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HOLISTIC STRATEGIES TO SAVE THE PHILIPPINE EAGLE

DENNIS I. SALVADOR

Philippine Eagle Foundation, 2F UCPB Building, Magsaysay Avenue, Davao City, 8000 PHILIPPINES

Abstract: The Philippine eagle (*Pithecophaga jefferyi*) is the primary predator of the Philippine rainforest ecosystem and plays a key role in maintaining biological diversity. Population declines have been caused by deforestation and other reasons. Wildlife managers have failed to take this into account. I present an holistic strategy for endangered species management, and describe how a program of community participation in habitat management evolved. I describe the program's impacts on human communities and on the target species. Wildlife managers will find this paper useful in developing projects that respond to human needs without necessarily sacrificing conservation goals.

Resumen: El águila de las Filipinas (*Pithecophaga jefferyi*) es el primer depredador de los bosques de las Filipinas y el ecosistema, y juega un papel claro en el mantenimiento de la diversidad biológica. La declinación de su población a sido causada por deforestación y otras razones. Los manejadores de vida silvestre han fallado para tomar esto en cuento. Presento una estratégia holistica por manejo de especie en peligro y describe como el programa de participación comunitaria en el manejo de hábitat. Describo como los programas impactan la comunidad humana y las especies. Los manejadores de vida silvestre pueden encontrar este reporte util en el desarrollo del proyecto que responde necesidades humanas sin necesidad del sacrificio, de las metas de conservacion.

Key words: community, development, endangered species, holistic management, Philippine eagle, Philippines.

The Philippine eagle is the primary endemic predator of the Philippine rainforest ecosystem. It plays a key role in maintaining biological diversity and normal ecological functions in this tropical rainforest environment. The Philippine eagle requires large natural areas to survive. Measures to conserve it generally can provide an umbrella of protection for entire ecological communities (W. A. Burnham, Peregrine Fund, unpubl. data).

The current population status of the species is not completely known. Population estimates in the late 1960s ranged from 36 to 60 individuals (Alvarez 1970, Gonzales 1971, Rabor 1971). Kennedy (1977) revised the estimate to 309–580 individuals, but Krupa (1989) estimated the population at 89–222 individuals. Today, there are only 63 individuals known for the entire species: 17 birds in captivity and 46 associated with wild nests (D. I. Salvador, unpubl. data). There are probably few other Philippine eagles left in the wild.

The population status of the Philippine eagle is alarming. Habitat and probably prey populations are continuing to disappear at a rapid rate. Deforestation in the Philippines is estimated at 190,000 ha/yr. The United States Agency for International Development (USAID) indicated that only 700,000 ha of primary dipterocarp forest remain (USAID 1989). Without places to live and food to survive, the species could rapidly become extinct.

Habitat loss and degradation are primary factors in the decline of Philippine eagle populations. Unabated over-exploitation of forests to meet growing domestic demand for forest products and fuelwood, continued encroachment into forest lands by migrant farmers, inappropriate land use policies, corruption, and public apathy contribute to the destruction of extant natural forests. Additionally, the high incidence of poverty in the Philippine uplands significantly impacts resource use and conservation. There are >17,000,000 Filipinos in uplands areas; they are among the country's poorest and compete with each other to survive (Porter and Ganapin 1988). Under these conditions, human needs take precedence over conservation of the natural resource base. Government policies compound the problem by favoring short-term remedial measures that conflict with long term conservation goals.

Politics undoubtedly have impacted wildlife conservation in the Philippines. The Protected Areas and Wildlife Bureau admits that it is low priority when personnel and funding allocations are made. Moreover, its present staff is either inadequately trained or lacks motivation to effectively pursue its mandate (Custodio and Simmon 1992), seriously compromising their credibility.

Non-government organizations (NGO's) have taken the lead in wildlife conservation in the Philippines; however, management techniques remain traditional. Efforts have been confined to activities such as education, biological surveys, delineation of sanctuaries, and policy formulation (Lechoncito 1984, Sinha 1984, Kennedy 1985). The inadequacy of wildlife management in the Philippines is clearly reflected in the diminishment of wildlife habitats throughout the country.

Until recently, there were few long-term programs to protect biodiversity in the Philippines. Moreover, planning for wildlife programs has remained sectoral in orientation, thereby alienating wildlife issues from the public. Our own efforts to save the Philippine eagle were assessed and found deficient. Despite 12 years of work on the species, Philippine eagle populations continued to decline. Fieldwork was especially frustrating because nests were frequently lost due to illegal logging and slash-and-burn farming. The continued threat to the Philippine eagle imposed by a rapidly growing upland population called for a comprehensive conservation strategy in the context of Philippine social,

economic, political, and cultural constraints (Salvador 1994). In this paper I present the results of an effort to design and implement a program that addressed the needs of the Philippine eagle and the human communities associated with it.

