

CURRENT AND FUTURE ROLES OF AGENCIES,
CONSERVATION GROUPS, LEGISLATURE, AND THE PUBLIC
IN PRESERVING AND MANAGING HAWAIIAN ECOSYSTEMS:
A SUMMARY

Cameron B. Kepler

The first 3 sessions of this symposium detailed the tremendous variety of stresses to native ecosystems that interact synergistically to the detriment of Hawai'i's flora and fauna. There are also many interacting people and agencies representing political and social perspectives, often at apparent odds with each other and with Hawai'i's natural resources. Solutions to our biological problems invariably involve interactions among groups holding very diverse points of view, and both the biological and political realities of a given situation must be considered if we are to succeed in protecting our natural heritage. Some of the human concerns and goals for the environment were expressed through a variety of agencies and citizen groups in a separate session of this Symposium. Participants and groups represented included: P. Stine, Fish and Wildlife Service; K. Taketa, The Nature Conservancy; B. Harry, National Park Service; C. Lamoureux, Conservation Groups; L. Landgraf, Department of Land and Natural Resources; A. Chang, Government; H.P. L'Orange, Private Landowners; S. Conant, Biologists; and P. Desha, Office of Hawaiian Affairs. These concerns are here reviewed and commented upon.

THE U.S. FISH AND WILDLIFE SERVICE

The U.S. Fish and Wildlife Service (FWS) is attempting to protect land critical to the needs of wildlife in Hawai'i, consistent with legislation and goals of the many recovery plans for Hawaiian species. The agency has been successful in safeguarding habitat for 18 species of seabirds in the Northwest Hawaiian Islands, and for the many endangered species also found there. FWS has developed 5 wildlife refuges totalling 500 ha for endangered waterbirds on the main islands, and is moving to acquire additional wetlands identified in the Hawai'i Waterbird Recovery Plan (Walker et al. 1977). If Kealia Pond on Maui and a few small wetlands on Hawai'i can be secured, this refuge system will then

embrace all the major islands and provide adequate security for Hawai'i's endangered waterbirds. Kealia Pond is particularly important, for it is the largest remaining unprotected wetland in the main islands, and at times holds over one-third of Hawai'i's endangered black-necked stilt (Himantopus mexicanus knudsoni) population.

The FWS does not currently own any forest bird habitat. This is regrettable. However, FWS is pursuing a Big Island project in upper Hamakua that could protect forest bird habitat identified as crucial for the Hawaiian hawk (Buteo solitarius), 'akiapola'au (Hemignathus munroi), Hawai'i creeper (Oreomystis mana), Hawai'i akepa (Loxops coccineus), and 'o'u (Psittirostra psittacea).

FWS research on endangered species is a continuing effort. Using the results of the Hawai'i Forest Bird Survey (Scott et al., in press) as a base, research is focusing on the relative importance of those factors presently limiting the distribution and abundance of some of the most critically threatened bird species. It is hoped that this program can be coordinated with the efforts of others in Hawai'i to produce a truly multi-disciplinary effect. An integrated research program on the effects of disease, ungulates, predators, arthropods, and habitat quality does not imply that we lack the knowledge to begin managing land already legally protected. FWS should encourage public agencies responsible for natural ecosystems to manage their land for its intrinsic natural values.

THE NATURE CONSERVANCY

Almost all of us are familiar with The Nature Conservancy (TNC) and its successful forest bird program. It has brought more than \$6,000,000 into the State and acquired 4 important preserves, totalling in excess of 48 km² on Kaua'i, Moloka'i, Maui, and Hawai'i. TNC has launched a Heritage Program to compile up-to-date data on the distribution of endangered plants, animals, and communities. In so doing, it is providing a vehicle for ascertaining the natural value of lands everywhere in Hawai'i. Published as well as unpublished information is being used to build the systems database. This means that research biologists for the first time can deposit data on the distribution of endangered taxa in a program that will be increasingly utilized in the decision-making process. The time is fast approaching when land managers and developers will no longer be able to remain ignorant of natural resource values in their decisions.

As successful as these programs have been, they are not in themselves TNC's only important accomplishments. The organization has provided an outstanding service in promoting interaction among diverse segments of the Hawaiian community. This is one of TNC's greatest strengths and accounts for its success in acquiring Kamakou and Waikamoi Preserves. TNC has brought State and Federal land managers and biologists into a close forum with businessmen and established corporate families to approach conservation in Hawai'i in a pragmatic, positive fashion. This has resulted in a significant broadening of the conservation base, funnelled financial support from Hawai'i's business sector into important conservation projects, and spread a conservation message into corporate boardrooms in a highly effective manner. The ensuing dynamic interaction will benefit resource programs far into the future.

