

Indigenous Control of Tropical Rain-forest Reserves: An Alternative Strategy for Conservation

Several mechanisms have been used to acquire land for tropical-forest reservations. Legislative designation of National Parks on government-owned land, condemnation of private land, debt swaps, and outright purchase of private lands for reserves may, however, be inappropriate strategies in areas occupied by extant indigenous populations. In areas where indigenous peoples have a strong conservation ethic, the creation of reserves under partial or complete aboriginal control represents a viable alternative to the more traditional forms of land acquisition. Recently, three significant rain-forest reserves were created in Samoa using alternative strategies. 1) A US National Park in American Samoa involves the long-term lease of customary lands with local chiefs forming an advisory board on park policy; 2) in the Falealupo peninsula in Western Samoa, a covenant was established between the villagers who pledged to preserve and manage a large rain forest and private donors who provided funds for the construction of an elementary school; 3) in Tafua, Western Samoa, a covenant was established between the village, which vowed to preserve and manage the forest, and the Swedish Society for Nature Conservation (SNF) which provided funds for an elementary school and public works. These reserves suggest that under indigenous control robust solutions to the problems of rain-forest preservation can be achieved.

INTRODUCTION

Over the past twenty years, public alarm over tropical deforestation has increased dramatically. By the late 1970s, it was estimated that the original 1.6 billion ha of tropical moist forest had decreased to 1.1 billion hectares, i.e. over 30% (1). Even more alarming is the rate of destruction. Conservative estimates indicate that between 1 and 2% of the world's tropical forest area is destroyed annually (2); this is equivalent to the disappearance each year of a forest area about the size of Denmark. Recent estimates, such as those produced by the World Resources Institute (3), indicate that deforestation may be occurring far more rapidly, at a rate between 16.4 and 20.4 million ha per year.

The possible results of tropical deforestation including mass extinctions and loss of biodiversity; increase in atmospheric carbon dioxide, with subsequent rises in global temperatures; regional decreases in rainfall; increased soil erosion; and increased urbanization and poverty in tropical countries, have been frequently cited in technical and popular literature. Although the ultimate consequences of tropical deforestation are likely to be global in effect, tropical-forest loss will be experienced most immediately and profoundly by those who live in the region. This is particularly true for indigenous peoples who depend on

tropical forests for food, shelter, and cultural values. Even though indigenous peoples often have a profound knowledge of the tropical ecosystems in which they reside, historically little attention has been given to the needs and aspirations of these peoples when natural reserves are created. All too frequently, the presence of indigenous peoples in potential forest reserves has been perceived as complicating factors rather than as a possible asset. Is it possible to design rain-forest reserves that protect indigenous cultures, indigenous knowledge, and in actual design, the creation and management of the reserves?

We briefly consider the advantages and disadvantages of several common land-acquisition strategies that have traditionally been used in the development of tropical rain-forest reserves. We then discuss our experiences in the recent creation of three rain-forest reserves in Samoa based upon novel concepts of indigenous control and management.

Current Strategies to Create Rain-forest Reserves

Most existing rain-forest reserves were created using one of four strategies of land acquisition and preservation. These conservation strategies are based largely on

private or governmental land ownership, and have been adapted from principles used in National Park creation in North America and Europe.

The first strategy is to declare government or crown land a National Park, either by legislative action or by executive order. Many rain-forest reserves have been established in this way, e.g. the Sian Ka'an Biosphere Reserve in the Yucatan peninsula, which was created by the Government of Mexico in 1986 (4). Over 99% of the this 528 000 ha reserve of lowland rain forest, wetlands, and coral reefs was government land prior to creation of the reserve. Since only 800 people live in the area, including indigenous concerns in the creation of the reserve was relatively simple.

There are several advantages to this type of strategy in rain-forest preservation: 1) The government can exercise complete control over such lands, and thus has the legal basis for effective enforcement of conservation policies on the land; 2) there are few difficulties in negotiating land purchases, since the land is owned by the government; 3) little capital outlay needs to be made for land acquisition; and 4) permanent infrastructure developments can be made, such as roads, visitors centers, camping grounds, etc. with the knowledge that such investments will always remain in the hands of the government.

There are, however, several disadvantages to this strategy: 1) Many countries lack sufficient government-owned land to develop large reserves; 2) many countries lack the financial resources or technical ability to effectively administer large reserves; and 3) governmental commitments to conservation may change over time as a result of economic or political conditions. Obviously then, politically-created reserves are always potentially vulnerable to changes in governmental legislative or administrative policies.

A second strategy to create rain-forest reserves involves purchase of land from private owners. An example of a reserve created by using this model is Guanacaste National Park in Costa Rica. To create this park, USD 12 million were required with USD 9 million being used solely for land acquisition. (Land acquisition for Guanacaste National Park is still ongoing).



