

FILLING THE GAPS IN THE FIGHT AGAINST INVASIVE SPECIES

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FOREWORD

This study was prepared in response to Senate Concurrent Resolution No. 45, H.D. 1 (2001). The concurrent resolution directed the Legislative Reference Bureau to conduct a study on policy recommendations and funding options for a comprehensive alien invasive species protection and control program for the State of Hawaii.

The Bureau extends its appreciation to the many federal, state, private agencies, and individuals who generously and promptly provided information and assistance in the preparation of this study.

Wendell K. Kimura
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FACT SHEET

I. Highlights

- A. The alien invasive species problem in Hawaii is both serious and daunting. The damage that invasive species cause and may potentially cause affects the State's health and safety, as well as its economic and environmental well being.
- B. The present system to fight invasive species is comprised of dedicated state, federal and private agencies. The system, however, is plagued with serious gaps and leaks.
- C. Two of the more major gaps involve funding problems and administering invasive species programs.
- D. This report addresses these gaps by recommending the establishment of an Invasive Species Administrator/Coordinator and suggesting various sources of funding to finance invasive species programs.

II. Anticipated Questions

- A. Will the establishment of an Invasive Species Administrator/Coordinator and the use of various funding sources suggested by this study solve the invasive species problem in Hawaii?

Answer: No. Although the administration of programs and money are two very important issues in the fight against invasive species, they are by no means a panacea.

It is important to understand that alien invasive species are not limited to just the miconia, Brown tree snake, or Caribbean coqui frog. "Invasive species" is a collective term that refers to all foreign plants, animals and organisms that are harmful to Hawaii. Recognition of this "big picture" is necessary to appreciate the overall damage caused by all invasive species and to formulate programs and policies that appreciate the long-term requirements necessary to effectively and efficiently utilize funds and resources.

It is also important for the Legislature to realize that funding for invasive species is an on-going cost. The elimination of the coqui frog or miconia or any other pest will not of itself solve the invasive species problem. Like any other budget line item such as education or housing, the invasive species problem is a recurring legislative concern.

B. How much will it cost to solve the invasive species problem?

Answer: For one year, the estimated cost of financing all invasive species programs is approximately \$50 million. Obviously, that amount is beyond the reach of the State, especially in this economic climate.

It is more important for the Legislature to focus on the on-going nature of the funding problem and to designate dedicated sources of funding for fighting invasive species, as well as to concentrate funding on prevention and inspection activities to achieve the greatest return on funds expended.

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Chapter 1

INTRODUCTION

Pursuant to Senate Concurrent Resolution No. 45, H.D. 1 (2001) (see Appendix A), the Legislative Reference Bureau was requested to conduct a study on policy recommendations and funding options for a comprehensive alien invasive species protection and control program for the State of Hawaii.

Simply put, the term "alien invasive species" means foreign plants or animals that have invaded another locality. A dictionary definition of "species" refers to a basic biological category of living things that "are able to breed among themselves, but are not able to breed with members of another species."¹ On a more technical level, alien invasive species refers to plants, animals, organisms, or microorganisms that were moved or transported beyond their natural habitat and have invaded or taken-over another habitat or ecosystem.

In a survey of the more serious alien pests in the Hawaiian Islands, George Staples and Robert Cowie's "Hawaii's Invasive Species," describes the scope of invasive species as "vertebrate and invertebrate [(snails, insects, etc.)], animals and plants that occur in terrestrial (land), freshwater, and marine habitats." Alien species also include "organisms that live underground including minute nematode worms, fungi, and protists (single-celled organisms)," as well as "disease-causing micro-organisms (bacteria, viruses, protists) ..."²

What is so Bad About a Foreign Plant or Animal in Hawaii?

Not all alien species are bad or invasive. Many plants, fruits, vegetables, and domesticated animals such as pineapples, sugarcane, coconuts, and taro, which are all alien to Hawaii, were imported here to provide food, sustenance, and economic growth.

Alien species become invasive in a new environment because the natural predators or other biological mechanism that kept the specie manageable in its former habitat is missing in its new environment. Without this biological balance, invasive species compete with native species for food and territory, alter or destroy natural habitats, change predator/prey relationships, and sometimes transmit foreign diseases or parasites. In doing so, these pests effectively change the biodiversity of a locality and can often cause millions of dollars in damage to local economies.

Biodiversity the Ultimate Goal

Biodiversity or biological diversity refers to variety within the living world. The world needs biodiversity "to guide important decisions at every level, from local

landscaping to federal importation regulations. ...[H]umans need to understand the role of place -- and the *separation* of places -- in shaping the biotic world."³ (Emphasis in original)

"Based on the number of species per square mile on each of the continents, [biologists] projected that such a landmass would support about 2,000 species of mammals. However, with the continents separate, the earth actually has about 4,200 species of mammals. [T]he complete breakdown of biogeographic barriers [as is the case with invading alien species,] might result in the eventual extinction of more than half of the earth's mammalian species."⁴ "The ecological importance of a species can have a direct effect on ... overall biological diversity."⁵

"The continuing destruction and degradation of natural habitats cause more species to become endangered. They also reduce our ecosystem's ability to provide basic ecological services, such as flood control and crop pollination, on which humans depend. Against this backdrop of ecological deterioration, exotic species are emerging as one of the leading threats to our native species and ecosystems."⁶

A case in point is the miconia calvescens plant. The miconia, which some believe was imported into Hawaii as a commercial decorative plant,⁷ is a native of South America and can quickly grow up to fifty feet tall with huge "elephant-ear" like leaves that can span more than a foot and a half wide and close to three feet long.⁸ These monstrous plants can grow almost anywhere and create gigantic canopies that not only effectively kill smaller native and non-native plants by blocking the sun's light, but in the process destroy the habitat of native forest birds, animals and insects, as well as threaten watersheds that supply water to thousands of households. Left unchecked, an invasive species like miconia is virtually impossible to eradicate. Maui county alone spends \$1 million a year just to contain the miconia plant.⁹

The Proper Perspective

It is important to understand that alien invasive species are not limited to just miconia, Brown tree snakes, or Caribbean coqui frogs. "Invasive species" is a collective term that refers to all foreign plants, animals and organisms that are harmful to Hawaii. Recognition of this "big picture" is necessary to appreciate the overall damage caused by all invasive species and to formulate programs and policies that appreciate the long-term requirements necessary to effectively and efficiently utilize funds and resources.

Legislative Intent

The Legislature recognized the environmental and economic threat posed by invasive species and was well aware of the efforts to address this problem by federal, state, county and concerned private organizations. The Legislature, however, was also aware of state invasive species programs that were "piecemeal [and lacked] adequate

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rigor, comprehensiveness, and political will ..."¹⁰ To resolve this administrative problem, the Legislature adopted Senate Concurrent Resolution No. 45 in an attempt to provide policy recommendations and funding options to develop a comprehensive invasive species protection and control program for the State of Hawaii.

Scope of the Study

The scope of this study is set-out in the concurrent resolution and requests the Bureau to provide information in the following areas:

- (1) The scope of the invasive species problem on a global and local level;
- (2) The economic and environmental costs to Hawaii associated with invasive species;
- (3) The health and safety issues for Hawaii associated with invasive species;
- (4) Hawaii's existing programs and policies that address the invasive species problem;
- (5) Existing collaborative efforts between organizations in the public, private, and non-profit sectors and among government agencies;
- (6) Potential for future collaborative efforts between organizations in the public, private, and non-profit sectors and among government agencies;
- (7) Statutory changes the Legislature can make to improve control and prevention of invasive species;
- (8) Assessing the need for a lead state agency for the control and prevention of invasive species, and if deemed necessary, recommending the lead state agency; and
- (9) Evaluating existing funding sources and recommending potential future funding sources for a comprehensive state plan.

This study will concentrate on the larger, more visible species that people generally encounter. Except for invasive species targeted by the Department of Health's Vector Control, organisms that live underground including minute nematode worms, fungi, and protists (single-celled organisms), as well as disease-causing micro-organisms will, for the most part, not be included in this study since the primary thrust of on-going efforts are not aimed at these pests.

Finally, this study does not address the "how to" of controlling and eradicating invasive species. This study is intended to focus on identifying "gaps" and "leaks" in the present system, assessing the need for a lead state agency, and evaluating funding issues related to combating invasive species in Hawaii.

Organization of the Study

This report is generally organized following the above issues as set forth in the concurrent resolution. Each issue is generally treated in a separate chapter with additional chapters discussing the gaps and leaks in the present system to fight invasive species, and how other jurisdictions administer their invasive species programs. The report concludes with recommendations and suggested legislation.

Endnotes

1. Random House Webster's College Dictionary 1991.
2. Staples, George and Cowie, Robert, 2001, "Hawaii's Invasive Species", Mutual Publishing.
3. Van Driesche, Jason and Roy, 2000, "Nature Out of Place", Island Press.
4. Id., quoting the "American Scientist", at 33-47.
5. World Conservation Monitoring Centre, 1995, "Biodiversity: An Overview", www.wcmc.org.uk/infoserv/biogen/biogen.html.
6. The Nature Conservancy, "America's Least Wanted", a NatureServe Publication.
7. Various interviews with state and private agency staff.
8. Honolulu Star-Bulletin, September 10, 2001, www.starbulletin.com.
9. Id.
10. Senate Concurrent Resolution No. 45 (2001), p. 1.

Chapter 2

SCOPE OF THE INVASIVE SPECIES PROBLEM ON GLOBAL AND LOCAL LEVELS

Globally

According to the IUCN -- The World Conservation Union,¹ the expansion of global trade and transport has allowed modern society to gain greater access to and benefits from the world's biological diversity. As a result, the world has become enriched through access to and introduction of different varieties of plant and animal species, including alien species. These species have been used for agriculture, forestry, fishing, ornamental and recreational purposes.²

Often, however, the introduction to ecosystems of alien species has carried a heavy price tag, especially in terms of loss of biodiversity and environmental and natural resource damage. As a result, the introduction of alien species has been recognized as one of the most serious threats to our health, and to our ecological, social and economic well being.³ "The environmental problems caused by alien species worldwide rank with habitat destruction in seriousness."⁴ "Tropical rainforests are being cut down faster than they can grow back, and ... the forest is replaced with grassland, usually composed of alien species."⁵ "The effects of invasive alien species are often less noticeable than the more obvious habitat destruction such as logging or urban development and in the past have generated less concern among politicians and the general public."⁶

Almost every country is grappling with the problems caused by introduced alien species. Addressing the problem is urgent because the threats increase daily. For example, according to the Invasive Species Advisory Committee⁷ and the Van Driesche's "Nature Out of Place":

- Zebra mussels are affecting fisheries and electric power generation in North America causing \$5 billion in damage to water pipes, boat hulls, and other hard surfaces in the region by the end of 2000;
- Water hyacinths are choking wetlands and waterways in Africa and China;
- Brown tree snakes are decimating native bird species on oceanic islands, and pose a major threat to Hawaii;
- Grey squirrels are ousting native Red squirrels in Europe;
- Foot and mouth disease, a highly contagious disease of cloven-hoofed animals has caused the United States to temporarily ban meat imports

from the European Union and Chile costing British companies \$30 billion; and

- A comb jelly, native to the eastern coast of the America's was accidentally released into the Black Sea, provoking the collapse of the already stressed Black Sea fisheries with an estimated \$350 million loss.

Worldwide, the losses to agriculture may be anywhere from \$55 billion to nearly \$248 billion annually.⁸ Philippine rice farmers have lost nearly \$1 billion in crops to the invasive golden apple snail. An exotic cattail is strangling rice paddies in the wetlands of northern Nigeria.⁹

The threat of alien species has resulted in numerous international conventions, treaties and agreements. The Convention on Biological Diversity included over 170 countries that addressed alien species introduction, control, and eradication across all biological taxa and ecosystems. To put the worldwide effects of invasive species into perspective, we need only look at the devastation in our own country.

Nationally

There are approximately 50,000 foreign species (not all harmful) that have been introduced in this country and the number is increasing.¹⁰ The National Conference of State Legislatures estimates the total costs attributable to invasive species in the United States amount to \$137 billion each year with an estimated thirty percent of the National Park System in the lower forty-eight states infested by invasive species. The cost to U.S. agriculture alone is approximately \$72.7 billion,¹¹ and the Nature Conservancy reports that invasive species impact nearly half of the species currently listed as "threatened" or "endangered" under the U.S. Federal Endangered Species Act.¹²

On Guam, the Brown Tree Snake originating in the South Pacific and Australia, has exterminated ten to thirteen native bird species, six of twelve native lizard species, and two of three bat species. The Glassy-winged sharpshooter, an invasive insect recently detected in California, carries the plant bacterium *Xylella fastidiosa*, a disease that has caused nearly \$40 million in losses to California grapes. The disease poses a major economic threat to the grape, raisin, and wine industries, as well as to tourism related activities all valued at nearly \$35 billion annually.¹³

An estimated 138 alien tree and shrub species have invaded native U.S. forest and shrub ecosystems.¹⁴ Also, invading weeds have spread and are invading approximately 700,000 hectares per year (1 hectare = 2.471 acres) of wildlife habitat in the United States.¹⁵ Similarly, European Cheatgrass has invaded and spread throughout the Great Basin in Idaho and Utah, predisposing the invaded habitat to fires.¹⁶ Before the invasion of Cheatgrass, fire burned once every 60-100 years, and shrubs had a chance to become well established. Now, fires occur about every 3-5 years; shrubs and other vegetation are diminished, and competitive monocultures of

Cheatgrass now exist on five million hectares in Idaho and Utah.¹⁷ The animals dependent on the shrubs and other original vegetation have been reduced or eliminated.¹⁸

Many small mammals have been introduced in the United States, including numerous species of rodents.¹⁹ The total cost of destruction by introduced rats in the United States is more than \$19 billion per year.²⁰ Introduced cats have also become a serious threat to some native birds and other animals. The total damage to the U.S. bird population is approximately \$14 billion per year.²¹

The list of invading alien species in this country seems almost endless and few dispute the estimated \$137 billion²² in damage that they cause each year.

Locally

"There is wide-spread agreement among farmers, scientists, government agencies, business people, and others that stopping the influx of new pests is essential to Hawaii's future well-being."²³

A 1994 report of the United States Office of Technology Assessment declared the Hawaii's alien pest species problem to be the worst in the nation.²⁴ Governor Cayetano apparently agreed with that assessment in a letter to the National Invasive Species Council when he said, "the invasive species problem [in Hawaii] is the most severe of any state ...".²⁵

"Each year an average of twenty new insects become established in our islands, half of which are known pests.... For the past five years, an average of one hundred new alien plants each year have been discovered in the islands."²⁶

Additionally, according to the U.S. Geological Survey, Biological Resources Division's Pacific Island Ecosystems Research Center, human colonization of the islands has severely impacted native plant and animal populations -- more than 75 percent of the historically known endemic bird species are now either extinct (23) or endangered (30). Of the nearly 1,300 endemic plant species described from Hawaii, 104 are considered extinct, and 267 of the remaining taxa are either listed or are proposed as endangered or threatened species.

Why is the Invasive Species Problem so much Worse in Hawaii?

According to the Coordinating Group on Alien Pest Species (CGAPS), an organization composed of private, state, federal, and other interested parties that is dedicated to fighting invasive species in Hawaii:

The same natural circumstances that have made Hawaii ... a paradise now make the islands exceptionally vulnerable to new pest species. For millions of years, Hawaii was isolated from the rest of the world by 2,000 miles of open ocean. Plants and animals succeeded in crossing the ocean and colonizing Hawaii very infrequently, perhaps as seldom as once in 50,000 years. Those that did survive this incredible journey found a pleasant climate, fertile soils, few competitors, and fewer diseases or predators....

As a result of this gentle environment, many native species lost their natural defenses because they had no need to escape or protect themselves from predators. For example, most native plants have no poisonous saps or thorns, and several birds lost their ability to fly.

But now a new pest reaches Hawaii once every 18 days on average. Like other species, they too, benefit from Hawaii's lush environment. Free of the competitors and natural diseases that kept them in check in their own native environments, these foreign pests sometimes explode in Hawaii, overwhelming native species, harming valuable crops, and sometimes threatening the islands' people as well.²⁷

The Scope of the Problem

The scope of the invasive species problem in Hawaii is enormous. The next two chapters will discuss the economic and environmental costs and the health and safety issues with respect to invasive species in Hawaii. But first, the following brief survey of some of the more notorious invasive species identified in Hawaii:

- (1) **Snakes**, especially the **Brown tree snake** are a threat to humans as well as to the environment. "Of the more than 200 people treated in Guam emergency rooms for snakebites, 84% were bitten at night while asleep in bed. On more than one occasion, parents checking on a crying baby have been horrified to find an eight foot snake coiled around the child, the baby's hands punctured and swollen from repeated bites."²⁸

"The brown tree snake has already wiped out nine of Guam's eleven native land bird species and most of the non-native birds as well." In Hawaii, "state inspectors captured 32 snakes and nearly 100 illegal reptiles and amphibians ... 1994 alone."²⁹

- (2) **The Caribbean frog** is quickly propagating on several islands. The mating call of a male frog "can reach up to the decibel level of 90 to 100, making it comparable to the noise made by a lawnmower, table saw, or helicopter."³⁰ "Two species of small brown Caribbean frogs ... have been introduced to Hawaii in the past ten years or so. One of these species (*E. coqui*) occurs on Maui; the second (*E. planirostris*) occurs on the Big Island, Oahu, and Kauai and could easily be transported to Maui."³¹ "The frogs can occur at densities up to 8,000 per acre, and may occur at higher densities in Hawaii. They consume an average of 45,000 prey items per acre per night (approximately 16 million prey items per acre per year).

They do not require standing water for a tadpole stage, eggs are laid in lead axils or in lead litter. Females produce 4-6 clutches per year, each clutch consisting of 16-41 eggs. They can occur from sea level to at least mid-elevation rainforest and mesic forest (ca. 4,000 feet)."³²

The Environmental Protection Agency has recently approved the use of caffeine to kill Caribbean frogs.³³ "The approval required an exemption from the Federal Insecticide, Fungicide and Rodenticide Act. The state Agricultural Department requested the exemption after tests administered by the U.S. Department of Agriculture indicated caffeine was an effective agent to kill coqui frogs."³⁴

- (3) **The Miconia plant** which creates gigantic canopies that not only kills smaller plants by blocking the sunlight, but in the process destroys the habitat of native forest birds, animals and insects, as well as threatens watersheds that supply water to thousands of households.³⁵
- (4) **Fruit flies, the Papaya ringspot virus and other agricultural related pests** that cause an estimated \$300 million in damage annually.³⁶
- (5) **The Formosan ground termite** causes nearly \$150 million in treatment and damage repair costs annually, most of which is paid by homeowners."³⁷ "Six species of termites occur in the islands, all of them aliens."³⁸ The subterranean termite causes the most damage and is the single most costly economic pest in the Hawaiian Islands.³⁹ Because of their large colonies (2-10 million termites) these insects can cause enormous damage in a short time. This species has not yet reached its full potential.⁴⁰
- (6) **Biting sand flies.** "On May 2, 1995, three canoes in the historic Polynesian voyaging fleet sailing from the Marquesas to Hawaii reported biting flies on board. The crews had seen for themselves the swarms of these no-no flies at beaches and streams on Nuku Hiva, and the infected sores on the legs of bitten Marquesan children. These tiny, voracious flies breed in beach sand or in streams, and are most active on sunny days."⁴¹
- (7) **Mosquitoes** that act as vectors for Dengue Fever and Malaria and have the potential to cause serious epidemics to humans and native birds.⁴²

Dengue Fever poses a threat to not only local residents but tourists as well. "Dengue and dengue hemorrhagic fever are caused by one of four closely related, but antigenically distinct, virus serotypes."⁴³ Dengue is primarily a disease of the tropics, and the viruses that cause it are maintained in a cycle that involves humans and *Aedes asgypti*, a domestic, day-biting mosquito that prefers to feed on humans.

- (8) **Piranhas** which have already found their way into Oahu waterways and remain a favorite illegal importation specie of pet hobbyists.⁴⁴
- (9) **Pigs, goats, deer and sheep** that destroy native vegetation, accelerate erosion, pollute water supplies, and devour bird nestlings. Their wallows create breeding sites for mosquitoes that may spread deadly diseases for animals and humans.⁴⁵
- (10) **Rodents** which transmit leptospirosis and murine typhus to humans as well as feed on sugarcane, native birds and plants including koa.⁴⁶

Pathways to Paradise

Alien pests enter Hawaii's boundaries through different means or pathways. The most popular pathways utilized by alien pests are by air, sea, and the mail. The following is a summary of these pathways and the scope of their use in Hawaii (prior to September 11, 2001):

"Every day by air:

- 68 commercial flights
- 192 interisland flights
- 21,992 passengers
- 11 military flights
- 260,000 pounds of cargo
- 15,575 parcels

Every day by sea:

- 30,964,000 pounds of cargo
- 20,888 parcels
- 222 passengers

Every day by mail:

- 614,000 pounds of mail
- 1,171,384 parcels"⁴⁷

Endnotes

1. IUCN -- The World Conservation Union, 2001, "A Guide to Designing Legal and Institutional Frameworks on Alien Invasive Species", www.iucn.org/themes/ssc/pubs/policy.htm.
2. Id.

SCOPE OF THE INVASIVE SPECIES PROBLEM ON GLOBAL AND LOCAL LEVELS

3. Id.
4. Staples and Cowie, 2001, "Hawaii's Invasive Species", Mutual Publishing, at 5.
5. Id.
6. Id.
7. Invasive Species Advisory Committee, Invasive Species Council, 2000, "International Working Group Report". The Committee and Council are a product of President Clinton's Executive Order 13112 and is discussed further in Chapter 7.
8. Id., at 57-58.
9. Id.
10. Pimentel, et al., "Environmental and Economic Costs Associated with Non-indigenous Species in the United States", June 12, 1999, Cornell University.
11. National Conference of State Legislatures, National Conference on Science, Policy, and the Environment, October 12, 2000.
12. Pimental, et al., "Environmental and Economic Costs Associated with Non-indigenous Species in the United States", quoting Nature Conservancy 1996; Wilcove, et al., 1998.
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Chapter 3

THE ECONOMIC AND ENVIRONMENTAL COSTS TO HAWAII ASSOCIATED WITH INVASIVE SPECIES

The tourism industry is Hawaii's primary economic engine. Tourists come to Hawaii, in large part, to experience its scenic beauty and pristine idyllic environment. Therefore, the economy and the environment are inextricably interrelated -- any threat to Hawaii's environment is logically a threat to its economy. Thus, an invasion of alien species that alters or affects the environment will affect the economy.

Invasive species affect Hawaii economically in two basic ways. First, the costs that are involved in preventing or eradicating these alien pests, and second, the potential costs associated with invasive species damage.

Economics of Prevention and Eradication

The economic costs involved with the prevention or eradication of invasive species "draw resources away from [other] activities that improve the quality of life [of Hawaii's residents]." ¹ Funds that would otherwise have been spent on costs associated with the quality of life, instead are used to:

- (1) [P]revent the establishment of harmful species (e.g. fencing out of feral animals),
- (2) [C]ontrol populations (e.g. the application of pesticides), ...
- (3) [R]emEDIATE damages caused by harmful pests (e.g. replacement of wood structures due to termite damage) ... [and]
- (4) [R]esidual damages (those that are leftover after control and remediation efforts) such as lower property values or decreased agricultural production.²

Agriculture

Hawaii's agricultural industry pays for costs in all of the foregoing categories. Lost revenues alone (due to potential markets that refuse Hawaii exports with pest infestations) account for an estimated \$300 million per year.³

"Many of Hawaii's most promising crops are struggling under a siege of alien pests. Anthurium growers battle bacterial blight which has caused a **40% decline** in statewide production since 1980. Several ginger root farmers have suffered **60-70% crop loss** due to a bacterial wilt that first appeared in 1991. An alien root aphid on Maui is causing crop **losses of 20-90%** in affected cabbage, broccoli, and cauliflower crops."⁴ (Emphasis in original)

"Since 1985, four new sugarcane insect pests have become established in Hawaii, costing sugar planters more than \$9 million. Alien snails, insects, viruses, and other pests threaten the resurgence of taro (already a \$2 million industry statewide) as an agricultural commodity and the staple of traditional Hawaiian diet. **The taro root aphid causes 90% crop loss in dryland taro.** (Emphasis in original) Big island taro growers are already battling this pest, and it spread to Oahu farms for the first time in late 1994. The only treatment for taro root aphid: removal of all taro from the infested field for at least one year."⁵

"Since fruit flies have made their way to Hawaii, restrictions have been placed on the export of papaya, mango, and other produce to fruit fly-free markets like California and Japan. The agriculture industry values these lost potential markets at \$300 million per year."⁶

"The papaya ringspot virus weakens the papaya tree and ruins the fruit. The virus could bring an end to large-scale papaya production on the Big Island, valued at \$16 million annually and employing 1,200 farmers. The fall of papaya, the fifth largest commodity in the state, could mean a \$50 million loss in an economy already suffering from the decline of the sugar industry."⁷

Many in Hawaii are familiar with the story behind the arrival of the Indian mongoose to Puerto Rico and Hawaii to control the local rat population. Although the mongoose failed to eliminate its nocturnal prey, it was successful in killing poultry in Puerto Rico and Hawaii. Additionally, the mongoose is responsible for the extinction of amphibians, reptiles, and native birds, and preys on native ground nesting birds in Hawaii and Puerto Rico. The mongoose causes approximately \$50 million in damages each year in Hawaii and Puerto Rico.⁸

The mongoose's intended prey -- rodents -- also cause their share of economic problems. "In Hawaii, rats were causing \$6 -- 10 million dollars a year in damage to sugarcane in the early 1990's."⁹ "Rats now cause an estimated reduction in the macadamia nut harvest of 5 -- 10 percent, which for 1995 would account for \$1.8 to 3.6 million in direct agricultural damages."¹⁰

Introduced bird species are an especially severe problem in Hawaii. A total of 35 of the 69 non-indigenous bird species introduced between 1850 and 1984 in Hawaii are still extant on the islands.¹¹ One such species, the common myna bird, was introduced to help control pest cutworms and army worms in sugarcane.¹² However, it became the major dispenser of seeds of an introduced serious weed, *Lantana camara*.¹³

Other Economic Costs

Termites caused an estimated \$60 million in 1986 which jumped to \$150 million in 1995.¹⁴

The infamous brown tree snake has all but devastated Guam ecologically in recent years and causes an estimated \$1 million in economic damages annually. The brown tree snake causes an average of one power outage every four days on Guam.¹⁵ "If Oahu faced similar conditions, the expense of power outages would be dramatic. A conservative estimate of the cost for one major Oahu power outage triggered by a fallen tree branch in 1991 was \$13 million."¹⁶ A few brown tree snakes have been found in Hawaii but thus far have been exterminated. Hawaii's concern about the snake, however, has prompted the federal government to invest \$1.6 million per year in brown tree snake control.¹⁷

Feral pigs, native to Eurasia and North Africa have been introduced into Hawaii where they have substantially changed the vegetation in area parks.¹⁸ More than eighty percent of the soil is bare in regions inhabited by pigs.¹⁹ This disturbance allows annual plants to invade the overturned soil and intensifies soil erosion. Pig control per park in Hawaii (1,500 pigs/park)²⁰ costs about \$150,000 per year. Assuming that the three parks in Hawaii have similar pig control problems, the total damage attributable to pigs is approximately \$450,000 per year.²¹

More costly and a more recent invasive species is the miconia plant. "More than \$1 million is spent each year on Maui and the Big Island ... [to fight the miconia plant.]"²² "[T]he cost is expected to rise; some say it would take \$49 million to get rid of miconia."²³

Potential Economic Costs

The most obvious potential economic cost related to invasive species is its impact on the State's cash cow -- tourism. The invasion of unwanted pests has the potential to economically devastate the State by keeping tourists away from the islands.

"The visitor industry is the backbone of Hawaii's economy, generating \$18.9 billion in total sales, 30% of all state and county taxes (\$1.1 billion), and 37% of all civilian jobs in 1994. Hawaii's visitor industry is largely dependent on the islands' image as a paradise with one of the world's safest and most pleasant outdoor environments -- fantastic weather, clean beaches and water, and no dangerous snakes, insects, or tropical diseases to worry about. But ... pest species threaten Hawaii's borders every year, if any sneak through, they could permanently tarnish this image and pose real threats to the engine that drives Hawaii's economy."²⁴

The "Silent Invasion" report preceded the dengue fever outbreak in the latter half of 2001. The 59 confirmed cases of dengue fever in Maui as of October 18, 2001, was blamed partially for an estimated 75% business slowdown in Hana, Maui, as well as a 25 percent layoff of employees at Hotel Hana-Maui.²⁵

Considering the relative seclusion of the Hana community, the State was fortunate that the outbreak was not in a more populated area. "In Tahiti, for example, dengue has spread to an estimated 28,000 people."²⁶ Had the outbreak occurred in Waikiki or West Maui, the economic repercussions would have been far greater.

The dengue outbreak also illustrates the quickness with which the disease or any invasive specie can spread in today's global community, the potential for widespread and substantial damage, and the difficulty of eradicating the alien specie. The latest outbreak of dengue was transported from Tahiti to over a dozen Hawaiian communities on three islands in a matter of months and devastated the town of Hana economically. Even after intensive eradication efforts by the Department of Health, vestiges of the disease still linger at the time of this writing.

In 1943, the only other dengue outbreak in Hawaii's history, the disease spread rapidly and infected 1,500 people statewide. Because of the relative infrequency of inter-island travel during the 40's, dengue was confined to the island of Oahu and the total eradication of the disease took ten years to complete.²⁷

Other invasive species that have the direct potential to negatively affect the tourism industry include:

- (1) **Biting sand flies.** These flies stowed away on the historic Polynesian voyaging fleet from the Marquesas in May of 1995. It also devastated a Caribbean resort development before it even formally opened.²⁸ "These tiny voracious flies breed in beach sand or in streams, and are most active on sunny days. Peak swarms can inflict up to 10,000 bites per person per day. Millions of dollars have been spent trying to control the flies in the Marquesas with little success ..." ²⁹
- (2) **The Caribbean Coqui frog.** These frogs pose problems to not only local residents, but to Hawaii's visitors as well. Reports of the frogs at Maui hotels have modified the habits of some kamaaina guests who were bothered by the ear-piercing calls of male frogs.³⁰
- (3) **The "Lethal yellowing" disease.** This disease attacks and kills coconut trees -- which has come to symbolize Hawaii and its beauty to tourist all over the world.³¹
- (4) **Red fire ants.** These ants "almost made their way to Hawaii in 1991 ... [and caused] nearly 20,000 people a year in the U.S. to seek medical attention, including 32 people that died in 1989 from allergic reactions to the ants' toxic stings."³²

As mentioned earlier, the foregoing invasive species have the potential to directly impact Hawaii's tourism industry. Other species can still affect the industry indirectly by altering or displacing Hawaii's environmental assets.

Endnotes

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Chapter 4

HEALTH AND SAFETY ISSUES FOR HAWAII ASSOCIATED WITH INVASIVE SPECIES

Alien invasive species affect the health and safety of residents and tourists in Hawaii both directly and indirectly. Invasive pests that harm or damage the environment indirectly affect the health of all other living things -- including humans. For instance, the miconia plant destroys the ecology of local forests -- thereby destroying the ecological balance of not only the physical environment, but the plant and animal life that depend on that delicate balance.

Invasive species do far greater damage to the health of residents and visitors directly than they do indirectly. Since alien invasive species include microorganisms that can take the form of a disease, any disease that is transported to Hawaii is considered an invasive specie. But because most diseases are alien to Hawaii, this report will concentrate on non-immunizable, new or reestablished diseases, such as dengue fever.

As was previously mentioned, the outbreak of dengue fever wreaked economic havoc on the little town of Hana on Maui, not to mention the debilitating, flu-like symptoms suffered by 59 Hana residents.¹ Luckily for Hawaii, the disease appears to have been contained in the Hana community before it could replicate the massive health problems it caused on Oahu some sixty years ago.²

Another disease that threatens the health and safety of Hawaii's people and visitors is the bacterium that causes anthrax, the bacillus anthracis.³ Since the death of a Florida man for inhalation of anthrax in October of 2001, anthrax has left a trail of victims across the East Coast.

Fortunately, no fatalities have occurred in Hawaii as of this writing, but the mere threat of anthrax has caused dozens of reportings (all ultimately negative) to overworked local authorities in addition to a rash of hoaxes that only added to the concerns of a public trying to get past the events of September 11, 2001.

Besides health concerns with diseases and bacteria, a host of other invasive species affect or have the potential to affect the health and safety of Hawaii's residents and tourists. As mentioned previously, these pests include:

- Biting sand flies which inflict 1,000 to 10,000 bites per human per day;
- Red fire ants which killed 32 people in 1989;
- Brown tree snakes which contribute to the 200 attacks annually on humans in Guam;

- Mosquitoes which carry both dengue fever as well as malaria;
- Africanized honey bee or "killer bees" which are responsible for 1,000 deaths and as many as 200,000 attacks on humans worldwide are already in southern California;
- Termites, which cause \$150 million in structural damage each year in Hawaii, jeopardize the safety of occupants in termite-eaten homes and buildings;
- Piranhas, which have already been found in Hawaii's waterways and can inflict serious injury to humans and animals;
- Rodents that transmit leptospirosis and murine typhus to humans as well as feed on sugarcane, native birds, and plants including koa;
- Fire promoting grasses that burn readily and serve as serious promoters of fire in native dryland ecosystems;⁴
- The stinging nettle caterpillar that causes a burning sensation when touched and attacks rhaps palm leaves;⁵ and
- The Caribbean coqui frog which emits a shrill mating call from "dusk to dawn ... at 90 to 100 decibels ... hovering somewhere between a chain saw and a rock band."⁶ Residents on the Big Island, Maui, and parts of Oahu have lost sleep and are forced to "close all the windows at night, but the whistling is so loud it is still nerve-racking."⁷

Endnotes

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4. Hawaii, Department of Land and Natural Resources, 2001, "Alien Species" website.
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6. Carol Chang, MidWeek magazine, May 30, 2001, "The War on Frogs", at 46.
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Chapter 5

STATE AND FEDERAL AGENCIES HAVING RESPONSIBILITIES CONCERNING THE INVASIVE SPECIES PROBLEM

Hawaii's existing invasive species programs and policies are essentially divided into two areas. First, preventing the introduction of invasive species into the State through inspection, and second, the eradication of incipient invasive species before they become established or the control of invasive species after their establishment in Hawaii.

The following is a brief description of the duties performed by state and federal agencies with respect to alien invasive species. Most of the material in this chapter is condensed from a report published by The Nature Conservancy of Hawaii,¹ which provides an excellent summary in this regard. Lists of state and federal laws, rules, and regulations administered or implemented or implemented by the respective state and federal agencies are included as Appendix B.

Inspection

State Agencies

Hawaii Department of Agriculture

"Generally, the Hawaii Department of Agriculture (HDOA) has sole responsibility for species importation originating within the U.S. Its authority however, extends only to materials coming from the continental U.S. It therefore relies heavily on referrals from U.S. Customs, U.S. Department of Agriculture (USDA)-Plant Protection and Quarantine Branch (PPQ) , and U.S. Fish and Wildlife Service Law Enforcement Division (USFWS - LE) to intercept foreign and trust territory items prohibited by the State."

The Hawaii Board of Agriculture is "responsible for enforcing the list of species prohibited by statute and determining which plant and animal species are prohibited or permitted into the State."¹ The board also maintains three lists for animals "conditionally approved" (permit required for importation); "restricted" (permit required for both importation and possession); and "prohibited." An animal not on the first two lists is also prohibited, however, unlike animals, there is no statutory language which states that plants must be on the permitted list or they cannot be imported.

With respect to microorganisms, the board maintains lists of:

- (1) "Restricted" microorganisms (permit required for importation);

- (2) Select human pathogens for certified clinic laboratories (no permit required); and
- (3) Nonrestricted microorganisms (no permit required). Unlisted microorganisms may be allowed based on the department's determination of the level of risk (high, moderate, or low).

Plant Quarantine Branch, Plant Industry Division, HDOA

The Plant Quarantine Branch (PQ) regulates the importation of plants, nondomestic animals and microorganisms and the movement within the islands of all plants and nondomestic animals. Its primary goal is to prevent the introduction of harmful insects, plant diseases, illegal animals and other pests into Hawaii.

Cargo Inspection

"The [B]ranch separates in-coming goods into one of three "risk-categories" -- high, medium, or low risk -- and randomly inspects the items in decreasing order of emphasis."¹

Passenger Inspection

"All passengers, officers and crew members arriving in Hawaii by commercial aircraft or vessel and carrying plants, animals, microbial cultures, or soil must complete the HDOA mandatory Declaration Form and submit the imported items for inspection."¹

Military Inspection

"Military maritime and airport facilities are subject to PQ inspection, but such inspections are limited due to the lack of staff."¹

Plant Pest Control Branch (PPC), Plant Industry Division, HDOA

The Plant Pest Control Branch is responsible for eradication of incipient plant diseases, weeds, and invertebrate pests. The Branch is not responsible for controlling some vertebrate pests, although it will assist in the control of specific vertebrate pests through departmental collaborative efforts. PPC also "plays a lead role in carrying out the department's responsibility to develop lists of noxious seeds and noxious weeds that are subject to regulation."¹

Inspection and Quarantine Branch (IQB), Animal Industry Division, HDOA

The IQB focuses on cats, dogs and other carnivores and places particular emphasis on keeping Hawaii free of rabies at its animal quarantine stations.¹ "IQB [also] has authority to inspect military air and sea transport."¹

Livestock Disease Control Branch (LDC), Animal Industry Division, HDOA

"The mission of the LDC is [the] prevention, control and eradication of diseases of livestock and poultry in Hawaii. Prevention is conducted through disease surveillance activities, which includes enforcing livestock import regulations.... The goal of this program is to ensure that the State remains free of ... [livestock] diseases and in turn makes it easier to export livestock."¹

Federal Agencies

U.S. Customs Service, Department of Treasury

The U.S. Customs Service seizes prohibited plants and animals or their products at foreign ports of entry into Hawaii and from foreign mail. "Customs requires a manifest from the shipping agent of all in-coming cargo. The shipper holds imported goods against a bond. Customs always inspects certain types of cargo, such as aquarium fish, before granting entry. Others, such as new cars, are rarely inspected."¹

"All packages mailed from outside the U.S. must have customs declarations that clearly state the nature of the contents. Customs can inspect any mail from foreign points of origin. In addition, Customs generally conducts spot checks to re-inspect selected military cargo and passengers previously inspected by Military Customs Inspectors."¹

U.S. Fish and Wildlife Service (USFWS), Department of Interior

The USFWS is responsible for all imports of wildlife or wild plants into the U.S. from foreign sources and the exportation of wildlife to foreign countries. The USFWS may review all in-coming plant or animal material for Customs. Much of their inspection duties involves examining baggage and mail referred by Customs and from incoming cargo.¹

Plant Protection and Quarantine Branch (PPQ), Animal and Plant Health Inspection Service (APHIS), U.S. Department of Agriculture

The PPQ and APHIS inspect foreign shipments entering Hawaii or bound for the mainland to prevent the importation of plant and animal diseases and pests. Much of

PPQ's work in Hawaii involves pre-clearance inspections of baggage and exports bound for the U.S. mainland.¹ The PPQ also provides foreign arrival inspections and also inspects plants or plant material that are found in baggage or cargo of foreign origin.¹

Military Customs Inspection Program (MCI)

MCI is an adjunct to U.S. Customs and APHIS and responsible for inspecting transfers of military goods and personnel from overseas into U.S. jurisdictions. They are responsible for implementing federal customs statutes and agriculture regulation for transfers of military goods and personnel from overseas into U.S. jurisdiction. MCI staff look for flying insects in airplane cabin areas and spray as necessary. They also review household and personal goods transferred to the U.S. from foreign duty stations, and review troops, gear, and equipment returning to areas of U.S. jurisdiction.¹ MCI is not responsible for goods transported to Hawaii from the U.S. mainland and vice versa.¹

U.S. Postal Service (USPS)

The USPS attempts to identify and screens some types of mail to intercept quarantined agricultural material. Current postal regulations continue to prohibit the opening or inspection of any first-class mail by state agricultural inspectors unless the parcel is plainly marked by the sender as containing a plant or plant product or labeled "may be opened for agricultural inspection". State agricultural inspectors are allowed to inspect parcels after getting consent from the sender or importer.

U.S. Food and Drug Administration (FDA), Department of Health and Human Services

"The FDA does not have a specific program for preventing alien pests from entering Hawaii. Very few instances involve live infestations; 90-99 percent of the food that FDA finds to be contaminated is infested with either dead insects or insect parts."¹

Eradication

State Agencies

Eradication duties are presently shared by the Department of Land and Natural Resources (DLNR), the Department of Health (DOH), and the Hawaii Department of Agriculture (HDOA).

Plant Quarantine Branch (PQ), Plant Industry Division, HDOA

PQ conducts selected "post-entry" follow-up inspections to ensure that potentially harmful species authorized for entry under HDOA and/or USDA permits do not escape and become established.

"Problems arise with established vertebrates. Although the law tasks PQ with the responsibility for species when they are entering the State, traditionally the [B]ranch is also involved in pursuing illegal species (e.g. snakes, other reptiles, a cougar) long after they have left the importation system -- airport, dock, warehouse or retail outlet -- are out in the wild. 'Handing off' of responsibility to another agency generally only happens if the other controlling agency has been previously designated.... If, however, the lines of responsibility are unclear, PQ is often the responding agency."¹

PQ also participates in programs related to or developing: agricultural quarantine inspection monitoring (sea cargo); banana inspection protocol; plant quarantine standard operating procedures; plant quarantine policy manual; plant pest control priority list; and plant pest control (biocontrol program) -- guidelines for conducting host range testing.

Plant Pest Control Branch (PPC), Plant Industry Division, HDOA

PPC "is responsible for controlling established diseases, invertebrate pests, some vertebrate pests and noxious plant species."¹ "PPC responds to some pest calls, including those reporting any animal, insect, disease agent or any other organism in any stage of development that is detrimental, or potentially harmful to agriculture, natural resources or the environment."¹ "Although the primary purpose of the [B]ranch's activities is to promote agriculture, the statutory definition of "noxious weed" extends PPC's jurisdiction to include weeds that threaten forest and conservation lands."¹

Division of Forestry and Wildlife (DFW), DLNR

Generally, DFW "is responsible for controlling pest species in conservation or nonagricultural lands while HDOA is responsible for agricultural pests. In many cases, however, this statutory distinction does not provide a clear jurisdictional boundary between the two agencies. The two agencies collaborate frequently, particularly when trying to control newly escaped species. HDOA-PQ is the first responding agency for escaped potential pests. Where necessary, PQ calls on DFW to assist with capturing or destroying escaped animals (especially vertebrates) and may ask DFW to accept primary responsibility for operations in remote areas where there is no HDOA staff."¹

"Domesticated, nongame animals, such as chickens, ducks, and rabbits, also present jurisdictional difficulties involving several agencies. Although DFW may respond to escapes or assist HDOA in handling them, jurisdiction over this class of potential pest is not clear. For example, although Animal Industry Division statutes provide some control over releasing domestic animals, no specific agency has jurisdiction over 'feral rabbits.' The problem is further complicated when the animals in question are pets or farm animals valued by the owner. Feral animals in urban settings are often captured or destroyed by the island humane societies."¹

DFW is responsible for:

- (1) Protecting alien birds occurring in a wild state;
- (2) The taking of alien animals declared as game mammals (feral pigs, goats, etc.) by requiring hunting licenses and other requirements; and
- (3) Selected situations on nonconservation and private lands where a serious pest threatens to expand into conservation land and provide technical assistance to private landowners for controlling pests.¹

Division of Aquatic Resources (DAR), DLNR

The DAR "is responsible for conserving, protecting and enhancing the state's renewable resources of aquatic life and habitat; managing noncommercial use of these resources; promoting, developing and enhancing opportunities for public recreational fishing; managing commercial use of Hawaii's aquatic resources; and encouraging the growth and development of commercial fisheries and aquaculture in the State.... DAR has initiated a high profile campaign against releasing aquarium fish into Hawaii's streams."¹

Vector Control Branch (VCB), Environmental Health Services Division, DOH

VCB "conduct[s] detection programs under the International Sanitation Rules and provide protection against quarantinable diseases.... VCB prevents vector-borne diseases by keeping populations of potential vectors below disease transmission levels."¹

VCB also administers the statewide Port-of-Entry Program in Hawaii. The Program is a critical priority for DOH and prevents alien species of public health significance from entering the State. Program operational procedures include monitoring, surveillance, cordon sanitation, alien specie identification, enforcement and zoonotic laboratory diagnosis, and support functions.

The Branch also assists the DOA and DLNR with various eradication efforts as resources allow through collaborative departmental agreements.

Federal Agencies

U.S. Fish and Wildlife Service (USFWS), Department of Interior

USFWS's mission is to resolve the problems created when wildlife causes damage to agricultural, urban or natural resources. USFWS control efforts include rat control and eradication and control of introduced predators on endangered waterbird refuges.

**Institute of Pacific Islands Forestry, U.S. Forest Service and
Tropical Fruit and Vegetable Research Laboratory, Agricultural
Research Service, U.S. Department of Agriculture**

These agencies provide research and testing services for biological control of forest weeds and fruit flies.

National Park Service, U.S. Department of Interior

Control activities include "large-scale feral animal and weed control programs ... and jellow-jackets, mongoose and other mammalian predators [control programs]."¹

Private Organizations

Private organizations that have contributed to the eradication and control of invasive species include the Bernice Pauahi Bishop Museum, The Nature Conservancy of Hawaii, the Hawaiian Sugar Planters' Association, the Hawaiian Humane Society, the Maui Human Society, and the Sierra Club.

**Collaborative Efforts Between Organizations in the Public, Private,
and Non-Profit Sectors and Among Government Agencies**

Collaborative efforts between public, private and non-profit agencies abound with respect to invasive species. These efforts include:

- (1) Memorandum of Understanding (MOU) between the state Department of Land and Natural Resources (DLNR) and the Hawaii Department of Agriculture (HDOA) that basically delegates responsibility for preventing the introduction of invasive species into the State to HDOA and the eradication of invasive species already in the State to DLNR;
- (2) MOU between the U.S. Departments of Interior, Transportation and Agriculture, the Federal Aviation Administration, and the state Departments of Agriculture, Health, Transportation, and Land and Natural Resources for the Hawaii Alien Species Action Plan (ASAP) for improvements at Kahului Airport;
- (3) The Hawaii Alien Species Action Plan (ASAP) was produced by the efforts of over eighty professionals from government, non-profit, and private agencies and organizations that produced a strategy to strengthen Hawaii's protection against invasive species. ASAP was the predecessor to the present Coordinating Group on alien Pest Species (CGAPS);

- (4) Alien Species Action Team (Interdiction Team) that included (2) above and the National Parks Service (Haleakala), Airlines Committee of Hawaii, the Maui Hotel Association, the Nature Conservancy, and other concerned civic groups;
- (5) MOU between the state Department of Health and HDOA as to which department should respond to a specific invasive specie threat (i.e., biting flies on the Hokulea/fire ants on Kauai);
- (6) Cooperative agreement between Plant Protection and Quarantine Branch (PPQ) and HDOA that HDOA will assist PPQ in identifying seeds imported into Hawaii;
- (7) Cooperative agreement that allows the U.S. Department of Agriculture (USDA) and HDOA to screen certain types of mail processed by the U.S. Postal Service as well as private carriers like Federal Express and DHL;
- (8) The Coordinating Group on Alien Pest Species (CGAPS), a multi-agency partnership of state and federal agencies, as well as private groups formed to coordinate efforts against the invasive species problem;
- (9) The respective island invasive species committees on Oahu, Maui, Hawaii, and formatively on Kauai that are, for the most part, privately funded to combat invasive species;
- (10) The Brown Tree Snake Control Group, formed in response to the threat of the snake's migration to Hawaii;
- (11) The Noxious Plants Task Force, formed in anticipation of the state noxious weed hearings;
- (12) The First-Class Mail Inspection Task Force, established by the HDOA to examine the problems presented by the entry of invasive species through the mail;
- (13) The Melastome Action Committee organized to prepare long-term prevention and control strategies for weed species in the Melastome plant family;
- (14) The Firetree Control Committee formed to control the noxious weed *Myrica faya*, an invasive tree native to the Azores and Canary Islands;
- (15) Red Imported Fire Ant Action Plan (draft form);
- (16) Brown Tree Snake Emergency Response Protocol;

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- (17) Alien Aquatic Organism Task Force formed under Act 237, Session Laws of Hawaii 1997;
- (18) Memorandum of Agreement between HDOA, USDA and APHIS on postentry inspection which is required for HDOA to conduct postentry quarantine inspections for APHIS in Hawaii (draft form);
- (19) The National Invasive Species Council (Council) co-chaired by the Secretaries of Agriculture, Commerce and the Interior -- and includes the Secretaries of State, Treasury, Defense, and Transportation, and the Administrator of the Environmental Protection Agency;
- (20) The National Invasive Species Advisory Committee which advises the National Invasive Species Council;
- (21) The Cooperative Forestry Assistance Act of 1978 which authorizes the Secretary of Agriculture to conduct activities and provide technical assistance relating to insect infestations and disease conditions and federal and non-federal lands;
- (22) The National Environmental Policy Act which requires federal agencies to identify actions that are likely to affect invasive species or be affected by them;
- (23) The federal Aquatic Nuisance Species Task Force which coordinates activities relating to aquatic invasive species;
- (24) The Federal Interagency Committee on the Management of Noxious and Exotic Weeds which coordinates weed management efforts on federal lands; and
- (25) The Committee on Environment and Natural Resources of the National Science and Technology Council which coordinates research efforts.

The Potential for Future Collaborative Efforts

To date, there has been a plethora of collaborative efforts among various state and federal agencies and private organizations for the purpose of fighting invasive species. The willingness or the potential for agency collaboration does not appear to be an issue. It is to the credit of state, federal and especially private agencies, that cooperative efforts among the various and sometimes adversarial groups have become commonplace and an effective means to combat problems posed by invasive species.

Tourism Industry

Considering the potentially devastating economic consequences that invasive species could cause to the tourism industry (see chapter 3), participation by the tourism industry in existing collaborative efforts to fight invasive species was surprisingly low. Some tourism officials had either no understanding of the potential consequences related to invasive species or any desire to participate in any collaborative effort, or both.²

Endnotes

1. The Nature Conservancy of Hawaii, Natural Resources Defense Council, 1992, "The Alien Pest Species Invasion in Hawaii: Background Study and Recommendations for Interagency Planning."
2. Various interviews with state agency officials and private groups.

Chapter 6

GAPS AND LEAKS IN THE PRESENT SYSTEM

Despite Hawaii's status as one of the leading states with respect to fighting invasive species,¹ "gaps", and "leaks" still plague the State's present system.

State and federal agencies, CGAPS, the Hawaii Nature Conservancy, and others have identified several gaps and leaks that can be organized into the following four categories.

Funding Related Issues

- The present system lacks proper funding to provide adequate inspection and control efforts at almost every phase of the present system including pests in vessel ballast water and hull encrustations and microalgae growth on local beaches.
- A large proportion of the total passenger, cargo, and other traffic entering Hawaii is currently uninspected, including materials known to be significant sources of new invasive species.
- The interisland spread of invasive species is a major, largely unregulated problem.
- Federal reimbursement is not fully utilized for state funds generally, and specifically for "interline" funding to subsidize the protection of the U.S. mainland from pests in Hawaii.
- Present laws and penalties for illegal introductions are inadequately enforced.
- Funding for vertebrate-control research needs to be increased because current levels are insufficient to cover more than a couple, out of the wide range of pests in Hawaii.
- DOH's revised Port-of-Entry Program needs to be fully funded to provide adequate rodent trapping, rodenticiding, mosquito larviciding, mosquito surveillance and other alien vector activities at ports-of-entry.

These budget and funding issues are discussed in the next chapter, *Funding Invasive Species Programs*.

State Administration Issues

- Response to new infestations is frequently delayed by jurisdictional, organizational, or procedural problems, allowing pests to become established and, in some cases, spread beyond control.
- Jurisdictional problems also reflect the absence of a single authority solely responsible for fighting invasive species that can represent the State regarding federal issues and concerns.
- Better involvement of county governments is needed in the island invasive species committees and in the prevention of the spread of invasive plants through state and county sponsored nurseries.
- A lack of agreement exists between state departments on the goals of preserving the agricultural base versus the natural resources of the State.
- Agency mandates and commercial interests sometimes call for maintenance of potentially destructive alien species as resources for sport hunting, aesthetic resources or other values.
- State lacks an invasive species mission statement and state agencies should be mandated not to promote the introduction or spread of invasive species.

Since these issues relate to administering invasive species programs, they are discussed further in chapter 9, *Assessing the Need for a Lead Agency*.

Federal Issues

- International trade agreements and other federal programs do not protect Hawaii from the full range of pests. Hawaii's fight against invasive species is hampered by federal laws (quarantine preemption problem) that do not recognize the dangers of pests already on the mainland but not in Hawaii, and international trade agreements that do not take into account the issues related to foreign pests.
- Domestic first-class mail is a pathway for invasive species into Hawaii and is federally protected from inspection.
- Quarantine of domestic pests arriving from the mainland should be provided by the federal government, as is the present practice that protects the mainland from pests originating in Hawaii.

GAPS AND LEAKS IN THE PRESENT SYSTEM

- Lack of coordination between federal agencies, especially between the U.S. Fish and Wildlife Service and the Department of Defense and the National Park Service.
- The federal Lacey Act should be amended to include possession of prohibited alien wildlife that is consistent with the State's injurious wildlife list to improve state-federal coordination in enforcing smuggling and black-market violations involving injurious alien species.
- The duties of the USDA in quarantines should be integrated with the Department of Interior on the interdiction of invasive species for international airline arrivals.
- Federal policy is needed to inspect domestic airline passengers, baggage and cargo for invasive species.
- The National Park Service has taken an active role in fighting invasive species far beyond the boundaries of their parks.
- More involvement by the federal Environmental Protection Agency in public health issues as it relates to invasive species.
- Provide properly funded collaborative USDA assistance, to in effect, "deputize" the USDA's plant protection and quarantine program to enforce Hawaii's laws.

Although these federal issues are, for the most part, beyond the authority of state government and hence -- this report, they reflect the complicated and interdependent relationship between federal and state agencies, laws and policies. These issues need to be addressed by federal authorities and actively promoted by the State and are therefore incorporated into chapter 9, relating to the administration of invasive species programs.

Endnotes

1. U.S., Office of Technology Assessment. Harmful Non-indigenous Species in the United States, Washington, D.C., September 1993, Chapter 7. "State and Local approach from a National Perspective".

Chapter 7

FUNDING INVASIVE SPECIES PROGRAMS

The Money Problem

When state, federal, and private agencies were asked to identify the single greatest problem they faced in their fight against invasive species, their answer was always the same -- **money**.¹ If the Legislature does nothing else but appropriate more funds for the fight against invasive species, it will have dramatically improved the State's condition with respect to alien pests.

In the prior chapter that identifies "funding related" gaps and leaks, all of the issues in that section involve the underfunding or lack of funds to adequately fight the invasive species problem in Hawaii. Especially issues related to the "inspection" of ballast water discharges, commercial cargo, interisland travel and cargo, and Port-of-Entry surveillance activities, unduly affect the fight against invasive species because of the State's priority on inspection activities -- a discussion of which follows later in this chapter. Underfunding also affects federal matching programs that are also discussed later in this chapter.

On-Going Cost

It is important for the Legislature to realize that funding for invasive species is an **on-going cost**. The elimination of the coqui frog or miconia or any other pest will not solve the invasive species problem. Like any other budget line item such as education or housing, the invasive species problem is a recurring legislative concern.

How much is Needed to Fight Invasive Species?

CGAPS estimates that the cost to effectively fight invasive species in Hawaii for one year is \$49,847,000. See Appendix C, for a breakdown of this estimate.

How much does the State Spend Fighting Invasive Species?

The United States General Accounting Office (GAO) conducted a study on invasive species in July of 2001 and found that for fiscal years 1999 and 2000, Hawaii spent \$6.3 million and \$7.6 million, respectively to fight invasive species. This is only 12% to 15% of the total amount needed to fight invasive species. See CGAPS estimate of spending breakdown in Appendix D.

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As of July 2001, in response to the GAO study, the following four state departments reported the following expenditures to fight invasive species for 1999 and 2000:

| | 1999 | 2000 |
|--------------|--------------------|---------------------------------|
| DLNR | \$1,500,000 | \$ 1,500,000 |
| HDOA | \$6,270,300 | \$ 7,582,380 |
| DOT | \$ 482,200 | \$ 1,760,000 |
| DOH | <u>\$ 245,000</u> | <u>\$ 245,000</u> |
| TOTAL | \$8,497,500 | \$11,087,380² |

Federal and Other Sources of Funding

The GAO report also provides the following federal and other sources of funding to the following state departments for 1999 and 2000:

| | 1999 | 2000 |
|----------------|--------------------|--------------------|
| DLNR | | |
| federal | \$ 260,000 | \$ 260,000 |
| other | \$ 210,000 | \$ 210,000 |
| HDOA | | |
| federal | \$ 562,000 | \$ 847,000 |
| other | \$ 570,000 | \$ 550,000 |
| DOT | | |
| federal | \$ 0 | \$ 0 |
| other | \$ 0 | \$ 0 |
| DOH | | |
| federal | \$ 0 | \$ 0 |
| other | <u>\$ 0</u> | <u>\$ 0</u> |
| TOTAL | \$1,413,000 | \$1,867,000 |

Excerpts of the GAO report are included in Appendix E.

Existing Funding Sources

The scope of this next section regarding existing funding sources has been limited to sources normally reported under the State Budget Act, which for fiscal year 2001-2002 is Act 259, Regular Session of 2001, Session Laws of Hawaii 2001.³ "Funding sources" means the specific revenue sources that make up the means of financing that in turn finances programs in the state budget that involve invasive species control and prevention.

At present, no programs in the state budget are devoted exclusively to invasive species. Instead, several programs in the budget incorporate or can incorporate invasive species activities within their broader objectives. The means of financing for these programs include general funds, special funds, federal funds, trust funds, interdepartmental transfers, and revolving funds.

Of these several means of financing, the special and revolving funds have statutorily established funding sources. These funding sources consist of fees, rates, charges, sales, fines, gifts, interest, legislative appropriations, or specific taxes. Generally, funding sources are not earmarked for a particular use.⁴ Instead, the special or revolving fund into which the funding sources are deposited is earmarked for some use.

With regard to the other means of financing, the funding sources for the interdepartmental transfers are the state Department of Land and Natural Resources and the Airports and Harbors divisions of the state Department of Transportation. The federal funding sources include the United States Department of Agriculture, the United States Department of the Interior, the United States Department of Transportation, and the Environmental Protection Agency. Within the Department of the Interior, funding sources include the United States Fish and Wildlife Service and the United States Geological Survey Biological Resources Division. Within the Department of Agriculture, funding sources include the United States Forest Service. Within the Department of Transportation funding sources, include the Federal Aviation Administration.

The departments in state government that either engage in or assist in funding programs that include invasive species efforts are the Departments of Agriculture, Land and Natural Resources, Health and Transportation.⁵ In the budget act, the programs of these departments are found in the program areas of economic development, environmental protection, transportation, health, and culture and recreation.⁶

Specifically, the departments through their divisions administer the following programs (as indicated by their budget program acronym and number), which include invasive species activities or funding:

- Department of Agriculture
 - Plant Industry Division
 - AGR 122 Plant Pest and Disease Control
 - AGR 846 Pesticides
 - Animal Industry Division
 - AGR 131 Rabies Quarantine
 - AGR 132 Animal Disease Control

- Department of Land and Natural Resources
 - Aquatic Resources Division
 - LNR 401 Aquatic Resources
 - LNR 805 Recreational Fisheries

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Forestry and Wildlife Division

LNR 402 Forests and Wildlife Resources
 LNR 407 Natural Area Reserves and Management

Department of Transportation

Airports Division

TRN 102 Honolulu International Airport
 TRN 131 Kahului Airport
 TRN 195 Airports Administration

Harbors Division

TRN 395 Harbors Administration⁷

Department of Health

Environmental Health Services Division

HTH 610 Environmental Health Services.

Existing funding sources for invasive species are set out in the table below. The table breaks out programs by the means of financing. For each means of financing except general funds, the funding sources are identified. For the special and revolving funds, the name of the fund and the statute establishing the fund and the funding sources are cited.

Table 7-1

Funding Sources for Invasive Species Control and Prevention

| Program ID | Means of Financing | Name of Fund | HRS Section | Funding Sources |
|--|------------------------|---|-------------|--|
| AGR 122 ⁸ Plant Pest and Disease Control | Revolving | Permit revolving fund | 150A-6.7 | Legislative, appropriations, user fees, interest, grants and gifts, any other moneys |
| | Revolving | Microorganism import certification revolving fund | 150A-48 | Legislative appropriations, certification and inspection fees, fines, reimbursements, interest, grants and gifts, any other moneys |
| | Trust ⁹ | | | Non-recurring funds |
| | General | | | |
| | Transfer ¹⁰ | | | Dept of Trans. (Airports Div) |
| | Federal ¹¹ | | | US Dept of Ag., & Dept of Interior (including the US Geological Survey Bio. |

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| Program ID | Means of Financing | Name of Fund | HRS Section | Funding Sources |
|---|------------------------|--|-----------------|---|
| | | | | Resources Div.) |
| AGR 846 ¹² Pesticides | Revolving | Pesticide use revolving fund ¹³ | 149A-13.5 | Licensing and registration fees and charges, educational services and training fees |
| | General | | | |
| | Federal ¹⁴ | | | EPA |
| AGR 131 ¹⁵ Rabies Quarantine | Special | Animal quarantine special fund | 142-28.5 | Quarantine fees, state appropriations, interest |
| AGR 132 ¹⁶ Animal Disease Control | General | | | |
| | Transfer ¹⁷ | | | Dept of Trans. (Airports Div.) |
| LNR 401 ¹⁸ Aquatic Resources | General | | | |
| | Federal ¹⁹ | | | US Dept of the Interior (US Fish and Wildlife Service) |
| LNR 805 ²⁰ Recreational Fisheries | Special | Sport fish special fund | 187A-9.5 | Fees for licenses, permits, programs, facilities and grounds use; other; fines, sales, monetary contributions, interest |
| | General | | | |
| | Federal ²¹ | | | US Dept of the Interior (US Fish and Wildlife Service) |
| LNR 402 ²² Forests and Wildlife Resources | Special | Natural area reserve fund | 195-9; 247-7 | Conveyance tax, public or private sources, investment earnings |
| | Special | Endangered species trust fund | 195D-31 | Sales, private contributions, fees and assessments, fines, legislative appropriations |
| | General | | | |
| | Federal ²³ | | | US Dept of Ag. Forest Service |
| LNR 407 ²⁴ | Special | Natural area | 195-9; | Conveyance tax, public or |

FUNDING INVASIVE SPECIES PROGRAMS

| Program ID | Means of Financing | Name of Fund | HRS Section | Funding Sources |
|---|------------------------|------------------------------------|-----------------------------------|---|
| Natural Area Reserves and Management | | reserve fund | 247-7 | private sources, investment earnings |
| | General | | | |
| TRN 102 ²⁵ Honolulu International Airport | Special | Airport revenue fund | 248-8; 261-5 | Aviation fuel taxes, rents, fees, and other charges |
| TRN 131 ²⁶ Kahului Airport | Special | Airport revenue fund ²⁷ | 248-8; 261-5 | Aviation fuel taxes, rents, fees, and other charges |
| TRN 195 Airports Administration | Special ²⁸ | Airport revenue fund | 248-8; 261-5 | Aviation fuel taxes, rents, fees, and other charges |
| | Federal ²⁹ | | | U.S. Dept of Trans. (FAA) |
| TRN 395 ³⁰ Harbors Administration | Special | Harbor special fund | 266-19; 266-17; 266-2(a)(3) | Rates, fees, and charges for dockage, wharfage, demurrage, storage, equipment, toll |
| HTH 610 ³¹ Environmental Health Services | General | | | |
| | Transfer ³² | | | Dept of Trans. (Harbors Div.), DLNR |

Potential Funding Sources

In a Bureau e-mail survey sent out to members of CGAPS, the members were asked for their suggestions on potential funding sources to fight the invasive species problem. Among the potential funding sources that the respondents themselves recommended were the following:

- (1) Federal government matching funds;³³
- (2) The state conveyance tax;³⁴
- (3) Airport landing fees;³⁵
- (4) Air cargo assessments;³⁶
- (5) The incoming vessel fee;³⁷

- (6) Sea cargo assessments;³⁸ and
- (7) A tax on nursery plants, pet animals, non-native aquacultural products, and non-native forestry products.³⁹

Except for the last item, these funding sources already exist. For federal funds, the problem seems to be the underutilization of those funds due to the lack of adequate state matching funds. For the conveyance tax, the problem appears to be the conditions imposed on the use of the tax. For the other state funding sources, the problem seems to be the absence of a link between the funding source and invasive species efforts. Specifically, the funding source is just one of several funding sources of a special or revolving fund that supports activities that can include invasive species. In other words, the funding source exists, but it does not exist necessarily for invasive species. However, the tax on nursery plants, pet animals, non-native aquacultural products, and non-native forestry products would constitute new sources of funding, since the tax does not currently exist.

These potential funding sources recommended by the survey respondents are discussed more fully below:

First, federal funds are already a means of financing under several programs involved in invasive species efforts. The issue with regard to federal funds is that they are being underutilized by the State.⁴⁰ However, the other side of the issue seems to be that the lack of adequate state matching funds considerably reduces the State's options for obtaining or maintaining federal funds for program activities.⁴¹ In other words, without increased levels of state funding, it will be difficult to draw increased levels of federal matching funds.

Second, the state conveyance tax is already a funding source of the natural area reserve fund administered by the Department of Land and Natural Resources. This special fund supports departmental programs that can potentially relate to invasive species. The law establishing the fund does not attach any conditions on the use of the conveyance tax.⁴² The law establishing the conveyance tax attaches conditions on the use of the tax revenues, and these conditions potentially hinder the department's access to that tax for invasive species activities. The conditions relate to procedures and priorities that the department must follow in disbursing the tax. Before disbursing the tax the department must consult with two entities, a committee and a commission, in setting priorities for the disbursement of the tax among three different programs, plans, or groups.⁴³

Third, air cargo assessments and airport landing fees are authorized by statute⁴⁴ and implemented under the administrative rules.⁴⁵ Specifically, the administrative rules establish the airports system landing fees, based on the approved maximum landed weight for the aircraft.⁴⁶ These fees are deposited into the airport revenue fund pursuant to statute.⁴⁷ Nothing in the language of the statutes establishes a clear

connection between the assessments and fees on the one hand and invasive species on the other. However, in practice, the Department of Transportation has used the special fund to fund the environmental impact statement for Kahului Airport and currently uses the fund to also transfer funds to the Department of Agriculture for activities relating to invasive species at Kahului Airport and at the Honolulu International Airport.⁴⁸ Legislation establishing the connection should indicate that there are federal laws to follow in the disposition of those fees.⁴⁹

Fourth, the incoming vessel fee and sea cargo assessments are authorized by statute⁵⁰ and implemented under the administrative rules.⁵¹ Specifically, the administrative rules establish the incoming vessel fees, or port entry fees,⁵² the dockage rates,⁵³ and sea cargo assessments, or wharfage payments.⁵⁴ These rates and charges are deposited into the harbor special fund pursuant to statute.⁵⁵ Again, nothing in the language of the statutes establishes a clear connection between the fees and assessments on the one hand and invasive species on the other. However, from this special fund the Department of Transportation transfers funds to the Department of Health for vector control activities, which can include invasive species efforts if those invasive species have public health significance.⁵⁶

Fifth, a tax on nursery plants, pet animals, non-native aquacultural products, and non-native forestry products would create a new funding source for invasive species control, as it would be a new tax. Presumably, the tax would attach to the importation or sale of the item. Existing models of legislation for the new tax appear to be the transient accommodations tax, the fuel tax law, the liquor tax law, or the cigarette tax and tobacco tax law. If the Legislature decides to enact a new tax, there are other technical matters to address aside from the disposition of the tax for invasive species activities. They include identifying the person to tax, the item to be taxed, the action for which the item is taxed, and the amount of the tax.

Accordingly, if the Legislature desires to re-direct state funds from existing funding sources, which were recommended by the survey respondents, to invasive species control and prevention programs, then the Legislature needs to establish clear directives between the funding source and invasive species. Legislative proposals in this regard are included in chapter 10.

Alternatively, the Legislature may wish to enact new special or revolving funds based on one or more of those existing funding sources recommended by the respondents. Examples of these types of funds include the California exotic species control fund and the Florida invasive plant control trust fund. Each fund is financed by specific funding sources and administered by a single agency for invasive species activities within its jurisdiction. Neither fund is a comprehensive fund for all activities related to invasive species. No state appears to have such a fund in place.⁵⁷

The California exotic species control fund is administered by the State Lands Commission to carry out activities relating to ballast water management for the control of nonindigenous species. The funding sources are fees collected from owners or

operators of vessels that enter a California port with ballast water loaded from outside the exclusive economic zone, and fines for violations relating to ballast water management requirements.⁵⁸

The Florida invasive plant control trust fund is administered by the Department of Environmental Protection to carry out invasive exotic plant control on public lands.⁵⁹ The funding source is a specified percentage of the excise tax on documents.⁶⁰

Endnotes

1. Interviews with various federal, state, and private agency administrators.
2. Totals are inconsistent with CGAPS totals.
3. Invasive species funding also exists outside of the state budget. An example is Act 4, 3d Special Session of 2001, relating to the Emergency Environmental Workforce. The act appropriates funds for the establishment of an emergency environmental workforce to be administered by the Research Corporation of the University of Hawaii. The workforce will employ individuals who were terminated from their jobs after the September 11 tragedy and the resulting local economic downturn. The individuals will be contracted for three months for the isolation of dengue fever, the eradication of the miconia plant and other invasive plants, and the reduction of coqui frog and fire ant populations.
4. The exception is the use of the conveyance tax, a funding source of the natural area reserve fund. The conditions on the use of the tax is established in Hawaii Revised Statutes section 247-7. The general purposes of the fund is stated in section 195-9.
5. The objectives and activities of these programs are described in The Multi-Year Program and Financial Plan and Executive Budget For the Period 2001-2007 (Budget Period: 2001-03), vols. I – III.
6. The chart below shows the location of these programs in the state budget by program area and department:

| | AGR | LNR | TRN | HTH |
|------------|--------------------------------|------------|--------------------------------|------------|
| Econ. Dev. | Plant Pest and Disease Control | | | |
| | Rabies Quarantine | | | |
| | Animal Disease Control | | | |
| Transport. | | | Honolulu International Airport | |
| | | | Kahului Airport | |
| | | | Airports Admin. | |
| | | | Harbors Admin. | |

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| | | | | |
|------------------------|------------|--------------------------------------|--|---------------------|
| Environ. Protection | Pesticides | Aquatic Resources | | |
| | | Forests and Wildlife Resources | | |
| | | Natural Area Reserves and Management | | |
| Health | | | | Environ. Hth. Serv. |
| Culture and Recreation | | Recreational Fisheries | | |

7. No clarification was received from the Harbors Division of the Department of Transportation as to which particular Harbors Division program ID provides transfer funds to the Department of Health for vector control activities.

8. The Department of Agriculture confirmed that "General funds, other federal funds, trust funds, interdepartmental transfers and revolving funds are all used for plant pests and invasive species initiatives in PI." Email response from Lyle Wong, Administrator, Plant Industry Division, Department of Agriculture, to Dean Sugano, Researcher, Legislative Reference Bureau, October 8, 2001.

 Furthermore, according to the budget proposal, among the inspection activities performed under AGR 122 is "Inspection of all military and domestic aircraft and cargo from Guam for brown tree snakes." The Multi-Year Program and Financial Plan and Executive Budget For the Period 2001-2007 (Budget Period: 2001-03), vol. I, p. 421.

9. The Department of Agriculture stated that the trust funds under AGR 122 are "used as a clearing account for non-recurring funds received by the PI division (e.g., moneys from the Tahiti Government to conduct research on Miconia biocontrol; moneys from DLNR for the same)...Moneys going into the trust fund are in one way or another related to pest control activities." Email response from Lyle Wong, Administrator, Plant Industry Division, Department of Agriculture, to Dean Sugano, Researcher, Legislative Reference Bureau, October 8, 2001.

10. Sums under TRN 131 Kahului Airport may be transferred to AGR 122 Plant Pest and Disease Control to fund plant quarantine inspector positions for alien pest species detection at Kahului Airport. Email response from Airports Division, Department of Transportation, to Dean Sugano, Researcher, Legislative Reference Bureau, October 16, 2001.

11. The United States Department of Agriculture and the Department of the Interior provide funds for canine teams for the brown tree snake program. In addition, the United States Department of Agriculture funds insect surveys, inspection of seeds for the presence of weed seeds, and exploration for parasitoids of the melon fruit fly. Also, the United States Geological Survey – Biological Resources Division, the sole science agency for the Department of the Interior, funds the development of a decision support system for invasive bird species. Email response from Lyle Wong, Administrator, Plant Industry Division, Department of Agriculture, to Dean Sugano, Researcher, Legislative Reference Bureau, September 21, 2001.

These activities appear to be reflected in the budget proposal for AGR 122. The Multi-Year Program and Financial Plan and Executive Budget For the Period 2001-2007 (Budget Period: 2001-03), vol. I, p. 421.

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12. The Department of Agriculture confirmed that "General funds, other federal funds, trust funds, interdepartmental transfers and revolving funds are all used for plant pests and invasive species initiatives in PI." Email response from Lyle Wong, Administrator, Plant Industry Division, Department of Agriculture, to Dean Sugano, Researcher, Legislative Reference Bureau, October 8, 2001.
13. The Department of Agriculture explained that the pesticide use revolving fund "is used to support various research projects, one or more projects each year related to invasive species control." Email response from Lyle Wong, Administrator, Plant Industry Division, Department of Agriculture, to Dean Sugano, Researcher, Legislative Reference Bureau, October 8, 2001.
14. Funds from the Environmental Protection Agency are available for the pesticides program. Email response from Lyle Wong, Administrator, Plant Industry Division, Department of Agriculture, to Dean Sugano, Researcher, Legislative Reference Bureau, September 21, 2001.
15. The Department of Agriculture noted that "AGR 131 is concerned with preventing the introduction of the rabies virus into Hawaii. In addition, the program staff inspect dogs and cats entering the State and are particularly concerned about ticks exotic to Hawaii. Such ticks can transmit human and/or animal diseases or act as serious livestock pests. The assumption is that viruses as well as bacteria and fungi are "alien" species – in this case rabies virus." Email response from James Foppoli, Administrator, Animal Industry Division, Department of Agriculture, to Dean Sugano, Researcher, Legislative Reference Bureau, October 8, 2001.
16. The Department of Agriculture noted that "All animals entering the State are delivered to the Animal Quarantine Holding Facility at the Honolulu International Airport. Inspectors within AGR 132 inspect to verify that entering animals are not prohibited or restricted species (hamsters, various species of birds, turtles, etc) and also inspect to determine if any external parasites are present (mites, lice, ticks, leeches, etc). Animals found with exotic parasites are either refused entry or must be treated to remove the offending parasites before release from the Holding Facility....Livestock and horses are inspected in a similar fashion and tested for certain diseases (bacterial or viral) absent from the State." Email response from James Foppoli, Administrator, Animal Industry Division, Department of Agriculture, to Dean Sugano, Researcher, Legislative Reference Bureau, October 8, 2001.
17. The transfer funds are from the Airports Division of the Department of Transportation. "The funds are to staff the airport quarantine facility with animal caretakers on a 24 hour per day, 7 day/week basis. Their primary duties are to receive animals after regular working hours and care for those animals. The role of Animal Caretakers in "invasive species" is very limited. For example they may detect external parasites on a bird arriving at the facility. This type of activity probably occupies less than 5% of their time and would only occur when Livestock Inspectors were not available (5:00 pm to 7:00 am)." Email response from James Foppoli, Administrator, Animal Industry Division, Department of Agriculture, to Dean Sugano, Researcher, Legislative Reference Bureau, December 3, 2001.
18. The Department of Land and Natural Resources confirmed that general funds and other federal funds are used to address the invasive species problem. The funds are used for "Identification, assessment of abundance, distribution, trends, observed and potential impact, control and eradication when feasible and warranted. Prevention of introductions through education, review with recommendations of proposed actions, policy and program establishment (For example, we have just received federal funds to design a program to limit the potential for accidental introductions of marine organisms via shipping--ballast water and hull encrusting organisms.) Email response from William Devick, Administrator, Aquatic Resources Division, Department of Land and Natural Resources, to Dean Sugano, Researcher, Legislative Reference Bureau, October 12, 2001.

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19. Specifically, the federal funds are from the United States Fish and Wildlife Service's Dingell/Johnson and Wallop/Breaux program. Email response from William Devick, Administrator, Aquatic Resources Division, Department of Land and Natural Resources, to Dean Sugano, Researcher, Legislative Reference Bureau, November 27, 2001.
20. The Department of Land and Natural Resources noted that funds in LNR 805 are involved in the fight against invasive species in "All aspects except those related to shipping." Email response from William Devick, Administrator, Aquatic Resources Division, Department of Land and Natural Resources, to Dean Sugano, Researcher, Legislative Reference Bureau, October 12, 2001.

Furthermore, according to the budget proposal for LNR 805, some of the activities performed there are "evaluating and controlling threats from alien aquatic species; protecting and managing native stream biota; managing estuarine habitat." The Multi-Year Program and Financial Plan and Executive Budget For the Period 2001-2007 (Budget Period: 2001-03), vol. III, p. 1203.
21. The federal funds are from the United States Fish and Wildlife Service's Dingell/Johnson and Wallop/Breaux program. Email response from William Devick, Administrator, Aquatic Resources Division, Department of Land and Natural Resources, to Dean Sugano, Researcher, Legislative Reference Bureau, November 27, 2001.
22. It is inferred from the budget proposal that LNR 402 funds are used to address the invasive species issue. No confirmation response was received from the Forestry and Wildlife Division, Department of Land and Natural Resources, to the LRB inquiry emailed on October 3, 2001.

According to the budget proposal for LNR 402, "The silent invasion of Hawaii by insects, disease organisms, snakes, weeds, and other pests is the single greatest threat to Hawaii's economy and natural environment and the health and lifestyle of Hawaii's people. Invasive pests already cause millions of dollars of crop losses, the extinction of native species, the destruction of native forests, and the spread of disease. But many more harmful pests now threaten to invade Hawaii and wreak further damage." The Multi-Year Program and Financial Plan and Executive Budget For the Period 2001-2007 (Budget Period: 2001-03), vol. II, p. 745.
23. Specifically, the federal funds are from the United States Department of Agriculture Forest Service's program under the Cooperative Forestry Assistance Act of 1978. Email response from Michael Buck, Administrator, Forestry and Wildlife Division, Department of Land and Natural Resources, to Dean Sugano, Researcher, Legislative Reference Bureau, September 24, 2001.
24. It is inferred from the budget proposal that LNR 407 funds address the invasive species issue. No confirmation response was received from the Forestry and Wildlife Division, Department of Land and Natural Resources, to the LRB inquiry emailed on October 3, 2001.

According to the budget proposal for LNR 407, "Nearly all the reserves have some degree of destructive infestation by non-native plants and animals. Management activities include fencing, non-native plant and animal control, monitoring and research designed to protect or enhance the natural resources." The Multi-Year Program and Financial Plan and Executive Budget For the Period 2001-2007 (Budget Period: 2001-03), vol. II, p. 759.
25. TRN 102 transfers funds to AGR 132 Animal Disease Control for animal quarantine activities. The funds are for staff costs. Email response from Airports Division, Department of Transportation, to Dean Sugano, Researcher, Legislative Reference Bureau, December 4, 2001.
26. TRN 131 transfers funds to AGR 122 for alien species activities. The Department of Agriculture uses the funds for inspections of arriving passengers, baggage, and cargo at Kahului Airport. Email response from the Airports Division, Department of Transportation, to Dean Sugano, Researcher, Legislative Reference Bureau, October 16, 2001.

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27. The Department of Transportation confirmed that "The Airport Revenue Fund which was established in HRS 248-8 is the fund being used to address the alien species issue. The Airport Revenue Fund is the only airport fund active..." Email response from Airports Division, Department of Transportation, to Dean Sugano, Researcher, Legislative Reference Bureau, October 16, 2001.
28. Funding for the Department of Transportation's alien species studies done for the Kahului Airport Environmental Impact Statement is reflected in the Airports Division capital improvement projects budget as special funds under TRN 195. Email response from Airports Division, Department of Transportation, to Dean Sugano, Researcher, Legislative Reference Bureau, November 29, 2001.
29. The Federal Aviation Administration provided reimbursement to the Airports Division of the Department of Transportation for the Kahului Airport Environmental Impact Statement. The reimbursements are reflected as Other Federal Funds ("N") in the budget appropriation. Email responses from Airports Division, Department of Transportation, to Dean Sugano, Researcher, Legislative Reference Bureau, October 16, 2001 and November 29, 2001.
30. No clarification was received from the Harbors Division of the Department of Transportation as to which particular Harbors Division program ID provides transfer funds to the Department of Health for vector control activities.
31. Activities related to invasive species control and prevention are initiative-based, not legislatively mandated. Furthermore, they focus on issues with public health significance or implications. Only general funds and interdepartmental transfers are used for these activities. HTH 610 also has special funds and federal funds, but these funds are not involved with the invasive species issue. Telephone interview with Kenneth Hall, Chief, Vector Control Branch, Environmental Health Services Division, Department of Health, November 28, 2001.
32. The interdepartmental transfer funds are from the Department of Transportation, Harbors Division, and the Department of Land and Natural Resources. First, the transfer funds from the Department of Transportation, Harbors Division, fund positions at the harbors and airports to control vermin and rodent infestations. Second, the transfer funds from the Department of Land and Natural Resources fund supplies such as rodent bait traps at small boat harbors. Telephone interview with Kenneth Hall, Chief, Vector Control Branch, Environmental Health Services Division, Department of Health, November 28, 29, 2001.
33. The Nature Conservancy of Hawaii stated that "The federal government is the single largest potential funding source. There are millions of dollars in matching funds available that Hawaii does not take full advantage of. The US Department of Agriculture is an underutilized ally in this effort with tremendous capacity to devote to the issue." Email response by Alenka Remec, Nature Conservancy of Hawaii, to Dean Sugano, Researcher, Legislative Reference Bureau, October 10, 2001.
34. The Department of Land and Natural Resources suggested use of the conveyance tax. Email response from Michael Buck, Administrator, Forestry and Wildlife Division, Department of Land and Natural Resources, September 24, 2001.

No clarification of the problem regarding the use of those funds was received from the department to the LRB follow up inquiry sent out on October 3, 2001.
35. The Nature Conservancy of Hawaii suggested airport landing fees and the state Department of Transportation as potential funding sources. Email response by Alenka Remec, Nature Conservancy of Hawaii, to Dean Sugano, Researcher, Legislative Reference Bureau, October 10, 2001.

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- The Bishop Museum also suggested a fee on all arriving aircraft and a fee on all arriving passengers. Email response by Fred Kraus, Bishop Museum, September 21, 2001.
36. The Nature Conservancy of Hawaii suggested assessments on air and sea cargo to pay for more thorough inspections. Email response by Alenka Remec, Nature Conservancy of Hawaii, to Dean Sugano, Researcher, Legislative Reference Bureau, October 10, 2001.
 37. Both the Department of Land and Natural Resources and the Bishop Museum suggested an incoming vessel fee or a fee on all arriving ships and boats. The Department of Land and Natural Resources in particular noted that the incoming vessel fee has been imposed by other states. Specifically, west coast states require vessel fees from every commercial vessel entering their ports to cover the costs of vessel inspection. Email responses from William Devick, Administrator, Aquatic Resources Division, Department of Land and Natural Resources, September 13, 2001, and Fred Kraus, Bishop Museum, to Dean Sugano, Researcher, Legislative Reference Bureau, September 21, 2001.
 38. Both the Nature Conservancy of Hawaii and the Bishop Museum suggested a charge or assessment on shipped cargo or sea cargo. Email responses by Alenka Remec, Nature Conservancy of Hawaii, October 10, 2001, and Fred Kraus, Bishop Museum, to Dean Sugano, Researcher, Legislative Reference Bureau, September 21, 2001.
 39. The Bishop Museum specifically suggested a charge on each nursery plant sold, a charge on each pet animal sold, a tax on non-native aquacultural products, and a tax on non-native forestry products (excluding Koa products).
 40. See note 33, for the response by the Nature Conservancy.
 41. Email response from William Devick, Administrator, Aquatic Resources Division, Department of Land and Natural Resources, to Dean Sugano, Researcher, Legislative Reference Bureau, November 27, 2001.
 42. Hawaii Revised Statutes, §195-9(a).
 43. Hawaii Revised Statutes, §247-7.
 44. Hawaii Revised Statutes, §261-7(e).
 45. Hawaii Administrative Rules, §§19-16.1-1, et seq., for non-signatory carriers.
 46. Hawaii Administrative Rules, §19-16.1-3.
 47. Hawaii Revised Statutes, §261-5(a).
 48. Email responses from the Airports Division, Department of Transportation, to Dean Sugano, Researcher, Legislative Reference Bureau, October 16, November 29, December 4, 2001.
 49. See Appendix F, Correspondence from the Federal Aviation Administration to the state Department of Transportation, dated July 31, 1998, on the alien species action plan for Kahului Airport. Evidently, there is a web of restrictions placed by the federal government on the alien species activities to which the airport revenue may be applied.
 50. Hawaii Revised Statutes, §266-2(a)(2) - (4).
 51. Hawaii Administrative Rules, beginning at section 19-44-1.
 52. Hawaii Administrative Rules, §19-44-91.

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53. Hawaii Administrative Rules, §19-44-61.
54. Id.
55. Hawaii Revised Statutes, §266-19.
56. Funds from the Department of Transportation, Harbors Division, fund vector control positions at the harbors and airports. Telephone interview with Kenneth Hall, Chief, Vector Control Branch, Environmental Health Services Division, Department of Health, November 28, 29, 2001.
57. Among the countries of the world, New Zealand appears to have established a comprehensive funding source in its Biosecurity Act 1993. The act is aimed in part at preventing the introduction of unwanted organisms not already established in the country. <http://www.mfe.govt.nz/about/laws/bios.htm> The act appears to delegate rather broad, rule-making powers to the Governor-General to impose levies on persons, activities, and goods that will be specified in the rules. New Zealand Biosecurity Act 1993, sections 90-93. In America, the grant of such powers might be challenged as being unconstitutional.
58. California Public Resources Code, §71215.
59. Florida Statutes, §369.252(4).
60. Florida Statutes, §201.15(6).

Chapter 8

HOW OTHER JURISDICTIONS ADMINISTER THE CONTROL AND ERADICATION OF ALIEN INVASIVE SPECIES

Before discussing and assessing the need for a lead agency for the control and prevention of invasive species (which follows in the next chapter) this chapter examines the strategies for managing the fight against alien species in New Zealand, Australia and several U.S. states including Florida, Georgia, Montana, and Utah. These states and Hawaii were reviewed by the federal Office of Technology Assessment (OTA) and found to have exemplary approaches to fish and wildlife invasive species control.¹ The review was based on states with detailed laws, no major authority gaps and lawmakers with "rigorous standards".² Also reviewed in this chapter are California, Minnesota, Texas, and Washington.

New Zealand

New Zealand published an issues paper in September 2001 that sought to develop a biosecurity strategy that included invasive species efforts. The issues paper was the culmination of months of consultations with various public and private stakeholders. It summarized and integrated approximately 400 issues identified by the stakeholders to a strategy development team.³

After a series of workshops and public meetings during October through December 2001, the strategy development team will prepare a draft Biosecurity Strategy for another set of public discussions in summer 2002. A final report will be presented in October 2002 with implementation expected to begin in 2003.

Administration

New Zealand administers its biosecurity program by coordinating participating national agencies. New Zealand has four primary government biosecurity agencies:

- (1) The Ministry of Agriculture and Forestry;
- (2) The Ministry of Fisheries;
- (3) The Ministry of Health; and
- (4) The Department of Conservation.

In addition the Ministries of Environment, Research, Science, and Technology, among others, contribute to development of biosecurity policy while the Environmental

Risk Management Authority controls the intentional importation of new organisms under the New Zealand Hazardous Substances and New Organisms Act of 1996 (HSNO).

In addition to New Zealand's national ministries, the regional councils at the local level are also involved with invasive species, usually at the point when an invasive pest is considered to be of "regional" rather than "national" significance.

Regional Councils

A regional council is a single agency, not like a U.S. state that may have as many as twenty departments administering concerns ranging from health to wildlife and natural resources. Each regional council coordinates its own pest control and may assess taxes for such purposes if necessary. Regional councils are represented on the national Biosecurity Council which reports to the Minister of Biosecurity.⁴ Regional councils manage unwanted organisms via the Biosecurity Act of 1993's small-scale management provisions, if eradication or control of an organism can be achieved within three years and at a cost of less than \$100,000.⁵

Other groups involved with invasive species include industries in forestry, cattle, and bees, and individuals who conduct pest control on their private lands by ridding their areas of certain weeds or animal pests.

Notably, New Zealand is guided only by national law with local governments adopting the law at their discretion which sometimes results in variations and gaps in treatment of specific pests.

Lead Agency

New Zealand's lead agency for invasive species purposes is the Ministry of Agriculture and Forestry (MAF). New Zealand also has a Minister for Biosecurity who is aided by a Biosecurity Council created in 1997 that coordinates policy and advises the Minister for Biosecurity. In 1999 the MAF created a Biosecurity Authority "with a wider role to coordinate the government's biosecurity program."⁶ The Minister of Biosecurity with the Council's advice sets priorities for the four aforementioned agencies. The Authority provides secretariat services and is involved in managing risks for the environmental, non-agricultural and forestry sectors.⁷

The Issues Paper acknowledged that there may be more emphasis on agricultural pests, forestry weeds and diseases rather than environmental pests because MAF is the lead agency.

Cooperative Efforts Between the New Zealand National and Local Governments

In New Zealand, the national government is the first to respond to the introduction of a new invasive specie. However, if eradication is not possible or fails,

land managers such as the regional councils and individual landowners are expected to assume the management of the invasive pests. The Issues Paper pointed out that during this transitional management and funding changeover from national government to regional councils, response to the particular invasive species might be delayed. In addition, if adjoining land management areas are not in agreement over eradication efforts, this lack of cooperation can undermine treatment efforts.

The Issues Paper also suggested that "the multi-agency approach to administering biosecurity policies still requires fine-tuning and a "whole of government approach" to prevent duplicative efforts, to close gaps, to assure agency accountability, [and] early [invasive species] involvement..."⁸

Summary of New Zealand's Approach

New Zealand has been tackling the invasive species problem for some time and in many respects is viewed as a country well prepared in this area. However it recognizes that biosecurity risks are on the increase because of more international trade and travel. Therefore New Zealand has embarked on a long-term plan for developing a strategy to handle invasive species. It began officially with the Biosecurity Act of 1993 and the country now seeks to implement a Biosecurity Strategy in 2003. In the course of developing an Issues Paper and Draft Biosecurity Strategy by 2002, the government identified several areas that require attention and interest groups' concerns that must be addressed in order for all to move forward with like purpose.

As will be seen from other governments' methodology, New Zealand's administrative structure is not unlike other jurisdictions in that it has established a lead agency to coordinate the work of several agencies and interest groups that have narrow concerns related to particular invasive species. New Zealand's lead agency is assisted by a policy advisory board at the national level. New Zealand's website can be found at www.biostrategy.govt.nz.

Australia

Australia, like its neighbor New Zealand, has rigorously attacked the problems associated with invasive species. Both countries' ecosystems support many unique creatures that have evolved over centuries of isolation. Yet both countries participate in the global mobility of the twenty-first century that all too often ignores transported invading species to the detriment of ecosystems worldwide.

Quarantine Act

Australia's Quarantine Act of 1908 established the Australian Quarantine and Inspection Service (AQIS) in the Department of Primary Industries and Energy. AQIS implements the delegated duties of the Director of Animal and Plant Quarantine, Secretary of the Department.

Nairn Committee

In 1995 Australia's national government set up the Nairn Committee to examine the nation's plant and animal quarantine policies and programs. The Committee published "Australian Quarantine: a Shared Responsibility" and recommended AQIS to "develop improved strategies to communicate its risk analysis process."⁹ In response to that request, AQIS developed a Risk Analysis Process Handbook (see http://www.dpie.gov.au/docs/market_access/biosecurity/index.html). The Handbook describes the process AQIS follows in developing and reviewing quarantine policies for importing plants, animals, and their products.

Exclusion List

Australia, like New Zealand, operates from an exclusion list of organisms not permitted entry into the country. When an organism, plant, insect or animal is reviewed for import, a process is generated that is called Import Risk Analysis (IRA) that follow six principles. The process must be:

- (1) Conducted in a consultative framework;
- (2) A scientific process and therefore politically independent;
- (3) A transparent and open process;
- (4) Consistent with both government policy and Australia's international obligations;
- (5) Harmonized, through taking account of international standards and guidelines; and
- (6) Subject to appeal on the process.

Stakeholders are consulted and the applicant interested in introducing the invasive species must provide the data for analysis to proceed.

Depending on the nature of the organism or plant being proposed for import determines the type of pathway risk analysis that is followed. The "routine" pathway risk analysis is shorter and involves an AQIS in-house team of experts, while the "non-routine" pathway involves a risk analysis panel comprised of AQIS and other experts.

Once the Executive Director of AQIS makes a determination on the plant or animal, the import proposal can be implemented. However, "any stakeholder of the opinion that the process outlined in the Handbook has not been properly followed, including that the risk analysis failed to consider a significant body of relevant scientific

or technical information may appeal to the Director of Animal and Plant Quarantine." ¹⁰
The appeal is considered by the Import Risk Analysis Appeal Panel.

Lead Agency Approach

Australia and New Zealand both follow the "lead agency" type of organizational structure where one state/government agency has the responsibility to lead other government agencies: New Zealand by its Ministry of Agriculture and Forestry (MAF), and Australia by its Australian Quarantine and Inspection Service (AQIS).

Both countries use advisory groups, and consult stakeholders who have an interest in allowing or banning entry of an invasive species. The publication of handbooks such as the Risk Analysis Process Handbook keeps the process transparent and less likely to be tainted by special interests. Both governments try to keep risks to a conservatively low level and seek to harmonize their national policy with international trade organization policies to minimize conflicts in trade.

Florida

Florida's motivation for pest control is fueled by the awareness that failure to adequately prevent or eliminate pests can have devastating effects on its agricultural, floral, tourism, and equine industries.

Florida's invasive species policies are influenced by several factors:

- (1) Fifty million tourists visit Florida annually;
- (2) Florida is surrounded by water on three sides through which cargo ships transport a variety of exotic pests from as close as the Caribbean;
- (3) Florida's climate favors a number of tropical organisms; and
- (4) Florida's coastal and wetlands ecology could be detrimentally affected by insensitive eradication techniques.

Because of these high risks, Florida created the Florida Pest Exclusion Advisory Committee (PEAC), consisting of 22 members, appointed in 1999. The mission of PEAC, among other things, is to review and evaluate Florida's existing and future exclusion, detection and eradication programs, the science behind the programs, and the current laws.

Gaps in Florida's Attack on Invasive Species

The PEAC recognized that "...there has been to this point no regular, structured communication or forum for working together in a strategic way to address this

increasingly urgent problem" regarding collaborative efforts on exclusion/risk prevention issues. Among its findings, PEAC indicated:¹¹

- (1) There is no organized method for exchanging information related to invasive species between the multiple federal and state agencies;
- (2) In some cases the interests of agencies concerned with the impact on ecosystems and biodiversity, but not agriculture, have not been accommodated;
- (3) Managing the risk of disease vectors on wildlife imports is not being adequately addressed due to the lack of effective communication and collaboration between the responsible federal and state agencies;
- (4) There is inefficient communication between affected state and federal agencies when consideration is being given to open new ports of entry or when there are major importation/expansion initiatives at existing ports; and
- (5) There is no platform for objectively assessing and reaching consensus on areas of priority, overall resource needs, and new technology opportunities of federal or state exclusion agencies.

To address these concerns, PEAC recommended the following:

- (1) Develop a multi-agency email protocol to communicate issues on pest exclusion and provide an information exchange forum for important issues to ensure that everyone involved receives the same information at the same time;
- (2) Review areas of jurisdictional overlap within state and federal agencies;
- (3) Establish a state invasive species council;
- (4) Use the Florida Pest Exclusion Advisory Committee as a working group for coordination and communication of Florida's plant and animal pest and disease exclusion, detection, and response programs;
- (5) Align state and federal research institution priorities to identify and perform investigations to mitigate future/impending invasions; and
- (6) Institute APHIS clearance protocol in U.S. Customs reference of passenger declarations.¹²

Georgia

In Georgia, the Legislature declared: "[t]he importation, transportation, sale, transfer, and possession of wild animals are privileges not to be granted unless it can be clearly demonstrated that such actions can be accomplished in a manner that does not pose unnecessary risk to Georgia's wildlife and other natural resources or to the citizens of and visitors to th[e] state." Certain named animals are listed as inherently dangerous and require a license or permit and insurance from the Department of Natural Resources which is responsible for animal and wildlife control.¹³

Georgia's Department of Agriculture is responsible for weed pests and noxious weed control.¹⁴

Like Florida and Tennessee, Georgia has also established an Exotic Pest Plant Council. The Council was created in 1999 and its mission is "to focus attention on:

- (1) [T]he adverse effects exotic pest plants have on the diversity of Georgia's native plants and animals;
- (2) [T]he use of exotic pest plant management to prevent habitat loss;
- (3) [T]he socioeconomic impacts of these plants;
- (4) [C]hanges in the seriousness of the different exotic pest plants over time; [and]
- (5) [T]he need to exchange information which helps land owners and managers set priorities for exotic pest plant management."¹⁵

Due to the efforts of this Council, Georgia has an exotic pest plant list and conducts a symposium to "allow the Council to deliver its mission, provide an educational forum and encourage membership in the organization".

Montana

Although the term "lead agency" is not used, the Department of Fish, Wildlife, and Parks and its Commission is charged with the responsibility of managing wildlife and protecting endangered species. "Management" means the collection and application of biological information for the purposes of conserving populations of wildlife consistent with other uses of land and habitat. The term includes the entire range of activities that constitute a modern scientific resource program, including research, census, law enforcement, habitat improvement, control, and education ... including periodic protection and regulated taking.¹⁶

The Commission and Department are directed to consult with the Departments of Agriculture and Livestock on matters of wildlife that may have a harmful effect on agricultural and livestock production.¹⁷ Montana's Department of Agriculture handles noxious weeds.

Consultation appears to be the mode of interaction among the Department of Agriculture and Livestock, and Department of Fish, Wildlife, and Parks.

Utah

In Utah, the State Weed Committee advises on matters pertaining to the administration of the state's noxious weed program.¹⁸ "Weed" is defined as any plant which grows where not wanted.¹⁹ The noxious weed program is administered by the Utah Bureau of Land Management.

Utah has also adopted the Pest Control Compact (as did Georgia and several other states). The Compact establishes a Pest Control Insurance Fund to be used to finance other than normal pest control operations.

The Division of Wildlife Resources is responsible for administration of laws and rules regarding terrestrial and aquatic pests injurious to health or the environment.²⁰

There appears to be no council type structure nor an overall lead agency in Utah.

California

In California, endangered species are dealt with by the Fish and Game Department. The California Legislature found that "all state agencies, boards, and commissions shall seek to conserve endangered species and threatened species and shall utilize their authority in furtherance of the purposes of the [California Endangered Species Act]."²¹

Aquatic plants are handled through the Fish and Game Code, but California desert native plants and exotic plant pests, including noxious weeds are managed by the Department of Food and Agriculture.

An Oversight Committee in the Department of Food and Agriculture (which is the "lead department" in noxious weed management) is composed of representatives from livestock production, agricultural crop protection, forest products industry, the California Exotic Pest Plant Council, research institutions, wildlife conservation groups, environmental groups, resource conservation districts, the general public, local government, and the Department of Fish and Game.²²

The Food and Agriculture Department is also responsible for plant quarantine inspection stations that ascertain the origin, quantity, and kinds of meat, poultry, livestock, agricultural commodity, and plants that may be brought into the state at airports, maritime facilities, and vehicle inspection stations along highways.

A state task force is planned to "develop and implement a program of preventive measures to reduce the likelihood that pests will be transported into the state."²³

California also enacted the University of California Pest Research Act of 1990 and requested the Regents of the University of California to establish a pest research center that would apply itself to pest management research for the welfare of California's agricultural, forest, or urban settings.²⁴ More information can be found at <http://cnas.ucr.edu/>.

California follows the "lead agency" approach to invasive species management and has created task forces and councils in specific areas to facilitate cooperation and coordination.

Minnesota

Minnesota follows a "lead agency" approach to the extent that at least for certain pests,²⁵ a particular agency is assigned the lead role. The Commissioner of the Department of Agriculture is responsible for the administration of the Local Pest Control Act and the Plant Pest Act.²⁶ These insect pests include grasshoppers, corn borers, beetles, destructive, or nuisance animals such as rats, gophers, and other animals dangerous to people, and plant or bee diseases that can endanger agriculture, horticulture, and forestry.

The Purple Loosestrife weed, however, is managed by the Commissioner of Natural Resources whose commission acts as the lead agency.²⁷ The Commissioner of Natural Resources, along with the Commissioner of Transportation are directed to work cooperatively to develop a management plan for the Purple Loosestrife Program, including coordinated detection, prevention of accidental introduction, public education, control of exotic species on lands and public waters, and classification of exotic species. The Commissioner of Natural Resources is also responsible for the state's Harmful Exotic Species Management Program.

Texas

Texas deals with exotic harmful or potentially harmful fish, shellfish, and aquatic plants through the Department of Parks and Wildlife which publishes a list of exotic animals and plants for which a permit is required. The Parks and Wildlife Department coordinates its activities with the Texas Animal Health Commission regarding testing for diseases. If manifestations of these diseases are found, the Department of Agriculture,

the Natural Resource Conservation Commission and the Animal Health Commission are notified.²⁸

Non-indigenous aquatic plants and animals are managed by the Department of Agriculture under aquaculture regulations.²⁹ The Agriculture Code covers agricultural and horticultural seeds, noxious weeds, various agricultural diseases and pests such as fire ants and the Mexican fruit fly. Regulations relating to the importation, possession, propagation, and sale of harmful exotic wildlife is the responsibility of the Parks and Wildlife Commission.³⁰

In Texas as is the case in most places, administrative responsibility for endangered species appears to follow function.

Washington

In Washington, the Legislature stepped in to settle an apparent jurisdictional difficulty in 1995 regarding a wetland plant called Spartina. In its findings the Legislature described the spread of the Spartina weed as threatening native freshwater and saltwater wetlands, intertidal zones, critical habitats for migratory birds, fish, and other marine organisms. The Legislature found:

Current laws and rules designed to protect the environment and preserve the wetland habitats, fish, and wildlife of the state are not designed to respond to an ecosystem-wide threat of this kind. State and federal agencies, local governments, weed boards, concerned individuals, and property owners attempting to deal with the ecological emergency posed by spartina and purple loosestrife infestations have been frustrated by interagency disagreements, demands for an undue amount of procedural and scientific process and information, dilatory appeals, and the improper application of laws and regulations by agencies that have in fact undermined the legislative purposes of those same laws while ignoring the long-term implications of delay and inaction. There is a compelling need for strong leadership, coordination, and reporting by a single state agency to respond appropriately to this urgent environmental challenge. ... Control efforts must be coordinated across political and ownership boundaries in order to be effective. ...

The legislature finds that six years is sufficient time for state agencies to debate solutions to the spartina and purple loosestrife problems... It is the mandate of the legislature that one state agency, the department of agriculture, be responsible for a unified effort to eliminate spartina and control purple loosestrife, with the advice of the state noxious weed control board, and that state agency shall be directly accountable to the legislature on the progress of the spartina eradication and purple loosestrife control program.³¹ (Emphasis added)

While Spartina has its own "lead agency", this was an unusual response for a noxious weed. Washington state's Department of Agriculture was named lead agency for spartina only because of difficulties dealing with the spread of this weed and the

Department of Agriculture was made responsible for overseeing special control funds for this noxious weed. Otherwise, the Washington State Noxious Weed Control Board sets the state weed list annually and coordinates control efforts with county weed programs.³² Because there are only two staff persons on the Board, they must work with other agencies from the counties and other stakeholders.³³

Invasive vertebrates are dealt with by the Department of Fish and Wildlife.³⁴ "Deleterious exotic wildlife" are animals not native to Washington and designated as dangerous to the environment or wildlife of the state.

Summary

In the United States, a response to an invasive species is usually initiated after a perceived threat to a state's economy or public health. Generally, it takes longer for a state to respond to an invasive species that is viewed as merely an ecological threat. Since invasive plants and animals do not respect state boundaries or property rights, cooperative strategies between adjoining states, or between public landowners and private landowners are commonplace.

State governments often respond to invasive species by directing a government agency with the closest ties to the threat to deal with control or eradication. Therefore, it is the nature of the invasion that usually determines if a state department becomes a "lead agency" for that particular purpose.

If the invading species is a weed, or horticultural pest, agriculture departments are usually involved. If the invader is a threat to forests, trees, the lumber industry, or wilderness areas, the state's natural resources department is usually given primary responsibility.

Florida and California have a "pest council" or "pest committee" with representatives from several stakeholder organizations to identify and develop programs for dealing with plant and animal pests. Montana's law on endangered species directs the Department of Fish, Wildlife, and Parks to consult with the Departments of Agriculture and Livestock on potentially destructive wildlife. In Washington, the Department of Agriculture was singled out by the state legislature to act as the lead agency for the *Spartina* weed.

Having a single state coordinator is an uncommon method for addressing the invasive species problem, although used in New Zealand with its national position of "Minister of Biosecurity".

Endnotes

1. U.S., Office of Technology Assessment, Harmful Non-indigenous Species in the United States, Washington, D.C., September 1993, Chapter 7. "State and Local Approaches from a National Perspective."
2. U.S. Office of Technology Assessment, Harmful Non-indigenous Species in the United States, Washington, D.C., September 1993, Chapter 7, p. 217.
3. Issues Paper, Developing a Biosecurity Strategy for New Zealand, Biosecurity Strategy Development Team, Wellington, NZ, September 2001, p.3.
4. Email communication to J. Mardfin, Researcher, Legislative Reference Bureau, from K. Thomas, Oct. 10, 2001.
5. Issues Paper, Developing a Biosecurity Strategy for New Zealand, Biosecurity Strategy Development Team (hereafter "Issues Paper", NZ), Wellington, NZ, p. 8.
6. Issues Paper, NZ, p. 11.
7. Issues Paper, NZ, p. 11.
8. Issues Paper, NZ, p. 16.
9. Australia, Australian Quarantine and Inspection Service. The AQIS Import Risk Analysis Process; Handbook, 1998, Foreword.
10. Australia, Australian Quarantine and Inspection Service. The AQIS Import Risk Analysis Process; Handbook, 1998, pp. 18-19.
11. Florida Pest Exclusion Report, pp. 26-28.
12. Florida, Pest Exclusion Advisory Committee Report, January 2001, Tallahassee, Florida, pp. 26-27.
13. Georgia Statutes, Game and Fish Code 27-5.
14. Georgia Statutes, Agriculture Code 2-1.
15. Georgia, Exotic Pest Plant Council website, see www.gaeppc.org.
16. Montana Code Ann., §87-5-102.
17. Montana Code Ann., §87-5-716.
18. Utah Code, §4-2-7.
19. Utah Code, §4-14-2.
20. Utah Code, §23-13 to 14.
21. California Fish and Game Code, §2055.
22. California Food and Agricultural Code, §7273.
23. California Food and Agricultural Code, §§5350 to 5350.5.
24. California Food and Agricultural Code, §576 to 585.

CONTROL AND ERADICATION OF ALIEN INVASIVE SPECIES

25. Minnesota statutes, §18.011.
26. Minnesota statutes, §§18.44 to 18.61.
27. Minnesota statutes, §§18.76 to 18.88, Minnesota Noxious Weed Law.
28. Tx Stats. Parks and Wildlife Code, ch. 66.007 (Exotic harmful or potentially harmful fish, shellfish, and aquatic plants).
29. Tx Stats. Agriculture Code, chap. 134, Aquaculture.
30. Tx Stats. Agriculture Code, §134.020, Exotic Species.
31. Rev. Code of Washington, §§17.26.005 and 17.26.006.
32. Rev. Code of Washington, §17.10.
33. Email correspondence to Jean Mardfin, Researcher, Legislative Reference Bureau, from Lisa Lantz, Washington State Noxious Weed Control Board, October 15, 2001.
34. Pursuant to Rev. Code of Washington, chapter 77.08.

Chapter 9

ASSESSING THE NEED FOR A LEAD AGENCY

The concept of a lead agency in multi-agency administrative situations is not new -- especially with respect to fighting invasive species. As discussed in the previous chapter, the nature of an invasion usually determines whether a particular state department becomes a lead agency.

A lead agency approach is attractive because it ostensibly provides administrative accountability by giving a single agency ultimate responsibility for fighting invasive species. Since the invasive species problem often crosses agency lines, a lead agency would insure that any administrative or responsibility gaps would be filled by the lead agency or someone designated by it.

Presently, the Departments of Agriculture, Land and Natural Resources, Health, and to a lesser extent, Transportation, work collaboratively to fight invasive species in Hawaii. Thus far, these departments have had mixed success with their efforts. The current system has been described as "a set of programs that are generally effective within their own jurisdictions but which, together, leave many gaps and leaks for pest entry and establishment."¹

A good example of an invasive species that fell through an administrative gap is the Caribbean coqui frog. The frog first appeared a few years ago on the Big Island and slowly spread to Maui and parts of Oahu. Had the State acted earlier to eradicate the frog, the suffering of many homeowners statewide might have been avoided.

Administratively, agency responsibility for eradicating the frog was unclear. To an extent, the HDOA was responsible for the frog because it was suspected that the frog was imported into the State in ornamental plants -- hence the agricultural connection to HDOA. But due to a memorandum of agreement between the HDOA and DLNR, responsibility for the eradication of the frog appeared to be designated to DLNR (see chapter 5, item no. 1). For years, no agency responded to the frog infestation. But after widespread media coverage and an apparent consensus between state departments and private organizations, eradication of the frogs finally began in earnest.

Had a lead agency for invasive species been in place, the coqui frog problem may not have proliferated to the point where it is today. But despite the apparent benefits of a lead agency approach, it is not without its detractors.

First, not all state agencies support the lead agency approach because of the fear that a lead agency, by virtue of its administratively superior position to the agencies it leads, would give preference to its own needs to the detriment of subordinate agencies.² This appears to be the case in New Zealand where the New Zealand Issues Paper acknowledged that there may be more emphasis on agricultural pests, forestry

weeds, and diseases rather than environmental pests because the Ministry of Agriculture and Forestry is the lead agency.³ Critics also point out that a lead agency would garner special favor with the Legislature and therefore receive more funds than it would have otherwise to the detriment of other agencies.

Secondly, there is a concern that a department in a lead agency capacity would not understand the needs of other departments. The Departments of Agriculture, Health, and Land and Natural Resources have very diverse missions and complex duties that may not be understood by a sister department. Also, if a department is focused primarily on its mission and duties, efforts to resolve an issue with and between other departments with different concerns may produce more problems than it solves.

Besides Australia, California, Minnesota, and to an extent Montana and Washington, also follow the lead agency approach.

The Council Approach

An alternative to the lead agency approach is for the State to follow in the footsteps of the federal government's National Invasive Species Council.

In February of 1999, President Clinton issued Executive Order No. 13112 on invasive species. "The order established the National Invasive Species Council -- chaired by the Secretaries of Agriculture, Commerce, and the Interior -- with members including the Departments of State, Treasury, Defense, and Transportation, and the Environmental Protection Agency.

The Order directs the Council to provide national leadership on invasive species and to see that federal agency efforts are coordinated and effective. The Secretary of the Interior was also directed to form the Invasive Species Advisory Committee to provide information and advice to the Council."⁴

The primary advantage of a council approach (for Hawaii's purposes) is that it would conceivably include the heads of all participating departments. This concentration of authority addresses one of the criticisms made against the Coordinating Group on Alien Pest Species (CGAPS) -- that it lacked "high-level political leadership."⁵

CGAPS was formed in 1995 and is the quintessential collaborative effort comprised of federal, state, and private organizations and is the administrative standard used by other jurisdictions in developing strategies to fight invasive species. One of the problems with CGAPS, however, is the inability of "individuals sitting on CGAPS as agency representatives ... to make major commitments for their agency. CGAPS can develop excellent strategies and resolve problems that require little new funding and no major legislative work. Major improvements, however, require political leadership of the highest level ..."⁶

The same authority or power vacuum at CGAPS is also lacking at the state agency level. Comments by some state agency officers confirm the comments by private organizations -- that the State lacks political will to effectively fight the invasive species problem.⁷ A council approach could presumably address this concern.

Additionally, a council approach could also provide:

- "(1) [I]ntegrated planning to encourage partnerships, coordinate funding, and develop response priorities;
- (2) [T]echnical assistance and other resources; and
- (3) [G]uidance on effective response measures."⁸

Florida, Tennessee, and Georgia currently favor a council type approach to administering their invasive species problem.

State Administrator/Coordinator

Another alternative is for the State to name an administrator/coordinator for invasive species. An autonomous administrator/coordinator position has several advantages including:

- (1) Independence from any state agency, thereby eliminating or reducing agency rivalries;
- (2) The ability to see the "big picture" that includes all agency concerns which may not be the case with a lead agency;
- (3) Providing a single authority with ultimate responsibility for the invasive species problem for accountability purposes; and
- (4) Quicker decision making as compared with the group consensus evident in a council approach.

An administrator/coordinator, however, would not enjoy the benefits of the collective wisdom that a council could provide. An administrator/coordinator would also not be able to act as quickly as a council with respect to disseminating information back to participating agencies. Except for New Zealand, no other country or state reviewed in chapter 6 adopted the administrator/coordinator approach.

All three administrative alternatives discussed above have their advantages and disadvantages. None of the alternatives alone, however, provide the efficiency and accountability required for the administration of the State's invasive species program.

To best service this program, the Bureau recommends a hybrid of all three alternatives that is discussed in the next chapter.

Endnotes

1. The Nature Conservancy of Hawaii, 1992, "The Alien pest Species Invasion in Hawaii: Background Study and Recommendations for Interagency Planning", at 65.
2. Interviews with various state agency administrators.
3. See chapter 8.
4. U.S., General Accounting Office, July 2001, Report to Congressional Requesters, "Obstacles Hinder Federal Rapid Response to Growing Threat", at 10.
5. The Nature Conservancy of Hawaii, 1992, "The Alien pest Species Invasion in Hawaii: Background Study and Recommendations for Interagency Planning".
6. Id.
7. Interviews with various state agency administrations and private groups.
8. U.S., General Accounting Office, July 2001, Report to Congressional Requesters, "Obstacles Hinder Federal Rapid Response to Growing Threat", at 6.

Chapter 10

FINDINGS AND RECOMMENDATIONS

The alien invasive species problem in Hawaii is both serious and daunting. The damage that invasive species cause and may potentially cause affects the State's health and safety, as well as its economic and environmental well being.

Economically, invasive species have the potential to literally shut down the State's cash cow -- tourism. Pests such as biting sand flies, the lethal yellowing disease, red fire ants, the Caribbean coqui frog and a host of other harmful pests can wreak havoc on tourists and an industry dependent on a tranquil and peaceful environment. Other industries, such as agriculture suffer losses of an estimated \$300 million annually from the destruction caused by alien pests.

Environmentally, Hawaii's scenic beauty and pristine environment are inextricably interrelated with the tourism industry. Thus, protecting the environment from invasive species means protecting the State's primary economic engine as demonstrated by recent efforts to control and eradicate the miconia plant that has overrun parts of the State cost \$1 million in Maui county alone.

Invasive species also affect the **health and safety** of island residents and visitors. From rodents and brown tree snakes to dengue fever carrying mosquitoes and the stinging nettle caterpillar, the very nature of our Hawaiian lifestyle is jeopardized by the danger and disease caused by invading pests.

But thanks to Herculean efforts by dedicated and hard-working state, federal and especially private agencies, invasive species are being challenged and fought on a daily basis. The battle, however, is not without its problems. The present system is plagued with gaps and leaks that allow alien pests to enter and proliferate in the State.

The Money Gap

The biggest and most obvious gap in the fight against invasive species is the funding gap. If the Legislature does nothing else except increase funding to fight invasive species, it will have dramatically improved the State's condition with respect to these alien pests. To raise additional funds for fighting invasive species, the Legislature may wish to consider the following funding proposals:

- (1) Amending Hawaii Revised Statutes section 247-7 by specifying invasive species as a priority in the disbursement of the conveyance taxes;
- (2) Amending Hawaii Revised Statutes section 261-7(e) by adding a new paragraph to require a specific percentage or amount of the airport landing

fees to be disbursed for invasive species activities permissible under federal law; and

- (3) Amending Hawaii Revised Statutes section 266-2(b) by adding a new paragraph to require a specific percentage or amount of the wharfage, demurrage, or other harbor charge to be disbursed for invasive species.

These amendments are provided as suggested legislation in Appendix G. Legislation to tax invasive species related products is a much more complex and voluminous proposal that requires more time than is presently available for research, consultation and preparation. A proposal for that purpose may be furnished with sufficient notice.

Lastly, with respect to funding issues, the Legislature may wish to consider the enormous fiscal advantages of prioritizing funding to detection and inspection efforts over other program areas. The old saying "an ounce of prevention is worth a pound of cure" could never be more applicable. Considering the millions of dollars spent on eradicating miconia and the continuing eradication efforts aimed at the Caribbean coqui frog, funding for inspection or detection purposes represents the greatest return for funds expended.

The Need for an Administrator/Coordinator Position

The invasive species problem also crosses a multitude of federal, state, and private agency lines. The sheer number of agencies involved with invasive species, not to mention the myriad of federal and state laws, regulations, rules, and policies make coordination oftentimes difficult and frustrating. To ease this administrative burden, especially at the state level, the Bureau recommends the establishment of a state invasive species administrator/coordinator position.

First, the Bureau recommends that the State establish an administrator/coordinator position for invasive species that is selected by a nominating committee.¹ To avoid agency rivalries, the position should not be administratively attached to any particular department, but instead, administratively placed in the Governor's office.

Second, like the National Council on Invasive Species, the administrator would fulfill the duties of the position with the advice of an advisory organization composed of state, federal, and private organizations. The Bureau recommends that CGAPS be named as the advisory organization.

Third, the administrator would also be required to consult with the heads of the four primary departments involved with invasive species (HDOA, DLNR, DOA, and DOT) on a regular basis to address the authority or power vacuum that exists in the present system.

Fourth, the administrator would not act as the "lead" for invasive species purposes, but would instead have the authority to designate a state agency to act as the lead agency for a specific invasive species -- notwithstanding but consistent with, if possible -- current applicable law. The ability to designate lead agencies would provide quicker responses to prevent the establishment of invasive species.

Additionally, the administrator would be responsible for the following concerns, including those raised in chapter 6, *Gaps and Leaks in the Present System*:

- (1) Maintaining a broad overview of the invasive species problem in the State and serving as an information clearinghouse for invasive species in Hawaii;
- (2) Advising and coordinating efforts between the HDOA, DLNR, DOH, and DOT on issues related to invasive species including state, federal, international, and privately organized programs and other areas of concern;
- (3) After consulting with appropriate state agencies and the advisory committee, create and implement a plan that includes the prevention, early detection, rapid response, control, enforcement, and education of the public with respect to invasive species, as well as create a mission statement articulating the State's position against invasive species;
- (4) Coordinating and promoting the State's position with respect to federal issues including:
 - (a) Quarantine preemption;
 - (b) International trade agreements that ignore the invasive species problem in Hawaii;
 - (c) First class mail inspection prohibition;
 - (d) Quarantine of domestic pests arriving from the mainland should be provided by the federal government;
 - (e) Coordinating efforts with federal agencies to maximize resources and reduce or eliminate system gaps and leaks including deputizing the USDA's plant protection and quarantine program to enforce Hawaii's laws;
 - (f) Promoting the amendment of federal laws as necessary, including the Lacey Act (so that federal and state laws are consistent) and

FINDINGS AND RECOMMENDATIONS

other laws to improve inspection of domestic airline passengers, baggage, and cargo;

- (g) Coordinating efforts and issues with the federal Invasive Species Council and its National Invasive Species Management Plan; and
- (5) Identifying and recording all invasive species present in the State and designating a state department to act as the lead agency for each invasive specie identified;
- (6) Identifying all state, federal, and other moneys expended for the purposes of the invasive species problem in the State;
- (7) Identifying all federal and private funds available to the State to fight invasive species and advising and assisting state departments to acquire these funds;
- (8) Advising the Governor and Legislature on budgetary and other issues regarding invasive species;
- (9) Providing annual reports to the Legislature on budgetary and other related issues;
- (10) Including the counties in the fight against invasive species to increase resources and funding and to address county-sponsored activities that involve invasive species;
- (11) Reviewing state agency mandates and commercial interests that sometimes call for maintenance of potentially destructive alien species as resources for sport hunting, aesthetic resources or other values;
- (12) Reviewing the fines and penalties structure to insure maximum deterrence to invasive species related crimes; and
- (13) Suggesting appropriate legislation to improve the State's administration of invasive species programs.

Suggested legislation establishing a state invasive species administrator/ coordinator position is included in Appendix G.

This proposal as well as the aforementioned funding proposals lack the benefit of state agency and public review and should be treated accordingly.

Endnotes

1. The nominating committee is based on the selection process for the Commission on Water Resource Management under section 174C-7, Hawaii Revised Statutes.

Report Title:

Study of Alien Aquatic and Terrestrial Species

THE SENATE

TWENTY-FIRST LEGISLATURE, 2001

STATE OF HAWAII

S.C.R. NO. 45

H.D. 1

SENATE CONCURRENT

RESOLUTION

REQUESTING THE LEGISLATIVE REFERENCE BUREAU TO study policy recommendations and funding options for a comprehensive invasive species protection and control program for the State of Hawaii.

WHEREAS, the silent invasion of Hawaii by insects, disease organisms, snakes, weeds, and other pests is the single greatest threat to Hawaii's economy, natural environment and the health and lifestyle of Hawaii's people and visitors; and

WHEREAS, invasive pests already cause millions of dollars of crop losses, the extinction of native species, the destruction of native ecosystems, and the spread of disease; and

WHEREAS, many more harmful pests threaten to invade Hawaii and wreak further damage; and

WHEREAS, the cumulative impacts of harmful invasive species create a burden for the United States, and the nation's current protection system is piecemeal and lacking adequate rigor and comprehensiveness; and

WHEREAS, these deficiencies led to a 1999 Executive Order that brought increased regulatory scrutiny and responsibilities for federal agencies as well as the creation of a national invasive species management plan; and

WHEREAS, the State of Hawaii's programs to address invasive species are also piecemeal, lacking adequate rigor, comprehensiveness, and political will; and

WHEREAS, the deficiencies in Hawaii's programs to address invasive species are evidenced by debate over determining a lead state agency and the formation in 1995 of a coalition of state agencies and non-profit partners called the Coordinating Group on Alien Pest Species (CGAPS);

and

WHEREAS, a principal lesson from the CGAPS program is that Hawaii needs a more coordinated invasive species prevention and control program that has sufficient programmatic capability to prevent new invasive species from entering into the State and control those species already present at a level that reduces the risks and mitigates the hazards to the people of Hawaii; and

WHEREAS, public and private sectors involved and affected by the invasive species issue should participate together in formulating funding options and policy changes for future legislative consideration; now, therefore,

BE IT RESOLVED by the Senate of the Twenty-First Legislature of the State of Hawaii, Regular Session of 2001, the House of Representatives concurring, that the Legislative Reference Bureau is requested to conduct a study on policy recommendations and funding options for a comprehensive invasive species protection and control program for the State of Hawaii; and

BE IT FURTHER RESOLVED that this study should address, but not be limited to, the following areas:

- (1) The scope of the invasive species problem on a global and local level;
- (2) The economic and environmental costs to Hawaii associated with invasive species;
- (3) The health and safety issues for Hawaii associated with invasive species;
- (4) Hawaii's existing programs and policies that address the invasive species problem;
- (5) Existing collaborative efforts between organizations in the public, private, and non-profit sectors and among government agencies;
- (6) Potential for future collaborative efforts between organizations in the public, private, and non-profit sectors and among government agencies;
- (7) Statutory changes the Legislature can make to improve control and prevention of invasive species;
- (8) Assessing the need for a lead state agency for the control and prevention of invasive species, and if deemed necessary, recommending the lead state agency; and
- (9) Evaluating existing funding sources and recommending potential future funding sources for a comprehensive state plan;

and

BE IT FURTHER RESOLVED that the Legislative Reference Bureau consult with the Department of Agriculture, Department of Land and Natural Resources, Department of Health, Department of Transportation, Department of Business, Economic Development, and Tourism, Hawaii Tourism Authority, affected private sector industry groups, relevant federal agencies, and relevant non-governmental organizations in its analysis; and

BE IT FURTHER RESOLVED that the Legislative Reference Bureau submit a report on its findings and recommendations, including draft legislation, to the Legislature no later than twenty days prior to the convening of the Regular Session of 2002; and

BE IT FURTHER RESOLVED that certified copies of this Concurrent Resolution be transmitted to the Governor, the Legislative Reference Bureau, the Board of Land and Natural Resources, the Department of Agriculture, the Department of Health, the Department of Transportation, the

Department of Business, Economic Development and Tourism, and the Hawaii Tourism Authority.

Appendix B

LAWS AND RULES OR REGULATIONS ADMINISTERED OR IMPLEMENTED

Laws and rules administered or implemented by the Hawaii Department of Agriculture.

- (1) Section 141-2, Hawaii Revised Statutes, Prohibition of importation into the State of diseased or infested insects that are injurious, harmful or detrimental to agriculture or the forest of the State;
- (2) Section 141-3, Hawaii Revised Statutes, Designation of pests; control or eradication of pests; emergency powers; authority to enter into contracts and cooperative agreements;
- (3) Section 141-3.6, Hawaii Revised Statutes, Entry of private property to control or eradicate any pests;
- (4) Chapter 142, Part I, Hawaii Revised Statutes, Animal Diseases and Quarantine;
- (5) Chapter 149A, Hawaii Revised Statutes, Hawaii Pesticides Laws;
- (6) Chapter 150A, Hawaii Revised Statutes, Plant and non-domestic animal quarantine;
- (7) Chapter 4-21, Hawaii Administrative Rules, Vaccines, microorganisms, and parasites;
- (8) Chapter 4-66, Hawaii Administrative Rules, Pesticides;
- (9) Chapter 4-67, Hawaii Administrative Rules, Seed Rules;
- (10) Chapter 4-68, Hawaii Administrative Rules, Noxious Weed Rules;
- (11) Chapter 4-69A, Hawaii Administrative Rules, Pests for control or eradication;
- (12) Chapter 4-70, Hawaii Administrative Rules, Plant and non-domestic animal quarantine;
- (13) Chapter 4-71, Hawaii Administrative Rules, Non-domestic animal introductions and microorganism introductions;
- (14) Chapter 4-72, Hawaii Administrative Rules, Plant and Non-domestic animal quarantine plant intrastate rules; and
- (15) Chapter 4-73, Hawaii Administrative Rules, land and non-domestic animal quarantine and quarantine plant export rules.

Laws and rules administered or implemented by the Department of Land and Natural Resources.

- (1) Section 183-1.5(4), Hawaii Revised Statutes, Devise ways and means of protecting the forest and forest reserves;

Section 183D-2(1), Hawaii Revised Statutes, Manage and administer the wildlife and wildlife resources of the State;
- (2) Section 183D-2(10), Hawaii Revised Statutes, Pursuant to section 183D-65, destroy predators deemed harmful to wildlife;
- (3) Section 195-4 (1) HRS, Management of natural area reserves;
- (4) Section 195-6.5, Hawaii Revised Statutes, Natural area partnership program;
- (5) Section 195D-4, Hawaii Revised Statutes, Endangered species and threatened species;
- (6) Section 183D-65, Hawaii Revised Statutes, Posting; destruction of predators;
- (7) Section 197-3, Hawaii Revised Statutes, Introduction of aquatic life and wildlife; and
- (8) Chapter 13-124, Hawaii Administrative Rules, Indigenous wildlife, endangered and threatened wildlife, and introduced wild birds.

Laws and rules administered or implemented by the Department of Health.

- (1) Section 321-11(23), Hawaii Revised Statutes, Disinsectization of aircraft entering or within the State as may be necessary to prevent the introduction, transmission, or spread of disease or the introduction or spread of any insect or other vector of significance to health;
- (2) Chapter 322, Hawaii Revised Statutes, Nuisances; Sanitary regulations (noise); and
- (3) Chapter 11-26, Hawaii Administrative Rules, Vector control.

Laws and regulations administered by the United States Fish and Wildlife Service.

- (1) Endangered Species Act (ESA);
- (2) Convention on the International Trade in Endangered Species of Wild Fauna and Flora (CITES);
- (3) Lacey Act of 1900, as amended;
- (4) Marine Mammal Protection Act of 1972, as amended;
- (5) Migratory Bird Treaty Act, as amended; and

- (6) Regulations relating to "Endangered & Threatened Wildlife and Plants"; "Endangered Species Convention"; "Importation, Exportation, and Transportation of Wildlife", and "Injurious Wildlife".

Laws and regulations administered by the Plant Protection and Quarantine and Plant Health Inspection Service.

- (1) Animal Damage Control Act of 1931;
- (2) Agricultural Marketing Act of 1946, as amended;
- (3) Alien Species Prevention and Enforcement Act;
- (4) Animal Industry Act, as amended;
- (5) Animal Quarantine Act, as amended;
- (6) Cooperative Forestry Assistance Act of 1978;
- (7) Establishment of International Animal Station, as amended;
- (8) Federal Land Policy and Management Act of 1976;
- (9) Federal Noxious Weed Act of 1974, as amended;
- (10) Federal Seed Act;
- (11) Forest and Rangeland Renewable Resources Research Act of 1978;
- (12) Hawaii Tropical Forest Recovery Act;
- (13) Imported Meat Act, as amended;
- (14) Livestock and Poultry Diseases Act, as amended;
- (15) National Environmental Policy Act, as amended;
- (16) Nonindigenous Aquatic Nuisance Prevention and Control Act;
- (17) Organic Administration Act;
- (18) Plant Protection Act;
- (19) Public Rangelands Improvement Act of 1978;
- (20) Virus-Serum-Toxin Act; and
- (21) Regulations relating to "Domestic Quarantine Notices"; "Foreign Animal Quarantines"; "Foreign Plant Quarantines"; "Noxious Weed Regulations"; "Territorial Plant Quarantines"; and "Migratory Bird Permits.

Laws and regulations administered by the United States Postal Service.

- (1) Agricultural Quarantine Enforcement Act;
- (2) Terminal Inspection Act;
- (3) P.L. 100-574; and
- (4) Regulations relating to "Importation of plants or plant products by mail".

Appendix C

Statewide Alien Prevention and Control Needs

| CGAPS "Capacity Exercise" Statewide Additional Needs Matrix | | | | |
|--|------------|---------------------|---------------------|---------------------|
| | | | | |
| Resources that can be shared with other efforts appear in red text | | | | |
| | | | | |
| Species: Summary of All | | Category: N/A | | |
| | | | | |
| | #FTE's | FTE\$ | Funding | Subtotal |
| Prevention | 144 | \$8,640,000 | \$620,000 | \$9,260,000 |
| Early Detection | 29 | \$1,740,000 | \$389,000 | \$2,129,000 |
| Rapid Response | 68.25 | \$4,095,000 | \$439,000 | \$4,534,000 |
| Control | 292 | \$17,520,000 | \$12,732,000 | \$30,252,000 |
| Enforcement | 4 | \$240,000 | \$260,000 | \$500,000 |
| Public Outreach | 37.25 | \$2,235,000 | \$937,000 | \$3,172,000 |
| Totals | 515 | \$34,470,000 | \$14,003,000 | \$49,847,000 |
| | | | | |
| Assumptions: | | | | |
| FTE \$= projected at \$60,000 per position to cover salary, fringe and support | | | | |
| Helicopter time= \$640/hr | | | | |

Appendix D

Recent State Expenditures on Alien Species Prevention/Control

| | FY 1999 | estimated FY 2000 |
|-------------------------------|----------------|--------------------------|
| Prevention | \$528,000 | \$662,000 |
| Early Detection | \$2,076,000 | \$2,106,000 |
| Rapid Response | | \$125,000 |
| Control | \$2,149,000 | \$2,075,000 |
| Enforcement | | |
| Public Outreach | \$65,000 | \$400,000 |
| Monitoring | \$475,000 | \$590,000 |
| Restoration | \$10,000 | \$10,000 |
| Research | \$800,000 | \$995,000 |
| Information management | \$168,000 | \$595,000 |
| Totals | \$6,271,000 | \$7,582,000 |

Appendix G

Report Title:

Invasive Species; Funding

Description:

Earmarks a portion of the airport landing fees and the harbor port entry, dockage, and wharfage fees for invasive species. Sets invasive species as the first priority for the disbursement of the conveyance taxes deposited into the natural area reserve fund.

A BILL FOR AN ACT

RELATING TO INVASIVE SPECIES FUNDING.

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF HAWAII:

1 SECTION 1. Section 247-7, Hawaii Revised Statutes, is
2 amended to read as follows:

3 "**§247-7 Disposition of taxes.** All taxes collected under
4 this chapter shall be paid into the state treasury to the credit
5 of the general fund of the State, to be used and expended for
6 the purposes for which the general fund was created and exists
7 by law; provided that of the taxes collected each fiscal year,
8 twenty-five per cent shall be paid into the rental housing trust
9 fund established by section 201G-432 and twenty-five per cent
10 shall be paid into the natural area reserve fund established by
11 section 195-9; provided that the funds paid into the natural
12 area reserve fund shall be annually disbursed by the department
13 of land and natural resources after joint consultation with the
14 forest stewardship committee and the natural area reserves
15 system commission in the following priority:

16 (1) To invasive species control programs;

S.B. NO.

1 director, for the purpose of meeting the expenditures of the
2 statewide system of airports set forth in section 261-5(a),
3 which includes expenditures for capital improvement projects
4 approved by the legislature.

5 Of the statewide system of airports landing fees collected
6 each year, one per cent shall be disbursed by the department for
7 invasive species control and prevention in accordance with
8 applicable federal law regarding the disposition of airport
9 revenue.

10 In setting airports rates and charges, including landing
11 fees, the director may enter into contracts, leases, licenses,
12 and other agreements with aeronautical users of the statewide
13 system of airports containing such terms, conditions, and
14 provisions as the director deems advisable.

15 If the director has not entered into contracts, leases,
16 licenses, and other agreements with any or fewer than all of the
17 aeronautical users of the statewide system of airports prior to
18 the expiration of an existing contract, lease, license, or
19 agreement, the director shall set and impose rates, rentals,
20 fees, and charges pursuant to this subsection without regard to
21 the requirements of chapter 91; provided that a public

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1 informational hearing shall be held on the rates, rentals, fees,
2 and charges.

3 The director shall develop rates, rentals, fees, and
4 charges in accordance with a residual methodology so that the
5 statewide system of airports shall be, and always remain, self-
6 sustaining. The rates, rentals, fees, and charges shall be set
7 at such levels as to produce revenues which, together with
8 aviation fuel taxes, shall be at least sufficient to meet the
9 expenditures of the statewide system of airports set forth in
10 section 261-5(a), including expenditures for capital improvement
11 projects approved by the legislature, and to comply with
12 covenants and agreements with holders of airport revenue bonds.

13 The director may develop and formulate methodology in
14 setting the various rates, rentals, fees, and charges imposed
15 and may determine usage of space, estimate landed weights, and
16 apply such portion of nonaeronautical revenue deemed appropriate
17 in determining the rates, rentals, fees, and charges applicable
18 to aeronautical users of the statewide system of airports.

19 The rates, rentals, fees, and charges determined by the
20 director in the manner set forth in this subsection shall be
21 those charges payable by the aeronautical users for the periods
22 immediately following the date of expiration of the existing

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1 contract, lease, license, or agreement. If fees are established
2 pursuant to this section, the department shall prepare a
3 detailed report on the circumstances and rates and charges that
4 have been established, and shall submit the report to the
5 legislature no later than twenty days prior to the convening of
6 the next regular session.

7 If a schedule of rates, rentals, fees, and charges
8 developed by the director in accordance with this section is
9 projected by the department to produce revenues which, together
10 with aviation fuel taxes, will be in excess of the amount
11 required to meet the expenditures of the statewide system of
12 airports set forth in section 261-5(a), including expenditures
13 for capital improvement projects approved by the legislature,
14 and to comply with covenants and agreements with holders of
15 airport revenue bonds, the department shall submit the schedule
16 of rates, rentals, fees, and charges to the legislature prior to
17 the convening of the next regular session of the legislature.
18 Within forty-five days after the convening of the regular
19 session, the legislature may disapprove any schedule of rates,
20 rentals, fees, and charges required to be submitted to it by
21 this section by concurrent resolution. If no action is taken by
22 the legislature within the forty-five-day period the schedule of

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1 rates, rentals, fees, and charges shall be deemed approved. If
2 the legislature disapproves the schedule within the forty-five-
3 day period, the director shall develop a new schedule of rates,
4 rentals, fees, and charges in accordance with this section
5 within seventy-five days of the disapproval. Pending the
6 development of a new schedule of rates, rentals, fees, and
7 charges, the schedule submitted to the legislature shall remain
8 in force and effect.

9 Notwithstanding any other provision of law to the contrary,
10 the department may waive landing fees and other aircraft charges
11 established under this section at any airport owned or
12 controlled by the State whenever:

- 13 (1) The governor declares a state of emergency; and
14 (2) The department determines that the waiver of landing
15 fees and other charges for the aircraft is consistent
16 with assisting in the delivery of humanitarian relief
17 to disaster-stricken areas of the State."

18 SECTION 3. Section 266-2, Hawaii Revised Statutes, is
19 amended by amending subsection (b) to read as follows:

20 "(b) "Notwithstanding any law or provision to the
21 contrary, the department of transportation is authorized to
22 plan, construct, operate, and maintain any commercial harbor

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1 facility in the State, including, but not limited to, the
 2 acquisition and use of lands necessary to stockpile dredged
 3 spoils, without the approval of county agencies.

4 All moneys appropriated for commercial harbor improvements,
 5 including new construction, reconstruction, repairs, salaries,
 6 and operating expenses, shall be expended under the supervision
 7 and control of the department, subject to this chapter and
 8 chapter 103D.

9 All contracts and agreements authorized by law to be
 10 entered into by the department shall be executed on its behalf
 11 by the director of transportation.

12 Of the port entry, wharfage, and demurrage fees collected
 13 each year, one per cent shall be disbursed by the department for
 14 invasive species control and prevention."

15 SECTION 4. Statutory material to be repealed is bracketed
 16 and stricken. New statutory material is underscored.

17 SECTION 5. This Act shall take effect upon its approval.

18

INTRODUCED BY: _____

Report Title:

Alien Invasive Species; State Administrator/Coordinator

Description:

Establishes a state invasive species administrator/coordinator and authorizes the departments of agriculture, health, and land and natural resources to enter private property for the purpose of controlling or eradicating alien invasive species.

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1 (2) Affirm the objective of the State to rid Hawaii of
2 invasive species; and

3 (3) Provide other statutory means to facilitate the
4 administration of the State's efforts to control
5 invasive species.

6 **§ -2 Administrator/coordinator.** (a) There is
7 established an administrator/coordinator position for invasive
8 species that shall be administratively attached to the
9 governor's office. The administrator/coordinator shall possess
10 at least five years experience in researching, controlling or
11 eradicating, or administering programs related to alien invasive
12 species. The nominating committee under subsection (b) shall
13 have sole discretion in determining the eligibility of persons
14 nominated for the administrator/coordinator position.

15 (b) The administrator/coordinator shall be appointed by
16 the governor subject to confirmation by the senate; provided
17 that the governor shall select an administrator/coordinator from
18 a list submitted by a nominating committee. The nominating
19 committee shall be composed of three individuals chosen as
20 follows: one person appointed by the governor; one person
21 appointed by the president of the senate; and one person

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1 appointed by the speaker of the house of representatives. The
2 committee shall solicit applications and send to the governor
3 the names of at least three nominees. The committee shall serve
4 without compensation and serve at the pleasure of the appointing
5 authority. The nominating committee may dismiss the
6 administrator/coordinator for cause and replace the
7 administrator/coordinator as the need arises.

8 (c) The administrator/coordinator shall serve a term of
9 four years, shall be appointed without regard to chapter 76, and
10 compensated at a salary level set by the nominating committee
11 with approval by the governor. The administrator/coordinator
12 may request staff assistance from the office of the governor and
13 other appropriate agencies. The administrator/coordinator may
14 also employ, without regard to chapters 76 and at the
15 administrator/coordinator's pleasure, hire and dismiss such
16 persons as the administrator/coordinator finds necessary for the
17 purposes of this chapter and fix their compensation accordingly.

18 (d) The administrator/coordinator shall:

19 (1) Maintain a broad overview of the invasive species
20 problem in the State;

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- 1 (2) Advise, consult, and coordinate invasive species
2 related efforts with and between the departments of
3 agriculture, land and natural resources, health, and
4 transportation including state, federal,
5 international, and privately organized programs and
6 policies;
- 7 (3) Identify and prioritize each lead agency's
8 organizational and resource shortfalls with respect to
9 invasive species;
- 10 (4) After consulting with appropriate state agencies and
11 the advisory body under section -3, create and
12 implement a plan that includes the prevention, early
13 detection, rapid response, control, enforcement and
14 education of the public with respect to invasive
15 species, as well as fashion a mission statement
16 articulating the State's position against invasive
17 species;
- 18 (5) Coordinate and promote the State's position with
19 respect to federal issues including:
- 20 (A) Quarantine preemption;

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- 1 (B) International trade agreements that ignore the
- 2 invasive species problem in Hawaii;
- 3 (C) First class mail inspection prohibition;
- 4 (D) Quarantine of domestic pests arriving from the
- 5 mainland should be provided by the federal
- 6 government;
- 7 (E) Coordinating efforts with federal agencies to
- 8 maximize resources and reduce or eliminate system
- 9 gaps and leaks including deputizing U.S.
- 10 Department of Agriculture's plant protection and
- 11 quarantine inspectors to enforce Hawaii's laws;
- 12 (F) Promoting the amendment of federal laws as
- 13 necessary, including the Lacey Act (so that
- 14 federal and state laws are consistent) and laws
- 15 related to inspection of domestic airline
- 16 passengers, baggage and cargo;
- 17 (G) Coordinating efforts and issues with the federal
- 18 Invasive Species Council and its National
- 19 Invasive Species Management Plan;
- 20 (6) Identify and record all invasive species present in
- 21 the State and designate the department of agriculture,

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- 1 health, or land and natural resources as the lead
2 agency for each invasive species identified;
- 3 (7) Identify all state, federal and other moneys expended
4 for the purposes of the invasive species problem in
5 the State;
- 6 (8) Identify all federal and private funds available to
7 the State to fight invasive species and advise and
8 assist state departments to acquire these funds;
- 9 (9) Advise the governor and legislature on budgetary and
10 other issues regarding invasive species;
- 11 (10) Provide annual reports to the legislature twenty days
12 prior to every legislative session on budgetary and
13 other related issues;
- 14 (11) Include the counties in the fight against invasive
15 species to increase resources and funding and to
16 address county-sponsored activities that involve
17 invasive species;
- 18 (12) Review state agency mandates and commercial interests
19 that sometimes call for maintenance of potentially
20 destructive alien species as resources for sport
21 hunting, aesthetic resources or other values;

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1 (13) Review the fines and penalties structure to insure
2 maximum deterrence for invasive species related
3 crimes;

4 (14) Suggest appropriate legislation to improve the State's
5 administration of invasive species programs and
6 policies; and

7 (15) Any other function necessary to effectuate the
8 purposes of this chapter.

9 **§ -3 Advisory body.** The administrator/coordinator may
10 appoint a local advisory body to advise the
11 administrator/coordinator to assist in coordinating activities
12 to fight invasive species. The body shall be comprised of
13 representatives of state, and private members. Representatives
14 of federal agencies shall be asked to participate. The
15 selection of the local advisory body shall be at the discretion
16 of the administrator/coordinator who shall meet with the body at
17 least quarterly. If the administrator/coordinator does not
18 appoint an advisory body, then the administrator/coordinator
19 shall conduct quarterly public hearings to gain public input on
20 current issues of concern. The administrator/coordinator shall
21 also meet at least semi-annually with the chairpersons of the

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1 board of agriculture and board of land and natural resources and
2 the directors of health and transportation to gain input and to
3 keep them abreast of current issues.

4 **§ -4 Lead agency; duties.** A state department that is
5 designated a lead agency under section -2(b)(5) with respect
6 to a particular species shall have sole administrative
7 responsibility and accountability for that designated invasive
8 species. The lead agency shall:

- 9 (1) Coordinate all efforts between other departments and
10 federal and private agencies to control or eradicate
11 the designated invasive species;
- 12 (2) Prepare a biennial multi-departmental budget proposal
13 for the legislature and invasive species
14 administrator/coordinator forty days before the
15 convening of the regular session of the legislature in
16 each odd-numbered year, showing the budget
17 requirements of each of the lead agency's assigned
18 invasive species that includes the budget requirements
19 of all departments that it leads for that species as
20 well as other federal and private funding for that
21 invasive species;

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- 1 (3) Prepare and distribute an annual progress report forty
2 days prior to the convening of each regular session of
3 the legislature to the governor, legislature, and the
4 invasive specie administrator/coordinator that
5 includes the status of each assigned invasive species
6 with respect to its control or eradication; and
- 7 (4) Any other function of a lead agency necessary to
8 effectuate the purposes of this chapter.

9 **§ -5 Authority to enter premises; departments of**
10 **agriculture, health, and land and natural resources.**

11 Notwithstanding any other law to the contrary, and in addition
12 to any other authority provided by law that is not inconsistent
13 with the purposes of this chapter, the departments of
14 agriculture, health, and land and natural resources and each
15 departments agents, pursuant to this chapter, are authorized to
16 examine, control, and eradicate all instances of invasive
17 species identified as such by the invasive species
18 administrator/coordinator under section -(2)(b)(5) on any
19 public or private premises or in any aircraft or vessel landed
20 or docked in waters of the State.

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1 **§ -6 Private property.** (a) Whenever any invasive
2 specie identified by the invasive species
3 administrator/coordinator under section -(2)(b)(5) is found
4 on private property, the departments of agriculture, health, or
5 land and natural resources, as the case may be, may enter such
6 premises to control or eradicate the invasive species after
7 reasonable notice is given to the owner of the property and
8 pursuant to the court order in subsection (d).

9 (b) If applicable, a duplicate of the notice so given
10 shall be left with one or more of the tenants or occupants of
11 the premises. If the premises are unoccupied, notice shall be
12 mailed to the last known place of residence of the owner if
13 residing in the State. If the owner resides out of the State or
14 cannot be reached with notice speedily, notice left at the house
15 or posted on the premises shall be sufficient.

16 (c) The department may instead cause notice to be given,
17 and order the owner to control or eradicate the invasive species
18 at the owner's expense within such reasonable time as the
19 department may deem proper, pursuant to the notice requirements
20 of this section.

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1 (d) If the owner thus notified fails to comply with the
2 order of the department, or its agent, within the time specified
3 by the department, the department or its agent may apply to the
4 district court of the circuit in which the property is situated
5 for a warrant, directed to any police officer of the circuit,
6 commanding the police officer to take sufficient aid, and, being
7 accompanied by the department, between the hours of sunrise and
8 sunset, execute measures to control or eradicate the invasive
9 species.

10 (e) The department may recover by appropriate proceedings
11 the expenses incurred by its order from any owner, who, after
12 proper notice has failed to comply with the department's order.

13 (f) In no case shall the department or any officer or
14 agent thereof be liable for costs in any action or proceeding
15 that may be commenced in pursuance of this chapter.

16 **§ -7 State or county property.** (a) Whenever any
17 invasive species identified by the invasive species
18 administrator/coordinator under section -(2)(b)(5) is found
19 on state or county property or on a public highway, street,
20 lane, alley, or other public place controlled by the State or
21 county, notice shall be given by the departments of agriculture,

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1 health, or land and natural resources, or its agent, as the case
 2 may be, to the person officially in charge thereof, and the
 3 person shall be reasonably notified and ordered by the
 4 department to control or eradicate the invasive species.

5 (b) In case of a failure to comply with the order, the
 6 mode of procedure shall be the same as provided in case of
 7 private persons in section -6.

8 **§ -8 Rulemaking.** The administrator/coordinator may
 9 adopt rules pursuant to chapter 91 to effectuate this chapter."

10 SECTION 2. There is appropriated out of the general
 11 revenues of the State of Hawaii the sum of \$, or so
 12 much thereof as may be necessary for fiscal year 2002-2003.

13 SECTION 3. This Act shall take effect on July 1, 2002.

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INTRODUCED BY: _____