1 PURPOSE AND NEED FOR ACTION

1.1 INTRODUCTION

This environmental assessment (EA) is prepared pursuant to the National Environmental Policy Act (NEPA). The action proposed is to continue the current cooperative wildlife damage management program in Hawaii to protect human health, safety and property. This EA analyzes projects and their potential impacts as conducted by the United States Department of Agriculture, Animal and Plant Health Inspection Service, Wildlife Services (WS) on behalf of private and public cooperating parties in Hawaii. The analysis does not include projects conducted on behalf of federal cooperators. The analysis examines human health and safety related projects to control fecal accummulations and ectoparasite infestations associated with roosting or nesting birds or mammals such as feral cats. The broad categories of property protection include structures, facilities, equipment, landscaping and commodities that may be damaged by birds and mammals. The present analysis does not include activities to manage wildlife hazards affecting aviation or the protection of agriculture or natural resources.

1.2 NEED FOR ACTION

1.2.1 Overview of Nuisance Wildlife Problem

Between federal fiscal years 1993 and 1997, Wildlife Services in Hawaii received 158 requests for assistance to protect property, health and safety from wildlife and feral animals (Table 1). The cost associated with these 158 incidents was estimated by the cooperators to be about $874,312 or an average of $174,862 per year. Not all requests resulted in WS operational assistance. Where problems warranted WS action, cooperators were required to pay for the assistance.

1.2.2 Birds

Roosting birds create problems when fecal accumulations create safety hazards and damage the buildings or equipment that are housed in buildings. Daily cleaning is often necessary to maintain appearances and sanitation. Nesting birds can create ectoparasitic infestations that can affect humans. Bird mites are a common bird parasite that bite humans and cause itching.

Common mynas (*Alectores tristis*), roosting in buildings or structures cost cooperators $758,500 in damages over a five year period with most of the damages reported in 1995 by a sugar company on Kauai with myna roosts at three of their mills.

Environmental Assessment Protecting Property, Health and Safety

Table 1. Property, Health and Safety damage costs reported to WS between fiscal years 1993-1997 (USDA 1998). Not every report resulted in WS operational assistance.

	Fiscal Year Damages Reported						Number of Incidents Reported					
Species	**1997**	**1996**	**1995**	**1994**	**1993**	**Total**	**97**	**96**	**95**	**94**	**93**	**Total**
Common myna (*Acridotheres tristis*)	6000	1000	750000	1500		758500	1	1	9	6	2	19
Feral pigeon (*Columba livia*)	300	53000				53300	4	3	1		2	10
Feral pig (*Sus scrofa*)	35200			1000	150	36350	5		3	1	3	12
Red jungle fowl (*Gallus gallus*)			10100	500		10600	1		4	1	1	7
English sparrow (*Passer domesticus*)					6200	6200	1	4	2	1	2	10
Zebra dove (*Geopelia striata*)	2000					2000	1	1				2
Rat (*Rattus* spp.)	1000		100	750		1850	2		1	1		4
Java sparrow (*Padda oryzivora*)	1				1700	1701	1				2	3
House finch (*Carpodacus mexicanus*)	1000					1000	1			1		2
Feral cattle (*Bos taurus*)			1000			1000		1	1			2
Feral cat (*Felis cattus*)			115		500	615	4	5	8	6	9	32
Common barn owl (*Tyto alba*)				500		500				1		1
House mouse (*Mus musculus*)					300	300				1	1	2
Other bird (*Aves*)	175					175	5	4	1			10
Wedgetailed shearwater (*Puffinus puffinus*)				100		100	2	1		1		4
Feral rabbit (*Oryctolagus cuniculus)*				100		100	2			3		5
Black crown night heron (*Nyctycorax nyctycorax*)			20			20			3			3
Axis deer (*Axis axis*)					1	1					1	1
Red whiskered bulbul (*Pyncnonotus jacosus*)						0	1					1
Red vented bulbul (*Pyncnonotus cafer*)						0	1			1		2
Feral duck (*Anas* spp.)						0				2	1	3
Feral dog (*Canis familiaris*)						0	3	1	2	1		7
Mongoose (*Herpestes auropunctatus*)						0	1		1			2
Feral goat (*Capra hircus*)						0	1					1
Laysan albatross (*Diomedia immutabilis*)						0	1				1	2

