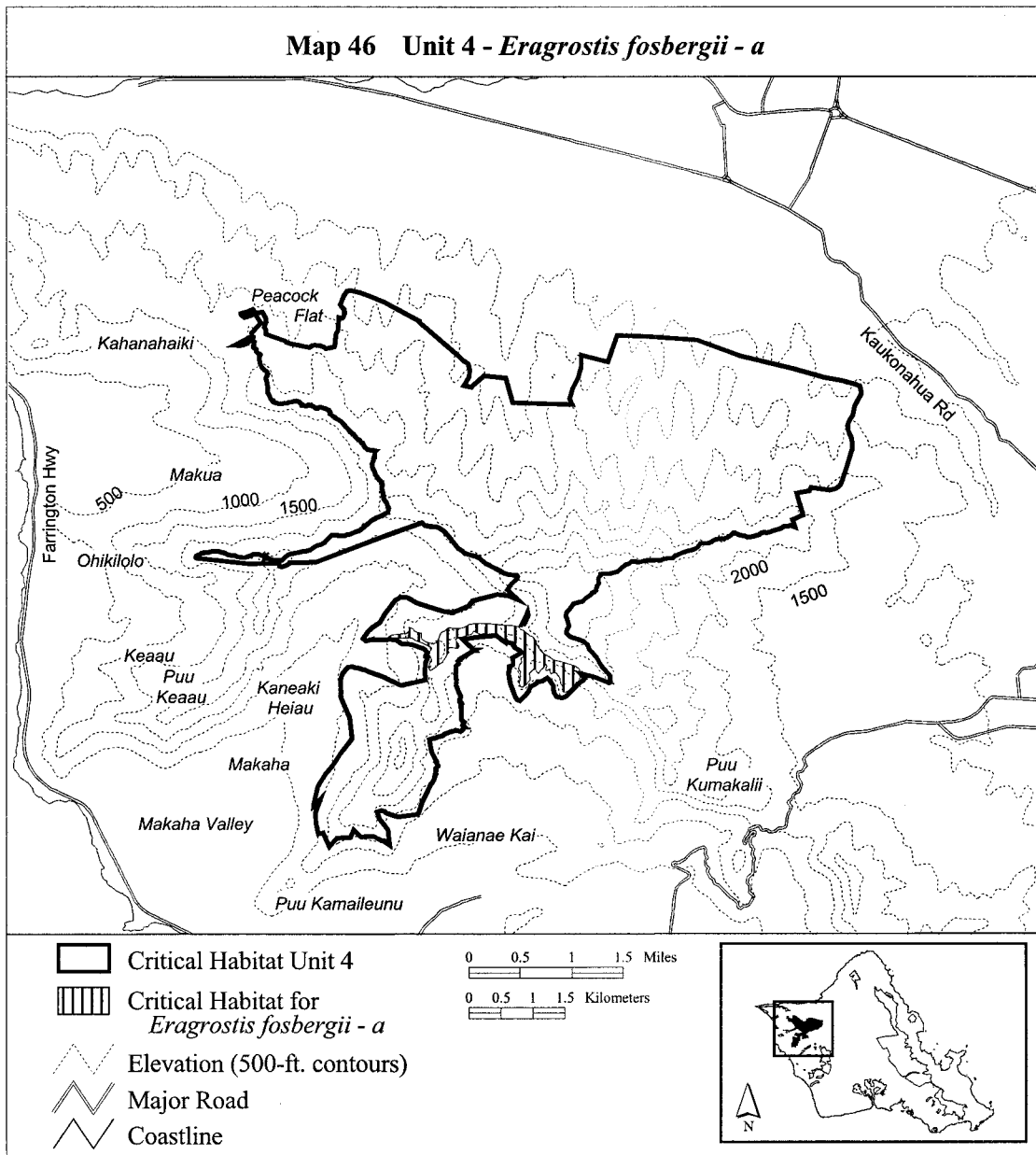
2377327; 587866, 2377348; 587833, 2377340; 587813, 2377315; 587794, 2377299; 587769, 2377274; 587776, 2377243; 587781, 2377207; 587791, 2377176; 587779, 2377160; 587753, 2377145; 587738, 2377127; 587728, 2377111; 587697, 2377083; 587673, 2377060; 587645, 2377060; 587629, 2377072; 587611, 2377111; 587612, 2377137; 587624, 2377180; 587632, 2377225; 587635, 2377253; 587620, 2377279; 587643, 2377302; 587609, 2377337; 587604, 2377384; 587635, 2377425; 587663, 2377459; 587637, 2377497; 587643, 2377520; 587678, 2377541; 587673, 2377554; 587674, 2377580; 587671, 2377580; 587626, 2377640; 587531, 2377693; 587492, 2377759; 587424, 2377773; 587394,

2377815; 587323, 2377818; 587302,
2377836; 587285, 2377871; 587249,
2377886; 587190, 2377889; 587083,
2377907; 586993, 2377898; 586904,
2377943; 586885, 2377936; 586889,
2377920; 586865, 2377903; 586837,
2377893; 586787, 2377884; 586747,
2377865; 586699, 2377853; 586677,
2377853; 586643, 2377837; 586615,
2377817; 586629, 2377782; 586659,
2377746; 586667, 2377705; 586658,
2377679; 586648, 2377671; 586605,
2377684; 586572, 2377686; 586548,
2377687; 586530, 2377687; 586503,
2377667; 586497, 2377647; 586511,
2377606; 586500, 2377587; 586485,
2377569; 586473, 2377550; 586450,
2377517; 586425, 2377475; 586415,
2377454; 586369, 2377427; 586313,
2377382; 586283, 2377360; 586243,

2377325; 586214, 2377331; 586192,
2377360; 586198, 2377394; 586208,
2377414; 586208, 2377432; 586228,
2377451; 586241, 2377465; 586241,
2377491; 586230, 2377507; 586219,
2377534; 586216, 2377552; 586185,
2377572; 586182, 2377588; 586200,
2377616; 586228, 2377641; 586238,
2377678; 586190, 2377707; 586134,
2377745; 586088, 2377767; 586007,
2377791; 585967, 2377813; 585938,
2377839; 585892, 2377847; 585817,
2377839; 585817, 2377843; 585794,
2377839; 585748, 2377839; 585684,
2377847; 585660, 2377847; 585627,
2377844; 585588, 2377844; 585566,
2377844; 585561, 2377852; 585572,
2377860; 585606, 2377881; 585649,
2377892; 585686, 2377892; 585737,
2377904; 585796, 2377909; 585842,

2377914; 585821, 2377904; 585821,
2377901; 585852, 2377904; 585880,
2377944; 585890, 2377967; 585880,
2378007; 585888, 2378010; 585917,
2377999; 585949, 2377981; 585962,
2377959; 585981, 2377946; 586002,
2377928; 586029, 2377930; 586061,
2377922; 586082, 2377916; 586082,
2377882; 586083, 2377837; 586115,
2377801; 586161, 2377774; 586206,
2377764; 586246, 2377751; 586270,
2377746; 586326, 2377775; 586343,
2377813; 586364, 2377852; 586367,
2377873; 586378, 2377904; 586391,
2377919; 586415, 2377933; 586441,
2377946; 586473, 2377972; 586484,
2377986; 586506, 2377999; 586538,
2377999; return to starting point.

(ii) **Note:** Map 46 follows:



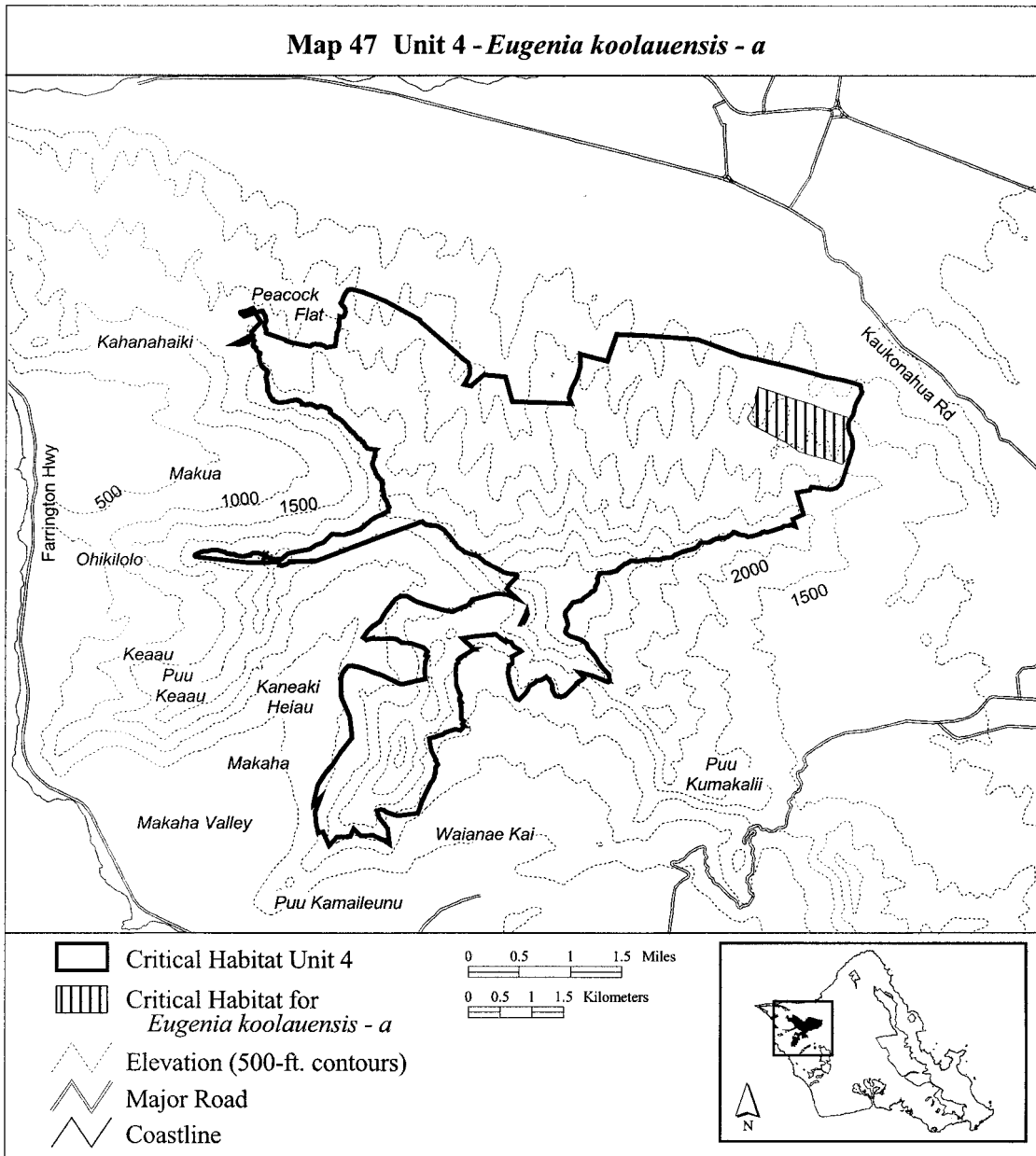
(47) Oahu 4—*Eugenia koolauensis*—a (113 ha; 280 ac)

(i) Unit consists of the following 23 boundary points: Start at 591255, 2381198; 591189, 2381301; 591255,

2381419; 591312, 2381558; 591307, 2381625; 591358, 2381794; 591610, 2381717; 591883, 2381620; 592196, 2381522; 592459, 2381414; 592623, 2381362; 592757, 2381326; 592772, 2381126; 592803, 2381018; 592829,

2380930; 592829, 2380822; 592793, 2380714; 592685, 2380571; 592505, 2380637; 592402, 2380658; 592227, 2380699; 592001, 2380771; 591790, 2380915; return to starting point.

(ii) **Note:** Map 47 follows:



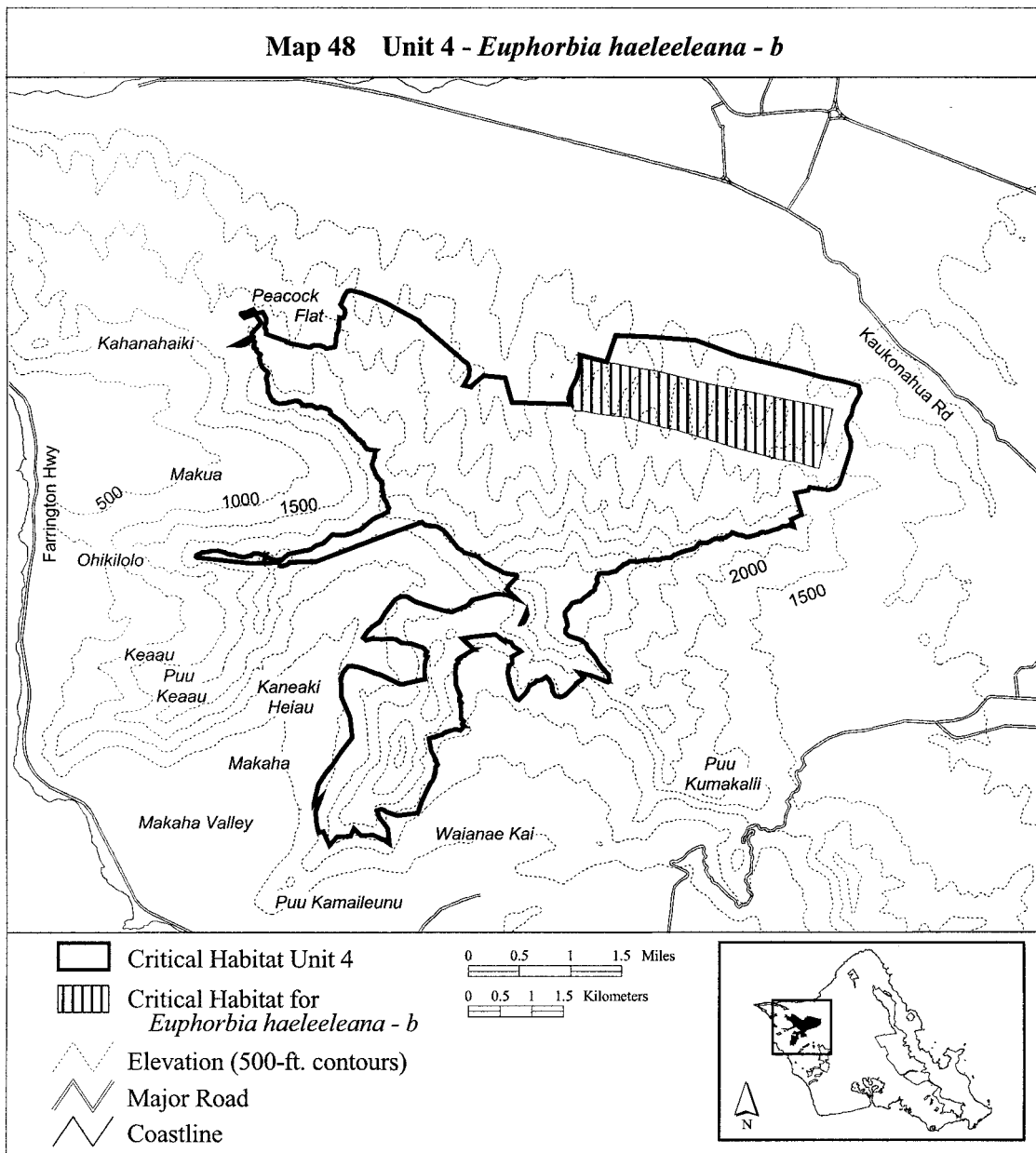
(48) Oahu 4—*Euphorbia haeleleana*—b (357 ha; 881 ac)

(i) Unit consists of the following 33 boundary points: Start at 589099, 2382193; 589372, 2382136; 589555, 2382097; 589794, 2382058; 590632, 2381854; 591432, 2381701; 591836,

2381610; 592280, 2381523; 592557, 2381462; 592334, 2380514; 592288, 2380528; 591980, 2380619; 591814, 2380645; 591697, 2380658; 591406, 2380745; 591049, 2380836; 590645, 2380958; 590267, 2381067; 590080, 2381136; 589906, 2381158; 589638, 2381236; 589368, 2381315; 589274,

2381335; 589020, 2381362; 588860, 2381384; 588642, 2381428; 588481, 2381436; 588399, 2381615; 588442, 2381784; 588529, 2381962; 588581, 2382136; 588577, 2382315; 589091, 2382181; return to starting point.

