

**2006 Status Reports
for the
Mākua Implementation Plan
and the
Draft O‘ahu Implementation Plan**



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MIP Executive Summary and Introduction

The Mākua Implementation Plan (MIP) was finalized in May 2003. In January 2005, the Army submitted an Addendum which emphasized management of three population units (PUs) per plant taxon. Over the past two years, management has been based on the priority actions put forth in this Addendum. This report serves as the annual status report to the Mākua Implementation Team (MIT), and participating landowners on the MIP Year-2 actions that have occurred between 1 September 2005 and 31 August 2006.

Current status of the Mākua Implementation Plan

The Army has been utilizing the MIP Addendum (2005) to direct stabilization efforts of the Mākua rare plant target taxa. The Addendum is a re-prioritized version of the Final 2003 MIP with emphasis on the bottom line requirements for stability as stated in the 1999 Biological Opinion (BO) for training at Mākua Military Reservation (MMR). It was written to guide Army efforts towards achieving stabilization given limited funding and resources. The Army is still awaiting formal comment from the USFWS regarding their concurrence with the MIP Addendum. In the mean time, the Army will continue to meet with the MIT each year to discuss progress and concerns regarding the overall direction of species stabilization and the associated non-native species control efforts.

The Army is also awaiting a new BO that will tie together all previous BOs and cover additional training proposed by the Army for Mākua Military Reservation (MMR). The Army expects this BO to be issued by the end of 2006. Until then, the Army will continue to utilize the MIP Addendum and the guidance of the MIT for direction.

The Army continues to work cooperatively under an Memorandum Of Understanding (MOU) with both the Board of Water Supply (BWS) and The Nature Conservancy of Hawai‘i (TNCH) for work in Mākaha and TNCH’s Honouliuli Preserve. The Army and BWS have completed all the necessary paper work for the Mākaha subunit I fence, including the Conservation District Use Permit (CDUP). It is hoped that this fence will be constructed by the end of 2006. There are also several fencing projects that have been approved within Honouliuli Preserve. The Army is working with TNCH to begin construction on the Pu‘u Palikea and ‘Ēkahanui subunit II fencelines in the coming months.

As mentioned in the previous years report, two major changes have taken place regarding Honouliuli Preserve. First, TNCH has decided to focus management on their other preserves in Hawai‘i. Therefore, TNCH is looking for another agency to take over the management of the preserve before the end of 2007. Additionally, at the end of 2006 TNCH plans to reduce the Honouliuli staff to one interim staff member to stay on until the end of 2007. Naturally, the Army is concerned about this upcoming change as the partnership between these two organizations has been mutually beneficial to the goals of both organizations over the past several years. The stabilization of many MIP and OIP taxa will not be successful without the existence of this preserve.

Secondly, the parcels below the Honouliuli preserve that have been leased by Delmonte Corporation for pineapple fields for many years are now for sale by the Estate of James

Campbell. Once these parcels are sold for various forms of agriculture and housing development, we expect an increased risk to Honouliuli from fire. These lands did not previously pose a large threat to the preserve because they were actively farmed. It is anticipated that once these fields go fallow they may create a large fuel base for potential fires in the area.

Currently, the Army Natural Resources Program is working on a long term license agreement with Kamehameha Schools (KS) for natural resource management in Kawaihoa, Punalu'u, Wai'awa, Waimano, and Wai'au Valleys. This formal agreement will allow the Army to assist KS land managers with surveys and the construction and maintenance of ungulate exclosures on some of these parcels. NRS expects that this agreement will be completed early next year.

The Army is also pursuing an agreement with Waikane Investment Corporation for seasonal predator control for 'Elepaio. This project will help protect the largest remaining 'Elepaio population on the windward side of O'ahu. NRS expects that this agreement will be completed by the end of 2006.

In April 2006, the Army received a one year State NARS special use permit for most conservation actions described in the MIP. This one year permit is contingent upon 1) a monthly request by the Army by date and place; 2) an approved Final Environmental Assessment (EA) with a Finding of No Significant Impact (FONSI); and 3) all the special conditions of the permit (see Appendix I). Thus far, the Army and the State have been working with this agreement. The Army has published a Final EA with a FONSI. In addition, the Army is currently working with the State Department of Forestry and Wildlife on a long term MOU regarding the Army conducting MIP actions on State land. The Army anticipates this agreement will be approved and signed by both parties sometime in the spring of 2007.