Total	45676	54000	761335	4450	8851	874312	147

Feral pigeons (*Columba livia*) created the second highest damage to buildings and structures at $53,300. They were a serious problem for the [redacted], where an estimated 10,000 were present in 1991. English sparrows (*Passer domesticus*) caused another $6,200 worth of damages, primarily at airport teminals.

Damages from red jungle fowl (*Gallus gallus*) amounted to $10,600. Jungle fowl are usually a general nuisance around subdivisions and condominiums. Peafowl (*Pavo cristatus*) are a growing problem on Oahu where they roost on trees near residences and in parking lots where they can damage and deface automobiles and other property.

1.2.3 Mammals

WS had 12 requests for assistance to remove feral pigs (*Sus scrofa*) from landscaping and gardens in urban areas next to undeveloped lands. Feral pigs caused $36,350 in damages from 1993-1997, which is the third highest cost associated with nuisance animals.

WS provided assistance to control feral cattle (*Bos taurus*) at a veterans cemetery.

WS recieved 32 requests to control feral cats (*Felis cattus*) over the five year period, which was the most frequently requested problem species. Cats cause odor and flea problems.

1.2.4 Purpose of the Proposed Action

The purpose of the proposed action is to respond to requests for assistance to resolve nuisance, health and safety problems associated with wildlife.

1.3 CURRENT PROGRAM

1.3.1 General Integrated Pest Management Strategy

The most effective approach to resolving wildlife damage problems is to integrate the use of several methods, either simultaneously or sequentially. Integrated Pest Management (IPM) as used in the WS program, is the integration and application of practical methods of prevention and control to reduce damage by wildlife while minimizing harmful effects of control measures on humans, other species, and the environment. The IPM approach used by the WS program consists of three action approaches: 1) management of the resource being negatively affected, 2) management of the wildlife responsible for, or associated with the damage, or 3)

physical separation of the two. Resource management includes alteration of cultural practices, habitat modifications, and alteration of human behavior. Management of the wildlife includes behavior alteration through harassment or scaring and population manipulation through translocation or lethal removal. Physical separation may consist of fencing, netting, or other barriers.

Selection of the appropriate approach and method is the result of applying the standard WS decision making process. The WS Decision Model (USDA 1994) is a version of the general professional action model and is applied to all WS operations. The problem is first identified, then a determination is made if the assistance requested is within existing authorities and abilities. Impacts of the problem are considered, and an assessment is made of the actions potentially applicable to the particular situation. This is followed by selection and implementation of those methods or approaches most appropriate. This process concludes with an assessment of the effectiveness of the actions to determine if additional treatment is required.

1.3.2 Interagency Coordination

Resident wildlife species are under the management authority of the State of Hawaii Department of Land and Natural Resources (HDNLR). WS is issued a Protected Wildlife Permit from HDLNR each year, which specifies the species, locations and methods approved to conduct wildlife damage control operations. Terms of the permit are negotiated with HDLNR. Additionally, WS may request a Wildlife Control Permit from a district biologist of HDLNR for specific projects on each island. Monthly reports of animals taken under each permit are submitted to HDLNR.

1.3.3 Wildlife Services Program in Hawaii

Between 1993 and 1997, a total of $338,693 of federal appropriated funds were used to supervise and provide support to implement WS control operations to protect health, safety and property in the state of Hawaii. This was an average expenditure of $67,738 per year. This amount includes the supervision and support to implement wildlife hazard management operations at airports and airfields. They are the largest part of safety protection conducted by WS, but these actions are not addressed in this current analysis.

1.3.3.1 Safety and Health

WS provides operational assistance to resolve safety and health problems

caused by wildlife. This current analysis does not address the management and control of wildlife hazards at airports and airfields, but this analysis does address WS actions on behalf of airports to implement control of wildlife to protect property or control health threats that are not associated with aviation.