(ii) **Note:** Map 48 follows:



(49) Oahu 4—*Flueggea neowawraea*—a (845 ha; 2,087 ac)

(i) Unit consists of the following 242 boundary points: Start at 585312, 2380625; 585349, 2380698; 585367, 2380769; 585403, 2380875; 585367, 2380946; 585291, 2381001; 585286, 2380984; 585176, 2381087; 585013, 2381250; 584871, 2381356; 584708, 2381452; 584531, 2381568; 584478, 2381621; 584340, 2381671; 584163, 2381717; 584022, 2381752; 583891, 2381777; 583746, 2381777; 583657, 2381716; 583652, 2381731; 583651, 2381742; 583651, 2381757; 583651, 2381773; 583651, 2381789; 583651, 2381805; 583651, 2381806; 583649, 2381820; 583644, 2381847; 583642,

2381874; 583639, 2381896; 583638, 2381897; 583634, 2381907; 583631, 2381919; 583629, 2381934; 583630, 2381951; 583633, 2381969; 583638, 2381979; 583645, 2381993; 583645, 2381994; 583649, 2382013; 583649, 2382018; 583648, 2382029; 583647, 2382030; 583641, 2382045; 583640, 2382045; 583626, 2382059; 583610, 2382073; 583590, 2382091; 583570, 2382107; 583561, 2382120; 583552, 2382135; 583546, 2382153; 583536, 2382180; 583529, 2382214; 583523, 2382238; 583518, 2382254; 583517, 2382264; 583517, 2382276; 583518, 2382287; 583521, 2382299; 583528, 2382305; 583535, 2382312; 583535, 2382313; 583535, 2382319; 583531, 2382326; 583523, 2382334; 583522,

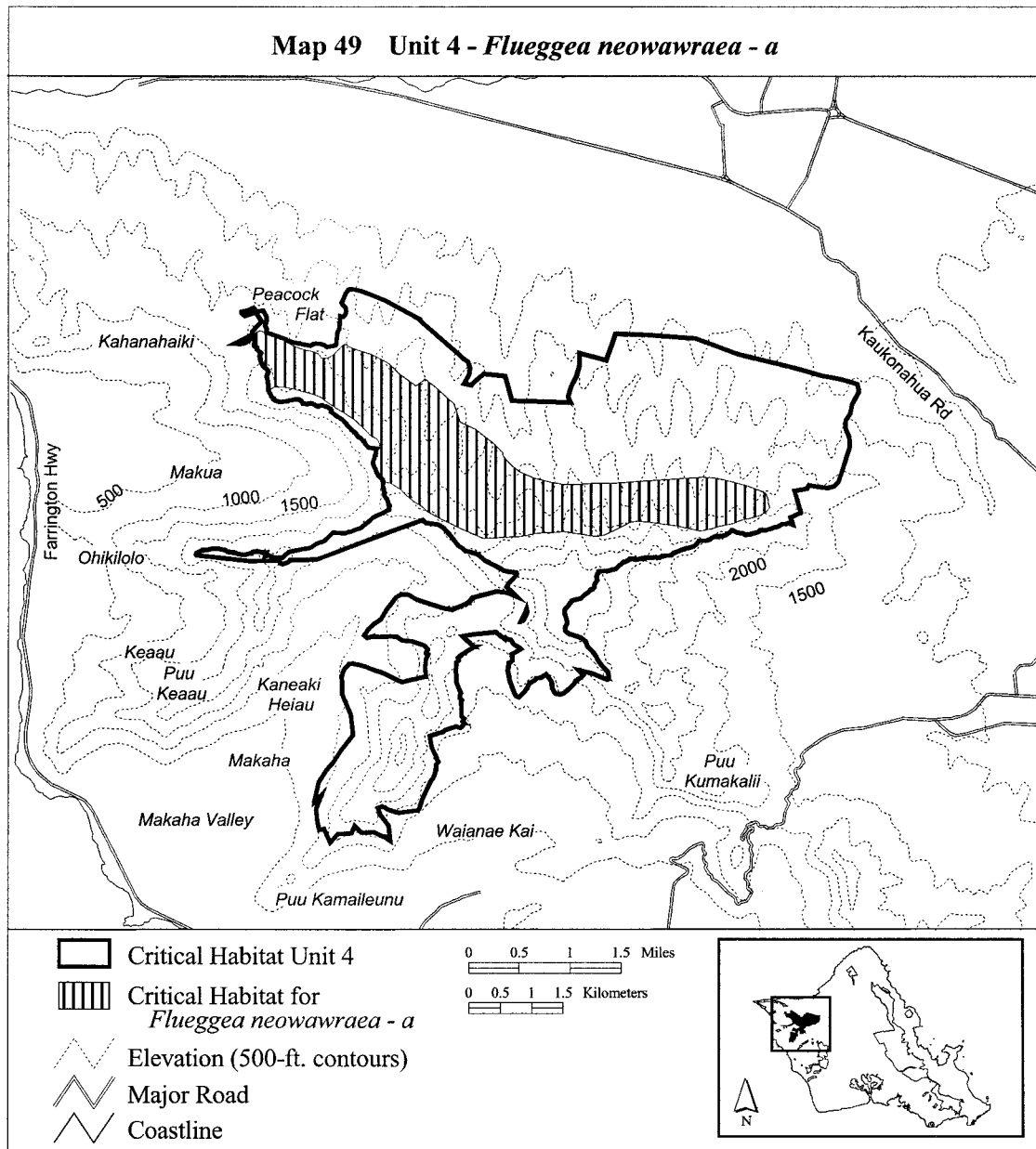
2382334; 583511, 2382337; 583498, 2382345; 583486, 2382351; 583477, 2382362; 583474, 2382370; 583475, 2382383; 583475, 2382397; 583474, 2382404; 583474, 2382405; 583469, 2382411; 583468, 2382411; 583457, 2382416; 583443, 2382421; 583435, 2382424; 583430, 2382430; 583429, 2382440; 583431, 2382460; 583433, 2382477; 583433, 2382478; 583431, 2382497; 583427, 2382525; 583427, 2382526; 583422, 2382540; 583419, 2382560; 583417, 2382581; 583417, 2382582; 583412, 2382595; 583411, 2382596; 583405, 2382599; 583404, 2382599; 583403, 2382599; 583403, 2382598; 583396, 2382592; 583396, 2382591; 583382, 2382561; 583360, 2382532; 583351, 2382522; 583336,

2382510; 583315, 2382498; 583295,
2382485; 583281, 2382481; 583265,
2382474; 583249, 2382467; 583232,
2382466; 583216, 2382464; 583204,
2382463; 583193, 2382461; 583179,
2382464; 583159, 2382468; 583158,
2382468; 583138, 2382470; 583125,
2382472; 583122, 2382472; 583519,
2382674; 583934, 2382535; 583948,
2382499; 583931, 2382503; 584036,
2382432; 584213, 2382372; 584266,
2382361; 584345, 2382340; 584433,
2382308; 584461, 2382280; 584476,
2382248; 584596, 2382241; 584681,
2382301; 584755, 2382368; 584822,
2382457; 584865, 2382453; 584893,
2382449; 584907, 2382421; 585028,
2382379; 585158, 2382333; 585296,
2382290; 585548, 2382156; 585604,
2382099; 585725, 2381982; 585976,
2381802; 586121, 2381904; 586281,
2381794; 586580, 2381520; 586680,
2381222; 586921, 2381108; 587200,
2380896; 587225, 2380870; 587227,

2380873; 587358, 2380734; 587358,
2380731; 587359, 2380730; 587358,
2380728; 587358, 2380692; 587431,
2380608; 587468, 2380566; 587468,
2380565; 587494, 2380535; 587643,
2380425; 587873, 2380330; 588120,
2380259; 588322, 2380224; 588541,
2380224; 588789, 2380241; 589069,
2380248; 590508, 2380344; 590692,
2380337; 590915, 2380294; 591116,
2380231; 591244, 2380195; 591453,
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2379863; 591534, 2379799; 591424,
2379735; 591318, 2379704; 591106,
2379658; 591003, 2379612; 590801,
2379573; 590667, 2379527; 590483,
2379495; 590341, 2379520; 590111,
2379573; 589881, 2379604; 589683,
2379626; 589496, 2379643; 589379,
2379629; 589184, 2379523; 588979,
2379424; 588887, 2379410; 588777,
2379410; 588675, 2379424; 588487,
2379456; 588328, 2379481; 588148,

2379463; 588045, 2379463; 587882,
2379449; 587744, 2379420; 587624,
2379396; 587394, 2379392; 587263,
2379382; 587051, 2379371; 586874,
2379442; 586691, 2379530; 586686,
2379523; 586496, 2379625; 586364,
2379689; 586368, 2379694; 586366,
2379695; 586364, 2379693; 586162,
2379796; 586099, 2379859; 585932,
2379976; 585837, 2380054; 585745,
2380146; 585589, 2380245; 585456,
2380281; 585451, 2380295; 585443,
2380310; 585430, 2380325; 585430,
2380326; 585408, 2380344; 585393,
2380361; 585375, 2380388; 585364,
2380407; 585353, 2380428; 585342,
2380452; 585330, 2380478; 585322,
2380497; 585318, 2380512; 585308,
2380533; 585299, 2380553; 585297,
2380570; 585300, 2380580; 585303,
2380592; 585309, 2380613; return to
starting point.

(ii) **Note:** Map 49 follows:



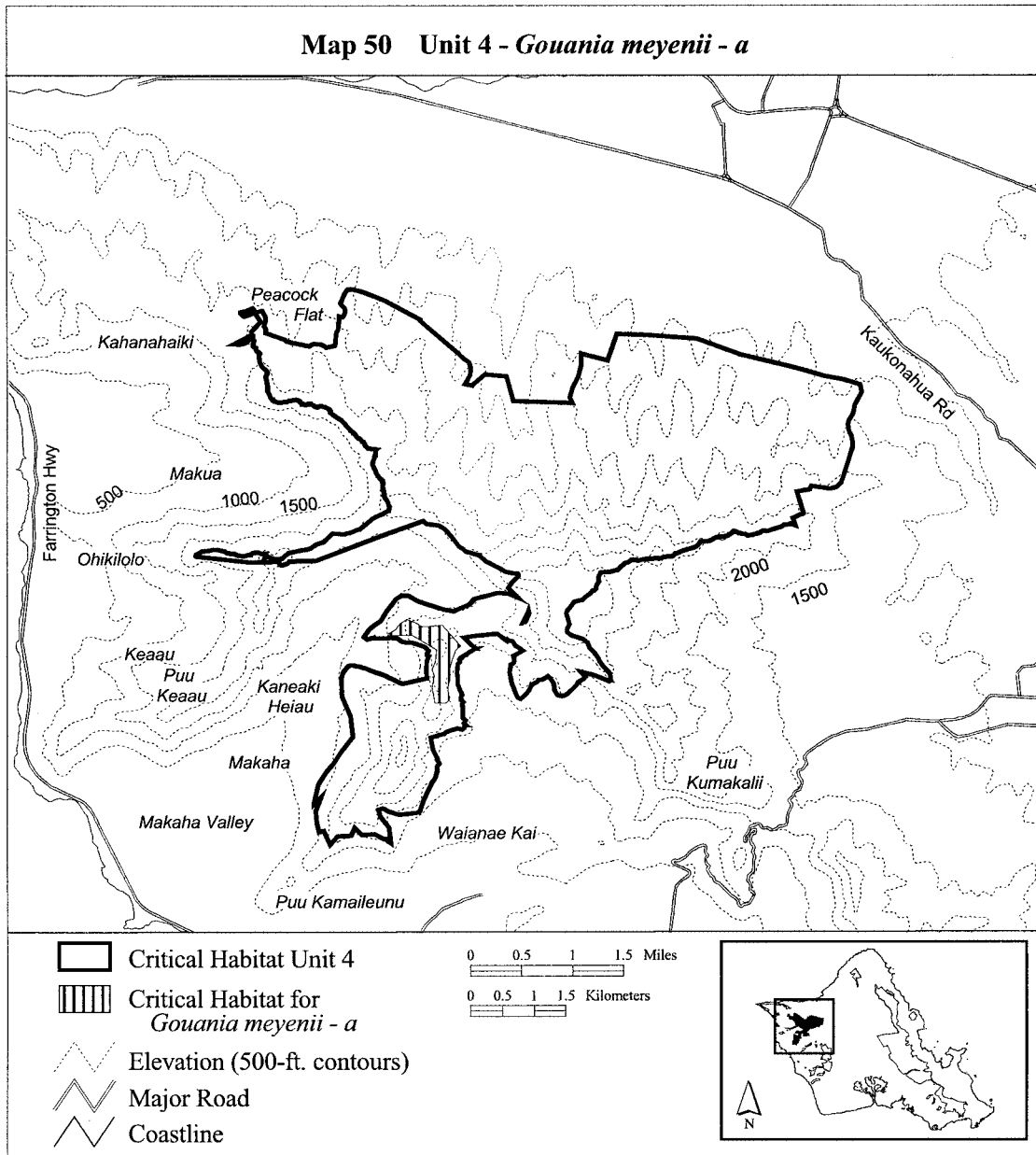
(50) Oahu 4—*Gouania meyenii*—a (48 ha; 118 ac)

(i) Unit consists of the following 27 boundary points: Start at 585998, 2378034; 586072, 2377992; 586303, 2378011; 586383, 2378023; 586678,

2377679; 586598, 2377619; 586542, 2377467; 586505, 2377324; 586505, 2377158; 586469, 2377029; 586496, 2376830; 586445, 2376780; 586270, 2376780; 586256, 2376853; 586220, 2377015; 586256, 2377222; 586224, 2377314; 586279, 2377439; 586289,

2377577; 586293, 2377628; 585924, 2377854; 585533, 2377854; 585556, 2377882; 585662, 2377942; 585726, 2378034; 585837, 2378108; 585929, 2378075; return to starting point.

