

Bob Merriam

1992 FOREST LEGISLATION SYMPOSIUM

SEPTEMBER 1992
KONA SURF RESORT & COUNTRY CLUB

- CO-SPONSORS:
- Kamehameha Schools/Bernice Pauahi Bishop Estate
 - Hawaii Forest Industry Association

- PARTICIPATING AGENCIES:
- Hawaii Department of Agriculture
 - Hawaii Department of Land and Natural Resources
 - National Park Service
 - R. C. & D. - Forestry Committee
 - U.S.D.A. Soil Conservation Service
 - United States Fish and Wildlife Service
 - United States Forest Service, Institute of Pacific Island Forestry

- PARTICIPATING ORGANIZATIONS:
- Conservation Council of Hawaii
 - Hawaii Audubon Society
 - Natural Resources Defense Council
 - Sierra Club, Hawaii Chapter
 - Society of American Foresters, Hawaii Chapter
 - The Nature Conservancy of Hawaii



Dear Participant,

Thank you for your interest in participating in the Forest Legislation Symposium. The theme of the symposium is developing and supporting legislation and legislative agendas that are mutually acceptable. We recognize that we differ in what we find most precious in the forest of Hawaii. For some, it is our remarkable avifauna be they threatened, endangered or endemic. For others it is the Hawaiian flora with their remarkable penchant for radiation and adaptation. For others, it is the dynamic ecosystem that is capable of sustaining and nurturing our vast variety of particularly Hawaiian organisms. For others, it is the beauty and variety of products of the forests. For most, it is all of the above with only variations of emphasis of interest. We are after all a small community with wide interests.

The organizers of this symposium were able to work harmoniously in developing the agenda and position papers. We agreed to concentrate on the issues that were not likely to cause strife between us. We deferred divisive issues for later discussions. There is so much to be done to protect and enhance our forests that, in principle, we can agree upon. If we unite our spirits in aloha, for the benefit of the forests, we can accomplish a great deal.

Each participant will be called upon to add to the thoughts that are presented in this booklet. We look forward to working with you. See you in Kona.

Aloha,

Hawaii DLNR - DOFAW
U.S. Fish and Wildlife Service
U.S National Park Service
Hawaii Department of Agriculture
U.S. Forest Service, Institute of Pacific Island Forestry
U.S. Soil Conservation Service
Conservation Council for Hawaii
Hawaii Audubon Society
Hawaii Forest Industry Association
Kamehameha Schools/Bishop Estate
Natural Resources Defence Council
Sierra Club, Hawaii Chapter
The Nature Conservancy of Hawaii
RC&D - Forestry Committee

1992 FOREST LEGISLATION SYMPOSIUM

AGENDA

September 9, 1992

- 8:00 - 9:00am Registration and Seating
- 9:00 Greetings from Peter Simmons, President of HFIA, and Forestry Land Manager, KS/BE
Introduction of Master of Ceremonies: Robert Lindsey, Hawaii Island Manager, KS/BE
- 9:05 Remarks from Robert Lindsey
Introduction of Oswald Stender, Trustee, KS/BE
- 9:15 Welcoming address by Mr. Stender
- 9:30 Comments by Senator Daniel Akaka
- 9:45 - 11:55 Introduction of co-sponsors, participating agencies, and participating organizations: explaining their involvement in forestry and forestry issues, and their interest in this symposium.
- Mike* - Hawaii Department of Land and Natural Resources - Division of Fish and Wildlife
 - Robert Smith* - U.S. Fish and Wildlife Service
 - Frances* - U.S. National Park Service
 - Hilina* - Hawaii Department of Agriculture
 - Gene* - U.S. Forest Service, Institute of Pacific Island Forestry
 - Sandra* - U.S. Soil Conservation Service
 - Conservation Council for Hawaii
 - Marge* - Hawaii Audubon Society
 - Bert* - Hawaii Forest Industry Association
 - Peter* - Kamehameha Schools/Bishop Estate
 - Gene* - Natural Resources Defence Council
 - Mark Bacheler* - Sierra Club, Hawaii Chapter
 - Len* - Society of American Foresters, Hawaii Chapter
 - Kim* - The Nature Conservancy of Hawaii
- 11:55 - 12:10 What has been accomplished since "Forestry 2000"?
Mike Robinson, RC&D Forestry Committee
- LUNCH SPEAKER: Hannah Springer, Historian, 'Land Use in Old Hawaii'

1992 FOREST LEGISLATION SYMPOSIUM

AGENDA

Sept. 9 continued

1:00 - 2:00pm Panel on Federal initiatives and programs affecting
Hawaii's Forests *Sea - Klima*

2:00 - 4:10 Presentation of proposals moderated by Mike Tulang,
U.S. Soil Conservation Service

Alien Species Prevention and Control

America The Beautiful Program (Urban Tree Planting)

Biological Control of Forest Weeds

BREAK (10 MINUTES)

2:50 Compensation for Management and Protection of
Public Resources on Private Property

Natural Resource Management Training in Hawaii

Increased Funding for DLNR Fire Protection and
Management Program

Forestry and Biodiversity

Forest Research

Funding for the State Natural Area Reserve System,
Natural Area Partnerships, and Forest Stewardship
Partnerships

Management of State Leases with Forested Lands by
the Department of Land and Natural Resources

Na Ala Hele Program (Hawai'i Trails and Access
System)

4:10 - 4:30 Discussion regarding topics: What else needs to be
examined and which do not need to be covered in a
facilitated break-out group tomorrow?

4:45 - 7:00 Heavy Pupus and No-Host Cocktails

1992 FOREST LEGISLATION SYMPOSIUM

AGENDA

September 10, 1992

- 8:30 - 9:00am Welcome Back!
Participants divide into break-out groups.
- 9:00 - 12:00 Facilitated break-out group work sessions.
- LUNCH SPEAKER: Robert Smith, U.S. Fish and Wildlife
Service, 'U.S. Endangered Species Act'
- 1:00 - 2:30pm Presentations from break-out groups to the entire
symposium body.
- 2:30 - 2:45 Where do we go from here? by Audrey Newman or Alan
Holt, The Nature Conservancy of Hawaii

Symposium Closure: Robert Lindsey
Peter Simmons

1 ALIEN SPECIES: PREVENTION AND CONTROL

2
3
4 EXECUTIVE SUMMARY

5
6 The silent invasion of Hawaii by pest species—weeds, disease
7 organisms, predators, insects, etc.—has far-reaching consequences
8 for the State's people, economy and natural environment. Pest
9 species already established in Hawaii are responsible for large
10 losses of agricultural and horticultural crops. These pests limit
11 the shipment of local produce to mainland markets, damage native
12 forests, streams and watersheds, compete with native flora and
13 fauna, and carry diseases that affect native species, agricultural
14 crops, livestock and humans. The magnitude of the threat posed by
15 the continual introduction of alien species into the State has led
16 to widespread agreement among scientists, farmers, environmental
17 groups and government agencies that stopping the influx of new
18 pests is essential to Hawaii's future well-being.