Over the past year, NRS have been working cooperatively with the State Department of Land and Natural Resources (DLNR) on a new greenhouse that will be located adjacent to the State's nursery at the Nike site. Much of the site preparation has been completed, including excavating, grading, and the installation of three separate retaining walls. Greenhouse construction should be completed by December 2006.

Status of fire management

The Army's Wildland Fire Management Crew now consists of 10 field personnel and a crew boss. This fire crew has already assisted in several fires onsite this summer. Additionally, this year the Army Natural Resources Program has trained and certified 11 personnel to Fire Fighter Type 2 level.

In September 2005, a 170 acre fire burned in lower 'Ēkahanui Gulch below and in Honouliuli Preserve. Only five acres of forest and critical habitat for the 'Elepaio burned. No active territories were affected. The 2006 summer also proved to be an active fire season on the Army ranges. On 15 June 2006, a fire occurred on Schofield Barracks West Range (SBMR). The burned area lies within 'Elepaio critical habitat, however no active territories were affected and the predominant vegetation is non-native. A Memorandum For Record (MFR) about this fire and the response is included in Appendix II.

On 3 July 2006, a fire started along Farrington Hwy near the Kaneana Cave and crossed over the ridge into Mākua Military Reservation (MMR). This fire is thought to be arson related and possibly due to fireworks. Approximately 20.2 acres were burned. The Army Natural Resources Program provided approximately \$1000 of helicopter time to assist in the suppression of this fire. The fire was stopped 100 meters away from the lower Ohikilolo ridge, *Chamaescye celastroides* var. *kaenana* and 150 meters away from the *Hibiscus brackenridgei* subsp. *mokuleianus* population (see MFR in Appendix III).

On 12 July 2006, there was a fire in the Keawa‘ula beach park area that ran uphill towards the Army NRS Kalukauila Management Unit within MMR. This fire is also thought to be arson related. NRS provided approximately \$7K for helicopter support, in addition to the support provided by the State, to suppress this fire. More than 200 acres were burned and the Army’s Kalukauila reintroduction of *H. brackenridgei* subsp. *mokuleianus* and a naturally occurring population of *C. celastroides* were both affected (see MFR in Appendix IV).

As always, lessons were learned from this fire season. The Army’s wildland fire crew is a much needed entity and is useful in fire suppression and control on Army ranges. The Army’s commitment of Natural Resource helicopter time was essential to the suppression of the Keawa‘ula fire. This year, the Army also contracted the Center for Environmental Management of Military Lands (CEMML) to develop a Wildland Fire Management Plan for the MUs on Army and adjacent State lands most threatened by fire. This document includes plans for fuel management within Lower ‘Ōhikilolo, ‘Ōhikilolo, Kahanahāiki, Kapuna, and West Makaleha. The Army hopes to employ some of these fuel management plans in the coming year.

Funding and staffing levels

There are currently a total of 31 staff including, several field staff and field supervisors and three part time technician hires, one fence crew boss, two fence crew technicians, one implementation project manager, one administrative assistant, one horticulturist, one horticulture assistant, one research specialist, one monitoring program manager, one seed conservation program specialist, one seed lab assistant, one *Achatinella* propagation assistant, one tissue culture assistant, and one database/GIS specialist contracted through the Research Corporation of the University of Hawaii (RCUH) to do natural resources work on Army training areas. In addition, the Army will pick up TNC’s three remaining field staff from the Honouliuli preserve by the end of 2006. One additional field technician position is currently open. The Army has also awarded two three-year grants to University of Hawai‘i graduate students for *Euglandina rosea* and rat density research.

Full implementation of Year 2 actions from the MIP Addendum required \$3,161,000 in funding, including overhead. The program received approximately \$3,200,000 last fiscal year for MIP projects. This was the first year that MIP projects have been funded to the amount requested. However, NRS are still concerned about the constancy of funding over time. NRS are hopeful that funding will support the existing personnel and will enable a third field crew to be established. NRS continue to deal with the amount of space needed to house three field crews and a fencing crew. The Natural Resource Center in Schofield Barracks East Range is already stretched to the limit. The Army has secured space at the TNC’s Kunia baseyard to support the fence crew and several more individuals until the end of 2007. NRS will continue to look for additional space to house new employees and hope to have this issue resolved in 2007.