(ii) **Note:** Map 50 follows:



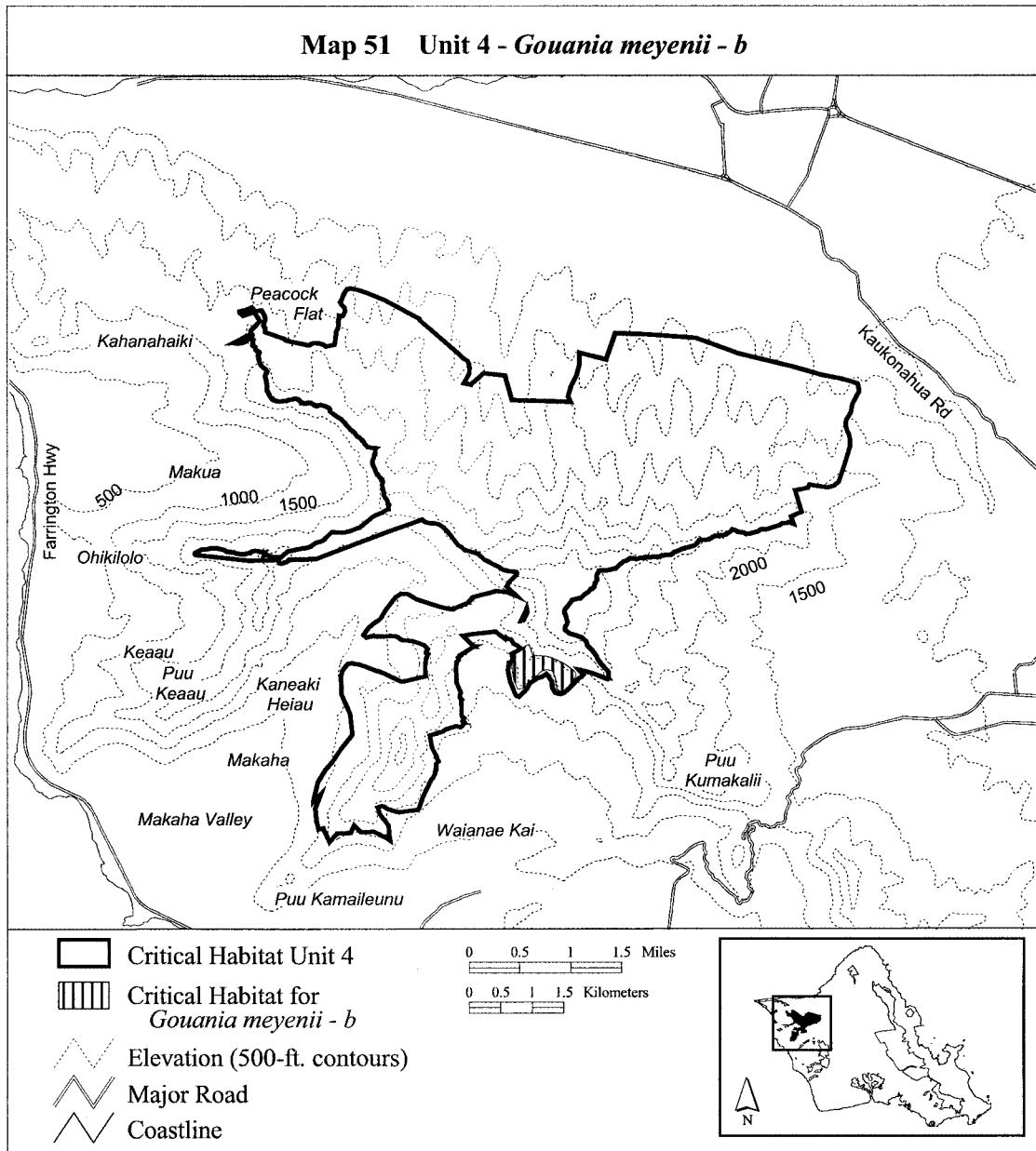
(51) Oahu 4—*Gouania meyenii*—b (39 ha; 96 ac)

(i) Unit consists of the following 28 boundary points: Start at 587782, 2377681; 587796, 2377628; 587833, 2377517; 587902, 2377499; 588022,

2377499; 588119, 2377471; 588313, 2377388; 588497, 2377268; 588530, 2377195; 588433, 2377056; 588364, 2376969; 588276, 2376936; 588221, 2376964; 588207, 2377047; 588193, 2377149; 588147, 2377255; 588068, 2377287; 587972, 2377245; 587879,

2377144; 587773, 2377075; 587709, 2376996; 587603, 2376964; 587575, 2377024; 587534, 2377125; 587511, 2377227; 587506, 2377319; 587515, 2377513; 587507, 2377531; return to starting point.

(ii) **Note:** Map 51 follows:



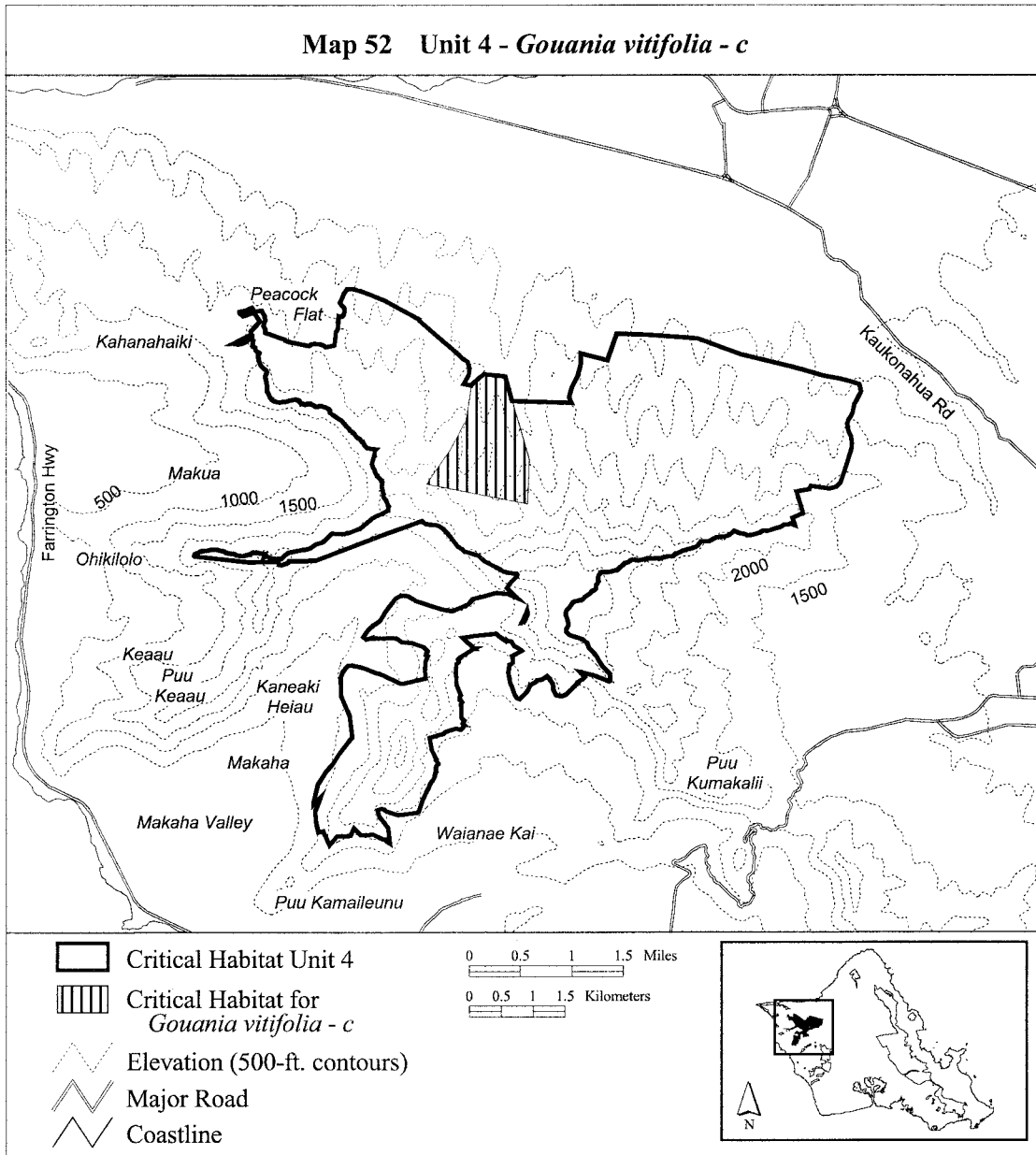
(52) Oahu 4—*Gouania vitifolia*—c (195 ha; 483 ac)

(i) Unit consists of the following 8 boundary points: Start at 587752,

2379934; 586159, 2380248; 586533, 2380789; 586779, 2381256; 586867, 2381827; 587064, 2381994; 587393,

2381955; 587777, 2380637; return to starting point.

(ii) **Note:** Map 52 follows:



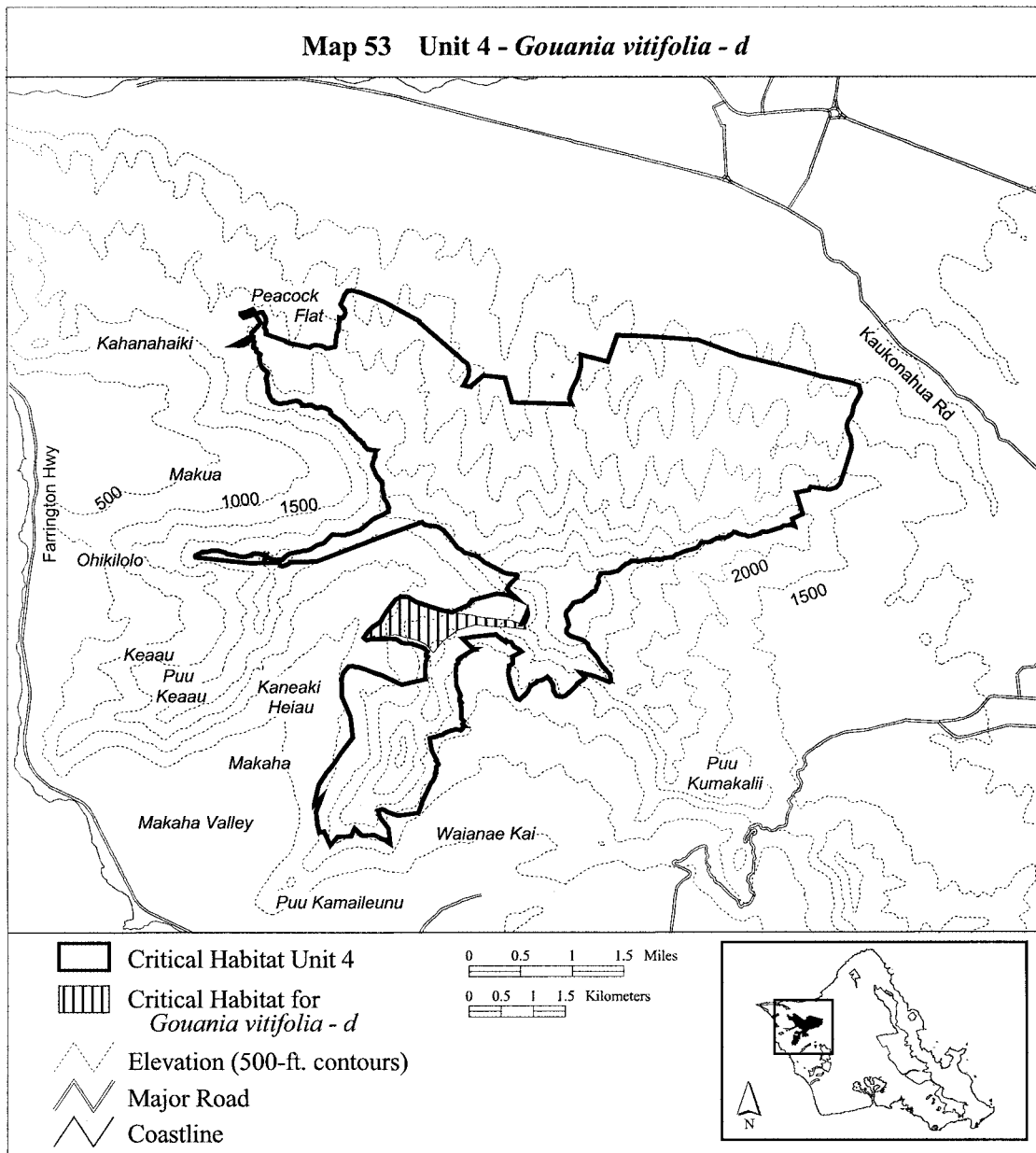
(53) Oahu 4—*Gouania vitifolia*—d (84 ha; 208 ac)

(i) Unit consists of the following 36 boundary points: Start at 586265, 2377593; 586264, 2377598; 586208, 2377667; 586135, 2377736; 586019, 2377792; 585834, 2377839; 585666, 2377882; 585550, 2377860; 585387,

2377843; 585206, 2377792; 585159, 2377830; 585236, 2377934; 585326, 2378020; 585421, 2378084; 585511, 2378235; 585602, 2378355; 585670, 2378437; 585752, 2378484; 585842, 2378480; 585873, 2378475; 585984, 2378402; 586230, 2378321; 586415, 2378265; 586582, 2378230; 586883,

2378192; 586957, 2378166; 587335, 2378123; 587490, 2378106; 587628, 2378058; 587705, 2378024; 587719, 2377966; 587435, 2378001; 587170, 2378013; 586936, 2378033; 586647, 2377957; 586421, 2377784; return to starting point.

(ii) **Note:** Map 53 follows:



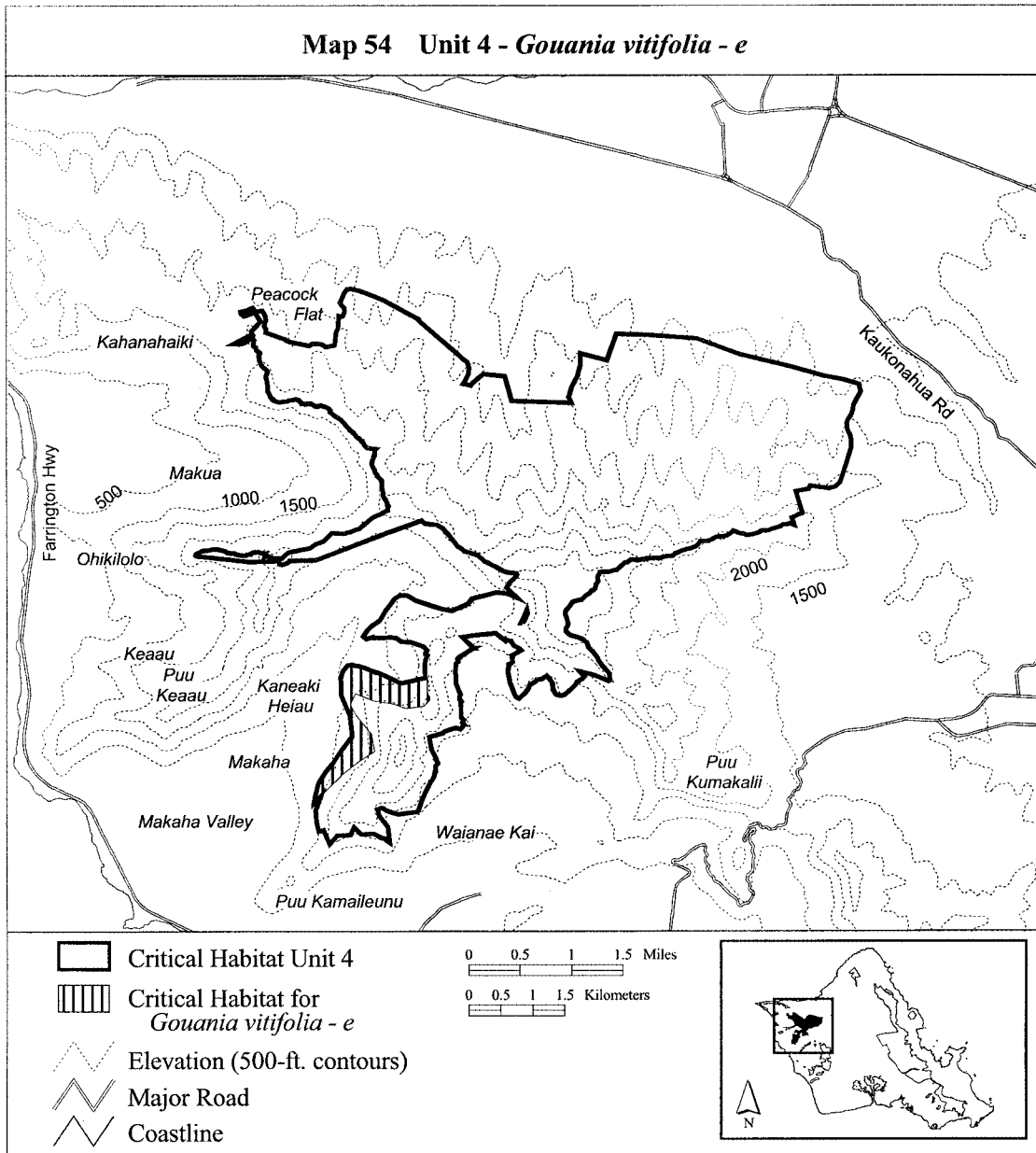
(54) Oahu 4—*Gouania vitifolia*—e (102 ha; 252 ac)

(i) Unit consists of the following 41 boundary points: Start at 585510, 2377208; 585756, 2377090; 586178, 2377178; 586178, 2377052; 586178, 2376914; 586190, 2376916; 586204, 2376890; 586213, 2376815; 586127,

2376725; 585844, 2376688; 585624, 2376763; 585329, 2376813; 585104, 2376927; 584958, 2376744; 585052, 2376581; 585285, 2376292; 585341, 2376015; 585102, 2375858; 584857, 2375669; 584562, 2375374; 584380, 2375182; 584380, 2375189; 584453, 2375499; 584578, 2375705; 584681, 2375822; 584794, 2376001; 584985,

2376248; 584956, 2376578; 584816, 2376896; 584814, 2377043; 584802, 2377164; 584836, 2377263; 584875, 2377327; 584926, 2377374; 584991, 2377379; 585042, 2377361; 585081, 2377361; 585167, 2377340; 585257, 2377301; 585382, 2377258; 585393, 2377255; return to starting point.