19
20 This report describes and assesses the current systems used in
21 Hawaii to prevent the introduction of unwanted alien species and to
22 respond to those pests that succeed in entering the State. It is
23 intended to help focus coordinated, multiagency planning to solve
24 the complex alien pest problem.

25
26 Hawaii has been actively involved in alien pest prevention and
27 control for a century. Today, at least 20 state, federal and
28 private organizations and a number of volunteer groups dedicate a
29 major part of their resources to this area.

30
31 PREVENTION

32
33 In general, federal agencies in Hawaii are concerned with
34 preventing the introduction of noxious pests into the U.S. from
35 foreign sources and preventing pests established in Hawaii from
36 reaching the U.S. mainland. Their work is guided by federal laws
37 and rules that have evolved with a focus on protecting large-scale
38 mainland agriculture and enforcing international trade agreements.
39 The U.S. Customs Service, U.S. Fish and Wildlife Service, U.S.
40 Department of Agriculture's Animal and Plant Health Inspection
41 Service, and the U.S. Department of Defense's Military Customs
42 Inspection Program are the federal agencies most involved in
43 prevention activities.

44
45 Compared to federal agencies, state agencies have a larger
46 responsibility for the prevention of noxious pest introductions
47 that may be damaging to Hawaii. State agencies assume most of the
48 task of preventing U.S. mainland pests from reaching Hawaii.
49 Because of Hawaii's tropical environment and unique natural
50 history, the State is vulnerable to far more foreign pests than the
51 typical mainland state. Therefore, state agencies rely on federal
52 colleagues to call them in on foreign pest introductions that pose
53 a threat to Hawaii but may not be prohibited in the U.S. The
54 Hawaii Department of Agriculture carries out virtually all of the
55 State's prevention programs. Several volunteer task forces and
56 private educational programs have also been initiated to bolster
57 public awareness and promote improved prevention systems.

58 CONTROL

59
60 The control of established or newly escaped pests in Hawaii is
61 primarily the responsibility of state government, although federal
62 agencies (U.S. Fish and Wildlife Service, National Park Service and
63 U.S. Department of Agriculture) carry out pest control operations
64 on federal lands, enforce endangered species laws, and carry out
65 research to improve control methods. The lead state agencies
66 involved in control are the Department of Agriculture and the
67 Department of Land and Natural Resources. Private organizations
68 including the Hawaii Sugar Planters' Association, Bishop Museum,
69 The Nature Conservancy of Hawaii, and Hawaii and Maui Humane
70 Societies are involved in aspects of alien species control as well.
71 While there is some coordination among these agencies and groups,
72 most focus only on agriculture or human health, or native ecosystem
73 pest problems.

74
75 PROBLEMS

76
77 Despite the efforts of these organizations, unwanted alien species
78 are entering Hawaii at an alarming and increasing rate. Since the
79 1970s, an average of 20 new alien invertebrates (insects, molluscs,
80 etc.) per year were recorded in Hawaii. This is an increase from
81 16 per year between 1937 and 1960. (By comparison, scientists
82 estimate that before man's arrival, a new invertebrate became
83 established in Hawaii on a rough average of only once every 10,000
84 years. The current rate of invasion, then, is about 200,000 times
85 more rapid than the natural rate.)

86
87 Approximately one-half of the immigrant invertebrates established
88 between 1981 and 1991 are regarded as economic pests. One in
89 twenty—or about one per year—is a "serious" economic pest. Since
90 1985, four new insect pests of sugarcane have become established;
91 of these, the lesser cornstalk borer alone has already cost sugar
92 planters an estimated \$9 million.

93
94 While information on how these pests are entering the State is
95 incomplete, inspectors estimate that most are entering via airline
96 passenger flights, first-class mail and cargo. The mainland U.S.
97 is the leading source of pests, followed closely by southeast Asia,
98 tropical America and the southwest Pacific.

99
100 Meanwhile, a number of pest species already established in Hawaii
101 are spreading. Although concerted efforts have succeeded in
102 limiting the spread of selected crop diseases or forest pests, most
103 interisland pest traffic is largely unchecked.

104
105 The chief areas of concern identified through interviews, a
106 workshop with agency staff and other research are as follows.

107
108 A large proportion of the total passengers, cargo and other
109 traffic entering Hawaii is currently uninspected, including
110 materials known to be significant sources of new alien
111 species.

112 The effectiveness of inspections is hampered by inadequate
113 sampling strategies;

114
115 Penalties for illegal introductions are inadequate;

116
117 Federal quarantine programs do not adequately address Hawaii's
118 special vulnerability to foreign pests;

119
120 The current process for determining which species are to be
121 prohibited from or allowed into the State does not adequately
122 address the full range of alien pest threats, and does not
123 balance the interests of alien pest control against
124 horticultural or other plant and animal trades;

125
126 Response to new infestations is frequently delayed by
127 jurisdictional or organizational problems, allowing pests to
128 become established and, in some cases, to spread beyond
129 control;

130
131 Interisland spread of pests is a major, largely unregulated
132 problem;

133
134 Control efforts are not taking full advantage of available
135 technologies; and

136
137 Agency mandates sometimes call for maintenance of potentially
138 destructive alien species as resources for sport hunting,
139 crops, aesthetic resources or other values.

140
141 Next Steps

142
143 A multiagency planning effort is urgently needed to develop a
144 cohesive and comprehensive pest prevention and control system.
145 Over the past 100 years, agency programs have arisen ad hoc to
146 address specific concerns of a particular audience. The result
147 today is a set of programs which are generally effective within
148 their own jurisdictions but which, together, leave many gaps and
149 leaks for pest entry and establishment. A multiagency plan must
150 invest especially in prevention activities because of their lower
151 cost and greater chances of success when compared to long-term
152 control operations for an established pest.