1.3.3.2 Property

Another $472,558 was received from non-federal cooperators between 1993 to 1997 to protect properties that were not associated with airports and airfields. This was an average of $94,511 per year.

1.3.3.3 Ongoing Projects from 1993 to 1997

The control of English sparrows at state operated airports has been an on-going activity in Hawaii. English sparrows nest in airport buildings and create fire hazards and mite infestations after chicks fledge. Droppings increase maintenance costs. Various methods are used to prevent sparrows from nesting, including the application of a tacky gel that is placed on potential nest sites. Sparrows may be baited and repelled using a chemical called Avitrol which when ingested, creates distressed behavior by individual birds that take a lethal dose. The result causes other birds to leave the area. Sparrow nests are removed, and individual birds are trapped in funnel traps or shot with pellet guns to reduce the overall population that may be using a building.

WS began control operations at the [redacted] in 1991 to remove feral pigeons to prevent food contamination and the threat of disease and ectoparasite transmission to the zoo animals, employees and visitors. In 1991, the state estimated the feral pigeon population at the zoo to be about 10,000 birds. WS removed most of the pigeons using throw nets and has since maintained an on-going control effort. The zoo implemented a no bird feeding policy which it strictly enforces. Currently there are about 50-60 feral pigeons remaining at the zoo.

WS began control operations for the [redacted] and a construction company base yard on Oahu in 1997. Feral pigeons, common mynas, English sparrows and zebra and spotted doves produce fecal accumulations that are a nuisance and a safety and health problem. These birds are controlled by shooting with pellet guns, scare devices, applications of repellent gel and mylar flash tape. Feral cats are captured in cage traps and

turned over to the Hawaiian Humane Society on Oahu.

1.3.3.4 Temporary Projects

Feral pigs have been controlled on many properties and are usually captured using leg snares. Pigs damage landscaping and gardens. Feral dogs are live cage trapped or leg-snared and turned over to the Hawaiian Humane Society on Oahu. Feral cattle that were defacing headstones, gravesites and eating flowers at the veterans cemetery in [redacted], [redacted] were controlled by shooting. Requests for the control of feral chickens and peafowl on various types of property have been made to WS. Peafowl and chickens are captured live in cage traps and removed from the site. Rodents may be controlled but are often incidental to controlling other target species. The public may request WS assistance on other species but often technical assistance is accepted since there would be a cost for operational assistance.

1.3.4 Decision to be Made

Based on Agency relationships and legislative mandates, WS is the lead agency for this EA, and therefore responsible for the scope, content, and decisions made. HDLNR and the U.S. Fish and Wildlife Service (FWS) have had input throughout the EA preparation to ensure that there is an interdisciplinary approach to complying with NEPA, agency mandates, policies or regulations.

The decisions to be made are:

Should the wildlife damage control program to protect Property, Health and Safety as currently implemented by WS be continued in the state (the no action alternative)?
Should it cease?
Should it be implemented in an expanded format in the state?
Would there be any significant impact on the environment?

1.3.5 Scope of this Environmental Assessment Analysis

This EA is tiered to the WS programmatic Environmental Impact Statement (USDA 1994). This EA analyzes the proposed action and alternatives of WS

providing operational assistance to control nuisance wildlife damage and hazards in the state of Hawaii. The analysis includes ongoing projects and those projects that are completed but are expected to resume due to the temporary nature of wildlife damage and nuisance problems. WS may also enter into new agreements that fall within the scope of actions covered by this analysis. The analysis does not cover WS assistance to airports to control wildlife hazards to aviation, but it does include operations on airport property where mammals and birds damage property or pose a health or other safety threat. The analysis does not cover operations conducted on behalf of federal cooperators. Federal cooperators are considered the responsible agency for NEPA requirements.