Fencing Costs

In 2006, the Army decided it was much more cost-effective to hire an in house fencing crew. The addition of the Army's fencing crew will save the program thousands of dollars and will allow fences to be built much faster than in previous years. This crew has already proven to be more economical and more flexible than contract fence construction. Since being hired, the fence crew has constructed three *Eugenia koolauensis* fences in Kahuku Training Area in a matter of weeks and scoped fencelines at 'Ekahanui, Pu'u Palikea, Kapuna subunit III, Mākaha, Kamaile'unu, and Pu'u Kawīwī. In addition, the Helemano fenceline was completed by the Army fence crew when contract money failed to cover the cost of the entire fenceline. The last fencing contract to be completed by a private company will be the 100 acre Mākaha Subunit I MU. The Army anticipates the Army fence crew will construct a few hundred meters of fence for this unit when contract money runs out.

Reporting

This document reports on all MIP actions for this fiscal year. For this report MIP and OIP actions are presented together and are organized by species/category. The MIP actions are reported in the first section of each relevant chapter (see table below). Some highlights of the Army's Natural Resources Program this year include: the development of a 'weed control database', which tracks ecosystem level weed control efforts within each MIP and OIP MU and in each incipient weed control area; the development of an invertebrate database which tracks the identity and location of invertebrates in MIP and OIP MUs; the reading of several LCTA monitoring plots and analyses comparing this year's data to original data in 1996 and 1999; the establishment of ground shell plots to monitor *Achatinella*; the protection of approximately 10 breeding pairs of O'ahu 'Elepaio within the Mākua AA; and several research projects on slugs, black twig borer, tropical fire ants, etc.

Chapter	Title	Contents
1	Feral Ungulate Management	Reports a combination of MIP and OIP MUs
2.1	MIP Weed Management	Reports on the incipient weed control and established weed control in Mākua and in MIP MUs (i.e. ecosystem level weed control).
3.1	MIP Rare Plant Management	Reports on all 27 MIP rare plant target taxa.
4.1	MIP Rare Invertebrate Management	Reports on <i>Achatinella mustelina</i> management
5.1	MIP 'Elepaio Management	Reports on 'Elepaio management within the Mākua Action Area
6	Research Issues	Reports on the status of NRS research projects and those associated with NRS work.

Oahu Implementation Plan Draft Status Update

Currently, the Draft O‘ahu Implementation Plan (OIP) is still out for review by the O‘ahu Implementation Plan Review Committee (OIPRC). This committee consists of biologists from US Fish and Wildlife Service (USFWS), Hawaii Biodiversity and Mapping Program (HBMP), Board of Water Supply (BWS), The Nature Conservancy of Hawai‘i (TNCH), US Geological Survey (USGS), University of Hawai‘i (UH), and other field experts. The OIPRC meets annually to discuss the Army’s progress on the stabilization of the species covered in each consultation.

Reporting

Because the OIP is still in draft form NRS report here on a subset of the OIP rare plant species. These species are those for which NRS have begun stabilization efforts. A subset of the OIP MUs are also discussed in the Weed Management Chapter 2.2. Once the OIP is finalized the Army will report on all the species covered in the O‘ahu consultation. Additionally, this year NRS report the latest population numbers and any relevant updates for the *Achatinella* species in the O‘ahu consultation. For this report the OIP and MIP data are presented together and organized by species/category. Any OIP actions are reported in the second section of each relevant chapter (see table below).

O‘ahu ‘Elepaio stabilization efforts were well underway as of last fiscal year. Therefore, this year’s data is presented as an update to those efforts. Major highlights regarding the OIP include: the protection of 75 breeding O‘ahu ‘Elepaio breeding pairs; the initiation of stabilization level protection and management of several OIP rare plant species; the collection of genetic samples of *Achatinella* species throughout the Ko‘olau AA; and the development of Right of Entries (ROEs)/ License Agreements with various landowners for OIP species management.

Chapter	Title	Contents
1	Feral Ungulate Management	Reports a combination of MIP and OIP MUs
2.2	OIP Weed Management	Reports on the incipient weed control and established weed control on Oahu Training Areas and in OIP MUs.
3.2	OIP Rare Plant Management	Reports on a subset of the OIP rare plant target taxa.
4.2	OIP Rare Invertebrate Management	Reports on <i>Achatinella</i> species within Oahu Training Areas.
5.2	OIP ‘Elepaio Management	Reports on ‘Elepaio management as part of the OIP FWS consultation
6	Research Issues	Reports on the status of NRS research projects and those associated with NRS work.