153
154 Effective systems will also require strong public support and
155 participation, essentially making pest prevention and control a
156 part of everyday island life. Although public understanding of
157 threats like snakes and other dangerous pests has increased through
158 recent media exposure, the average citizen remains unaware of the
159 magnitude of the problem. On-going public support, however,
160 depends on a compelling and practical strategy for long-term
161 prevention and control.

162 A two-phased planning process is suggested, to begin in the summer
163 of 1992. Phase 1 should result in:

164 Pre-entry prevention strategy;

165 Port-of-entry sampling and inspection strategy;

166 Statute, policy and rules review to clarify conflicts/gaps and
167 determine a coordinated approach for resolving them;

168 Rapid response strategy; and

169 Statewide control strategies for selected, established pests.

170 Phase 2 planning is intended to draw on the products of Phase 1 to
171 produce:

172 Cohesive training strategy;

173 Coordinated data systems;

174 Coordinated research strategy; and

175 Expanded public awareness campaign.

176 For both political and technical reasons, this process will be a
177 major undertaking. To succeed, it should be guided by a simple,
178 clear policy statement identifying the standard of excellence
179 Hawaii aspires to in this field (e.g., "Hawaii will develop a pest
180 prevention and control system that is the most effective in the
181 world", or "...that reduces the influx of new pest species into the
182 State to ten percent of present levels by the year 2000"). Because
183 of its long history and broad involvement in this area, the Hawaii
184 Department of Agriculture is the most appropriate agency to lead
185 such a planning effort.

186
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189
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191
192
193
194
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197
198
199 The Executive Summary and Table of Contents for The Alien Pest
200 Species Invasion in Hawaii: Background Study and Recommendations
201 for Interagency Planning which was prepared by The Nature
202 Conservancy of Hawaii and the Natural Resources Defense Council and
203 published in August 1992. The principal authors of this report
204 were Susan Miller (NRDC) and Alan Holt (TNCH), who were assisted by
205 Jodi Bailey (TNCH) and Susan Machida (Lacayo Planning).

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*Susan
Oliver*

1 HAWAII'S AMERICA THE BEAUTIFUL PROGRAM (ATB)
2
3

4 PROPOSAL:
5

6 Create an Urban and Community Forestry legislative mandate.
7

8 BACKGROUND:
9

10 The Federal 1990 Farm Bill for urban and community forestry
11 established the America the Beautiful Act of 1990 which authorizes
12 the Secretary of Agriculture to provide financial and technical
13 assistance to State forestry agencies for the purpose of
14 encouraging local governments, civic groups, and individuals to
15 plant and maintain trees and improve forests in communities and
16 urban areas. Under this mandate, State foresters will provide
17 statewide leadership and support to deliver this program at the
18 local level.
19

20 President Bush is proposing an annual budget of \$65 million for
21 five years to plant an average of 30 million trees per year in
22 urban communities throughout the United States. Hawaii received a
23 base funding of \$150,000 for fiscal years 1991 and 1992. This base
24 funding is used to help states establish their urban and community
25 forestry programs.
26

27 An ATB Coordinator was hired to facilitate the program as well as
28 help establish the Hawaii Urban Forest Advisory Council (HUFAC),
29 which totals 11 members. A member of each of the county's arborist
30 committee sits on the council as well as private citizens and state
31 and federal agency representatives. The main purpose of HUFAC is
32 to assist the Division of Forestry and Wildlife in deciding which
33 projects will be funded. They also develop criteria and evaluate
34 recommendations for cost-share proposals, pilot and demonstration
35 programs, and other funding distribution related issues.
36

37 The Division of Forestry and Wildlife recently awarded Federal
38 grant monies totalling \$74,630 to ten local groups. These include
39 the following:
40

41 \$13,365 to The Hawaii Plant Conservation Center on Kauai to
42 develop an education project called "The Growing Seed."
43

44 \$13,000 to the Wailuku Main Street Association, Inc. on Maui
45 to help establish their "Wailuku Gateway Beautification
46 Project."
47

48 \$9,400 and \$2,000 to Campaign Recycle Maui and Tri-Isle RC&D,
49 respectively, to develop a "Plant-A-Tree" educational program
50 on Maui.
51

52 \$2,500 to the University of Hawaii-Hilo Biology Department to
53 construct a conifer garden project.

54 \$13,000 to the Friends of Waipahu Cultural Garden Park for
55 their "Hawaiian Plantation Village."
56

57 \$10,000 to the City and County of Honolulu to develop a
58 computerized street tree inventory system.
59

60 \$5,400 to the North Shore Outdoor Circle to help beautify a
61 newly established village for the homeless.
62

63 \$4,000 and \$1,965 to the 4-H Youth program to plant Koa trees
64 and the Hawaii Kai Marina Community Association, respectively,
65 for Wildlife habitat improvement.
66

67 More grants will be awarded as the program progresses.
68

69 JUSTIFICATION:
70

71 The ATB funding is guaranteed for five years to those states who
72 have established urban and forestry community programs. For those
73 states who do not have such programs, the funding is guaranteed for
74 only three years. In a recent federal Cooperative Forestry program
75 review by the U.S. Forest Service, the review team found that
76 Hawaii lacked a state legislative mandate for urban and community
77 forestry. They ascertained that a state legislative mandate for
78 urban and community forestry could result in a broader public
79 support system for community forestry in Hawaii and, subsequently,
80 the greater involvement of volunteers who are the backbone of the
81 program. Already there is strong public support for planting trees
82 in community settings.

Mike

1 BIOLOGIC CONTROL OF FOREST WEEDS IN HAWAII

2
3 PROPOSAL:

4 Establish a program of biological control of introduced weeds in
5 forest and associated ecosystems that includes the following
6 implementation steps:

7
8 Identify the principal state and federal agency partnerships and
9 address the need for maintaining continuous multiple sponsorship of
10 the program. Identify a Hawaii agency (such as the Department of
11 Land and Natural Resources) that would providing program
12 leadership.

13
14 Establish an authority to review and assure that no agents released
15 for biological control will interfere with valuable agricultural
16 and native flora and fauna.

17
18 Establish the responsibilities of the lead agency to provide a
19 program manager who would be responsible for coordinating day to
20 day operations and interact with the partners.

21
22 Provide a line item for funding the program.