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STUDY AREA

The study was conducted on the island of Mindanao, Philippines. Specifically, I worked in Mount Apo National Park in southern Mindanao and Mount Kitanglad National Park in central Mindanao. Mindanao is the second largest island in the Philippines and contributed enormously to the economy through agriculture, fisheries, mining, and forestry. The demands of this economy have diminished the resources that sustain it. Over 60% of the annual illegal deforestation in the Philippines occurred in Mindanao. Additionally, 22.3% of the country's 64 million people lived in Mindanao, and 50.6% of those lived in poverty. The island is considered the last stronghold of the endangered Philippine eagle.

METHODS

A pilot project was launched near Mount Apo National Park in 1990. The community was initially consulted and briefed on the purpose of the project. Their participation in project design and implementation was encouraged. Baseline data were obtained through socio-metric surveys and resources appraisal using pre-tested questionnaires. Given this information, our team and the community jointly drafted a program consistent with available resources and the community's perceived needs and interests. To facilitate the development process, a project officer was assigned to work and lived with the community. The officer was responsible for helping the community in key activity areas: networking, social preparation, training, livelihood projects, cooperative formation, reforestation, and project phase-out procedures. The livelihood program developed by the community was predictably agricultural because the beneficiaries were traditionally slash-and-burn farmers; however, sustainable farming techniques; e.g., multiple cropping and sloping agricultural land technology, were instituted. All inputs were provided on credit; a group accountability system was institutionalized to ensure that the loans were paid. A cooperative store also was established to complement farm incomes. Capital for the enterprise was generated through membership contributions. The store helped provide the basic food requirement of the community to eliminate costs associated with middlemen. Economic activities were coupled with efforts to strengthen the community as a social unit. Regular community dialogues and seminars were held to strengthen positive traditional values and cull those that adversely affected the community. Tribal leaders also played a major role in policy formulation and decision making. The pilot project was replicated in 4 different communities in Mindanao.

RESULTS AND DISCUSSION

Initial resource assessments of the project sites showed low crop production and low farm incomes. Additionally, people had no control over factors of production; e.g., cost contributed to their tendency to opt for short-term and exploitative types of resource use. By the end of the first year of the project, these problems had been addressed. Farm incomes doubled, and household incomes increased through savings and dividend profits from their community cooperative store project. Some participants were able to pay off loans ahead of schedule and purchase their own draft animals. Changes in community attitudes toward resource conservation were remarkable. Regular dialogue and consultation facilitated meaningful interactions among community members and helped bring about cohesion and unity of purpose.

Community initiatives in the project areas led to the elimination of illegal logging activities, harvesting of minor forest products, and slash-and-burn farming practices. Volunteers patrolled forest regularly and participated in research activities. Women and children helped establish backyard and communal tree nurseries for reforestation; seedlings were transplanted by cooperative effort when time permitted. We believe that wildlife populations remained undisturbed or thrived under communal protection.

To a large extent, the upland community projects have been successful in easing the consumptive pressures on the forests, and serve as buffers against further encroachment and other potential threats. By responding to needs of upland communities and fostering local conservation capabilities, managers sustained wildlife populations and provided marginal-income families with opportunities to contribute to national development goals. Complementing efforts to save an endangered species such as the Philippine eagle in situ, managers are conducting captive breeding and public education programs. The first 2 Philippine eagles were bred in 1992 using artificial insemination techniques. With this breakthrough, reintroductions should begin in 1995. Public education has been responsible for generating the support needed to make the field and breeding programs successful. Integration of these components permit a holistic approach to wildlife management.

MANAGEMENT IMPLICATIONS

The strategy for wildlife management relies on realistic perceptions of problems that lead to species endangerment and habitat loss. It would be convenient if only technological solutions were required to address biodiversity issues in a developing country such as the Philippines, but that was

clearly not the case. Conservation seems like a luxury to a people struggling to survive. For a conservation program to work, it must anticipate and adequately address potential conflicts with the primary interests of the public. My experience suggests that the following conditions should be met in implementing a community-based habitat management program: direct participation of the community in all phases of the project, improvement of the community's socio-economic welfare, a good relationship between the proponent and community, and mechanisms for building local conservation capacities and long-term sustainability.

Participation of different public sectors to achieve the conservation plans should be maximized. By adopting a participatory approach to the program, I have been able to recruit the services of international and local scientists. Teachers, students, and businessmen were encouraged to participate, lowering costs for the program. In addition, these cooperative undertakings foster better understanding of the work and thereby engendered public support. Communication and interaction with other people also opened doors for innovative ideas. An holistic program does not necessarily mean being all things at the same time; trying to do so can limit effectiveness. A focused mission and integration of programs within that framework can maximize impacts to society.

Serious measures must be taken to address global extinction rates. Developing countries are particularly vulnerable because economic priorities often overshadow environmental concerns. Because protection and conservation of natural resources are not quick or cheap, the role of managers should be to convince governments that investments in such areas promote sustainable national development.

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