NATIONAL PARK SERVICE

The National Park Service (NPS) controls over 1036 km² or 5% of the land in Hawai'i and clearly must continue to play a major role in protecting our natural resources. It has steadily moved from the posture of simple protection to active management and, with research biologists and management staff stationed in Haleakala (HALE) and Hawai'i Volcanoes (HAVO) National Parks, is increasing our understanding of what needs to be protected while simultaneously inventing or improving the management tools needed to move the parks from disturbed to pristine ecosystems. The successes in removing feral goats (Capra hircus) and, more recently, eliminating feral pigs (Sus scrofa) from relatively large management units in HAVO, generates optimism that similar control efforts will work at HALE. The current effort to fence the entire Crater at HALE appears to be heading for success and will for the first time allow Park personnel to eliminate goats within the Crater and provide for the regeneration of alpine shrubland and grassland communities, in addition to the mesic forest in Kaupo Gap. These are encouraging programs, and they clearly demonstrate that managing areas with intelligence and commitment is effective.

The integrity of the national parks in Hawai'i, as elsewhere, is increasingly dependent upon conditions beyond their borders. On Maui, TNC's Waikamoi Preserve shares a common boundary with HALE, and the fruitful exchange of help and advice, from an early stage before the Preserve was established, provides an example of how the NPS can positively affect adjacent areas. Similar interactions with major landowners, such as the

State of Hawai'i, will become increasingly important in the future.

STATE DEPARTMENT OF LAND AND NATURAL RESOURCES

The State of Hawai'i is the largest landowner in the Islands and holds over 2,360 km² in protected (P) subzones or Natural Area Reserves (NAR's). This represents 63% of all protected lands in the State. Controversy constantly swirls around these lands and focuses on 2 primary issues: do they encompass all the areas and ecosystems needing protection, and are they being managed properly.

Few would argue that the Hawai'i Department of Land and Natural Resources (DLNR) has not done a good job assembling its Seabird Sanctuary, which now includes 35 islands extending from Kure Atoll to Keaoi Island off the Ka'u coast. The State actively protects waterbird habitat throughout Hawai'i, but we are not concerned here with waterbirds. Instead, our interest is in the forests of the major islands, where conflicting issues arise on most State-owned land. Should logging, ranching, public hunting, or development be allowed? How does land management, or its lack, affect watershed value? How can access be provided to land locked by private ranches? Should huntable species be encouraged, further introduced, or eliminated entirely, and where should all this take place? Where will the money come from to undertake active management programs? What plant and animal management is desirable and practical?

Although DLNR is clearly aware of most of the concerns of the conservation community, it is not surprising that a prioritized listing of management actions for State-owned forests lands is desired by State officials. The conservation community, which includes a number of DLNR employees, has recently responded to this request (Stone and Stone 1984) with a list of 10 major issues (with peripheral lists developed by subsets of the participants) in a survey of concerned individuals in Hawai'i. While the lists contain many specific proposals, the number one priority, "identify and protect pristine and near pristine ecosystems", sounds much like a DLNR request for further information and may not be too helpful in its own right. Reasons why many of the listed actions will be politically difficult were given by R. Walker in an appendix to Stone and Stone (1984).

Where does conservation go from here on State lands? One recommendation would be to push for important programs, using the recommendations in Stone and Stone (1984). The development of reserves on Hawai'i's

Pu'uwa'awa'a Ranch (no. 2 priority) is well under way. FWS, with NPS help, is developing a program to control pigs within po'ouli (Melamprosops phaeosoma) range (no. 7 priority), which is a direct outgrowth of HALE's crater fencing program and the Hawai'i Forest Bird Survey (Scott et al., in press). The Sierra Club and Hawai'i Audubon Society are pursuing mouflon sheep (Ovis musimon) eradication on Mauna Kea (no. 5.5 priority). More action is sure to follow.