23
24 BACKGROUND:

25 Most conventional methods of vegetation management (herbicides,
26 mechanical weeding, grazing, etc.) are unsuitable for our forest
27 environment. They often cause more damage to the native vegetation
28 than to the targeted weed. Conventional methods are also
29 expensive and produce only temporary solutions in small or limited
30 areas. Fortunately, a possible solution has been found in
31 biological control: the finding, importing, and releasing of the
32 natural enemies of the introduced weed. A small research program,
33 funded and conducted by a number of different State and Federal
34 Research and Land Management Agencies since 1984 has demonstrated
35 that biological control can successfully be used to control forest
36 weeds in Hawaii.

37
38 Effective biological control consists of several different
39 components including: foreign explorations, quarantine operations,
40 release operations, post release evaluation, and supporting
41 research. Professional entomologists and supporting people are
42 needed to implement the program.

43
44 JUSTIFICATION:

45 A full-scale biological control program requires a team of managers
46 and scientists, a large permanent well-equipped quarantine
47 facility, and a commitment for funding as a high priority long-term
48 program. Funding should be provided by joint agreement of the
49 cooperating agency partners; operational costs would be one to 1.5
50 million dollars a year. In order to be effective, the program life
51 should be a minimum of 10 years.

52
53 Supporting research is needed for all phases of the importing,
54 testing, and releasing of insects. Each insect received is an
55 unknown that usually requires unique methods of rearing and
56 testing. Research scientists also play an important role in

57 identifying the homeland of the insect; identifying insects that
58 are collected; as well as studying the fate of insects after they
59 are released into the forest to determine ways that they may be
60 manipulated to make their populations increase faster and improve
61 their impact on the target weed.

62
63 A forest weed biological control program manager would provide
64 leadership needed to manage an effective and efficient forest weed
65 management project. The biocontrol program manager should have the
66 following responsibilities:

67
68 coordinate the search for biological control agent;

69
70 coordinate life history studies of potential biocontrol agents
71 and target weeds;

72
73 coordinate approved cooperative studies in the weed's native
74 country;

75
76 coordinate partnership use and maintenance of biological
77 control facilities;

78
79 coordinate importing and testing of potential biological
80 control agents;

81
82 coordinate preparation and review of requests for approval to
83 release new agents;

84
85 coordinate the use of facilities provide by the program
86 partners for rearing colonies of agents approved for release;

87
88 coordinate studies to evaluate the expansion and effectiveness
89 of populations; and

90
91 coordinate preparation and transmittal through appropriate
92 channels of an annual report to the partners and the
93 legislature of progress and recommended action.

94
95 The commitment to a full-scale program using biological control of
96 forest weeds is needed. Biological control should become a
97 permanent management tool and be an integrated part of the
98 management program for our forests. Program support may seem
99 costly but losing our forests is even more expensive. Production
100 of usable water; maintenance of air quality; protection and
101 recovery of Hawaii's unique collection of rare and endangered flora
102 and fauna; and protection of fragile mountain slopes -- all depend
103 on stable forest ecosystems. Hawaiian forests also provide unique
104 forest products and contain valuable parts of Hawaii's past,
105 present, and future culture. The forest is the backbone of
106 Hawaii's visitor and agriculture industries. Experience has
107 clearly demonstrated that there are no other viable methods for
108 managing the forest weed invasion.

109
110
111 C. Eugene Conrad and George P. Markin

50 JUSTIFICATION

51

52 Many people have come to understand that society must contribute
53 financially for conservation or preservation of important
54 resources. It is in the spirit of fairness, that landowners should
55 be compensated when not permitted to utilize forest products from
56 their commercial forested lands.

57

58 After a project receives certification from DLNR's DOFAW as a sound
59 forest management practice, and so long as it complies with its
60 management plan, then when the landowner commences to harvest the
61 trees he/she is exercising his/her "rights to harvest". If,
62 however it is determined to be in the public interest not to permit
63 harvesting, then the State of Hawaii should compensate the
64 landowner for the economic loss. Compensation should include the
65 original establishment costs including fencing, site preparation,
66 soil amendments and approved continued management including
67 additional management plus interest minus any income derived from
68 the project such as commercial thinning.

69

70

71

(By: Peter Simmons & Bill DeMent, August 1992)

72

1 NATURAL RESOURCE MANAGEMENT TRAINING IN HAWAII
2
3

4 PROPOSED ACTION
5

6 Support establishment of a Secretariat for Conservation Biology and
7 expansion of University of Hawaii programs in Conservation Research
8 and Training for natural resources.
9

10 Form a small, broadly representative, working group to consider the
11 issues and identify actions needed to adequately provide for the
12 educational needs of natural resource managers and researchers.
13

14 PROBLEM
15

16 There is no curriculum in Hawaii's University system to train
17 people adequately in natural resource management, and there are
18 important deficiencies in the training of researchers, particularly
19 for some disciplines that are more directly applied in the
20 management of natural resources.
21

22 BACKGROUND
23

24 The graduate Resource Management Certificate is a cooperative
25 program involving the College of Social Sciences, the college of
26 Tropical Agriculture and Human Resources, and the East-West Center.
27 It complements degree programs in a wide range of fields and gives
28 students the opportunity "to become acquainted with both the nature
29 of environmental resources management and possibilities for
30 alternative development strategies". The curriculum of 15 credit
31 hours may include one forestry course.
32

33 The UH Department of Botany offers a course in Resource Management
34 and Conservation in Hawaii, which places emphasis on the management
35 of native Hawaiian organisms and terrestrial ecosystems with
36 attention to strategies, planning, research and management actions
37 needed.
38

39 The conservation community proposes to establish a small
40 Secretariat for Conservation Biology located at the University of
41 Hawaii to foster regular interaction and communication between
42 conservation researchers, managers and educators.
43

44 The University of Hawaii is examining how to expand the existing
45 conservation research (Hawaiian Evolutionary Biology) and graduate
46 (Ecology, Evolution and Conservation Biology) programs to provide
47 more comprehensive coverage of conservation biology.

48 ISSUES

49
50 Issue 1. Given the low level of wood harvesting from Hawaii's
51 forests, how many graduates trained specifically in technical
52 forestry skills are needed annually?

53
54 Should these needs be met by the University of Hawaii
55 establishing forestry training?

56
57 Should intending forestry professionals from Hawaii study
58 forestry at mainland universities? (e.g., by exchange
59 programs, cooperative agreements with mainland Universities)
60 and/or

61
62 Should the foresters required continue to be recruited from
63 the mainland after graduation from Forestry Schools there, as
64 at present?