The Samoan flying fox, *Pteropus samoensis*, was in danger of extinction from deforestation and commercial hunting. Recently placed on Appendix I of the international CITES treaty, prospects for the survival of the flying fox have increased due to the recent creation of three rain-forest reserves in the Samoan islands. Samoan legends have always pointed to the ecological importance of the flying fox; only recently have Western scientists discovered the dependence of many Samoan plants on the flying fox for pollination or seed dispersal. Photo: P. A. Cox.



Samoan youth drinking from a *Mucuna* vine in the Samoan forest. The Samoan people possess much knowledge about the rain forest and its plants, having successfully managed the forests for over 2000 years. Recent conservation initiatives seek to use the knowledge and skills of the Samoan people in managing rain-forest reserves. Photo: P. A. Cox.

viduals to establish several new preserves in Western Samoa and American Samoa. What is striking about these preserves is that they were established on customary lands without alteration to the indigenous Samoan land-tenure system or Samoan culture. To attain this goal, unique land acquisition and management techniques were developed and these may prove useful in other areas of the Pacific that have communal land-tenure systems.

In traditional Polynesian societies, land, including the natural plant and animal populations which occupied it, were viewed as sacred and an ancestral inheritance. Private land ownership, in the sense of European uses of the term, did not develop; instead communal land-tenure systems were established with chiefs acting as managers and stewards of the land rather than as owners. Although Western cultures have altered and had an impact on South Pacific cultures, the deep commitment to conservation and the traditional communal-land tenure system remains relatively intact in many Pacific archipelagos, e.g. Samoa, Tonga, and Fiji.

LEASING INDIGENOUS LAND FOR RESERVES: THE CASE OF THE AMERICAN SAMOA NATIONAL PARK

The large interior forests of Tutuila and Ta'u islands, American Samoa, have played an important cultural role, being traditional areas for pigeon hunting and foraging for food and medicinal plants. These forests also contain archaeological remains and mythological sites that are considered sacred by Samoans. As many American Samoans have had the opportunity to visit National Parks and reserves abroad, the idea of setting aside some of their own forest areas as reserves has

slowly increased in strength. As high chief Moaali'itele from Ta'u island explained,

"Ever since I have been young I have had a dream—a dream of a park or refuge that would protect our rain forest. For years I have prevented any logging of our family land on the south side of Ta'u island. I want to preserve that forest for my grandchildren and future generations" (7).

This concern about protecting the forest for future generations finally reached fruition in a Samoan initiative to petition the United States Congress to create a US National Park in American Samoa. Field hearings of the National Park Subcommittee were held in 1987. Based on the tremendous public support for a National Park voiced at the hearings, a joint study between the US National Park Service and the American Samoan government was commissioned by Congress. This study identified three areas as having the significant scenic, biological, and cultural features necessary for a US National Park: the rain forests on the Ta'u island and the northern side of Tutuila island, and the coral reef community of Ofu-Olosega island.

However, the land acquisition techniques commonly used by the US National Park Service, e.g. land purchase, proved to be incompatible with both the Samoan culture and the constitution of American Samoa which forbids purchase of traditional lands. As the Samoan chiefs explained, their conservation ethic is based on over two thousand years of experience. Given their responsibilities to both their ancestors and to unborn generations, they did not regard it as prudent to surrender control of their forests to a country such as the US which has been in existence "scarcely more than 200 years".

After considerable discussion between National Park Service officials, the American Samoan Government, and the tradi-

tional chiefs and orators of the affected villages, it was finally decided to use negotiated long-term leases as the sole land acquisition tool. Under this scheme, villages will lease their lands for 50 years to the US National Park Service for development of a National Park subject to certain constraints. For example, the National Park Service is forbidden to build roads into the forests, to disturb graves or other important cultural sites, and to allow the construction of hotels or other overnight accommodation on leasehold land (other than a small primitive camping area in the Ta'u forest). In addition, the villagers retain rights to forage for forest plants for medicine and other cultural purposes, to construct small plantations in specified areas, and to continue non-commercial reef foraging, as long as traditional techniques and tools are used in all cases. In addition, the National Park Service has pledged to manage the park in close consultation with the traditional chiefs and leaders of Samoa. To accomplish this goal, an advisory committee composed of individuals nominated by the American Samoan Government and the US Secretary of Interior will work closely with the US Park Service in establishing the park.