1.3.5.1 Period for which this EA is Valid

This EA will remain valid until WS and other appropriate agencies determine that new needs for action, changed conditions, or new alternatives having different environmental effects must be analyzed. At that time, this analysis and document will be supplemented pursuant to NEPA. Review of the EA will be conducted annually to ensure the EA is sufficient.

1.3.5.2 Site Specificity

This EA addresses all sites under past and present Cooperative Service Agreements in the state. WS may also enter into new agreements within the scope of actions covered by this analysis. This EA emphasizes issues as they relate to specific areas whenever possible; however, many issues apply wherever wildlife damage and resulting management occur, and are treated as such. The standard WS Decision Model (USDA 1994) and WS Directive 2.201 will be the site-specific procedure for NEPA compliance for individual actions conducted by WS in the state. Many site-specific actions may be categorically excluded from further NEPA documentation by Animal and Plant Health Inspection Service NEPA implementing regulations.

1.3.5.3 Actions Analyzed

This EA evaluates ongoing and temporary projects as the types of actions that prevent or control wildlife damage to property and threats to health and safety in Hawaii

1.4 AUTHORITY AND COMPLIANCE

1.4.1 WS Legislative Authority

The primary statutory authority for the WS program is the Animal Damage Control Act of 1931 as amended, (7 U.S.C. 426-426c; 46 STAT. 1468) which provides that:

"The Secretary of Agriculture is authorized and directed to conduct such investigations, experiments, and tests as he may deem necessary in order to determine, demonstrate, and promulgate the best methods of eradication, suppression, or bringing under control on...State, Territory or privately owned lands...brown tree snakes and other animals injurious to agriculture, horticulture, forestry, animal husbandry, wild game animals, furbearing animals, and birds..."

In 1988, Congress strengthened the legislative mandate of WS with the Rural Development, Agriculture, and Related Agencies Appropriations Act (Public Law 100- 202, Dec. 22, 1987, STAT. 2329-1331 (7 U.S.C. 426c)) which authorizes the Secretary of Agriculture to enter into agreements to control nuisance mammals and birds.

1.4.2 Compliance with Federal Law

1.4.2.1 National Environmental Policy Act

NEPA requires that federal agencies consider the impacts of their decisions on the environment. This document follows Animal and Plant Health Inspection Service Implementing Procedures for the National Environmental Policy Act.

1.4.2.2 Endangered Species Act (ESA)

It is WS (WS Directive 2.310) and federal policy, under the ESA, that all federal agencies shall seek to conserve threatened and endangered species and shall utilize their authorities in furtherance of the purposes of the Act (Sec. 2(c)). WS conducts Section 7 consultations with the FWS to utilize the expertise of the FWS to ensure that "any action authorized, funded or carried out by such an agency...is not likely to jeopardize the continued existence of any endangered or threatened species..." (Sec. 7(a)(2)).

1.4.2.3 Migratory Bird Treaty Act

The Migratory Bird Treaty Act provides the FWS regulatory authority to protect birds that migrate. WS informs FWS of activities to conduct control operations on Migratory Birds.

1.4.2.4 Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)

FIFRA requires the registration, classification, and regulation of all pesticides used in the United States. The Environmental Protection Agency (EPA) is responsible for implementing and enforcing FIFRA. All chemicals used or recommended by the WS program in Hawaii are registered with and regulated by both the Federal EPA and DOA. WS uses the chemicals according to labeling procedures and requirements as regulated by the EPA and DOA (WS Directive 2.401).

1.4.2.5 National Historic Preservation Act (NHPA) of 1966 as amended

The NHPA requires: 1) Federal agencies to evaluate the effects of any Federal undertaking on cultural resources, 2) consult with the State Historic Preservation Office regarding the value and management of specific cultural, archaeological and historic resources.

1.4.2.6 Environmental Justice

Executive Order 12898 requires Federal agencies to make Environmental Justice part of their mission, and to identify and address disproportionately high and adverse human health and environmental effects of Federal programs, policies and activities on minority and low-income persons or populations.