65
66 Issue 2. In view of the multiple uses of Hawaii's forests, how
67 many graduates trained through a broad "natural resource
68 management" curriculum are needed annually?

69
70 Issue 3. What is an appropriate curriculum for natural resource
71 managers in Hawaii?

72
73 Issue 4. Some natural resource management training needs (apart
74 from technical forestry skills) may not be catered for anywhere in
75 the University of Hawaii's existing programs and curricula.

76
77 What existing UH programs and curricula (e.g., economics,
78 conservation biology) are applicable to natural resource
79 management?

80
81 What would be the best way to bring these together into an
82 integrated program?

83
84 In order to establish a well-rounded curriculum for natural
85 resource managers, which programs could be adapted, which new
86 ones established?

87
88 Can the Ecology, Evolution and Conservation Biology Graduate
89 Program (already being broadened) cater for some requirements
90 at the graduate level?

91
92 Issue 5. There are gaps in the training that is available in
93 Hawaii for future natural resources research scientists (e.g., the
94 University of Hawaii at present lacks expertise in wildlife biology
95 in the conventional sense of large animal management).

96
97 What are the most important deficiencies and how can these be
98 remedied?

99
100 (Prepared by Colin Bassett with help from Ken Kaneshiro, Jim Fownes
101 and Audrey Newman).

1 INCREASED FUNDING FOR DLNR FIRE PROTECTION AND MANAGEMENT PROGRAM
2
3

4 BACKGROUND:

5 Among the threats recognized by concerned agencies, organizations,
6 and interest groups, wildfires have the distinction of being a
7 leading factor in the deterioration and destruction of native
8 habitat (as well as other areas). The Division of Forestry and
9 Wildlife, which has primary responsibility for fire suppression
10 activities within the Forest Reserves, has during the past ten
11 years averaged \$448,000 in annual suppression expenses (refer to
12 attached). While the number of acres of responsibility has
13 increased (currently at 3 million acres), there has been no
14 corresponding increase in manpower, equipment, and funding.
15

16 PROBLEM STATEMENT:

17 Chapter 185 (Land Fire Protection Law) of the Hawaii Revised
18 Statutes, needs to be revised due to inadequate and obsolete
19 sections. Sections to be revised include those relating to Section
20 185-1, Responsible agency; Section 185-2 and 3, Fire Wardens; and
21 Section 185-4, Payment for firefighting; and Section 185-7, Fire
22 danger periods, setting fires, penalties.
23

24 PROPOSED ACTION:

25 The following actions are proposed for Chapter 185, Land Fire
26 Protection Law:
27

28 Change the Fire Warden system due to reflect the faster response
29 times of county fire departments and the lack of active
30 participation of plantations and ranches in fire suppression.
31

32 Change the penalty provisions for violators to a misdemeanor.
33

34 Increase the contingency fund from \$250,000 to \$500,000 or request
35 a fire suppression fund of \$500,000 as a line item in the operating
36 budget ("B" Account) of DOFAW.
37

38 Change obsolete terms and clarify areas of responsibility for fire
39 suppression.
40

41 FIRE MANAGEMENT PROGRAM

42
43 MISSION STATEMENT:

44 Provide protection to forest reserves, public hunting areas, and
45 natural area reserves and cooperate with established fire control
46 agencies for the protection of other wildlands not within
47 department protection areas to the extent needed to provide for
48 public safety and to hold environmental damage below the level at
49 which it would interfere with the high level sustained yield of
50 products and services from these lands.
51

52 AUTHORITY:

53 Chapter 185, Hawaii Revised Statutes, Land Fire Protection Law.

54 FUNDING SOURCES:

		STATE		FEDERAL	
	<u>FY</u>	<u>Suppression</u>	<u>Contingency</u>	<u>RFPC*</u>	<u>RCFP**</u>
58	88	\$ 27,989	\$ 250,000	\$ 135,000	\$ 18,000
59	89	27,989	250,000	123,000	13,000
60	90	27,989	250,000	76,000	36,000
61	91	32,989	250,000	70,800	50,000
62	92	31,262	250,000	110,000	50,000

63

64 *RFPC=Rural Fire Protection & Control

65 **RCFP=Rural Community Fire Protection

66

67 MANPOWER:

68 Approximately 99 DOFAW personnel are formally trained for fire

69 suppression activities statewide. Training is an annual event that

70 is tailored to meet the needs of a functional fire organization

71 that can cope with most fires under DOFAW's jurisdiction and to

72 assist other fire services if requested.

73

74 FIRE HISTORY (Wildland Fires Statewide):

	<u>FY</u>	<u>#Fires</u>	<u>DOFAW</u> <u>Involved</u>	<u>Acres</u> <u>Burned</u>	<u>DOFAW</u> <u>Expenses</u>	<u>Other Agency</u> <u>Expenses</u>
78	92	199	59	11,377	unavailb.	\$ 887,000
79	91	205	80	38,352	580,052	692,000
80	90	210	37	2,184	113,195	500,000
81	89	83	20	6,584	377,290	219,000
82	88	72	14	34,777	115,917	584,000
83	87	109	6	6,713	132,537	432,000
84	86	140	7	25,329	256,000	278,000
85	85	217	19	3,656	1,044,798	424,000

(Natural forests
(FORESTRY) AND BIODIVERSITY

1
2
3
4 PROPOSED ACTION to achieve sound native forest management, protect
5 biodiversity and reduce the probability of species endangerment:
6

7 Add one position in Service Forestry to the DLNR, so that
8 landowners who wish to get management advice will have an adequate
9 source.

10
11 Improve the climate for private consultants in forestry and
12 biodiversity by stimulating landowner interest in management plans
13 and techniques that promote diverse natural forests.
14

15 Provide further incentives for protection, propagation and
16 management of Threatened and Endangered species in all natural
17 forests, through adequate funding of the State Forest Stewardship
18 Program.
19

20 Deliver a high-quality and continually updated program of public
21 education on all matters that pertain to natural forest management,
22 by authorizing and funding an Information and Education Officer in
23 DOFAW.
24

25 Continue work with Counties to achieve fair forest taxation.
26

27 BACKGROUND
28

29 **FOREST CONDITION:** Hawaii's natural forests are seriously degraded,
30 altered, their biodiversity is impoverished and many species are
31 endangered due to a variety of influences that have occurred with
32 increasing frequency and variety over the last 200 years. These
33 influences include:
34

35 introduced cattle, sheep, goats, deer and other
36 vegetation-eating mammals against which the natural Hawaiian
37 flora had developed no defenses;
38

39 introduced grasses, forbs, herbs, shrubs and trees from all
40 parts of the earth, many of which have become the most
41 aggressive of weeds occupying land which formerly supported
42 natural plants;
43

44 introduced species of birds, and diseases of birds such as
45 avian malaria;
46

47 introduced insects and other invertebrates which have
48 adversely affected natural forests and related ecosystems;
49 unwise land uses and land clearing, too often stimulated by
50 public policies based in little understanding of or concern
51 for native forests, and
52

53 a general lack of appreciation of the value of forests for
54 their biological, cultural, hydrological, aesthetic and
55 economic contributions to the quality of life.

