

## An Overview of Raptor Conservation in Latin America

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The Neotropics support the world's most diverse assemblage of raptors (over 130 species). Raptor communities of Latin America include a high proportion of endemics, some cosmopolitan species and, seasonally, a considerable number of North American species which winter in the tropics.

Despite the variety of raptors present in the neotropics, comparatively few studies have been conducted in this part of the Western Hemisphere. In landmark papers Reichholf (1984) described raptor responses to various levels of habitat destruction and alteration and Thiollay considered the functional role of tropical rain forest raptors (1985a, 1985b) and described species composition and abundance in disturbed and undisturbed areas of French Guiana (1984). Olrog (1985) reported the status of raptors in northern Argentina. Ecological studies have been conducted for only a few species, notably the Savannah Hawk (*Heterospizias meridionalis*) (Mader 1982). For much of Latin America however, knowledge of raptor biology is limited to broad regional accounts such as found in Ridgely's (1976) book on the birds of Panama or Meyer de Schauensee's volumes on Venezuelan birds (1978) and South American birds (1970). These latter accounts provide general descriptions and known distributional status only. We know remarkably little about the breeding ecology and habitat requirements for most endemic Latin-American raptors (Grossman and Hamlet 1964; Brown and Amadon 1968). For some, even for the spectacular Crowned Solitary Eagle (*Harpohaliaetus coronatus*), nesting sites have yet to be found and this lack of even baseline data is especially disturbing because environmental changes are rapidly occurring over much of Latin America. Major threats, which are undoubtedly affecting raptor populations and their distribution, include widespread deforestation and other habitat alterations associated with increasing human populations; use of pesticides to maintain food production; overgrazing of arid and montane regions; and the essentially unknown element of raptor persecution, hunting and trade.

Our perspective in this overview report is based on our intermittent travels (over 64,000 km) and raptor surveys through much of Mexico, Central America and South America from 1970-1982. For specifics of local research and conservation efforts we defer to the biologists who have more intensively studied in restricted locales (see references in this volume).

### Conservation Problems

Deforestation is rightly cited as the most pressing conservation problem threatening many tropical American raptors. Even within the rain forest, however, other problems are present. Hunting pressure alone can result in

the loss of large raptors regardless of deforestation rates (Thiollay 1984). In other areas of Latin America many species suffer from direct persecution (Schulz 1977; Jaksic this volume; pers. observ.). In agricultural areas, pesticide contamination of food chains (Schulz 1977; Risebrough and Springer 1983; Ellis 1985) is of concern. Finally, in semiarid areas overgrazing becomes more important.

### Conservation Laws and Attitudes

In our travels we frequently questioned local residents about their attitudes toward raptors. Locals in most countries expressed surprise at our concern for birds of prey. Although conservation agencies in most of these nations were sympathetic and raptors are legally protected, the agencies which enforce these laws are usually too small and too burdened with other responsibilities to be effective. In some of these countries it is often possible to see locals in outlying regions blatantly violate wildlife laws and then confess upon inquiry that they were unaware that the particular species was protected. Even the largest and most beautiful species are often ignored or deliberately destroyed.

To illustrate the nature of this persecution, in Argentina, where condors are legally protected and gun control laws are in effect, local sheep herders confess to routinely killing this species. We once observed an adult Andean Condor (Vultur gryphus) suspended in a fruit tree near the roadside residence of a farmer. His response to our inquiry was that he shot the condor and used its skin to keep birds away from his fruit. In another province we obtained the body of an adult Peregrine Falcon (Falco peregrinus cassini) and two live fledglings from campesinos who accurately identified the birds as "peregrinos" and claimed that they frequently killed them. In Patagonia, Black-chested Buzzard Eagles (Geranoaetus melano-leucus), caracaras (Polyborinae spp.) and Red-backed Hawks (Buteo polyosoma) are frequently seen dead in barrow pits or suspended from fences and powerpoles. In Guatemala, we observed a dead Collared Forest Falcon (Micrastur semitorquatus) and Great Black Hawk (Buteogallus urubitinga) nailed to the front wall of a house just outside the border of the national park at Tikal. By contrast, in Chile condor watching stations are indicated on road signs, signalling a local awareness and an appreciation of this bird.

In heavily forested areas, where rivers are the major transportation avenues, it is common to see hunting parties in dugout canoes quietly patrolling at the edge of the forest for monkeys and other edible animals. Raptors are often shot indiscriminately. In Brazil, where raptors are legally protected, we observed eagle and hawk feathers decorating many of the Indian craft items offered for sale to tourists. The magnitude of this illegal hunting pressure must not be overlooked. To illustrate, a solution frequently proposed for the conservation of tropical ecosystems is the establishment of large parks and reserves. However, the existence of a park on a map does not ensure protection of wildlife. In Argentina the huge Nahuel Huape National Park exists on paper only. Hunting and ranching activities continue within the park as before. At other national parks we receive reports that the caretakers provide food for their families by hunting wildlife in the park.

Overgrazing is not usually cited as a major conservation problem in Latin America, but on the Patagonian steppes erosion caused by sheep and goats is extensive. With the loss of primary productivity, consumers and eventually raptor populations must decline. In the final analysis, all of the problems discussed above are the result of increasing pressure from growing

human populations.

### Solutions to Raptor Conservation and Management

In combating threats to Latin-American raptors and their environment, conservationists must take advantage of man's natural disposition to seek short-term economic gain even at the expense of the environment. In the long term, ecologically sound practices are also economically sound, but the conservation community must find ways to demonstrate, on a local basis, economically and culturally acceptable reasons for conserving wildlife and its habitat. To use a potential example: if in an Amazonia village hunters learn they can gain more from guiding tourists to see Jaguars (Panthera onca) and Harpy Eagles (Harpia harpyja) than from selling pelts and feathers, wildlife conservation objectives may thrive. In large measure, our ultimate success as conservationists depends on our abilities as salesmen.

To preserve Neotropical ecosystems and the raptor communities they harbour, a broad range of activities must be employed (Table 1). In each category of Table 1 the suggested activities are listed in the approximate order of their occurrence. It should be understood, however, that all categories should proceed concurrently. The general strategy should be to proceed first in preserving the most vulnerable species with the expectation that other species will also be preserved.

Research efforts in Latin America will ultimately result in the identification of habitat requirements for each sensitive species. To utilize two descriptors from the range management field: increasers are species such as caracaras, Black Vultures (Coragyps atratus) and Black-shouldered Kites (Elanus caeruleus), which adapt well to habitat modification and show population growth commensurate with increased agricultural development of primary forests; decreaseers are species such as the forest falcons (Micrastur spp.) and forest eagles which become rarer as dense forests are fragmented, and the Orange-breasted Falcon (Falco deiroleucus) which may entirely disappear with moderate habitat alterations (Jenny, this volume). The large eagles of tropical rain forests present formidable conservation and management problems because they can be quickly eliminated from primary rain forest with even moderate hunting pressure (Thiollay 1984). Once habitat requirements are known for a species, management plans can be generated and conservation agencies may become increasingly effective in implementing strategies aimed toward saving the most vulnerable decreaseers.

### Synopsis

Prior to the last decade, biological studies of raptorial birds in Latin America were almost nonexistent. For many species little more was known than their general range and habitat type. The last few years have seen the opening of a door to what will surely be a flood of scientific investigations.

Ultimately, the survival of raptor communities in Latin America depends not only on research but also on several other equally significant conservation efforts. These typically appear in the following order: first, appropriate legislation must be enacted and enforced to provide legal protection; second, the public must be educated concerning the value of wildlife; third, substantial blocks of favourable habitat must be identified and preserved; fourth, economic incentives must be generated so that the local human populations actually benefit from the preservation of vulnerable wildlife and natural habitats; and finally, the long-term success of all of these efforts in each nation depends on the attainment of political, economic and social stability.

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Table 1

Phases in the Conservation and Management  
of Neotropical Raptors

- I. Legislation and enforcement
  - A. adopt "model hawk laws"
  - B. enforce legislation
- II. Research
  - A Extensive surveys for many species
    - 1. determine distribution and abundance
    - 2. identify concentration areas
    - 3. identify species with narrow habitat tolerances
    - 4. identify species vulnerable to loss through hunting, pesticides, etc.
  - B Ecological studies for each species
    - 1. determine home range and territory size, food habits, and reproductive performance
    - 2. identify specific habitat requirements
    - 3. identify potential population limiting factors
    - 4. determine optimum size for habitat management units
  - C Management plans for each indicator species (or for raptor communities associated with each ecosystem or habitat type)
  - D Population monitoring
- III Conservation education
  - A Prepare literature and media materials based on research results
  - B Inform and mobilize local conservation groups and educational institutions
  - C Involve public in raptor conservation efforts
- IV Habitat protection
  - A Identify important conservation areas
  - B Acquire habitat through purchase, legislation or deed restriction
  - C Develop and implement management programs