Acquisition of the land by leasehold provoked some initial controversy in Washington, but strong bipartisan legislative support in both the House of Representatives and the US Senate, together with effective lobbying efforts by the American Samoan conservation group 'O Le Vao Matua, Bat Conservation International, and an informal coalition of biologists, artists, and students at Brigham Young University, The University of California, Berkeley, and New York City, assisted the bill in being passed by both houses of Congress without a single dissenting vote. The bill was signed into law by President Reagan in October, 1988 being

vation (SNF) was approached and rapidly agreed to establish a special appeal (8) among its members for funds to build schools, hospitals, and other needed public works in Tafua, Fa'ala, and Salelologa villages. Equally significant, SNF pledged their management and administrative expertise to the project and agreed to send several of their board members to Samoa to meet with the village chiefs.

Through a series of meetings between SNF representatives and the Tafua village council, a covenant was negotiated for creation of the Tafua rain-forest reserve. In many respects, this covenant resembles the Falealupo covenant in that the donors renounced all rights to the land and the villagers pledged to preserve the forest for 50 years, while continuing to be allowed to use the forest for specified cultural purposes. But the Tafua covenant, unlike the Falealupo covenant, also mandates protection of the contiguous marine resources, including a specific ban on the hunting of sea turtles. The Tafua covenant was signed during a special kava ceremony in Tafua in January 1990 (9).

SNF has recently signed similar covenants with the chiefs of Fa'ala village who are using SNF funds to construct a small visitors center and guest house in the reserve, and Salelologa who are using funds for the construction of a primary school building.

Realizing that the Tafua rain-forest reserve must not only meet current needs of the village (i.e. construction of a school), but also future needs of the village, SNF has applied for and received funding from the Swedish International Development Authority (SIDA) for needed infrastructure, such as a secure water supply and improved road, and for assistance in the development of village-based environmental tourism in Tafua. These funds will be administered by SNF in close consultation with traditional village leaders.

The proximity of Tafua to the major wharf on Salelologa, and the proximity of both the Tafua and Falealupo reserves to commercial airstrips and small hotels suggests that carefully planned environmental tourism may allow both villages to realize income from their forests without the necessity of logging. But all parties to these agreements agree that any development of tourism must be village initiatives, rather than foreign initiatives, and must be carefully planned and controlled so that the Samoan culture in these areas is not jeopardized.

DISCUSSION

Successes in Samoa have indicated the potential of indigenous control strategies to rapidly facilitate establishment of reserves in other areas. However, careful analysis and knowledge of local cultures and languages are necessary, as is a willingness to engage in negotiations according to local customs. It is necessary that donors of funds renounce all land rights and legal penalties, and that the covenants be based on trust between donors and the local people. Given indigenous

views on the sacredness of the land, short-term arrangements, such as setting up reserves for c. 50 years are necessary, and may be one serious disadvantage to this type of strategy. However, given the rapid rate of tropical rain-forest destruction we believe that protecting rain-forests for even a limited time period, e.g. 50 years, is a worthy undertaking. We predict that any rain-forests remaining intact in the year 2040 will be valued to such a degree, both by the indigenous peoples and the international community, that there will be little debate about the need to continue to protect them. Perhaps one of the greatest gifts we can donate to coming generations is intact rain-forests; 50 years from now the global effects of deforestation and loss of biodiversity will be all too apparent.

In Samoa, the use of novel concepts of land acquisition and careful consultation with indigenous peoples has resulted in the recent establishment of four major rain-forest reserves. Although each reserve differs in constitution and approach, they are all based on the belief that the Samoan people themselves possess keen insight into the management and preservation of island rain-forests.

We believe that similar approaches may be useful in other parts of the Pacific and indeed of the world where: 1) rain-forests are occupied by indigenous peoples with a long history of occupancy; 2) the indigenous peoples possess strong conservation ethics; and 3) individuals, conservation organizations, and government agencies are willing to devote the time and resources needed to develop rain-forest reserves according to the needs and aspirations of indigenous peoples, rather than basing the approach on models that have proved useful in developed countries. We believe that reserves established in this manner lack many of the enforcement and management problems of other types of reserves. Although different models of reserve establishment may be more appropriate in other areas, we offer our experiences in Samoa for consideration by conservationists elsewhere.

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10. During our fieldwork in Samoa, Cox was supported by a NSF Presidential Young Investigator Award BSR-8452090 and Elmquist by a Swedish NFR post-doctoral fellowship. We thank the Swedish Society for Nature Conservation (SNF), the World Wide Fund for Nature (WWF), and Seacology for their support of conservation initiatives in Samoa. Most importantly, we thank the Samoan people for teaching us a new way to approach conservation initiatives.
11. First submitted July 11, 1990, accepted for publication after revision February 4, 1991.

Paul Alan Cox is professor of botany at Brigham Young University in Provo, Utah. His address: Department of Botany and Range Science, Brigham Young University, Provo, Utah 84602, USA.
Dr. Thomas Elmquist is a plant ecologist at the Department of Ecological Botany, University of Umeå. His address: Department of Ecological Botany, University of Umeå, S-901 87 Umeå, Sweden.