(ii) **Note:** Map 54 follows:



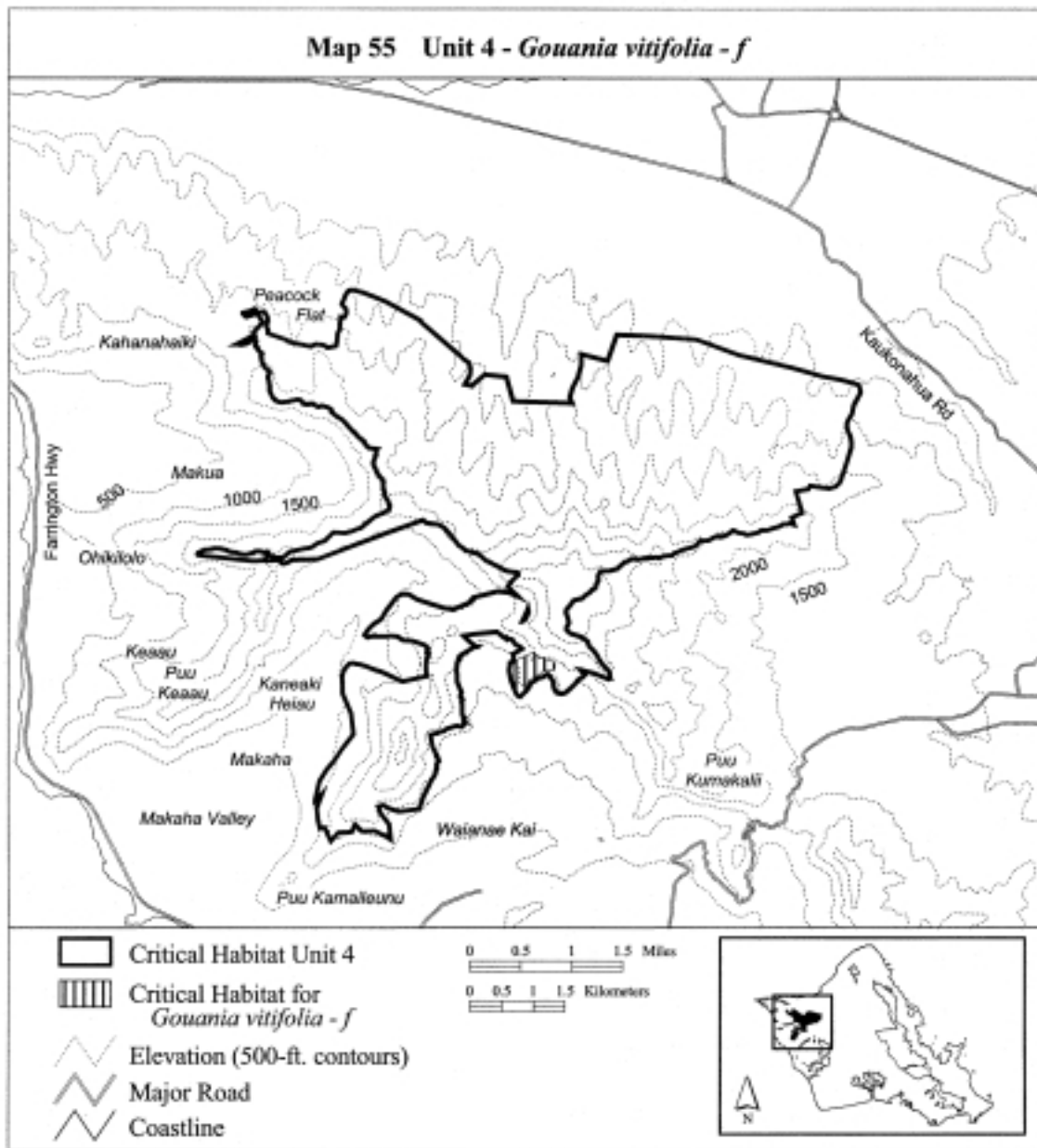
(55) Oahu 4—*Gouania vitifolia*—f (27 ha; 67 ac)

(i) Unit consists of the following 25 boundary points: Start at 587841, 2377556; 587873, 2377508; 587963, 2377465; 588066, 2377439; 588131,

2377413; 588170, 2377374; 588170, 2377336; 588157, 2377271; 588058, 2377275; 587963, 2377245; 587903, 2377168; 587873, 2377121; 587791, 2377060; 587757, 2377000; 587701, 2376931; 587675, 2376897; 587619,

2376850; 587580, 2376862; 587554, 2376906; 587503, 2377026; 587477, 2377090; 587455, 2377189; 587443, 2377271; 587460, 2377366; 587455, 2377389; return to starting point.

(ii) **Note:** Map 55 follows:



(56) Oahu 4—*Hedyotis degeneri*—a (917 ha; 2,265 ac)

(i) Unit consists of the following 334 boundary points: Start at 590035, 2379115; 589518, 2379058; 588672, 2379188; 588616, 2379195; 588356, 2379231; 588192, 2379252; 587212, 2379139; 587072, 2379208; 587008, 2379219; 586848, 2379307; 586668, 2379411; 586497, 2379514; 586155, 2379713; 586096, 2379735; 585983, 2379807; 585725, 2379807; 585661, 2379871; 585619, 2379878; 585550, 2379846; 585558, 2379891; 585558, 2379892; 585557, 2379892; 585548, 2379922; 585550, 2379928; 585550, 2379929; 585549, 2379929; 585549, 2379930; 585548, 2379930; 585547, 2379930; 585546, 2379929; 585545,

2379931; 585539, 2379943; 585531, 2379963; 585523, 2379982; 585522, 2379982; 585511, 2380001; 585498, 2380021; 585488, 2380040; 585483, 2380053; 585478, 2380071; 585475, 2380089; 585476, 2380103; 585474, 2380125; 585474, 2380128; 585472, 2380137; 585468, 2380149; 585465, 2380160; 585461, 2380173; 585457, 2380185; 585456, 2380203; 585456, 2380223; 585459, 2380252; 585459, 2380269; 585456, 2380281; 585451, 2380295; 585443, 2380310; 585430, 2380325; 585430, 2380326; 585408, 2380344; 585393, 2380361; 585375, 2380388; 585364, 2380407; 585353, 2380428; 585342, 2380452; 585330, 2380478; 585326, 2380488; 585324, 2380511; 585336, 2380611; 585384,

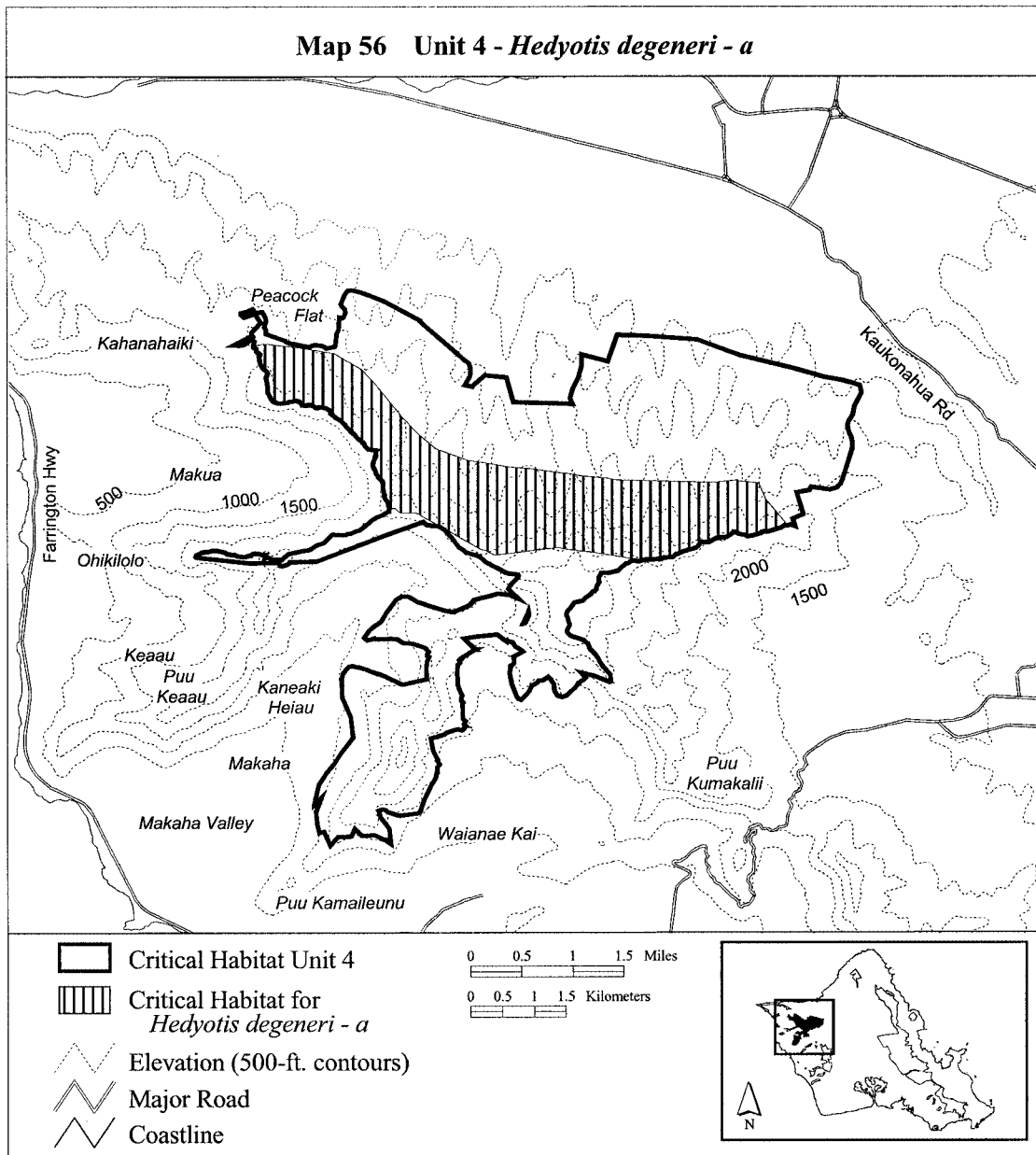
2380711; 585358, 2380763; 585345, 2380771; 585345, 2380779; 585348, 2380789; 585348, 2380790; 585344, 2380798; 585344, 2380799; 585338, 2380802; 585329, 2380804; 585328, 2380804; 585308, 2380806; 585281, 2380810; 585257, 2380825; 585168, 2380904; 585156, 2380911; 585140, 2380929; 585134, 2380934; 585119, 2380952; 585119, 2380953; 585107, 2380962; 585106, 2380963; 585095, 2380967; 585046, 2381011; 585039, 2381021; 585027, 2381040; 585011, 2381059; 584993, 2381074; 584973, 2381090; 584954, 2381104; 584939, 2381117; 584923, 2381137; 584905, 2381157; 584891, 2381175; 584867, 2381205; 584852, 2381221; 584844, 2381230; 584843, 2381230; 584813,

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2379404; 590699, 2379398; 590669,
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2379354; 590593, 2379338; 590572,
2379336; 590525, 2379340; 590514,
2379339; 591779, 2379340; 591778,
2379340; 591762, 2379334; 591744,
2379312; 590415, 2379277; 590373,
2379247; 590347, 2379233; 590321,
2379227; 590285, 2379219; 590191,
2379191; 590084, 2379149; 590076,
2379145; 590067, 2379142; 590066,
2379141; 590039, 2379117; return to
starting point.

(ii) Note: Map 56 follows:



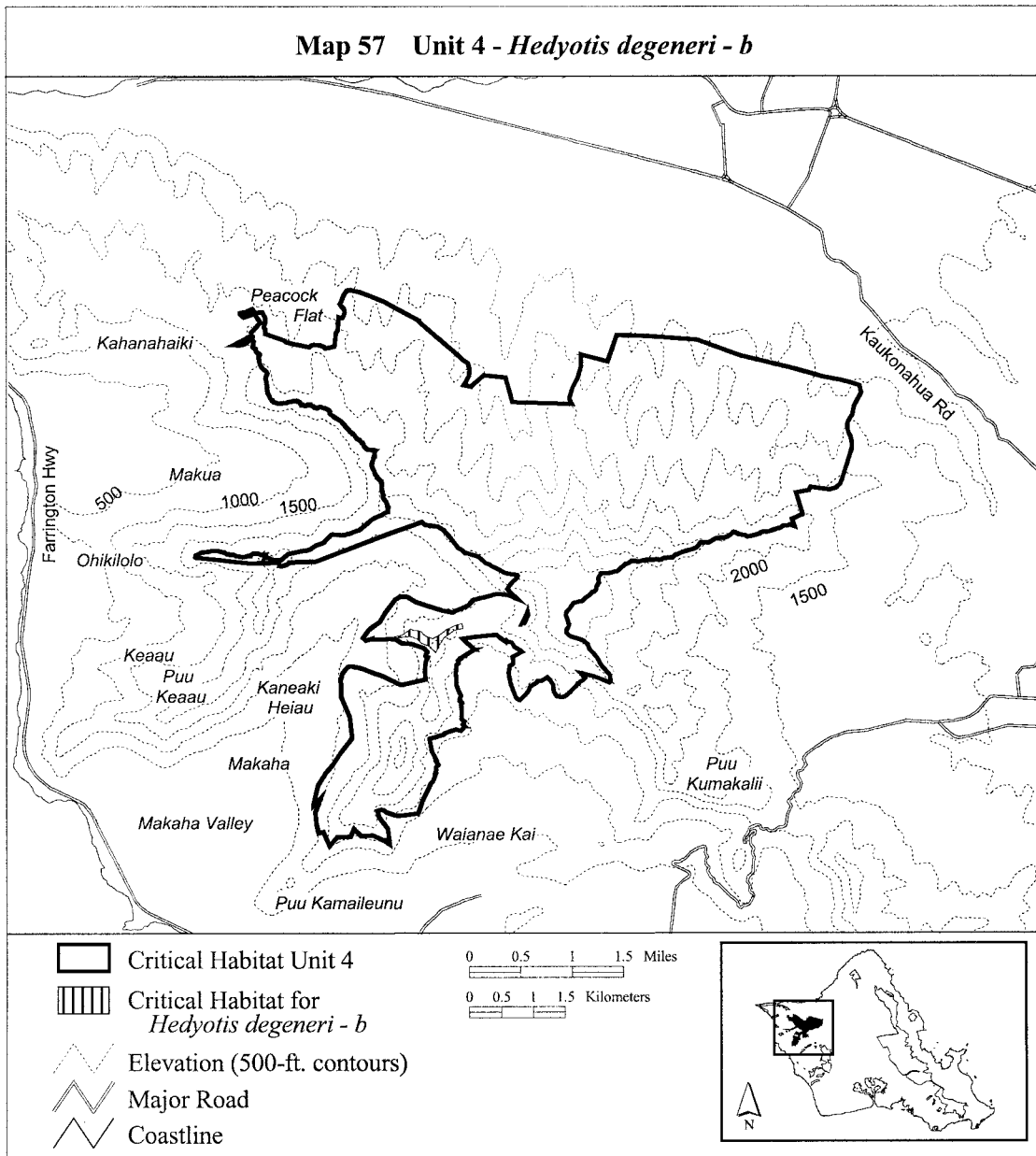
(57) Oahu 4—*Hedyotis degeneri*—b (12 ha; 29 ac)

(i) Unit consists of the following 31 boundary points: Start at 586352, 2377675; 586332, 2377658; 586305, 2377602; 586273, 2377640; 586200, 2377699; 586086, 2377748; 586007,

2377816; 585902, 2377857; 585796, 2377842; 585700, 2377836; 585650, 2377839; 585653, 2377857; 585720, 2377868; 585787, 2377883; 585875, 2377947; 585919, 2377971; 585963, 2377944; 586027, 2377944; 586083, 2377927; 586098, 2377900; 586162,

2377851; 586264, 2377816; 586370, 2377886; 586469, 2377962; 586630, 2378038; 586717, 2378053; 586729, 2377984; 586680, 2377973; 586585, 2377946; 586434, 2377833; 586354, 2377700; return to starting point.