Future of the OIP

When the OIP is finalized, the Army will begin year one of the plan. In the meantime, NRS will continue working on the stabilization of OIP rare plant species with a focus on 1) Tier 1 species (see OIP) and 2) the rarest species and most threatened populations. In the interim, OIP rare plant stabilization work for these manage for stability populations will focus on *in situ* PU

protection and genetic storage collections. *In situ* protection includes fencing, weed control, rat control and general ecosystem management associated with these species. Rare plant surveys will also be conducted in the coming year. The Army is working with Kamehameha Schools (KS) to develop a license agreement that would allow NRS to conduct surveys and conduct some rare plant management on KS land in the coming year.

The Army is awaiting the results of a population genetic analyses being conducted by Dr. Michael Hadfield's lab at UH. It is hoped that these results will provide additional guidance for these species stabilization efforts. Interim, rare snail stabilization efforts in the Ko'olau Mountains will continue with current predator control efforts, surveys, monitoring, and genetic sampling and analyses. NRS anticipate adapting the preliminary snail stabilization plans outlined in the OIP once genetic analyses are complete (See Chapter 4.2 OIP *Achatinella* Management). NRS also predict OIP *Achatinella* management will be influenced by the results of surveys conducted on KS land in the coming year.

Stabilization efforts for the O'ahu 'Elepaio have been conducted for the past two years. This year, approximately 75 breeding pairs of 'Elepaio received predator control at four sites on O'ahu (Schofield West Range, Honouliuli, Mākaha, and Moanalua). Currently, the Army is pursuing a year by year agreement with Waikane Investment Corporation, the landowners of Waikane Valley, for an 'Elepaio predator control program. This population is the largest remaining windward O'ahu population and an important population to protect for the subspecies (see chapter 5.2)

The Army also obtained a Right of Entry with Moanalua Valley Properties LLC to conduct predator control during the 'Elepaio breeding season this year and expect to have the same agreement for the next breeding season.

Table of Contents

	<u>Page</u>
List of Contributors and Associates.....	i
Executive Summaries MIP/OIP.....	iii
Chapter 1: Feral Ungulate Management.....	1-1
Chapter 2.1: MIP Weed Management.....	2-1-1
2.2: OIP Weed Management.....	2-2-1
Chapter 3.1: MIP Rare Plant Stabilization Plan Introduction	3-1-1
3.1.1 <i>Alectryon macrococcus</i> var. <i>macrococcus</i>	3-1-14
3.1.2 <i>Cenchrus agrimonioides</i> var. <i>agrimonioides</i>	3-1-21
3.1.3 <i>Chamaesyce celastroides</i> var. <i>kaenana</i>	3-1-34
3.1.4 <i>Chamaesyce herbstii</i>	3-1-42
3.1.5 <i>Cyanea grimesiana</i> subsp. <i>obatae</i>	3-1-47
3.1.6 <i>Cyanea longiflora</i>	3-1-58
3.1.7 <i>Cyanea superba</i> subsp. <i>superba</i>	3-1-62
3.1.8 <i>Cyrtandra dentata</i>	3-1-69
3.1.9 <i>Delissea subcordata</i>	3-1-73
3.1.10 <i>Dubautia herbstobatae</i>	3-1-83
3.1.11 <i>Flueggea neowawraea</i>	3-1-88
3.1.12 <i>Hedyotis degeneri</i> var. <i>degeneri</i>	3-1-97
3.1.13 <i>Hedyotis parvula</i>	3-1-102
3.1.14 <i>Hesperomannia arbuscula</i>	3-1-108
3.1.15 <i>Hibiscus brackenridgei</i> subsp. <i>mokuleianus</i>	3-1-114
3.1.16 <i>Melanthera tenuifolia</i>	3-1-123
3.1.17 <i>Neraudia angulata</i>	3-1-129
3.1.18 <i>Nototrichium humile</i>	3-1-140
3.1.19 <i>Phyllostegia kaalaensis</i>	3-1-147
3.1.20 <i>Plantago princeps</i> var. <i>princeps</i>	3-1-153
3.1.21 <i>Pritchardia kaalae</i>	3-1-161
3.1.22 <i>Sanicula mariversa</i>	3-1-169
3.1.23 <i>Schiedea kaalae</i>	3-1-175
3.1.24 <i>Schiedea nuttallii</i>	3-1-184
3.1.25 <i>Schiedea obovata</i>	3-1-190
3.1.26 <i>Tetramolopium filiforme</i>	3-1-198
3.1.27 <i>Viola chamissoniana</i> subsp. <i>chamissoniana</i>	3-1-205
Chapter 3.2 OIP Rare Plant Status	
3.2.1 <i>Cyanea crispa</i>	3-2-1
3.2.2 <i>Cyanea st.-johnii</i>	3-2-3
3.2.3 <i>Cyrtandra subumbellata</i>	3-2-5
3.2.4 <i>Eugenia koolauensis</i>	3-2-7
3.2.5 <i>Gardenia mannii</i>	3-2-10

3.2.6	<i>Huperzia nutans</i>	3-2-12
3.2.7	<i>Labordia cyrtandrae</i>	3-2-13
3.2.8	<i>Lobelia gaudichaudii</i> subsp. <i>koolauensis</i>	3-2-21
3.2.9	<i>Melicope lydgatei</i>	3-2-23
3.2.10	<i>Phyllostegia hirsuta</i>	3-2-24
3.2.11	<i>Phyllostegia mollis</i>	3-2-29
3.2.12	<i>Pteris lidgatei</i>	3-2-34
3.2.13	<i>Sanicula purpurea</i>	3-2-36
3.2.14	<i>Schidea trinervis</i>	3-2-38
3.2.15	<i>Stenogyne kanehoana</i>	3-2-39
Chapter 4.1:	MIP <i>Achatinella mustelina</i> Management	4-1-1
4.2	OIP <i>Achatinella</i> Management	4-2-1
Chapter 5.1:	MIP ‘Elepaio Management	5-1-1
5.2	OIP ‘Elepaio Management	5-2-1
Chapter 6:	Research Issues	6-1

Appendix

Number

NARS SUP 2006	I
<u>Fire Records</u>	
SBMR June 26, 2006	II
MMR July 3, 2006	III
Keawa‘ula July 12, 2006	IV
Weed Taxa Abbreviations	V
<i>Dodonea viscosa</i> seed germination trials in MMR	VI
Ground Shell Plot Methodology	VII
Rat density and home range proposal	VIII
<i>Euglandina rosea</i> research proposal	IX
<i>Euglandina rosea</i> research year 1	X
Slug sampling methods	XI
<i>Achatinella</i> sp. research proposal	XII
Literature Cited	XIII

List of Figures

Figure 1.1	Wai‘anae Kai MU.....	1-5
1.2	Ungulate Control in Mākaha	1-6
1.3	Eastern Half of ‘Ōhikilolo MU.....	1-8
1.4	Western Half of ‘Ōhikilolo MU	1-9
1.5	Kaluakauila MU.....	1-12
1.6	Kahanahāiki MU.....	1-13
1.7	Upper Kapuna MU	1-14
1.8	East and West Makaleha and Manuwai MUs.....	1-15
1.9	Kalua‘ā and Wai‘eli MUs.....	1-16
1.10	‘Ēkahanui MU	1-17
1.11	Palikea MU	1-18
1.12	Lower ‘Ōpae‘ula MU	1-19
1.13	‘Ōpae‘ula/Helemano MU	1-20
2.1.1	ITAM training card cover.....	2-1-2
2.1.2	Invasive species identification card.....	2-1-3
2.1.3	Invasive species identification card.....	2-1-3
2.1.4	LCTA Plot Locations.....	2-1-11
2.1.5	Sum of native and non-native species interceptions per plot per date.....	2-1-12
2.1.6	Northern Wai‘anae Surveys.....	2-1-13
2.1.7	Southern Wai‘anae Surveys.....	2-1-14
2.1.8	Locations of Incipient Weed Species in Mākua Military Reservation.....	2-1-17
2.1.9	Weed Control Areas in Haili to Keālia, DMR.....	2-1-25
2.1.10	Weed Control Areas in Ka‘ena and Ka‘ena East of Alau	2-1-27
2.1.11	Weed Control Areas in Lower ‘Ōhikilolo	2-1-29
2.1.12	Kaluakauila Weed Control Areas	2-1-32
2.1.13	Weed Control Areas in Kahanahāiki, MMR	2-1-36
2.1.14	Weed Control Areas in Pahole NAR.....	2-1-43
2.1.15	Weed Control Areas in Upper Kapuna, Pahole NAR.....	2-1-46
2.1.16	Weed Control Areas in West Makaleha	2-1-50
2.1.17	Weed Control Areas in ‘Ōhikilolo.....	2-1-52
2.1.18	Weed Control Areas in ‘Ōhikilolo- Mauka	2-1-53
2.1.19	Weed Control Areas in ‘Ōhikilolo- Makai	2-1-54
2.1.20	Mākaha Weed Control Areas.....	2-1-63
2.1.21	Weed Control Areas in Pu‘u Kūmakali‘i.....	2-1-63
2.1.22	Weed Control Areas at Wai‘anae Kai	2-1-67
2.1.23	Weed Control Areas in ‘Ēkahanui.....	2-1-69
2.1.24	Weed Control Areas in Kaluaa & Waieli	2-1-73
2.1.25	Weed Control Areas in Pualii & Pālāwai Gulches	2-1-78
2.1.26	Weed Control Areas in Palikea.....	2-1-79
2.1.27	Weed Control Areas in Hālona.....	2-1-82
2.2.1	Landing Zone & Road Surveys, Poamoho to SBE.....	2-2-3
2.2.2	Landing Zone & Road Surveys, KTA and KLOA	2-2-4
2.2.3	Location of Incipient Weed Species in KLOA & SBE	2-2-7

2.2.4	Location of Incipient Weed Species in KLOA.....	2-2-8
2.2.5	Location of Incipient Weed Species in KTA.....	2-2-9
2.2.6	Location of Incipient of Incipient Weed Species in SBW & SBS	2-2-10
2.2.7	Weed Control Areas in East ‘Ō‘io, KTA.....	2-2-22
2.2.8	Weed Control Areas in Kaleleiki, KTA	2-2-23
2.2.9	Weed Control Areas in Kaunala, KTA.....	2-2-25
2.2.10	Weed Control Areas in ‘Ō‘io, KTA	2-2-27
2.2.11	Weed Control Areas in Pahipahi‘ālua, KTA	2-2-29
2.2.12	Weed Control Areas in Helemano & Peahina‘a	2-2-31
2.2.13	Weed Control Areas at Ka‘ala Summit, SBW.....	2-2-33
Figure 4.1.1	Grouping of 18 <i>A. mustellina</i> sites into 6 ESUs	4-1-7
4.1.2	Map and details of ESU-A.....	4-1-9
4.1.3	ESU-B1 ‘Ōhikilolo Ground Shell Plots.....	4-1-12
4.1.4	Location of ESU-B1 ‘Ōhikilolo.....	4-1-13
4.1.5	ESU-B2 Genetic Sampling.....	4-1-15
4.1.6	ESU- B2 East Branch of East Makaleha	4-1-16
4.1.7	ESU-C Schofield Barracks West Range, Ala‘ihe‘ihe and Palikea Gulches...	4-1-17
4.1.8	ESU-D1 Kalua‘ā, Wai‘eli and Pu‘u Hāpapa	4-1-19
4.1.9	ESU-D2 Mākaha.....	4-1-21
4.1.10	ESU-E Pu‘u Kaua/‘Ēkahanui	4-1-23
4.1.11	ESU-F Pu‘u Palikea.....	4-1-25
4.2.1	<i>Achatinella byronii</i> genetic sampling sites, 2006.....	4-2-4
4.2.2	Location of possible <i>Achatinella concavospira</i> within SBS	4-2-5
4.2.3	<i>Achatinella lila</i> genetic sampling sites	4-2-7
4.2.4	A comparison of BISH collections	4-2-9
4.2.5	An individual from a current <i>Achatinella livida</i> site	4-2-9
4.2.6	<i>Achatinella livida</i> genetic sample sites 2006.....	4-2-10
4.2.10	<i>Achatinella sowerbyana</i> genetic sampling sites 2006	4-2-12
Figure 5.1.1	‘Elepaio Distribution in Makua Military Reservation.....	5-1-3
5.1.2	‘Elepaio Distribution on the North Slope of Mākaha.....	5-1-4
5.2.1	‘Elepaio Distribution on SBMR	5-2-5
5.2.2	‘Elepaio Distribution in Mākaha Valley.....	5-2-8
5.2.3	Distribution of ‘Elepaio in ‘Ēkahanui.....	5-2-12
5.2.4	Distribution of ‘Elepaio in Moanalua Valley	5-2-16
5.2.5	Distribution of ‘Elepaio in Waikāne Valley/Kahana Valley	5-2-18
Figure 6.1	<i>Ryncogonus fordii</i>	6-1
6.2	BTB entry hole in <i>Fluggea neowawrae</i>	6-3
6.3	BTB gallery in <i>Fluggea</i>	6-4
6.4	BTB trap and collection cup.....	6-6
6.5	Location of <i>Solenopsis geminata</i>	6-7
6.6	Intert slug bait mixture.....	6-11
6.7	Presentation of bait and regular fungus diet to <i>Partulina redfieldii</i>	6-12
6.8	Evidence of bait consumption by two separate snails	6-13