1.5 ISSUES

The issues that have been identified as important to this analysis are:

Issue 1: The effectiveness of the WS operations to protect property and threats to health and safety.
Issue 2: Impacts on federal and state listed threatened and endangered animals and plants and those proposed for listing.
Issue 3: Impacts on migratory birds.
Issue 4: Humaneness of techniques.

Issue 5: Impacts on target/nontarget species.

2 ALTERNATIVES

2.1 DESCRIPTION OF ALTERNATIVES

2.1.1 Alternative 1 - Current Program (No Action)

The No Action alternative is a procedural NEPA requirement (40 CFR 1502.14(d)), it is a viable alternative that could be selected, and serves as a baseline for comparison with other alternatives. This alternative embraces the current program as described in Section 1.3 of this document and includes both ongoing and temporary projects. WS may enter into new agreements but the program would be similar. The No Action Alternative, as defined here, is consistent with the Council on Environmental Quality (CEQ) definition.

2.1.2 Alternative 2 - No WS Operational Program - Technical Assistance Only

This alternative would terminate the WS program to control damages to property and threats to health and safety within the State of Hawaii but would allow WS to provide technical assistance and make recommendations when requested. Examples of technical assistance may include providing training on bird and animal damage identification and demonstrations on how to use various scare and barrier techniques. Under this alternative, the property owner could carry out the control work under permit by the FWS, if migratory birds were involved, and the Hawaii Department of Land and Natural Resources if any other bird were involved.

2.1.3 Alternative 3 - Non-Lethal Before Lethal Control Program

The Non-Lethal Before Lethal Control Program alternative would require the use of all practical nonlethal methods prior to WS recommending or using lethal controls to resolve wildlife damage problems.

2.1.4 Alternative 4 - Expanded WS Program to Protect Property, Health and Safety

The expanded program would include all aspects of the current program with the addition of staff and inclusion of operations to more effectively serve the future needs of property owners on all the islands. Control methods would be similar but operations would be expanded to other properties. The expansion of the current

WS program would be dependent upon the need of such services and funding support by the property owner or other agencies.

3 ENVIRONMENTAL CONSEQUENCES

This section analyzes the environmental consequences using Alternative 1 (the current program) as the baseline for comparison with the other alternatives to determine if the real or potential impacts are greater, lesser, or the same.

The following resources within the state of Hawaii would not be significantly impacted by any of the alternatives analyzed: soils, geology, minerals, water quality/quantity, wetlands, visual resources, air quality, aquatic resources, and historical sites. Impacts on these resources will not be analyzed further.

3.1 ENVIRONMENTAL JUSTICE

This action would be in compliance with Executive Order 12898 to ensure Environmental Justice. It is not anticipated that the proposed action would result in any adverse or disproportionate environmental impacts on minority and low-income persons or populations.

3.2 CUMULATIVE AND UNAVOIDABLE IMPACTS

This EA recognizes that the total annual removal of individuals from wildlife populations by all causes is the cumulative mortality. The WS operational program to protect property, health and safety, statewide is not likely to result in any significant adverse cumulative impacts on target and nontarget animals (including threatened and endangered species). The removal of individuals from a wildlife population, to prevent damage to property and threats to health and safety does not adversely affect the population. Generally the reason that a wildlife species becomes a pest is due to high inherent reproductive and adaptive capabilities. The recruitment and a species ability to adapt to the human environment ensures the population survival, and minimizes the effects of the annual removal of individuals to protect property, health and safety.

3.3 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

The WS operational program to protect Property, Health and Safety statewide will require minor commitments of fossil fuels and electrical energy for motor vehicles and office support. These uses will produce negligible impacts on the supply of fossil fuels and electrical energy.

3.4 ISSUES ANALYZED IN DETAIL

3.4.1 Alternative 1 - Continue the Current Program (No Action)

3.4.1.1 Issue 1 - Effectiveness

The current program satisfies the immediate need to reduce or eliminate damage and health and safety threats from wildlife, and is considered effective. WS program personnel are experienced in controlling animals, the requester pays directly for the services. There are no measurements available to quantify the effectiveness of the program, only testimonies from property owners or requesters, and the annual renewal of cooperative agreements which generally indicate that the requester was satisfied with the results of the operation.