I would recommend that conservation groups use as much of their energy as possible working with, rather than against, DLNR. We all understand that confrontation does and will continue to occur. There are, however, vast problems about which DLNR personnel and other concerned individuals can sit down to focus creative, positive energy to bring about needed actions. It is possible to lobby for more financial support for DLNR at higher State levels, rather than rail against the agency for perceived failings. This will involve public education (no. 3 priority) at all levels in Hawai'i. Where important management actions may be impossible for DLNR to undertake because of a lack of manpower or funds, outside volunteers could be utilized to help. Although such cooperation may not always be possible, it should become an important part of the overall conservation strategy in Hawai'i.

CONSERVATION GROUPS

C.H. Lamoureux split the activities of conservation groups into 4 general categories, as follows:

1. The Eager Assistant.
2. The Watchdog.
3. The Gadfly.
4. The Legal Adversary.

The categories are sufficiently descriptive to need little elaboration, except to say that an "educator" function is more evident at levels 1 and 2. Although some individuals, and a few issues, fit neatly into one category or another, events tend to move them about, often (lamentably) toward confrontation. The major question posed is how to keep events at the Eager Assistant and Watchdog levels and still accomplish adequate preservation and management.

In essence, activity in the Eager Assistant level is alive and well, and this needs emphasizing. The Hawai'i Audubon Society continues to publish 'Elepaio, the major State conservation newsletter, lead hikes and outings, present slide talks, and provide input on many major conservation issues. The Sierra Club, numerous hiking clubs, botanical societies and garden clubs, environment centers, and museum and university staff are all actively providing information and support for the

numerous agencies. A large and growing corps of volunteers is helping NPS, TNC, and FWS in their conservation programs. Employees from the major State and Federal land-managing agencies are included in the memberships of the largest conservation groups; indeed, to select only 2 of many examples, a DLNR biologist edits 'Elepaio and a NPS Superintendent serves on the executive committee of the Maui group of the Sierra Club. What we want to do is keep our activities at the "Eager Assistant" level whenever possible, while recognizing that an escalation to "Legal Adversary" may at times be unavoidable. When it happens, we must still strive to keep the personal interactions between opposing parties as positive and productive as possible. In general, this appears to happen. When legal recourse occurs, conservation groups also have other avenues available to them. They can work with elected members of State and county governments, and help educate the press. And their participation in symposia and surveys can continuously inform land managers and the public about Hawai'i's major environmental issues.

POLITICAL REPRESENTATIVES

A major message from the political arena was that local government needs accurate information from the conservation community upon which to base its decisions. We cannot expect our planning commissions, county councils, or State representatives to know what is best for the environment without our active input. In the world in which they move, they are continuously subjected to lobbying by vested interests whose perspectives are generally exploitative and self serving rather than protective and in the best interests of the Islands. Our elected representatives are accessible, and many of them will support conservation causes if they can be informed of them. They do like to hear our opinions, and there is a real opportunity for input that we often miss, simply because we don't make the effort. We are as often unaware of this opportunity as our legislators are unaware of the information that we wish they would act upon. Constant meaningful dialogue is the essential ingredient if we are to effectively enlist the support and aid of our elected representatives.

PRIVATE LANDOWNERS

The owners of large ranches on Hawai'i's Kona coast sent their concerns to the Symposium in the care of H. Peter L'Orange. Four major problems, as follows, have resulted in a deteriorating relationship between the large landowners and the scientific community. Individuals requesting access to private land:

1. Have not been honest about the true scope of their research.
2. Have not communicated their findings to the property owners prior to publication of data.
3. Have conducted research in areas other than those for which permission was given.
4. Have threatened possible government action if access was not granted.

It is not surprising that large landowners, facing such problems, deny further access to their lands, certainly for individuals known to act as noted.

The solutions to these concerns are obvious: Golden-rule behavior on the part of everyone working on private land, honesty of purpose, and communication of findings. The solutions clearly involve a respect for the landowners and their property. What is surprising is that such principles of respect have been violated often enough to cause palpable hard feelings; the majority of biologists working in Hawai'i regret this development and will honor the wishes of the landowners. Those causing the problems should do so also, no matter how much they disagree with land use practices or how self-righteous they feel.

However, the respect desired by the landowner is not always shown by him to the irreplaceable natural resources under his care. The needs of natural communities of organisms of national and international value should, insofar as is possible, be considered in overall stewardship of the land. As with political representatives, continual dialogue is necessary so that conservationists are aware of the problems of landowners and can alert them to current environmental concerns. It is unfortunately true that economic incentives are lacking in Hawai'i for managing the land for natural communities.

BIOLOGISTS

Biologists need to operate on 2 levels. First, they must continue to learn more about the components of Hawaiian ecosystems and how they interact. Second, they must convey this information both to their scientific colleagues and to the "outside" world. Information transfer must extend far beyond the classroom so that it reaches landowners, land managers, government officials, and the public at large through the news media. As indicated above, these groups need information upon which to base their actions. The problem is that the need for information acquisition and transfer exceeds the capacity and probably the capability of university and other biologists to meet. A further problem is the conflict between scientific objectivity and resource advocacy, which has often arisen in

Hawai'i, where numbers of trained and concerned individuals are limited and conflicts arise over natural resources that are deteriorating and scarce.

HAWAIIAN PEOPLE

The Office of Hawaiian Affairs traditionally concerns itself with the needs of members of the Hawaiian community as they relate to their lives, land, and culture. In attempting to define and shape that culture, they can offer much of value to all people in Hawai'i. Biologists also have a great deal to offer the Hawaiian people. Foremost is the gift of understanding Hawaiian natural history that so obviously fits into the context of much of the Hawaiian heritage. Conservationists can work hard to protect intact examples of the Hawai'i that shaped human development in the Islands. It is clear that the interests of conservationists merge with those of Hawaiian groups on these fronts.

Another area where a combined focus can help is the issue of watershed quality, so critical as a manifestation of 'aina (love of land) and for traditional Hawaiian agriculture. The important dimension is dialogue, as usual, which if maintained, could contribute to the enrichment of both Hawaiian culture and natural resource preservation.

GROUP INTERACTION IN BEHALF OF HAWAIIAN ECOSYSTEMS

There are many groups and people in Hawai'i who care deeply about the welfare of native Hawaiian plants and animals. This concern is an important resource. There will always be less than universal agreement among the various groups, but it is imperative that they work together to steadily preserve and improve the condition of that which remains, and to restore, as much as possible, that which has become degraded. No one agency, no single person, can begin to do it all. But by working together, conditions can improve. In the last few years there have been several programs that clearly point to improvements in the plant and animal habitat throughout the State, even though much has also been lost.

As an example, the results of the FWS Forest Bird Survey provided a database that attracted TNC to the Islands to launch their Endangered Forest Bird Project. TNC actively recruited biologists from FWS, NPS, DLNR, the University of Hawai'i, and the Bishop Museum to help prioritize important natural ecosystems that needed protection. Waikamoi Preserve on Maui and Kamakou Preserve on Moloka'i were acquired within 3 years, and preserve managers are actively attempting

now to control introduced plants and animals in these areas. On Maui, where TNC and NPS now share a common boundary, joint management programs are demonstrating how cooperative efforts can effectively manage problems that transcend legal boundaries.

If we are to continue to preserve and manage our native ecosystems, we must look forward with optimism and build on our successes. We should recall that the NAR's, the FWS system of waterbird refuges, and TNC's forest bird program all had their genesis very recently. The national parks have essentially solved their feral goat problems in HAVO and are well on their way to doing the same at HALE. They have recently made giant strides in their feral pig control program. DLNR eradicated most of the feral sheep and goats on Mauna Kea, indicating the power of conservation organizations and courts, and the willingness and ability of the State to comply. The results of the cooperatively run FWS Forest Bird Survey have allowed us to prioritize important forest areas and have helped lead to the development of preserve designs and the acquisition of forest bird habitat. The Endangered Species Act of 1973 has made it more difficult to ravage important areas. New know-how continues to improve our management options and motivate us to act. Conservation awareness is extending further into business and policy-making communities. Even though the magnitude of our losses in Hawai'i over the last 15 centuries has been enormous, we are now moving to correct many past abuses to the land and protect many remaining gems. The growth of integrated and well-planned conservation programs within the past 15 years shows that we can make a difference.

LITERATURE CITED

- Scott, J.M., S. Mountainspring, F.L. Ramsey, and C.B. Kepler. In press. Forest bird communities of the Hawaiian Islands: their dynamics, ecology, and conservation. Stud. Avian Biol.
- Stone, C.P., and D.B. Stone. 1984. The "10 most-wanted" management actions for terrestrial Hawaiian ecosystems: a survey. Elepaio 45:41-48.
- Walker, R.W., J. Medeiros, R.E. Saito, T. Telfer, D.H. Woodside, S. Swedberg, P. Sekora, and C.F. Zeillemaker. 1977. Hawaii waterbirds recovery plan. Portland, Ore.: U.S. Fish Wildl. Serv.