(ii) **Note:** Map 57 follows:



(58) Oahu 4—*Hedyotis parvula*—a (387 ha; 958 ac)

(i) Unit consists of the following 111 boundary points: Start at 589524, 2379043; 589477, 2379034; 589462, 2379034; 589441, 2379042; 589424, 2379047; 589391, 2379048; 589370, 2379041; 589369, 2379041; 589348, 2379025; 589324, 2379009; 589303, 2379003; 589286, 2379001; 589285, 2379001; 589276, 2378998; 589275, 2378998; 589271, 2378994; 589223, 2378985; 589021, 2378858; 589009, 2378857; 588910, 2378852; 588910, 2378851; 588899, 2378848; 588898, 2378848; 588887, 2378841; 588887, 2378840; 588872, 2378818; 588702, 2378884; 587699, 2379193; 587159, 2379038; 587048, 2379065; 587045,

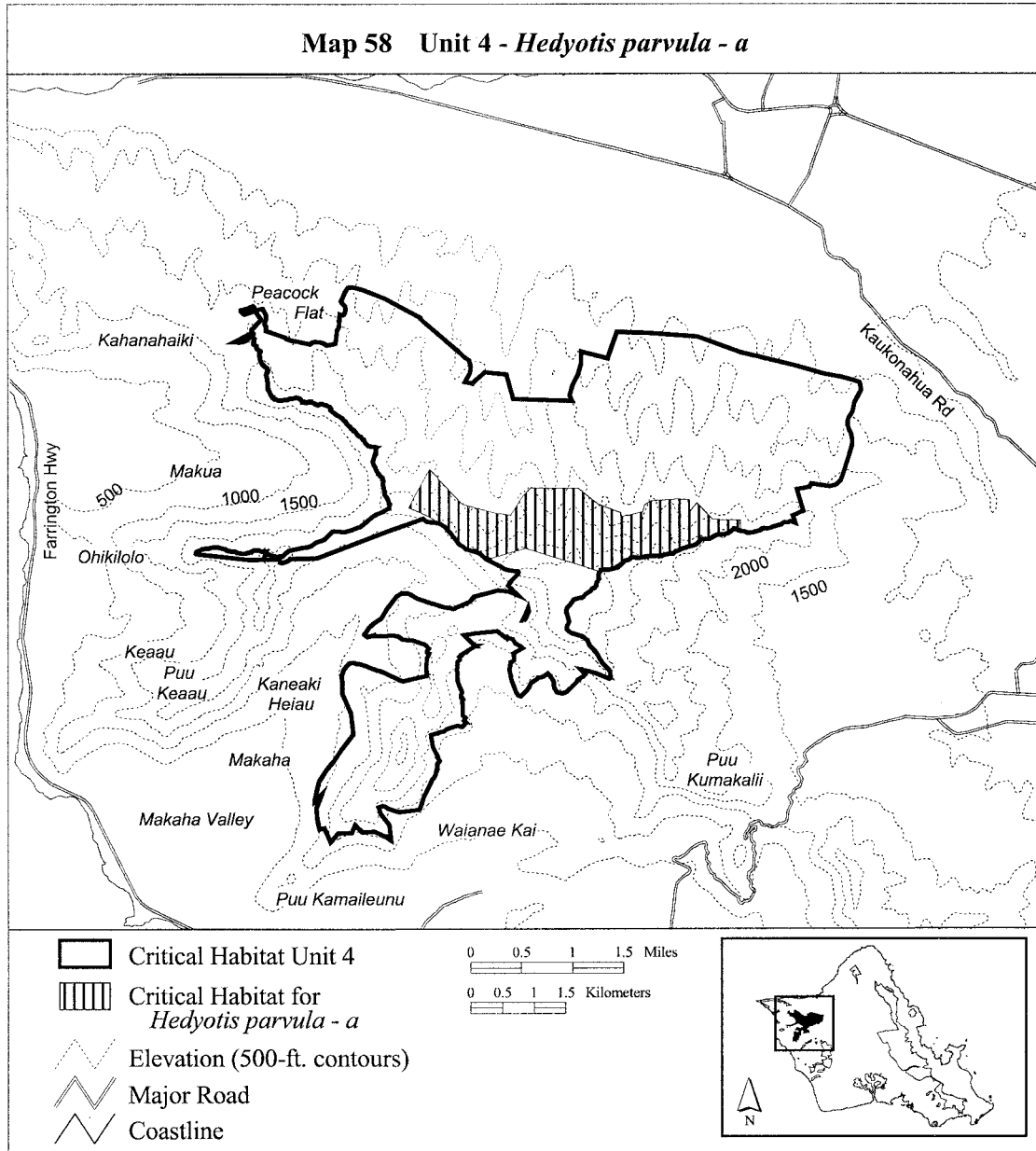
2379095; 586904, 2379179; 586764, 2379173; 586676, 2379263; 586542, 2379397; 586421, 2379532; 586176, 2379699; 585874, 2379837; 585860, 2379838; 585956, 2380034; 586191, 2380443; 586309, 2380325; 586324, 2380341; 586311, 2380311; 586706, 2379887; 587036, 2379801; 587201, 2379758; 587471, 2379718; 587658, 2380020; 587784, 2380156; 587949, 2380153; 588167, 2380149; 588534, 2380143; 588706, 2380004; 588703, 2379964; 588722, 2379990; 588846, 2379891; 589200, 2379754; 589203, 2379694; 589300, 2379716; 589311, 2379711; 589328, 2379722; 589550, 2379771; 589567, 2379874; 589674, 2379941; 590079, 2379973; 590273, 2379963; 590283, 2379771; 590394,

2379904; 590646, 2379643; 591073, 2379636; 591075, 2379464; 591069, 2379465; 591039, 2379476; 590996, 2379497; 590996, 2379498; 590995, 2379498; 590982, 2379496; 590981, 2379496; 590981, 2379495; 590970, 2379488; 590969, 2379488; 590943, 2379463; 590908, 2379443; 590896, 2379436; 590874, 2379427; 590832, 2379413; 590808, 2379409; 590790, 2379408; 590721, 2379404; 590699, 2379398; 590669, 2379385; 590668, 2379384; 590630, 2379354; 590593, 2379338; 590572, 2379336; 590525, 2379340; 590514, 2379339; 590479, 2379340; 590478, 2379340; 590462, 2379334; 590444, 2379312; 590415, 2379277; 590373, 2379247; 590347, 2379233; 590321, 2379227; 590285,

2379219; 590191, 2379191; 590099,

2379155; 589590, 2379056; 589557,
2379052; return to starting point.

(ii) Note: Map 58 follows:



(59) Oahu 4—*Hesperomannia arborescens*—a (125 ha; 308 ac)

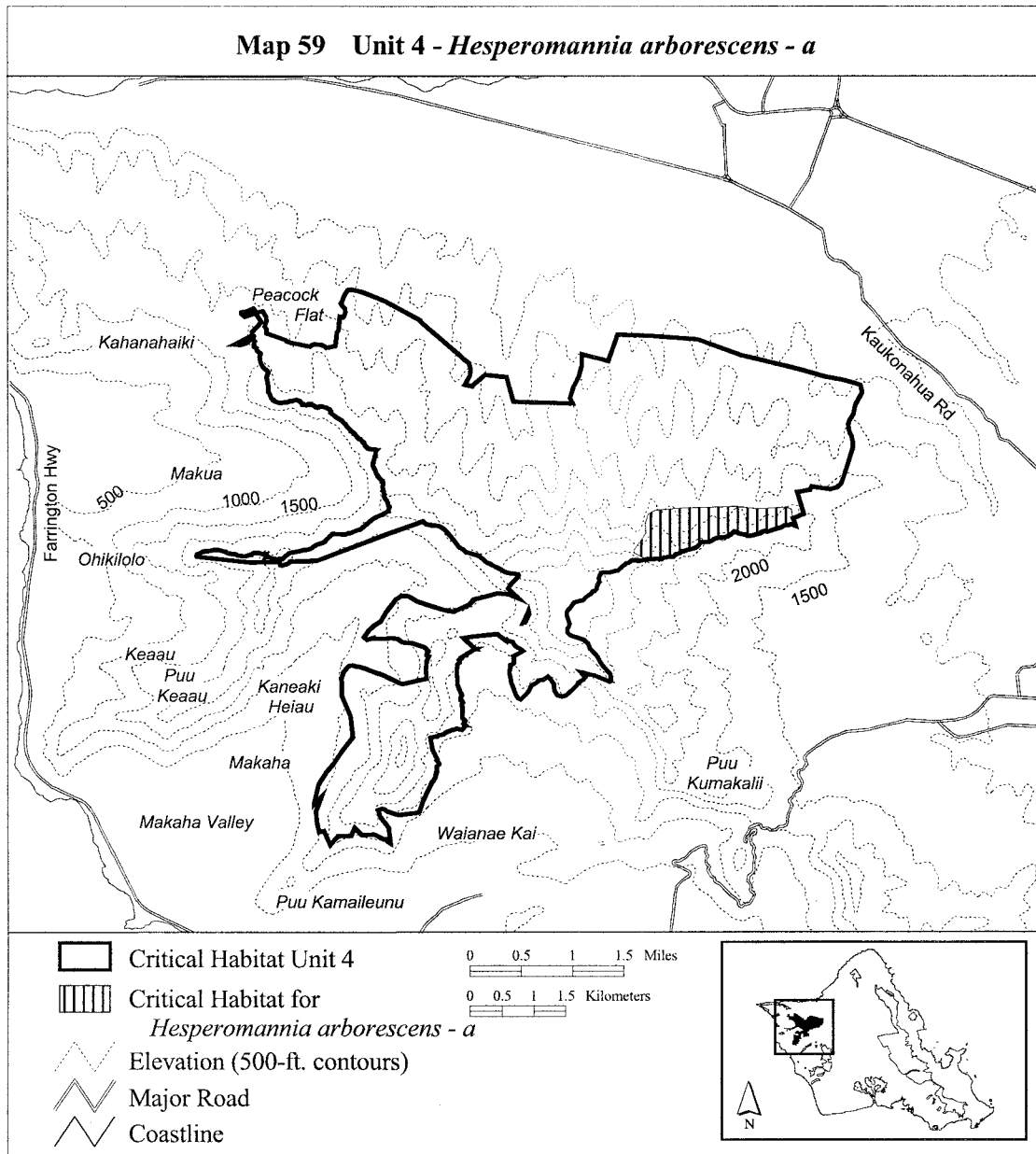
(i) Unit consists of the following 82 boundary points: Start at 591935, 2379592; 591870, 2379614; 591821, 2379599; 591791, 2379602; 591790, 2379602; 591766, 2379598; 591765, 2379598; 591740, 2379584; 591709, 2379566; 591635, 2379543; 591613, 2379538; 591582, 2379527; 591581, 2379526; 591567, 2379517; 591504, 2379497; 591500, 2379496; 591496, 2379496; 591461, 2379506; 591460, 2379506; 591443, 2379503; 591431, 2379499; 591420, 2379498; 591419,

2379498; 591404, 2379488; 591404, 2379487; 591395, 2379475; 591235, 2379445; 591091, 2379479; 591026, 2379482; 590996, 2379497; 590996, 2379498; 590995, 2379498; 590982, 2379496; 590981, 2379496; 590981, 2379495; 590970, 2379488; 590969, 2379488; 590943, 2379463; 590908, 2379443; 590883, 2379429; 590832, 2379413; 590808, 2379409; 590790, 2379408; 590721, 2379404; 590699, 2379398; 590698, 2379398; 590669, 2379385; 590668, 2379384; 590641, 2379362; 590534, 2379339; 590525, 2379340; 590514, 2379339; 590479,

2379340; 590478, 2379340; 590462, 2379334; 590444, 2379312; 590415, 2379277; 590396, 2379264; 590308, 2379227; 590232, 2379203; 590191, 2379191; 590187, 2379189; 590056, 2379149; 589821, 2379079; 589613, 2379066; 589594, 2379063; 589406, 2379168; 589408, 2379201; 589491, 2379323; 589582, 2379471; 589578, 2379631; 589630, 2379784; 589747, 2379845; 589991, 2379862; 590282, 2379879; 590739, 2379888; 591022, 2379897; 591330, 2379866; 591565, 2379871; 591800, 2379892; 591878,

2379858; 591896, 2379718; return to starting point.

(ii) Note: Map 59 follows:



(60) Oahu 4—*Hesperomannia arbuscula*—a (596 ha; 1,472 ac)

(i) Unit consists of the following 289 boundary points: Start at 583882, 2381544; 583799, 2381556; 583764, 2381564; 583747, 2381571; 583730, 2381588; 583709, 2381612; 583707, 2381614; 583694, 2381639; 583685, 2381655; 583672, 2381685; 583659, 2381711; 583652, 2381731; 583651, 2381742; 583651, 2381757; 583651, 2381773; 583651, 2381789; 583651, 2381805; 583651, 2381806; 583649, 2381820; 583644, 2381847; 583642, 2381874; 583639, 2381896; 583638,

2381897; 583634, 2381907; 583631, 2381919; 583629, 2381934; 583630, 2381951; 583633, 2381969; 583638, 2381979; 583645, 2381993; 583645, 2381994; 583649, 2382013; 583649, 2382018; 583648, 2382029; 583647, 2382030; 583641, 2382045; 583640, 2382045; 583626, 2382059; 583610, 2382073; 583590, 2382091; 583570, 2382107; 583561, 2382120; 583552, 2382135; 583546, 2382153; 583536, 2382180; 583529, 2382214; 583523, 2382238; 583523, 2382239; 583518, 2382254; 583517, 2382264; 583517, 2382276; 583518, 2382287; 583521, 2382299; 583528, 2382305; 583535,