3.4.1.2 Issue 2 - Impacts on threatened and endangered species.

Generally the projects falling under property, health and safety protection are in urban areas. Threatened and endangered species are generally not an issue in these areas. No threatened and endangered species occur or would likely be exposed to any WS actions covered in the scope of this analysis.

3.4.1.3 Issue 3 - Impacts on Migratory Birds

Migratory birds appear in Table 1 as being reported to cause damages. The introduced house finch (*Carpodacus mexicanus*) may sometimes be a nuisance problem by nesting in buildings, however, in the ongoing and temporary projects, house finches were not impacted or subject to control by WS. Technical assistance was provided by WS to property owners who had problems with black-crowned night herons (*Nyctycorax nyctycorax*) consuming fish from garden fishponds. Common barn owls (*Tyto alba*) roosted in buildings and created a nuisance with droppings and pellets. Wedge-tailed shearwaters (*Puffinus pacificus*) nesting under homes on Oahu create noise problems. Laysan albatrosses (*Diomedia immutabilis*) nesting on condominium properties on Kauai and were considered a nuisance. None of these cases resulted in WS operational assistance. In most cases WS would provide technical assistance to address the problem in a nonlethal manner or make referals to other wildlife agencies that may choose to provide further assistance.

In the event that migratory birds are subject to WS actions, IPM nonlethal methods are usually considered sufficient in dealing with indigenous species. The introduced migratory birds that may establish a commensal relationship with humans may require an IPM approach that also incorporates lethal removal. In both cases populations are considered abundant for all introduced migratory species listed in Table 1 and any take of individuals would not have a significant negative impact on the populations.

3.4.1.4 Issue 4 - Humaneness of Techniques

The issue of humaneness, as it relates to the killing or capturing of wildlife is an important but very complex concept that can be interpreted in a variety of ways. Humaneness is a person's perception of harm or pain inflicted on an animal, and people may perceive the humaneness of an action differently. Some individuals and groups are opposed to some of the management actions of WS, especially lethal methods. However, it is concluded that the most effective and expeditious methods must be used to handle wildlife conflicts. WS personnel are experienced and professional in their use of control methods so that they are as humane as possible.

3.4.1.5 Issue 5 - Impacts on Target Species

The impact of the program on target species from ongoing projects during a 5- year period is listed in Table 2. These numbers are not significant on the overall population of any of the species because of the high reproductive and recruitment rates.

Table 2. Target animals killed to control damage to property and threats to health and safety in Hawaii for ongoing projects in Hawaii from FY 1993 to 1997.

On-going Projects	Species	1993	1994	1995	1996	1997	Total
[redacted]	Common Myna					208	208
	English Sparrow					7	7
[redacted]	Feral Pigeon	812	460	222	5	85	1584
	Java Sparrow	228					228
	Zebra Dove	352					352
[redacted]	Common Myna	318	78	75	109	313	893
	English Sparrow	63	108	67	147	214	599
	Feral Cat	34	19	31	30	16	130
	Feral Dog		1				1

[redacted]*	English Sparrow	197	230	30	116	157	730
	Java Sparrow	356	339	283	304	275	1557
	Feral Cat	24	36	27	22	15	124
	Feral Dog		1	1		1	3
[redacted]	Feral Cat	55	10				65
	Feral Dog		1				1

*these records are from takes that are associated with WS actions in terminals and other airport buildings and property and are not associated with WS actions to protect aviation safety from wildlife hazards on the airfield.