56 CURRENT PERCEPTIONS AND TRENDS: Over the last 2 decades, published
57 knowledge about Hawaii's forest ecosystems and the values that they
58 hold for science, the economy and Hawaii's cultural heritage have
59 grown by a roughly estimated two orders of magnitude or 100 times.
60 There is strong interest in forest protection and management by
61 many groups with often conflicting viewpoints. Some current trends
62 are:

63
64 appreciation of natural forests as guardians of watershed
65 functioning and quality;

66
67 very high value of shrinking supplies of Acacia koa, the most
68 prized of the native hardwoods; the price per unit of koa wood
69 has risen at least by a factor of 10 in the past decade; many
70 landowners who formerly shunned forestry as a paying land use
71 can now see the value of growing native koa and other native
72 woods such as sandalwood;

73
74 there is a broader-based and deeper understanding of the value
75 of biodiversity, and recognition of this by landowners, public
76 policymakers and public land managers; this has produced such
77 Legislative initiatives as the Natural Area Reserves System,
78 Natural Area Partnerships, and the Federal and State Forest
79 Stewardship Programs, all of which are or can be employed to
80 further the protection and management of natural forests.

81
82 county governments concerned about forests and watersheds are
83 re-examining their taxation policies which discourage
84 maintaining lands in forest, and are seeking ways to stimulate
85 sound forestry without eroding their tax bases.

86
87 the use of selected insects, pathogens and other techniques to
88 combat alien species of weeds and undesired animals is
89 growing, as is knowledge about the science of selecting and
90 employing these biocontrol and other agents.

91
92 there is a tendency for the many groups and organizations who
93 are interested in forests to emphasize their common objectives
94 and work together toward achieving them, rather than to engage
95 in conflict over their differences.

96
97 increased use of public forest lands for outdoor recreation by
98 both residents and visitors, stimulated recently by a desire
99 to escape from cancer-causing exposure to the sun.

100
101 JUSTIFICATION: Despite the interest, cooperation and legislation
102 achieved to date,

103
104 Hawaii's natural forests that are not covered by existing programs
105 have no public policy incentives for their protection, management
106 and perpetuation. Weeds and alien animals, fire and disease and
107 other destructive influences, play with little hindrance through
108 these forests, which are losing their biodiversity and spreading
109 alien influences into adjacent forests targeted for protection and
110 management.

111 Even those forests authorized for protection under the various
112 programs mentioned are not being fully protected and managed
113 because of low funding of the authorized programs.

114
115 DOFAW's service forestry staff (2 people) is not sufficient to
116 provide the expertise needed by landowners interested in sound
117 forest management.

118
119 Prepared by L. A. Newell
120 Hawaii Society of American Foresters
121

1 FORESTRY RESEARCH ISSUES

2
3 PROPOSAL:

4
5 Establish a Hawaii Forestry research program to deal with ecosystem
6 resources in order to assure high species diversity, appropriate
7 economic benefits, and an adequate supply of high quality water.
8 The cost of the program should be identified as budget line items
9 to covering the following broad components:

10
11 Watershed management research to develop knowledge needed to assure
12 water yield, water quality, and watershed stability (erosion,
13 landslide, etc.) are adequate to meet public requirements.

14
15 Forest species diversity research to develop knowledge of plant and
16 animal species diversity to improve guides for managing forests for
17 all ecosystem values.

18
19 Forest restoration research to develop guides:

20
21 for natural recovery of native forests with high plant species
22 diversity and adequate habitats for rare and endangered plants
23 and animals.

24
25 for land managers to regenerate forest species to gain economic
26 benefit and improve watershed values.

27
28 for developing low maintenance forestry as a way to reduce the
29 cost of management.

30
31 Forest ecosystem research to improve knowledge of the structure and
32 function of Hawaiian forests in order to develop guides for their
33 management and restoration.

34
35 Forest genetics research to improve understanding of the genetic
36 variability of common and rare forest plant species and develop
37 guides for maintaining high genetic diversity.

38
39 Forest pest management research to develop guides to control plant
40 and animal pests that are alien to Hawaii forests.

41
42 BACKGROUND:

43
44 Forestry research in Hawaii has been limited to meeting special
45 needs with particular emphasis given water yield. In the 100 years
46 between 1880 and 1980, water delivery from the forest has been its
47 major value. It still is the major value but the effect of that
48 limited view has ignored the inter-dependance of ecosystem
49 functions. Forests have lost much of their plant and animal
50 diversity, soil resources have declined, and even water quality and
51 water yield have declined.

53 JUSTIFICATION:
54

55 Beginning in the 1960's, concerns were serious enough to cause
56 recognition at the University of Hawaii, the Department of Land and
57 Natural Resources, and the public in general.
58

59 The report, "Hawaii Renewable Resources Research Plan for the 80's"
60 was published in 1985 by the Department of Land and Natural
61 Resources - Division of Forestry and Wildlife. This report covered
62 an intensive planning study done by numerous State and federal
63 agencies, the University of Hawaii, Bishop Museum, and concerned
64 citizens.
65

66 When the planning study was done, about 33 scientist years were
67 assigned by state, federal, and private organizations to work on
68 non-agriculture natural resource problems. The report recommended
69 that the number of scientists should be increased by almost four-
70 fold to address "important" to "ultra-critical" issues. Seven
71 research subject areas were identified and the report recommended
72 that almost 75 scientist years should be assigned to critical
73 issues. Today it is likely that fewer scientists are assigned to
74 these issues than when the planning study was done. As an example
75 only 0.2 of a scientist year was assigned to "Inventory and
76 Assessment" of natural resources; the report recommended that three
77 scientists were needed just to cover the "ultra-critical" needs.
78 Today there are no scientists working on inventory and assessment.
79