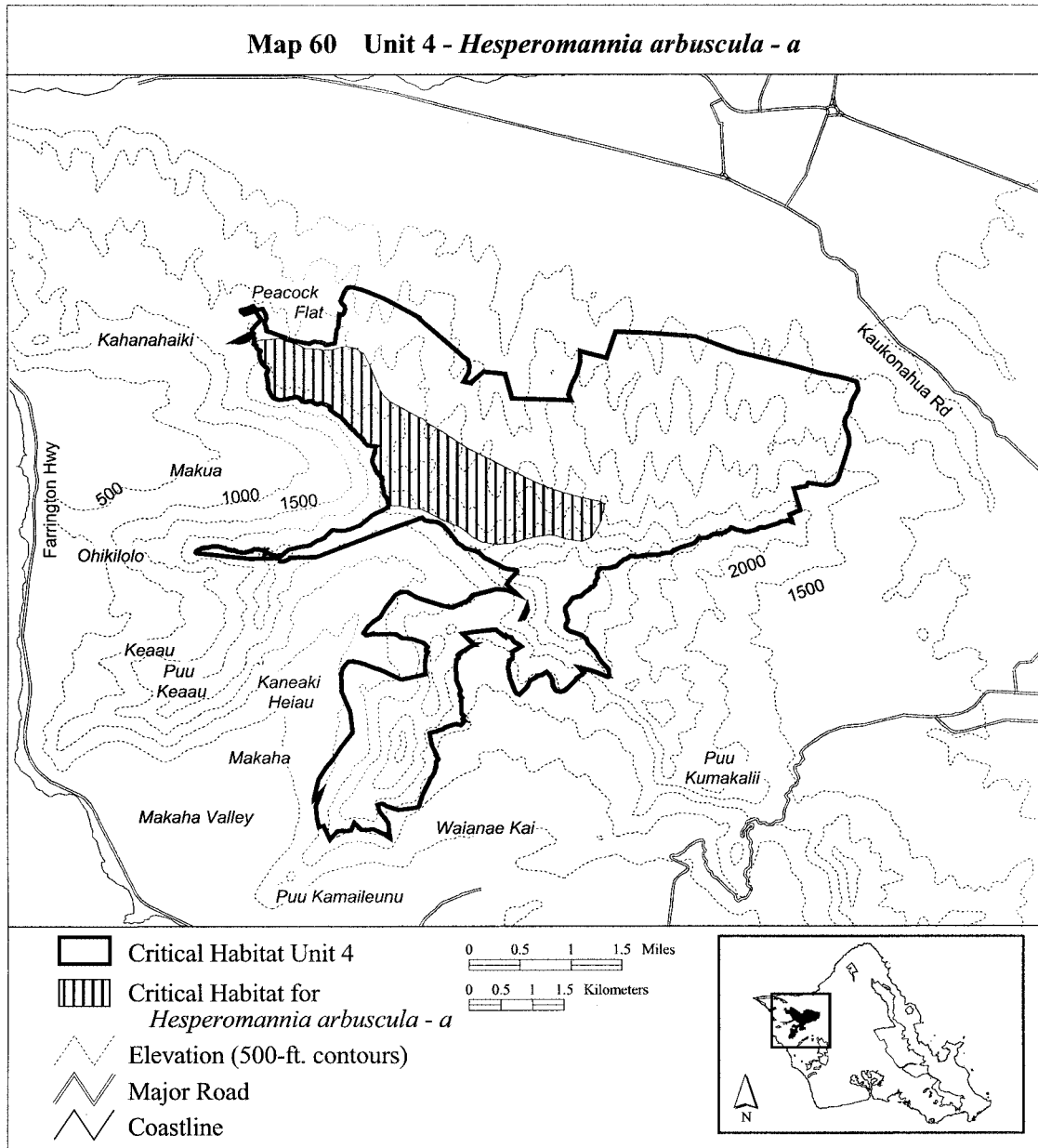
2382312; 583535, 2382313; 583535, 2382319; 583531, 2382326; 583523, 2382334; 583522, 2382334; 583511, 2382337; 583498, 2382345; 583497, 2382345; 583486, 2382351; 583477, 2382362; 583474, 2382370; 583475, 2382383; 583475, 2382397; 583474, 2382417; 583474, 2382405; 583469, 2382411; 583468, 2382411; 583457, 2382416; 583443, 2382421; 583435, 2382424; 583430, 2382430; 583429, 2382440; 583430, 2382455; 583530, 2382499; 583719, 2382510; 583836, 2382521; 583970, 2382474; 584145, 2382415; 584247, 2382364; 584328, 2382361; 584536, 2382332; 584605,

2382332; 584700, 2382353; 584802,
2382379; 584893, 2382397; 585046,
2382364; 585105, 2382317; 585166,
2382284; 585261, 2382091; 585407,
2381723; 585483, 2381614; 585582,
2381519; 585800, 2381399; 586026,
2381275; 586114, 2381231; 586157,
2381184; 586363, 2381060; 586369,
2381064; 586802, 2380776; 587167,
2380586; 587495, 2380415; 587717,
2380306; 587957, 2380186; 588030,
2380175; 588030, 2380165; 588198,
2380098; 588318, 2380062; 588573,
2379993; 588781, 2379945; 588886,
2379923; 588955, 2379880; 588955,
2379792; 588918, 2379690; 588918,
2379614; 588853, 2379479; 588758,
2379348; 588612, 2379286; 588361,
2379318; 588193, 2379370; 588087,
2379391; 588007, 2379374; 588007,
2379373; 588003, 2379372; 587989,
2379370; 587989, 2379371; 587902,
2379359; 587690, 2379311; 587556,
2379264; 587271, 2379235; 587035,
2379271; 586892, 2379348; 586783,
2379435; 586688, 2379512; 586550,
2379559; 586437, 2379614; 586280,
2379697; 586098, 2379788; 585985,
2379810; 585898, 2379803; 585876,
2379829; 585716, 2379850; 585588,
2379850; 585557, 2379890; 585558,
2379891; 585558, 2379892; 585557,
2379892; 585548, 2379922; 585550,
2379928; 585550, 2379929; 585549,
2379929; 585549, 2379930; 585548,

2379930; 585547, 2379930; 585546,
2379929; 585545, 2379931; 585539,
2379943; 585531, 2379963; 585523,
2379982; 585522, 2379982; 585511,
2380001; 585509, 2380004; 585504,
2380029; 585480, 2380063; 585478,
2380071; 585475, 2380089; 585476,
2380103; 585474, 2380125; 585474,
2380128; 585472, 2380137; 585468,
2380149; 585465, 2380160; 585461,
2380173; 585457, 2380185; 585456,
2380203; 585456, 2380223; 585459,
2380252; 585459, 2380269; 585456,
2380281; 585451, 2380295; 585443,
2380310; 585430, 2380325; 585430,
2380326; 585408, 2380344; 585400,
2380353; 585402, 2380382; 585445,
2380413; 585391, 2380375; 585350,
2380434; 585342, 2380452; 585330,
2380478; 585322, 2380497; 585318,
2380512; 585308, 2380533; 585299,
2380553; 585297, 2380570; 585300,
2380580; 585303, 2380592; 585309,
2380613; 585312, 2380624; 585355,
2380732; 585356, 2380787; 585348,
2380789; 585348, 2380790; 585344,
2380798; 585344, 2380799; 585338,
2380802; 585329, 2380804; 585328,
2380804; 585308, 2380806; 585279,
2380811; 585252, 2380816; 585222,
2380825; 585208, 2380833; 585194,
2380847; 585183, 2380863; 585167,
2380888; 585157, 2380904; 585138,
2380929; 585119, 2380952; 585119,
2380953; 585107, 2380962; 585106,

2380963; 585034, 2381030; 585027,
2381040; 585011, 2381059; 584993,
2381074; 584993, 2381075; 584973,
2381090; 584955, 2381103; 584937,
2381120; 584923, 2381137; 584905,
2381157; 584891, 2381175; 584867,
2381205; 584852, 2381221; 584844,
2381230; 584843, 2381230; 584813,
2381261; 584796, 2381273; 584778,
2381284; 584774, 2381287; 584751,
2381303; 584728, 2381318; 584715,
2381325; 584706, 2381333; 584641,
2381428; 584624, 2381434; 584618,
2381442; 584617, 2381442; 584601,
2381452; 584581, 2381462; 584562,
2381467; 584539, 2381475; 584519,
2381483; 584494, 2381489; 584478,
2381486; 584461, 2381479; 584415,
2381486; 584386, 2381492; 584383,
2381494; 584357, 2381507; 584350,
2381511; 584325, 2381523; 584324,
2381523; 584310, 2381528; 584309,
2381528; 584291, 2381527; 584290,
2381527; 584281, 2381521; 584275,
2381516; 584273, 2381515; 584269,
2381515; 584174, 2381559; 584160,
2381560; 584150, 2381572; 584130,
2381584; 584129, 2381584; 584104,
2381586; 584065, 2381583; 584021,
2381575; 583992, 2381567; 583957,
2381557; 583934, 2381555; 583897,
2381549; return to starting point.

(ii) **Note:** Map 60 follows:



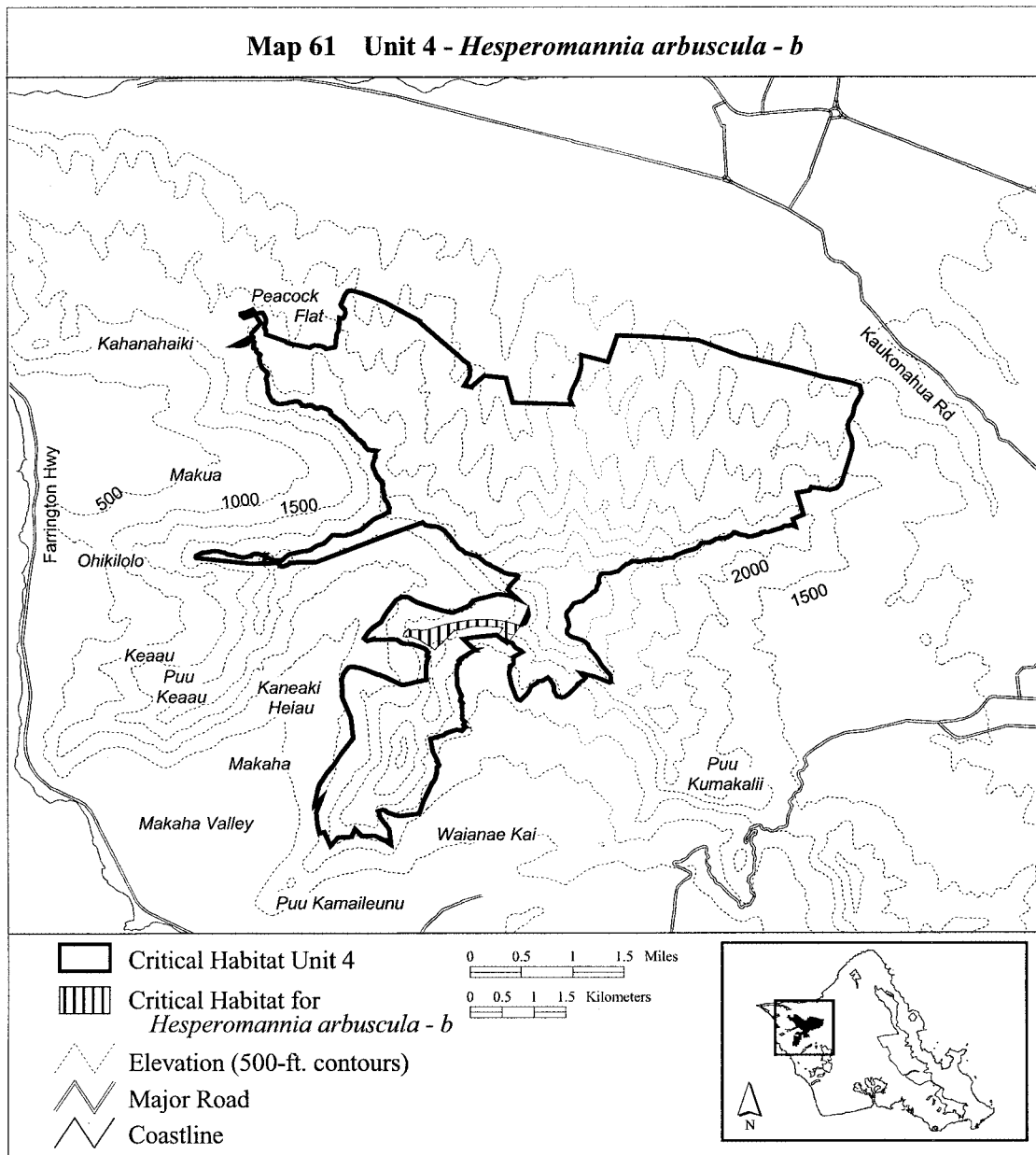
(61) Oahu 4—*Hesperomannia arbuscula*—b (31 ha; 78 ac)

(i) Unit consists of the following 35 boundary points: Start at 585893, 2377968; 586006, 2377974; 586069, 2377958; 586208, 2377978; 586416, 2378047; 586624, 2378090; 586810,

2378123; 586965, 2378130; 587150, 2378130; 587336, 2378110; 587498, 2378077; 587620, 2378030; 587622, 2378022; 587460, 2377788; 587277, 2377877; 587356, 2378000; 587078, 2378018; 586882, 2378021; 586704, 2377975; 586578, 2377945; 586471, 2377850; 586396, 2377759; 586327,

2377703; 586274, 2377650; 586237, 2377680; 586168, 2377720; 586098, 2377766; 586046, 2377796; 585966, 2377839; 585910, 2377855; 585847, 2377852; 585788, 2377855; 585778, 2377865; 585801, 2377911; 585864, 2377981; return to starting point.

(ii) **Note:** Map 61 follows:



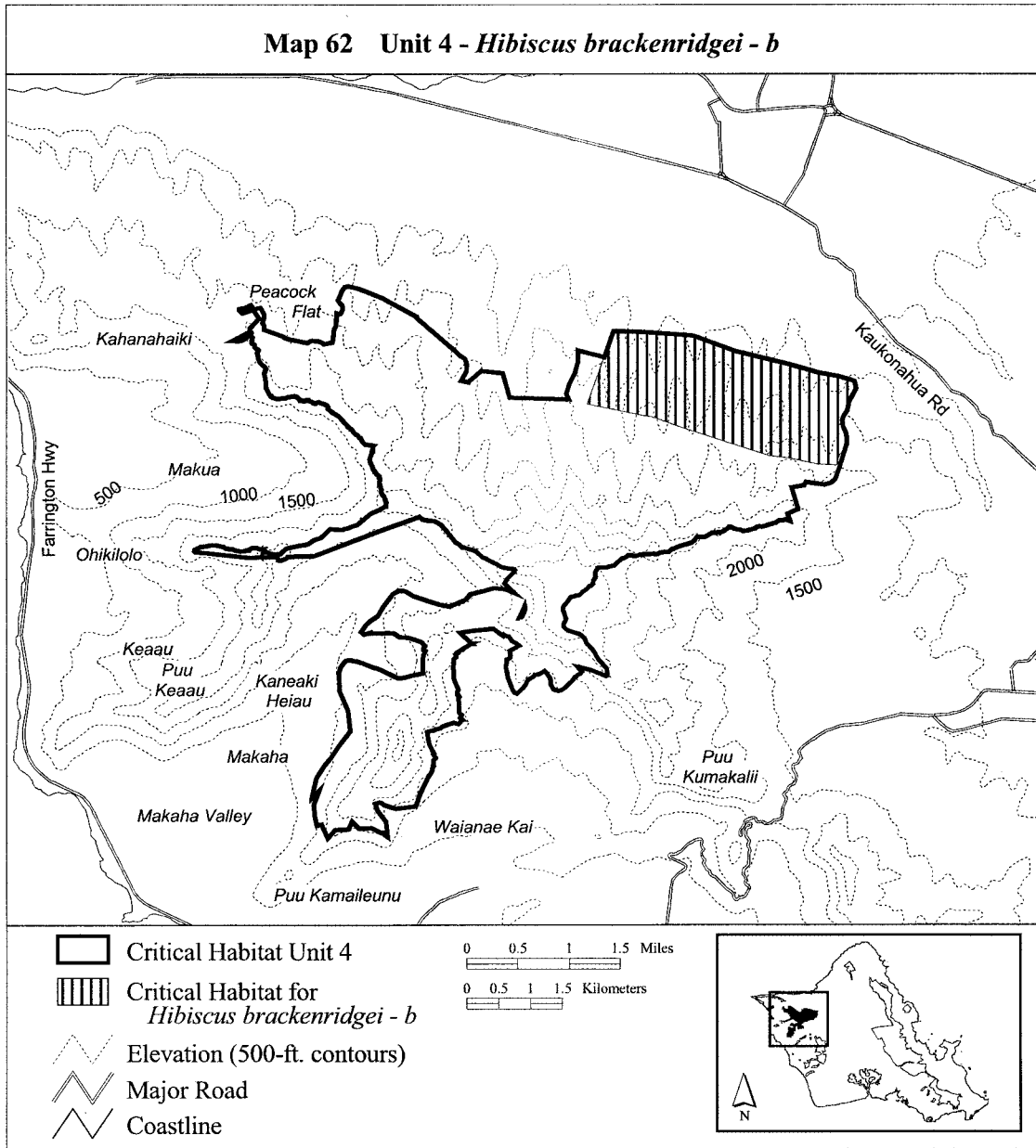
(62) Oahu 4—*Hibiscus brackenridgei*—b (560 ha; 1,385 ac)

(i) Unit consists of the following 35 boundary points: Start at 590390, 2382551; 591054, 2382306; 591908, 2382094; 592162, 2382021; 592395, 2381959; 592679, 2381908; 592850,

2381861; 592959, 2381825; 592985, 2381706; 592917, 2381592; 592871, 2381504; 592845, 2381364; 592788, 2381266; 592762, 2381188; 592757, 2381116; 592819, 2381017; 592840, 2380924; 592840, 2380826; 592793, 2380717; 592731, 2380650; 592695, 2380562; 592705, 2380520; 592679,

2380479; 592596, 2380489; 592389, 2380495; 592219, 2380531; 591908, 2380598; 591618, 2380639; 591380, 2380707; 590226, 2381090; 589766, 2381250; 589585, 2381276; 588725, 2381459; 589141, 2382625; 589622, 2382606; return to starting point.