3.4.2 Alternative 2 - No Federal WS Operational Program - Technical Assistance Only

Under this alternative, operational wildlife damage management would be conducted by the property owner or his agent. WS would provide the technical assistance to support the property owner or a third party if requested. This alternative retains all elements of the Current Program Alternative, but the work would be conducted by different people. The effectiveness of the alternative could be similar to the Current Program Alternative if methods and control devices are applied by personnel with the same technical expertise and professional oversight capabilities as the WS program. This may not always be possible for a property owner and may result in higher environmental costs to achieve protection of property, health and safety. The impacts to migratory birds, target and non-target species and the issue of humaneness could be greater than the Current Program Alternative. WS employs wildlife biologists to manage and supervise the field program. These individuals have the education, expertise and training that allows the agency to minimize the negative impacts to wildlife populations. WS as a federal agency is also subject to the Government Performance and Results Act of 1993, which requires that federal agencies establish standards measuring their performance and effectiveness. The GPRA is another mechanism whereby WS is held accountable to maintain an effective program. Under Section 7 of the Endangered Species Act, federal agencies, such as WS, must consult with the FWS if any proposed actions will impact threatened and endangered species.

3.4.3 Alternative 3 - Non-Lethal Before Lethal Control Program

The Non-Lethal Before Lethal Control Program alternative is a modification of the present WS program that would require the use of all practical nonlethal methods prior to WS recommending or using lethal controls to resolve wildlife damage problems. Ultimately, both nonlethal and lethal controls would be used under a

modified Integrated Pest Management program.

The process of using nonlethal methods before lethal methods tends to be counter intuitive to some service recipients and may not be as effective as using lethal control initially. Often the service recipient needs the immediate problem solved while nonlethal methods are established as part of a long-term solution. In some cases, not only would lethal before nonlethal be more efficient, it could also increase the effectiveness of nonlethal techniques.

Threatened and endangered species are not usually encountered in operations described in this analysis. Where they may occur, a strategy of non-lethal control, if any, is the usual WS response. This strategy would not change under this alternative. Target species may be more difficult to handle if all nonlethal remedies are required to be implemented prior to lethal control. The impact on target and nontarget may not necessarily change with is alternative since it does not preclude the use of lethal control if all other nonlethal methods fail. The humaneness of the approach would not be affected as well, since the alternative does not preclude the use of lethal control if all other nonlethal methods fail.

3.4.4 Alternative 4 - Expanded WS Program to Protect Property, Health and Safety

The expanded program would include all aspects of the current program with the addition of staff and inclusion of operations to more effectively serve the future needs of property owners on all the islands. Control methods would be similar but operations would be expanded to other properties. The expansion of the current WS program would be dependent upon the need of such services and funding support by the property owner or other agencies. Expansion of the current WS program would not necessarily have a greater impact on migratory, threatened and endangered, and target and non-target species since an IPM approach does not exclusively use lethal control. If more target species are taken due to an expansion of program assistance, the populations that are usually involved can withstand the limited increase in take that may be expected. Humaneness would remain the same since the methods would not necessarily change under this alternative.

4 CONCLUSION

The action proposed by this environmental assessment is the current program alternative which would allow the types of operations described in the ongoing and temporary projects to protect property, health and safety in Hawaii. No significant impacts would be expected to result from the implementation of this proposal.

5 PERSONS CONSULTED

Michael Buck
Administrator
Department of Land and Natural Resources
Division of Forestry and Wildlife

Field Supervisor
U.S. Fish and Wildlife Service
Ecological Services
Michael Wilson
State Historic Preservation Officer
State of Hawaii
Historic Preservation Office

LIST OF PREPARERS

James G. Murphy
Reviewer
District Supervisor
USDA-APHIS-WS, Honolulu, HI.
B.S. Zoology, University of Hawaii.

Tim J. Ohashi
Primary Writer
Assistant State Director
USDA-APHIS-WS, Honolulu, HI.
B.S. Wildlife Resources, University of Idaho
M.S. Wildlife Biology, New Mexico State University at Las Cruces

J. Gary Oldenburg
Reviewer
State Director
USDA-APHIS-WS, Olympia, WA.
B.S. Fisheries and Wildlife Management, Oregon State University

Shannon Starratt
Editor
Environmental Management Coordinator
USDA-APHIS-WS, Portland, OR.
B.S. Animal Science, Virginia Polytechnic Institute
M.S. Agriculture, California Polytechnic State University

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7 APPENDIX