80 In order to address critical issues, approximately \$12 million per
81 year is needed to support the 75 scientist years called for in the
82 research plan. In order to achieve such a funding target, broad
83 support is needed. A start could come from legislation to
84 establish a Hawaii Forestry research program.
85

86
87 C. Eugene Conrad and Colin Bassett

1 FUNDING FOR THE STATE NATURAL AREA RESERVES SYSTEM,
2 NATURAL AREA PARTNERSHIPS, AND FOREST STEWARDSHIP
3
4

5 PROPOSAL: Permanent, dedicated funding of up to \$4 million/year
6 from State lease revenues for the Natural Area Reserves System
7 (NARS), and the Natural Area Partnership and Forest Stewardship
8 programs.
9

10 BACKGROUND: The State Natural Area Reserves System was created in
11 1970 to protect and preserve the best remaining examples of the
12 island's unique native ecosystems on State lands. There are
13 currently 19 NARS totalling more than 109,000 acres on five
14 islands. Governor Waihee and the 1991 legislature created the
15 Natural Area Partnership and Forest Stewardship programs to
16 complement the NARS by providing incentives for private landowners
17 to protect important natural resources on their lands.
18

19 The Natural Area Partnership program provides matching funds (\$2
20 State : \$1 private) to landowners who manage important private
21 natural areas, including lands with intact native ecosystems and
22 essential habitat for native species. To qualify, landowners must
23 permanently dedicate their land to conservation.
24

25 The Forest Stewardship program provides matching funds (up to \$1
26 State : \$1 private) to landowners who manage important natural
27 resources such as non-native watersheds, small patches of native
28 forests, valuable timber, or isolated populations of endangered
29 species. In return, landowners must make a minimum 10-year
30 commitment to the program.
31

32 Since 1987, the legislature has been increasing support for
33 management of the Natural Area Reserves System, and for the last
34 four years Department of Land and Natural Resources has received a
35 minimum of \$2 million annually. In 1991, the legislature
36 appropriated \$250,000/year for the Natural Area Partnership program
37 and \$50,000/year for Forest Stewardship. Three Natural Area
38 Partnerships and two Forest Stewardship projects were funded in the
39 first year. In 1992, Governor Waihee introduced legislation to
40 provide dedicated funding of up \$4 million/year from State lease
41 revenues for the Natural Area Reserves System and the two
42 partnership programs. Although the legislature did not act on the
43 dedicated funding, they did provide \$2 million for the NARS, and
44 increased Natural Area Partnership funding to \$600,000 for FY93.
45 (The Governor has asked all State Departments to review their
46 budgets and propose potential cuts in light of reduced State income
47 projections. FY93 funding for the Natural Area Reserves System and
48 Natural Area Partnerships may be affected by that review.)
49

50 JUSTIFICATION: In recent years, the State has made excellent
51 progress with their new management programs on the NARS, and both
52 of the partnership programs are off to a strong start. However,
53 protecting Hawaii's forests is a long-term undertaking, and
54 permanent funding is essential to ensure the continuation of
55 critical management programs.

56 Permanent funding for the Natural Area Reserves System protects the
57 State's investment:

58
59 management programs must be sustained year after year if they
60 are to be successful

61
62 if management were to be interrupted for just one budget
63 period, all past progress could be reversed -- and all that
64 the State has invested could be lost as fences fall into
65 disrepair and non-native animals invade a protected area
66

67 The Partnership programs are cost-effective:

68
69 the State doesn't have to buy land to protect it

70
71 the State pays only part of the management costs (when many of
72 these same lands were under surrender agreement as forest
73 reserves, the State paid all management costs)

74
75 the more we invest in management now, the less we will have to
76 spend to restore our valuable watersheds in the future

77
78 many private natural areas are adjacent to NARS or other State
79 lands which benefit from cooperative management programs
80

81 Permanent funding is essential to encourage landowners to
82 participate in one of the partnership programs:

83
84 landowners must make a 10 year commitment to the Forest
85 Stewardship program and a permanent commitment to the Natural
86 Area Partnership program

87
88 the State can only commit to two years of funding

89
90 dedicated funding would demonstrate to landowners that the
91 State is clearly committed to these partnerships
92

93 Permanent funding is crucial to protect Hawaii's threatened natural
94 resources in financially tough times:

95
96 essential management of our natural resources cannot be tied
97 to fluctuations in the economy

98
99 we have already lost 50% of our rain forest. What is left
100 protects our fresh water supply, habitat for native plants and
101 animals, valuable timber resources, and many other important
102 natural resources -- resources we can least afford to lose in
103 financially tough times

104 The need is urgent:

105

106 the long-term health of Hawaii's forests affects the quality
107 of life of every person in the State

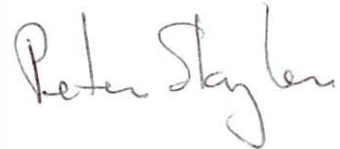
108

109 Hawaii's forests continue to be damaged by pigs, goats, deer,
110 weeds, and other non-native species. The longer we wait, the
111 more we lose.

112

113 Prepared by: Kim S. Harris
114 The Nature Conservancy of Hawaii

115



1 ADMINISTRATION OF STATE LEASES AND PERMITS BY THE
2 HAWAI'I DEPARTMENT OF LAND AND NATURAL RESOURCES
3
4

5 PROPOSED ACTION
6

7 A comprehensive assessment of the Hawai'i Department of Land and
8 Natural Resources' administration of state leases and month-to-
9 month revocable permits for state-owned lands is proposed. T h e
10 assessment -- to be conducted by the Legislative Auditor -- should
11 review the resource, administrative, and statutory limitations the
12 Department faces in achieving its legal mandate and objectives.
13

14 BACKGROUND
15

16 The public, as represented by the State of Hawai'i, is the largest
17 landowner in the state, with approximately 1.4 million acres. The
18 Department of Land and Natural Resources ("DLNR") is authorized to
19 manage, administer, and exercise control over public lands as
20 defined by state law (H.R.S. § 171.2). Within DLNR, the Division
21 of Land Management ("DLM") is responsible for the planning,
22 administration, development, and disposition of state lands in such
23 a way as to contribute to the social, environmental, and economic
24 well-being of the people of Hawai'i nei. Lands that have not been
25 set aside for public purposes, in accordance with state law (H.R.S.
26 § 171-11) and federal law relative to ceded land, are made
27 available to the public by sale in fee simple, lease, lease with
28 option to purchase, license, or permit. Most dispositions of state
29 lands are made at public auction.
30

31 In Fiscal Year 1990-91, DLM administered 914 state leases. These
32 covered 192,369 acres and generated an income of approximately \$4.9
33 million. Month-to-month revocable permits for the use of state
34 lands were also administered by DLM. DLM's 38 employees work to
35 acquire, administer, and develop public lands; conduct sales of
36 state lands; issue leases and permits for the use of state lands;
37 enforce state lease and permit conditions; identify natural and
38 cultural resources on state lands; and provide administrative
39 support for the above.
40

41 Income generated from state leases and permits goes directly to the
42 State General Fund. In turn, DLNR and DLM submit biennial budget
43 requests to the Legislature for operational expenses relating to
44 the administration of state leases, permits, and other programs.
45 A revolving fund to develop public lands and water resources is
46 available to DLM; however, it cannot be used to hire staff,
47 pursuant to current state law.

48
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99

JUSTIFICATION

A comprehensive assessment of the State's administration of state leases and month-to-month revocable permits -- conducted by the Legislative Auditor -- could identify those factors that prevent DLNR and DLM from fulfilling legal mandates and effectively administering state lands. Such an assessment should include the following:

Administrative Responsibilities, Staffing, and Resources

DLNR's existing responsibilities relating to the administration of state leases/permits and existing staffing and resource allocations to DLM

staffing and resource improvements that may be needed for DLM to more effectively administer leases/permits in the public's best interest

staffing and resource improvements that may be needed for DLM to protect and enhance important natural and cultural resources on state lands

statutory and procedural constraints to DLM's administration of leases/permits and to the protection of important resources on state land

current lease/permit fee structure to evaluate the potential for increasing revenues generated by leases/permits on those lands deemed appropriate for leasing/permitting

Resource Protection and Management

establishment of a formal procedure by DLNR and DLM to identify state lands appropriate for leasing/permitting and to identify state lands containing important natural and cultural resources, which may not be appropriate for leasing/permitting

establishment of a formal and proactive program by DLNR and DLM to identify, protect, and enhance important resources on leased lands, complementing DLNR's resource management activities on non-leased lands

compliance with the Hawai'i Environmental Policy Act, H.R.S. Chap. 343, as it relates to state leases and permits

Hawaii Audubon Society
Sierra Club, Hawai'i Chapter
Environment Hawai'i

Pat Tamm on 5

1 THE NA ALA HELE (HAWAII TRAIL AND ACCESS SYSTEM) PROGRAM

2
3
4 The purpose of the Na Ala Hele Program is to establish and
5 implement a comprehensive trail and access system in the State of
6 Hawaii. Major components of the program include:

7
8 cataloging an inventory of public and private trails and
9 accesses in the state,

10
11 ongoing review of proposed, potential and needed trails
12 and accesses under Na Ala Hele jurisdiction,

13
14 developing rules to regulate the use of trails and
15 accesses,

16
17 examining the legal issues and strategies to reduce or
18 limit liabilities to landowners who allow access to the
19 general public,

20
21 implementing the Statewide Trails and Access Program
22 Plan,

23
24 receiving advice on program implementation from the six
25 island advisory councils and the statewide council, and

26
27 constructing and maintaining trails on all the islands by
28 work crews and volunteers.
29

30 Management and maintenance are needed to insure that safe trails
31 and accesses are available to a wide range of user groups and skill
32 levels. The Division of Forestry and Wildlife (DOFAW) is in the
33 process of developing rules for the use of trails and access within
34 the Na Ala Hele system. A challenge for the program is the
35 development of a special trail and access fund in which resources
36 would be dedicated to the management and maintenance of trails in
37 the Na Ala Hele system.
38

39 One issue of concern is the increasing amount of "commercial" use
40 of Hawaii's trails and accesses, sanctioned (by permits through
41 DLNR and Counties) and non-sanctioned. Many adventure type tours
42 are using these trails and accesses without contributing to their
43 management and maintenance. Monies in a special trail and access
44 fund could be derived from commercial use permits of trails, fines
45 and penalties, and land development projects which involve a loss
46 of a trail or access which was previously enjoyed by the public.
47

48 Federal funding is another avenue for the construction and
49 maintenance of trails and accesses. Last year, the Symms Trails
50 Act passed the U.S. Congress and Hawaii could receive up to
51 \$300,000 each year over the next seven years. Na Ala Hele was
52 designated as the lead agency to receive funds under the Symms
53 Trails Act. The State must fill three major requirements in the
54 Symms Trails Act to acquire funds 1) an advisory council made up of
55 user groups, 2) at least one third of the funds shall be used for

56 the construction and maintenance of off-road trails and 3) by 1994
57 the State must adopt an off-road vehicle fuel tax for trails.
58 Hawaii can meet the first two requirements easily but legislation
59 is needed on the off-road vehicle fuel tax.

60
61 Presently, the fuel tax on all vehicles is placed into the State
62 Highway Fund. A study is needed to determine how much of the total
63 fuel tax revenues is generated by the use of off-road vehicles.
64 The State Tax Office would need to do a survey on off-road vehicle
65 usage in the entire State. Secondly, changes are needed in the law
66 regarding the distribution of the fuel tax to include the
67 Department of Land and Natural Resources trails program. The
68 challenge is there to adopt legislation before 1994 in order to
69 receive additional funding from the federal level.

70
71 A lot of coordination within the DLNR family and with the
72 Departments of Transportation, Budget and Finance, Business and
73 Economic Development and Tourism, and Taxation is needed to get
74 trail funding legislation through the hoops.

75
76 A trail and access fund will help the Na Ala Hele Program meet the
77 major challenges of balancing the many and varied public and
78 commercial interests and ensure that Hawaii's trails and accesses
79 are properly developed, maintained, and managed. Hopefully we can
80 make some in-roads on a commercial users tax and a off-road vehicle
81 fuel tax during this upcoming session of the legislature. Annual
82 reports would be made available to the public and legislative
83 review that would detail all revenues and expenditures from the
84 fund.

Chris

Hima -
1876 - Ministry of Interior
Supt of Woods & Forests

1893 - Dept of Interior
Bureau Comm of Ag & Forestry
Board of Ag

June 14, 1900 - Act providing
Statehood A Commissioner of Ag & Forestry

Is any group making a special effort to educate the representatives of the news media?

Get a copy of ^{Hawaii} Forestry Recovery Act -

VIC - get him ISVF & SAR applications.