(ii) **Note:** Map 62 follows:



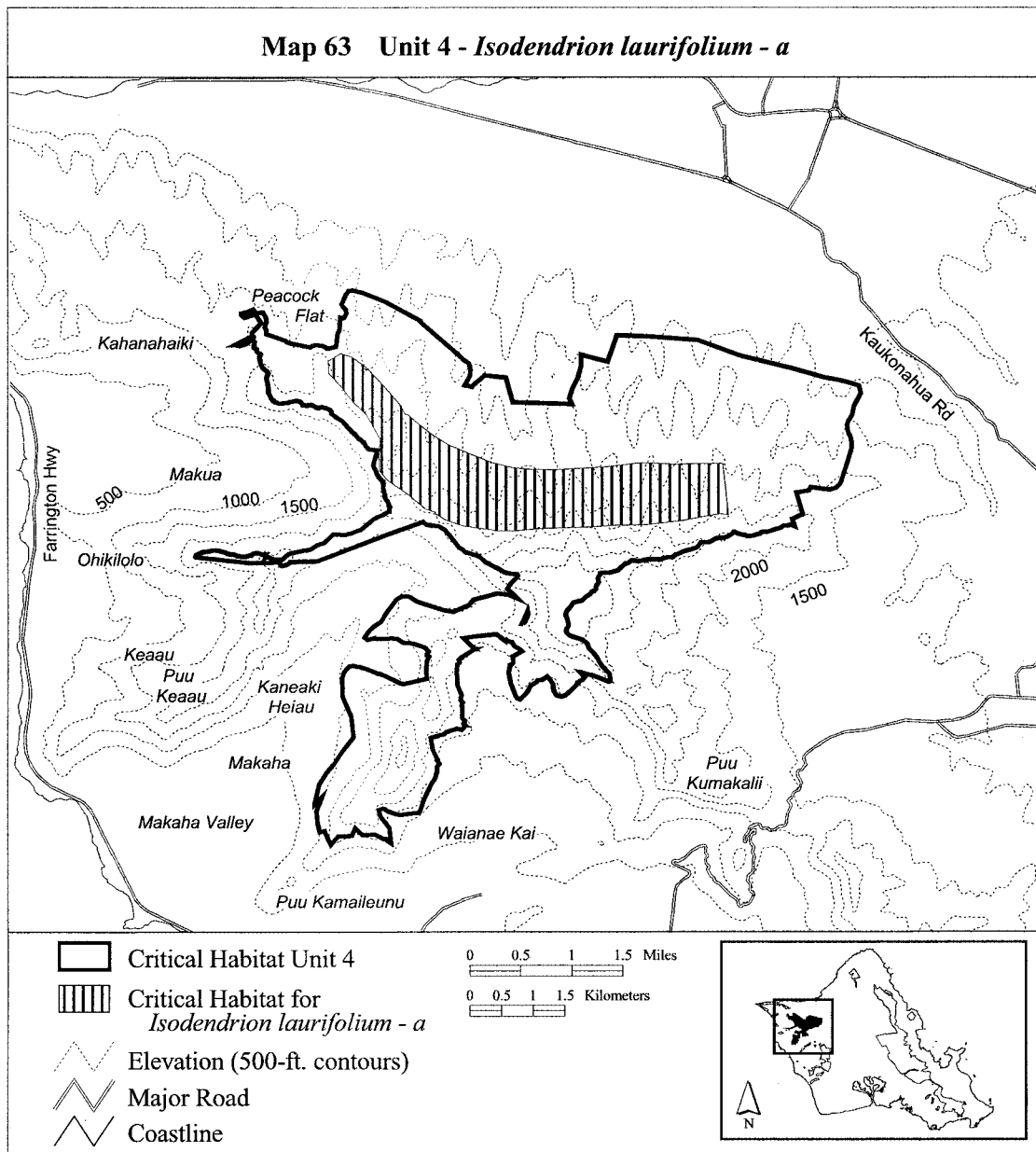
(63) Oahu 4—*Isodendrion laurifolium*— a (617 ha; 1,524 ac)

(i) Unit consists of the following 54 boundary points: Start at 586829, 2380741; 587186, 2380602; 587492, 2380524; 587782, 2380496; 588189, 2380491; 588963, 2380535; 589515, 2380602; 590027, 2380585; 590807, 2380591; 590891, 2379772; 590779, 2379788; 590445, 2379738; 590172, 2379677; 589854, 2379644; 589620,

2379616; 589408, 2379605; 589163, 2379610; 588728, 2379577; 588300, 2379566; 587959, 2379554; 587541, 2379515; 587268, 2379521; 586934, 2379566; 586716, 2379599; 586449, 2379694; 586276, 2379794; 586280, 2379814; 586137, 2379866; 585947, 2380006; 585830, 2380112; 585708, 2380201; 585546, 2380307; 585396, 2380474; 585385, 2380708; 585402, 2380981; 585302, 2381154; 585179,

2381382; 584973, 2381583; 584795, 2381811; 584594, 2382029; 584589, 2382213; 584789, 2382330; 584962, 2382280; 585073, 2382201; 585179, 2382129; 585307, 2381990; 585469, 2381817; 585625, 2381639; 585731, 2381505; 585798, 2381382; 585848, 2381366; 585965, 2381260; 586249, 2381037; 586489, 2380892; return to starting point.

(ii) **Note:** Map 63 follows:



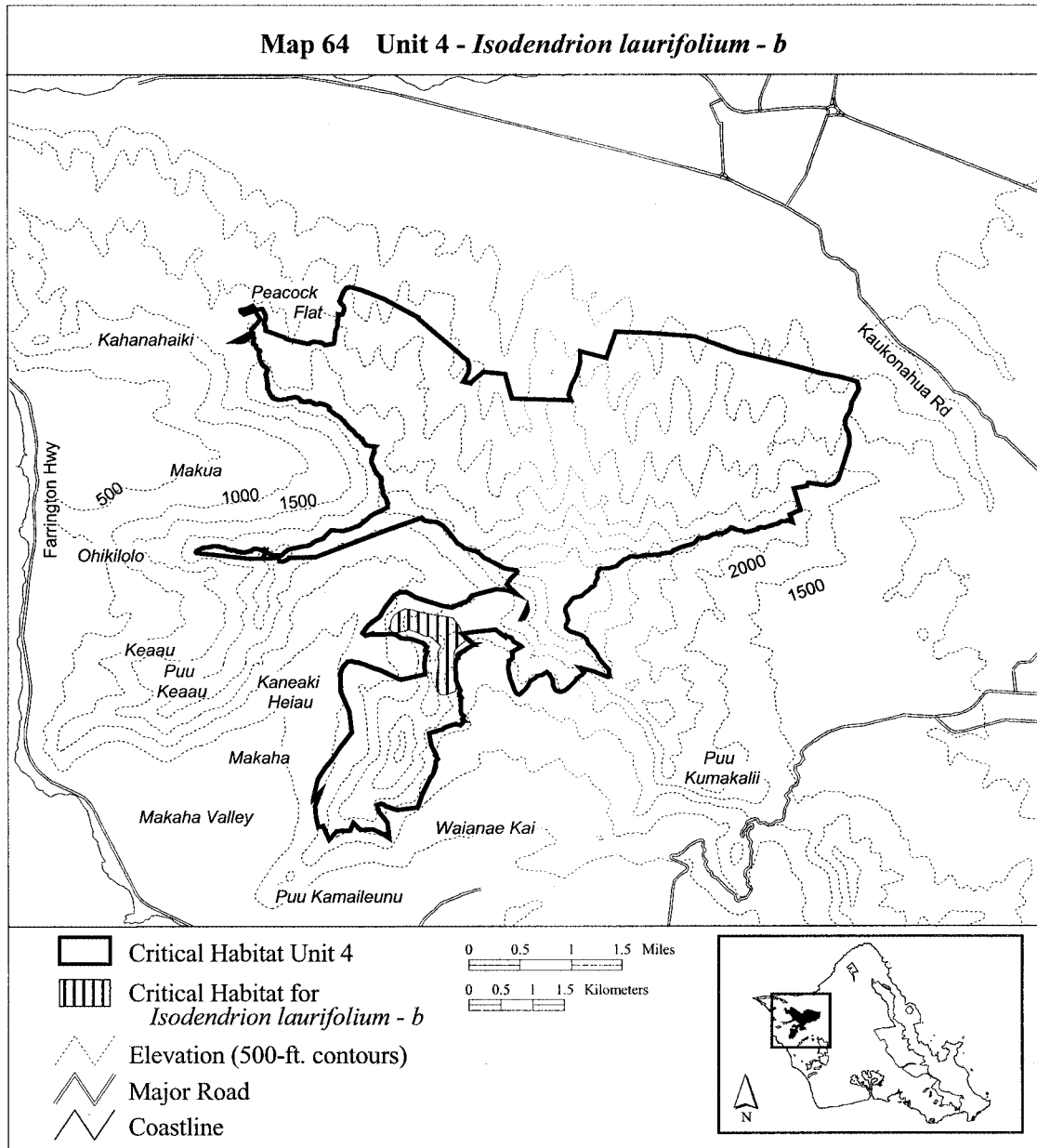
(64) Oahu 4—*Isodendron laurifolium*—
b (62 ha; 154 ac)

(i) Unit consists of the following 43 boundary points: Start at 586591, 2378074; 586586, 2378057; 586673, 2377968; 586668, 2377967; 586669, 2377967; 586771, 2377694; 586772, 2377693; 586771, 2377693; 586772, 2377690; 586750, 2377686; 586684,

2377637; 586618, 2377556; 586598, 2377498; 586591, 2377359; 586626, 2377192; 586622, 2377072; 586637, 2376972; 586637, 2376914; 586571, 2376879; 586479, 2376848; 586401, 2376848; 586331, 2376898; 586316, 2377018; 586328, 2377169; 586355, 2377339; 586339, 2377529; 586399, 2377621; 586326, 2377693; 586326,

2377694; 586235, 2377769; 586138, 2377784; 586014, 2377846; 585875, 2377885; 585782, 2377854; 585662, 2377827; 585573, 2377904; 585597, 2377935; 585612, 2378036; 585658, 2378121; 585743, 2378171; 585836, 2378217; 585948, 2378198; 586088, 2378152; return to starting point.

(ii) **Note:** Map 64 follows:



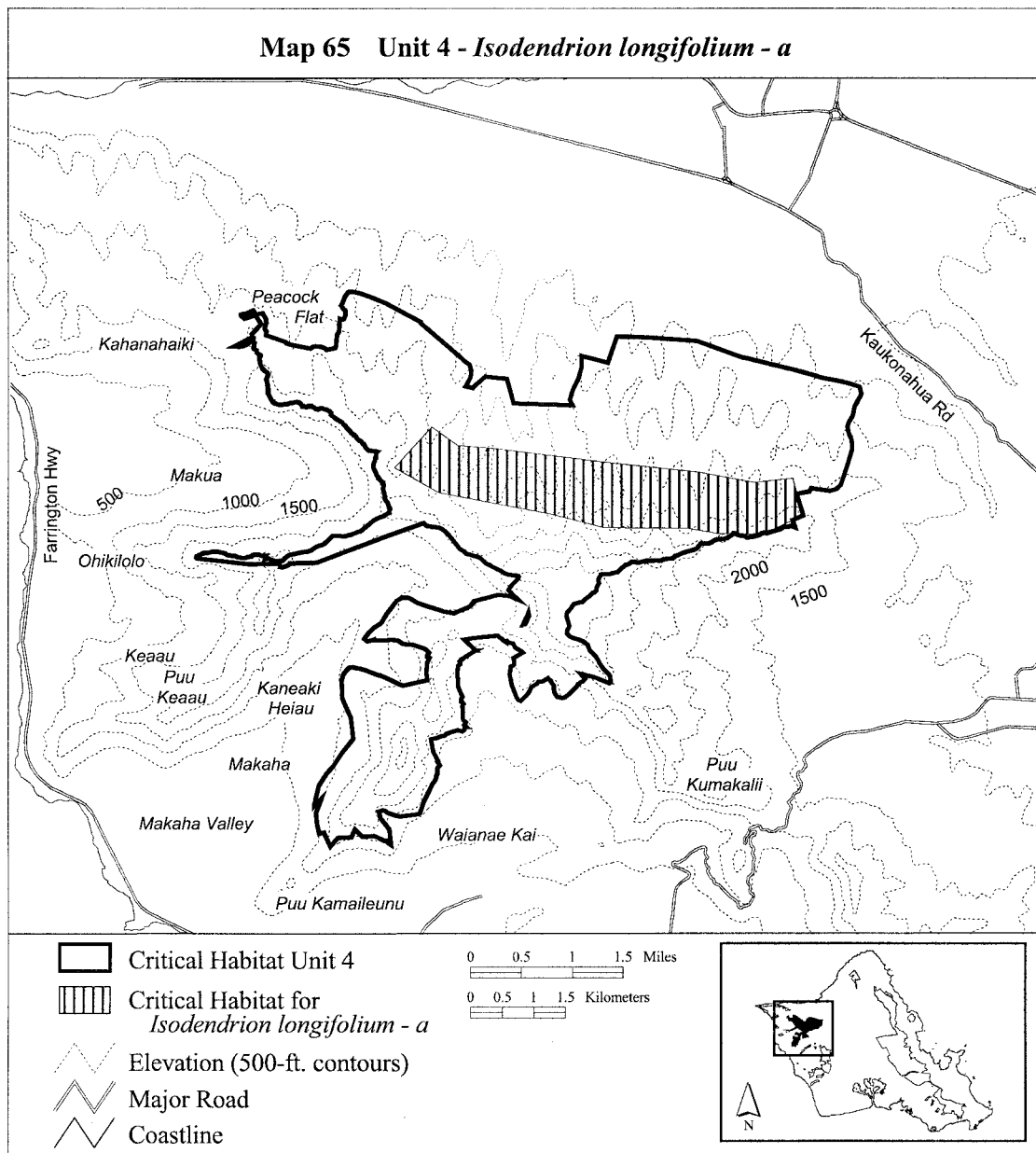
(65) Oahu 4—*Isodendron longifolium*—
a (552 ha; 1,363 ac)

(i) Unit consists of the following 18
boundary points: Start at 585636,
2380541; 586214, 2381188; 586627,

2380899; 587191, 2380857; 589008,
2380623; 590425, 2380472; 591292,
2380307; 591898, 2380376; 592063,
2379784; 591609, 2379563; 591251,
2379481; 590987, 2379504; 590755,

2379495; 590246, 2379577; 588938,
2379591; 588086, 2379811; 586764,
2380059; 586323, 2380142; return to
starting point.

(ii) **Note:** Map 65 follows:



(66) Oahu 4—*Labordia cyrtandrae*—a (161 ha; 397 ac)

(i) Area consists of the following 114 boundary points: Start at 588702, 2378502; 588659, 2378471; 588616, 2378430; 588583, 2378413; 588562, 2378406; 588530, 2378399; 588483, 2378388; 588466, 2378385; 588465, 2378385; 588458, 2378380; 588394, 2378294; 588360, 2378255; 588348, 2378235; 588348, 2378234; 588343, 2378210; 588343, 2378187; 588343, 2378186; 588348, 2378161; 588348, 2378160; 588372, 2378097; 588383, 2378041; 588383, 2378026; 588379, 2378003; 588362, 2377972; 588350, 2377942; 588350, 2377941; 588352, 2377924; 588352, 2377923; 588360, 2377904; 588361, 2377903; 588368,

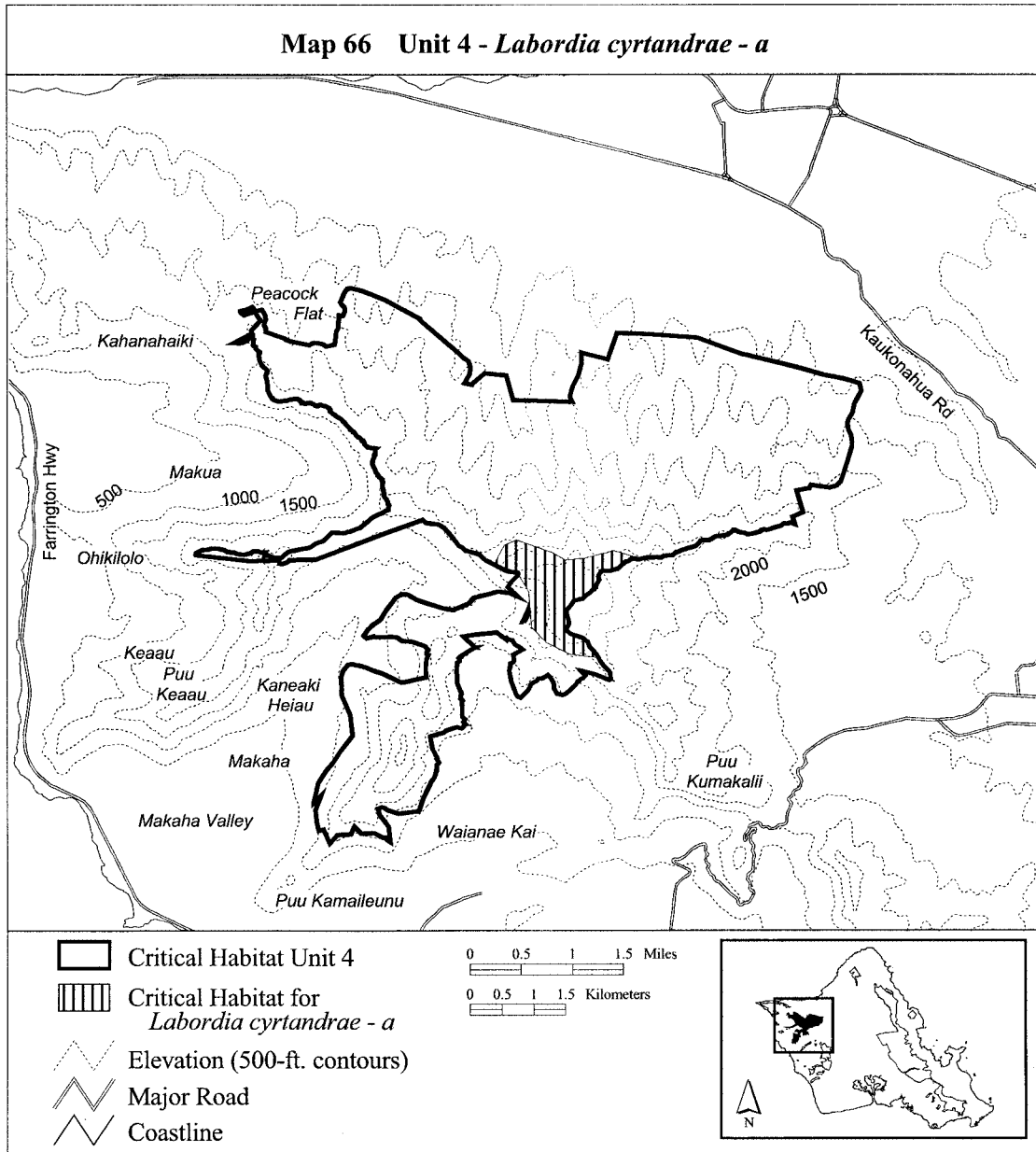
2377893; 588406, 2377863; 588407, 2377863; 588443, 2377848; 588444, 2377848; 588503, 2377826; 588587, 2377797; 588594, 2377793; 588594, 2377792; 588605, 2377788; 588624, 2377778; 588662, 2377749; 588673, 2377733; 588684, 2377709; 588691, 2377689; 588691, 2377688; 588708, 2377657; 588735, 2377626; 588736, 2377625; 588762, 2377601; 588787, 2377570; 588816, 2377534; 588841, 2377494; 588810, 2377480; 588752, 2377488; 588394, 2377535; 588024, 2377726; 587797, 2377965; 587750, 2378526; 587571, 2378836; 587213, 2378967; 587368, 2379265; 587559, 2379349; 588119, 2379146; 588322, 2379027; 588621, 2379051; 589098, 2379170; 589451, 2379064; 589446,

2379060; 589427, 2379046; 589424, 2379047; 589391, 2379048; 589370, 2379041; 589369, 2379041; 589348, 2379025; 589324, 2379009; 589303, 2379003; 589286, 2379001; 589285, 2379001; 589276, 2378998; 589275, 2378998; 589245, 2378974; 589217, 2378943; 589164, 2378898; 589149, 2378886; 589123, 2378879; 589060, 2378862; 589009, 2378857; 588910, 2378852; 588910, 2378851; 588899, 2378848; 588898, 2378848; 588887, 2378841; 588887, 2378840; 588862, 2378802; 588851, 2378772; 588851, 2378763; 588851, 2378746; 588855, 2378710; 588838, 2378677; 588825, 2378656; 588815, 2378615; 588815, 2378614; 588814, 2378597; 588767, 2378640; 588765, 2378640; 588695,

2378577; 588695, 2378576; 588694,
2378576; 588675, 2378552; 588667,
2378540; 588667, 2378538; 588686,

2378515; 588686, 2378514; return to
starting point.

(ii) **Note:** Map 66 follows:



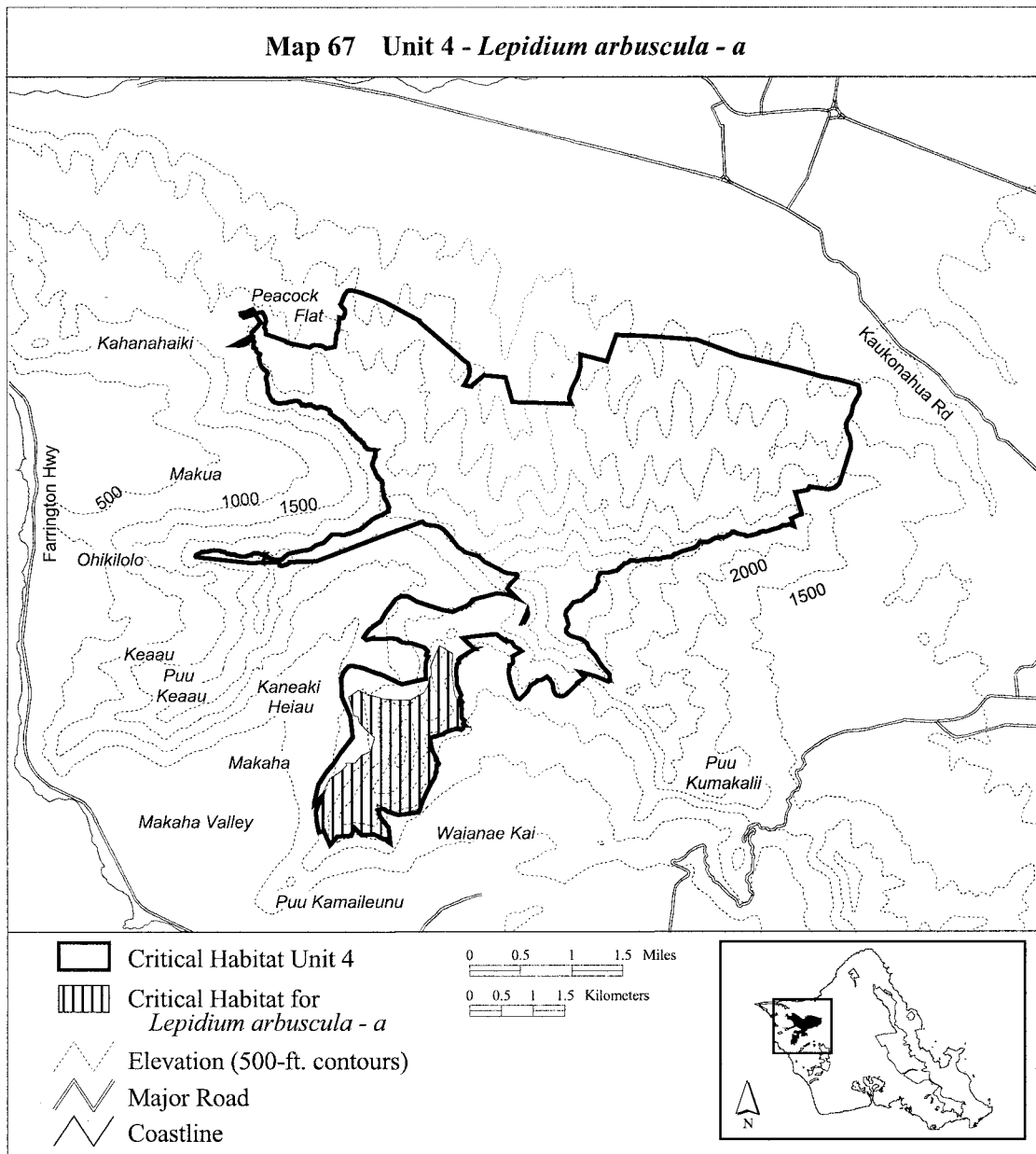
(67) Oahu 4—*Lepidium arbuscula*—a
(329 ha; 813 ac)

(i) Unit consists of the following 59
boundary points: Start at 586225,
2377240; 586216, 2377374; 586354,
2377705; 586562, 2377571; 586551,
2377255; 586596, 2376916; 586697,
2376755; 586711, 2376435; 586714,
2376433; 586693, 2376424; 586634,
2376388; 586634, 2376389; 586454,
2376338; 586201, 2376249; 586302,

2375690; 586018, 2375108; 585683,
2375026; 585530, 2375075; 585368,
2375194; 585411, 2374997; 585551,
2374818; 585578, 2374579; 585526,
2374607; 585510, 2374636; 585509,
2374637; 585467, 2374638; 585325,
2374713; 585128, 2374699; 585020,
2374810; 584964, 2374691; 584752,
2374684; 584633, 2374546; 584531,
2374770; 584459, 2374749; 584427,
2374883; 584408, 2375073; 584493,
2375310; 584635, 2375594; 584777,

2375689; 584901, 2375803; 584881,
2375836; 585037, 2375840; 585035,
2375843; 585138, 2375964; 585193,
2375992; 585198, 2375992; 585198,
2375994; 585270, 2376030; 585337,
2376239; 585100, 2376476; 585072,
2376573; 585003, 2376595; 584927,
2376885; 585083, 2376990; 585195,
2376934; 585508, 2376845; 585899,
2376841; 586115, 2376952; 586157,
2377037; return to starting point.

(ii) **Note:** Map 67 follows:



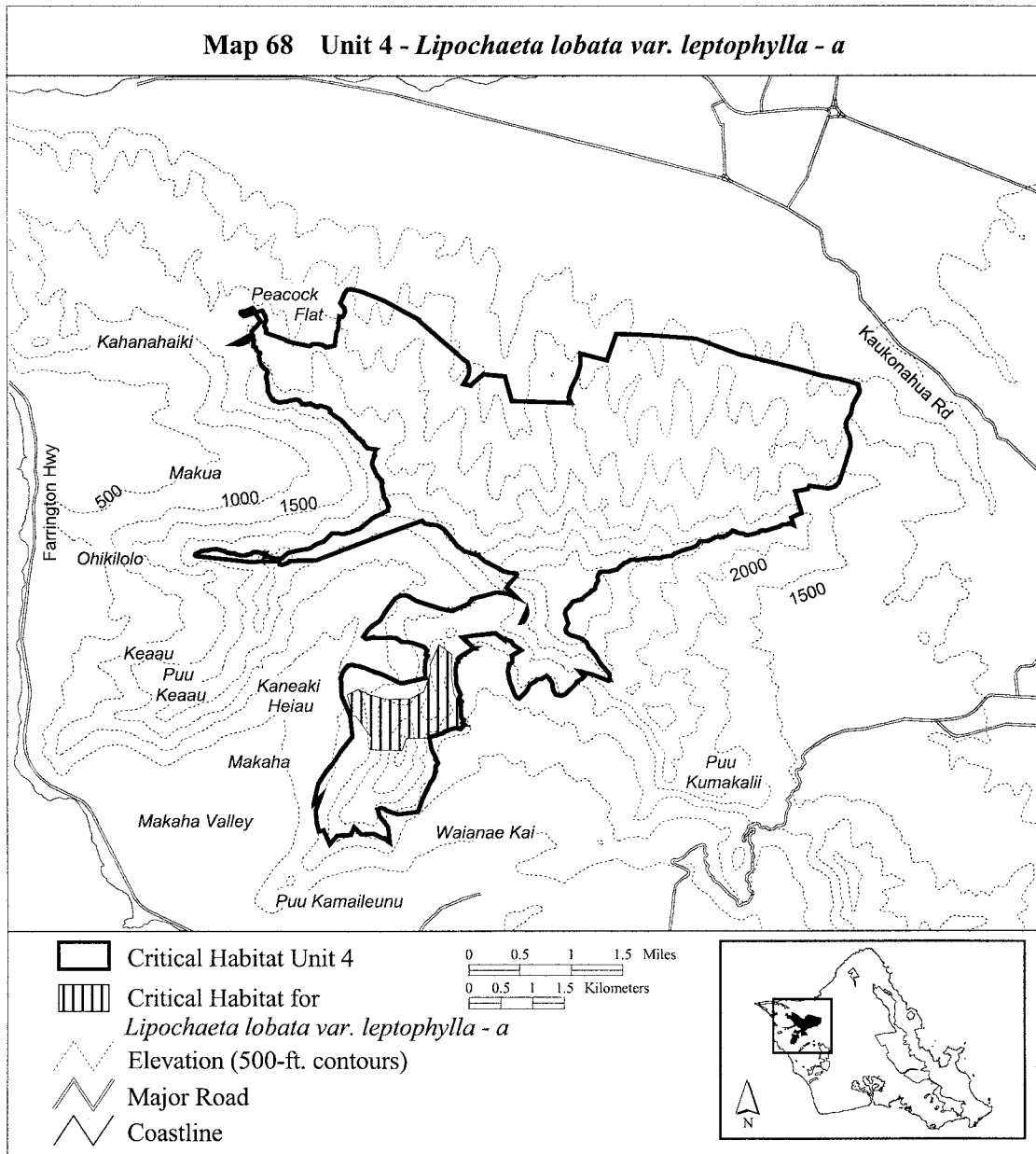
(68) Oahu 4—*Lipochaeta lobata* var. *leptophylla*—a (139 ha; 344 ac)

(i) Unit consists of the following 23 boundary points: Start at 586225, 2377399; 586356, 2377699; 586563,

2377545; 586548, 2377345; 586548, 2377199; 586594, 2376915; 586702, 2376738; 586702, 2376422; 586187, 2376230; 585840, 2376222; 585779, 2376030; 585271, 2376038; 585289, 2376232; 585094, 2376499; 585056,

2376568; 584986, 2376584; 584909, 2376907; 585079, 2376992; 585240, 2376922; 585525, 2376838; 585910, 2376845; 586117, 2376953; 586225, 2377253; return to starting point.

(ii) **Note:** Map 68 follows:



(69) Oahu 4—*Lipochaeta tenuifolia*—a
(23 ha; 57 ac)

(i) Unit consists of the following 32 boundary points: Start at 590120, 2379962; 590149, 2379920; 590199, 2379920; 590266, 2379920; 590282, 2379874; 590282, 2379849; 590241,

2379812; 590179, 2379750; 590133, 2379692; 590125, 2379629; 590125, 2379596; 590174, 2379559; 590179, 2379513; 590145, 2379422; 590120, 2379401; 589996, 2379359; 589929, 2379388; 589850, 2379413; 589755, 2379426; 589713, 2379451; 589684, 2379463; 589643, 2379521; 589622,

2379584; 589630, 2379633; 589676, 2379700; 589705, 2379750; 589738, 2379795; 589825, 2379775; 589879, 2379762; 589958, 2379829; 590004, 2379899; 590071, 2379974; return to starting point.

(ii) **Note:** Map 69 follows: