

Notes on the Status of Diurnal Raptor Populations in Ecuador

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While raptor populations east of the Andes remain relatively safe, those in the inter-Andean valleys and west of the Andes have been drastically reduced, mainly because of deforestation. A Harpy Eagle specimen now in the University of Miami, obtained 6 years ago, could be the last record of this species from western Ecuador, where monkeys, sloths, and other arboreal mammals have nearly disappeared. A similar situation is affecting other large birds of prey there. Widespread use of pesticides for raising export crops is another source of danger for all raptors except those in areas that have not been altered by intensive cultivation. While the Andean Condor and other open-country vultures are not uncommon, forest-dwelling cathartids are declining in response to habitat destruction. The best hope for continuing survival of the 75 vulture, hawk and falcon species found in Ecuador is the National Park and Natural Area Administration System, but this government service is understaffed and otherwise limited in resources.

INTRODUCTION

The forests and mountains of Ecuador are home to over 75 species of vultures, hawks and falcons; however, accelerating habitat changes due to human activities have shrunk the ranges of all but the most adaptable species. Open-country birds such as the Andean Condor, Black and Turkey Vultures, some caracaras and a few hawks and falcons have suffered less than their forest-dwelling counterparts.

Destruction of forest by cattle-raising and export crop concerns, and by the piecemeal but relentless carving up of forests by "colonos" (settlers), is causing the decline or outright extinction of prey populations used by both diurnal and nocturnal predators. A compilation from various sources giving taxonomic, distributional and status information on the Falconiformes of Ecuador is included in the second part of this report.

SITUATION IN THE WESTERN PROVINCES

Primate populations are nearly extinct in the western lowlands where, by about 1965, road projects had extended human occupation of virgin lands well beyond the limits of 19th and early 20th century cocoa plantations. Tamandua and Silky Anteaters, sloths and kinkajous have suffered a similar fate, depriving such species as the Harpy Eagle and hawk eagles of their favoured food. Howler Monkeys can still be heard in the intact montane forests that rise inland from the coast, and this may explain why large raptors such as Black-and-Chestnut Eagles and Barred (or Black-chested)

Hawks are still seen, and the recent reports of heretofore overlooked populations of the Black Hawk Eagle and Black-and-White Hawk Eagle at the western foot of the Andes (P. Greenfield, pers. comm.). All of these birds typically prefer mountainous terrain. But in the flatlands at lower elevations intensive cultivation of bananas, manila hemp, soybeans, oil palms and pasture has replaced unique humid and dry forest, these agricultural crops often requiring aerial spraying for pest control. The dire effects of these practices on birds of prey cannot be over-emphasized and may explain the apparent recent extinction of Harpy Eagles and Black Caracaras in the West, and the widespread decline of other species.

SITUATION IN THE AMAZONIAN PROVINCES

On a smaller scale, settlement and cultivation of the Amazonian lowlands on the eastern side of the Andes is imperilling raptor populations there. The discovery and frenzied exploration and exploitation of the Rio Aguarico oil-fields has multiplied the permanent road network of the Oriente (the Amazonian region) twenty-fold over the last 15 years. Dozens of new settlements have mushroomed alongside the roads, and "precooperativas agricolas" have branched inland from these outposts, clearing forest to capitalize on "land improvement". At the same time, internationally-backed oil palm agribusiness has descended upon this region with governmental approval; thousands of hectares have been cleared to develop palm plantations, seen in some quarters as the most profitable long-term economic alternative for the Oriente. Deforestation has proceeded so fast near Lago Agrio that a pair of Orange-breasted Falcons seen nesting there one year had repeated nesting failures in consecutive years, apparently in response to habitat disruption (P. Jenny, pers. comm.). In Santa Cecilia, a locality near Lago Agrio, nothing remains of Dr. William Duellman's study area, where the largest herpetological diversity recorded anywhere was found only a few years ago (Duellman, 1978). With well over 50% of Ecuador's revenues coming from oil exports, it is not surprising that the government has encouraged the occupation of the Oriente. What is surprising, however, is that US and British oil concerns operating in the area have not shown more than a token interest in conservation, even when faced with massive oil spills in the rivers of the Aguarico drainage, and considering their responsibility in road building.

Destruction of monkeys, large birds, caimans, snakes, fish and other animals by hungry peasants, road crews and oil camp maintenance personnel is common, and no control whatever exists to regulate "subsistence" hunting. As a result, the decline of birds of prey east of the Andes is following the pattern seen across the mountains. The sight of a Harpy Eagle or a King Vulture is now rare indeed in the oil-producing portion of the Ecuadorian Oriente. On the other hand, there are recent sight records of Yellow-headed Caracaras and White-tailed Kites, birds of open terrain previously unknown in Ecuador, from this general area; these species may be indicators of how far the habitat has changed from what not too long ago was unbroken tropical lowland forest.

IMPORTANCE OF LOWLAND HABITATS

Lowland habitats are particularly worth mentioning because there is a high degree of endemism in the avifauna of Ecuador west of the Andes; this is a fairly isolated transitional region between the Choco wet forest to the north and the dry forests and scrub of the northern Peruvian coast to the south. No less than 15 taxonomically distinct populations of birds of prey, including such unique species as Accipiter collaris, Leucopternis occidentalis,

L. semiplumbea, L. plumbea Buteogallus (anthracinus) subtilis and Micrastur plumbeus, occur there. In regard to the lowlands east of the Andes, they are interesting because they hold an unsurpassed diversity of life forms, including raptors. There are 34 taxa from this general region listed in the second part of this report on the basis of collected specimens. The vast majority of these were taken by the famous Olalla brothers in the forests at the foot of Mt. Sumaco, in Napo Province, an area comparable in size to the foothills of Mt. Shasta in California. Sumaco is believed to be near the core of the Napo Pleistocene Refuge, one of the largest patches of moist forest that survived drought during Pleistocene glaciations.

SITUATION IN THE HIGHLANDS

The upper slopes of the mountains and the inter-Andean valleys still hold a handful of resident raptor species. The Andean Condor is the most spectacular of these, and gatherings of 10 to 20 individuals at roosts and feeding spots are not exceptional. However, no nests have been located in modern times, even though juvenile-plumaged birds are seen accompanying the adults. The largest aggregation of these huge birds known in the country occurs at a roost near the western foot of Mt. Antisana, but isolated soaring birds are often seen from Paramo del Angel in the north, to Mts. Cotacachi, Cotopaxi and Cajas in the south. There are now only exceptional reports of condors at Mt. Pichincha near Quito, where several specimens were collected in the past and geographical feature names still remind us of their former abundance. Breeding species at high elevations include the widespread and abundant Buteo poecilochrous and B. polyosoma, Parabuteo unicinctus at Guayllabamba near Quito, Phalcoboenus carunculatus, and Falco femoralis and F. sparverius. A truly unexpected discovery was made a few years ago when an active eyrie of Falco peregrinus was located near Quito (Jenny et al. 1981). Birds at this eyrie and the raptors previously mentioned have been the subject of intensive studies conducted by Dr. Tjitte De Vries (1983), foremost authority on the Galapagos Hawk, and his students at Universidad Católica del Ecuador. He and his group have elucidated a number of questions concerning the breeding cycles of raptors at high elevations on or near the Equator, including the composition of the diet of growing Phalcoboenus carunculatus young at Mt. Cotopaxi National Park. Agrarian reform applied to the large land holdings of farms in the high mountains has often resulted in high-elevation Indian settlements and attempts at agriculture. These largely unsuccessful trials have used up a large area of paramo affecting the habitat of such staples in the raptors' diet as Sylvilagus rabbits and various native rodents. There can be little question that the high human densities recorded in the mountains and intervening valleys have adversely affected raptors there. Hunting is always an added danger, and is particularly intense when weekend shooters try their guns on hawks, falcons and even an occasional condor. Fortunately, live trapping or keeping of live raptors has been discouraged by the government's firm stand on live animal exports, which require licenses and involve a number of restrictions, including a prohibition on exporting birds of prey.

PERSPECTIVES

There is a natural area and wildlife conservation strategy in Ecuador that directs governmental conservation efforts. This strategy has resulted in the establishment of national parks, national recreation areas and ecological reserves managed by a dependency of the National Forest Programme of the Ministry of Agriculture and Livestock. Much of this outfit's energy is channelled to managing the Galapagos National Park, where a few world-famous

animal species live and are internationally admired; only one diurnal raptor occurs there as resident, the Galapagos Hawk, with a very small total population (less than 500 individuals). Its numbers appear to have remained stable or even shown a small increase since the early 1970s when the park was first staffed. Unfortunately, other parks and reserves on the mainland do not get attention from the government in proportion to their area and to the greater conservation risks they face. Nevertheless they constitute the best, if not the only, hope of continuing survival for forest-dwelling raptor populations. Their improved management should be a goal that all interested parties, including private conservation organizations, should pursue. International conservation efforts should therefore be focused not only on providing material resources to enable Ecuador to do a good job in park management, but also on seeking ways to ensure that this job gets done. A successful mechanism for this is now in operation: WWF funds are not given directly to the government, but are given to the agency managing the parks and reserves through Fundación Natura, a prestigious private organization with headquarters in Quito, which thus acts as both a liaison and an in-country evaluator of the agency's use of the funds. A hopeful sign of the influence of such a private organization upon conservation policy implementation is the opportunity given to some of the Foundation's leaders to act in influential public posts. Granting a higher status to the agency in charge of parks, reserves and wildlife is a strict priority for these individuals, and so is the need for enhancing the level of the agency's field-deployed personnel to include professional wildlife biologists and natural area managers.

DIURNAL RAPTOR SPECIES OCCURRING IN ECUADOR

- Vultur gryphus Barren uplands and mountains over 2,500 m. Groups of 20-30 individuals seen in Mt. Antisana; single birds and smaller groups elsewhere.
- Sarcoramphus papa E & W, in wooded areas below 300 m. Very rare.
- Coragyps atratus Inter-Andean valleys from 2,200 to 3,200 m (foetens); refuse dumps in the Costa (brasiliensis).
- Cathartes aura Chapman (1926) recognised two forms: C. a. jota, confined to La Plata Is., with the exposed outer web of the secondaries silver; and C. a. ruficollis (Costa, Sierra and Oriente) with the same dark brown. Blake (1977) states two other forms (falklandica and meridionalis) may also occur in Ecuador.
- Cathartes melambrotos Trop. E = Limoncocha.
- Elanus leucurus NE, Napo Prov. Range greatly extended in past 15 years.
- Gamponyx s. swainsonii Trop. E recently. Probably increasing (Ridgely MS).

<u>Gampsonyx s. magnus</u>	Trop. W.
<u>Elanoides f. forficatus</u>	Trop. (Bucay). Chapman considered it a migrant from the north.
<u>Elanoides f. yetapa</u>	Trop. E & W. According to Chapman, a migrant from the south, arriving Sept. This and the above race common in wooded areas in low mountain country.
<u>Leptodon cayanensis</u>	Trop. E & W. Now very rare in W.
<u>Chondrohierax uncinatus</u>	Trop. and subtrop. E & W, but W population reduced by deforestation.
<u>Harpagus diodon</u>	Trop. E in Napo Prov.; recorded from Limoncocha (Ridgely 1980).
<u>Harpagus bidentatus</u>	Subtrop. and trop. E & W. Rare.
<u>Ictinia plumbea</u>	Trop. E & W. Common, but confined to forested areas.
<u>Rostrhamus s. sociabilis</u>	Wetlands in trop. E & W. Local, in snail habitat.
<u>Helicolestes hamatus</u>	Trop E = Limoncocha.
<u>Accipiter b. bicolor</u>	Trop. and subtrop. E & W.
<u>Accipiter s. superciliosus</u>	Trop. E, but recorded by old specimens.
<u>Accipiter s. fontanieri</u>	Trop. W. Recorded by Centro Cientifico Rio Palenque (Leck <u>et al.</u> 1980).
<u>Accipiter collaris</u>	Subtrop. NW. A very rare species.
<u>Accipiter poliogaster</u>	Trop. E. Rare according to Chapman, though widespread.
<u>Accipiter striatus salvini</u>	Quito region. Uncertain subspecific status (De Schauensee 1966 vs. Blake 1977).
<u>Accipiter s. ventralis</u>	Trop. and subtrop. W and inter-Andean valleys. De Schauensee thought it possibly specifically distinct from the previous and the N. American forms.
<u>Geranoetus melanoleucus</u> <u>australis</u>	Mountain areas above 2,700 m. Occurs rarely in trop. W. Not uncommon, but sometimes shot by hunters.
<u>Buteo a. albicaudatus</u>	Old records from Pichincha and other mountains near Quito.
<u>Buteo p. polyosoma</u>	Lowland plains and inter-Andean valleys. The commonest accipiter in Ecuador. Great variation in size and colour; easily confused

	with <u>B. poecilochrous</u> .
<u>Buteo polyosoma</u> <u>peruviensis</u>	Trop. W. Common. Smaller than <u>Buteo p. polyosoma</u>
<u>Buteo poecilochrous</u>	Inter-Andean valleys, lowland and upland moors. Very difficult to distinguish from <u>Buteo p. polyosoma</u> .
<u>Buteo albonotatus</u> ?	Trop. E & W. Very uncommon; not included by Chapman (1926).
<u>Buteo swainsonii</u>	Trop. W, inter-Andean valleys. A migrant from N. America.
<u>Buteo p. platypterus</u>	Throughout the country (except Galapagos Is.). A migrant from the U.S.A., June-Feb.
<u>Buteo magnirostris</u>	Trop. and subtrop. (below 1,000 m), E & W. The commonest accipiter of La Costa. Ecuadorian populations are of uncertain subspecific status.
<u>Buteo leucorrhous</u>	Upper subtrop. and temperate E & W.
<u>Buteo albigula</u>	Above 2,500 m in the Andes. Considered by Blake (1977) a subspecies of <u>B. brachyurus</u> .
<u>Buteo brachyurus</u>	?Trop. E and subtrop. W. Rare or difficult to see.
<u>Buteo n. nitidus</u>	Trop. E & W. Uncommon, confined to native forest.
<u>Buteo galapagoensis</u>	Galapagos Is. Uncommon, confined to native forest.
<u>Parabuteo unicinctus</u> <u>harrisi</u>	Trop. W and Tumbaco-Guayllabamba valley (Pichincha Prov.) where pop. reduced to less than 50 birds.
<u>Leucopternis albicollis</u> ?	Trop. E. Rare; may survive in national parks in E.
<u>Leucopternis occidentalis</u>	Subtrop. W. Rare; occurs sporadically in mountain forest. Very vulnerable. Endemic to Ecuador and NW Peru, represented in SE by <u>L. albicollis</u> .
<u>Leucopternis melanops</u>	Napo Prov. trop. E. Very local; the Ecuador pop. appears restricted to forest at the foot of Sumaco; recorded from Lago Agrio (Ridgely MS).
<u>Leucopternis semiplumbea</u>	Trop. NW. Very rare in Ecuador, the edge of its range.

<u>Leucopternis schistacea</u>	Trop. E. & W, near bodies of water. Possibly extinct in W.
<u>Leucopternis plumbea</u>	Lower subtrop. N.W. Very local, with a small overall range (Panama to NW Peru).
<u>Leucopternis princeps</u>	Trop. E and subtrop. W. A magnificent but extremely rare hawk. Range confined between Costa Rica and El Chiral, Ecuador.
<u>Busarellus nigricollis</u>	Trop. E. Recently seen by R. Sierra in Cuyabeno; this bird occurs throughout the Amazon basin.
<u>Heterospizias m. meridionalis</u>	Trop. W. Restricted to flood zones between Rio Guayas and similarly in El Oro Prov.
<u>Buteogallus anthracinus</u> <u>subtilis</u>	Coastline of Isla Puná and mangrove swamps of the Gulf of Guayaquil.
<u>Buteogallus u. urubitinga</u>	Trop. W. & E. Very rare, if not extinct W of the Andes.
<u>Harpyhaliaetus s. solitarius</u>	"SE foothills" (Ridgely 1980). One of the rarest S. American birds.
<u>Harpyhaliaetus coronatus</u>	Rio Topoin lower montane E, but single specimens mentioned in a study made in the 19th century.
<u>Morphnus guianensis</u>	Trop. E, near foot of Mt. Sumaco.
<u>Harpia harpyja</u>	Trop. E. and formerly trop. W (specimen brought to Rio Palenque, deposited in U. Miami). Not in Chapman. In all probability W pop. now extinct.
<u>Spizastur melanoleucus</u>	Trop. W near mountains; recently seen for the first time in Ecuador.
<u>Oroaetus isidori</u>	Lower subtrop. to montane, E & W. Confined to areas with intact mountain forest and sizeable pops. of guans and mammals.
<u>Spizaetus ornatus</u>	Subtrop. E & W. Very rare, and probably extinct W of the Andes.
<u>Spizaetus tyrannus</u>	Subtrop. E & W. Very rare, but recently sighted in the W.
<u>Circus cinereus</u>	Moorlands and upper parts of humid inter- Andean valleys. Common.
<u>Geranospiza c. caerulescens</u>	Trop. E, in Napo Prov.
<u>Geranospiza c. balzarensis</u>	Trop. W in Guayas Prov., including Puná Is. Requires native forest, probably epiphyte- laden mangroves.

<u>Pandion haliaetus</u> <u>carolinensis</u>	Throughout the country, near bodies of water. A migrant from N. America, Oct.-Feb.
<u>Herpetotheres cachinnans</u>	Trop. E & W. Drastic decline in W, due to habitat destruction.
<u>Micrastur semitorquatus</u> <u>naso</u>	Lower subtrop. E & W. "Very uncommon" (Ridgely MS).
<u>Micrastur buckleyi</u>	Trop. and subtrop. E; considered by Chapman a race of <u>M. melanoleucus</u> , as with the preceding form.
<u>Micrastur mirandollei</u>	Trop. E.
<u>Micrastur ruficollis</u> <u>concentricus</u>	Trop. and subtrop. SE.
<u>Micrastur r. interstes</u>	Trop. and subtrop. W (Ridgely MS); "Barred Forest Falcon".
<u>Micrastur gilvicollis</u>	Trop. E; "Lined Forest Falcon".
<u>Micrastur plumbeus</u>	Trop. NW, restricted to intact native forest.
<u>Daptrius ater</u>	Trop.E. Common along rivers, but few museum specimens.
<u>Daptrius americanus</u>	Trop. E, and trop. and subtrop. W. Western pop. drastically reduced or extinct.
<u>Milvago chimachima</u>	Trop. E. "Widely distributed" and "fairly common". (Ridgely in Leck 1980).
<u>Phalcoboenus carunculatus</u>	Above 3,000 m on moorland; still abundant in high mountains.
<u>Polyborus plancus cheriway</u>	Trop. dry W and (formerly) inter-Andean valleys of Pichincha and Imbabura Provs. The inter-Andean pop. has declined or in places disappeared.
<u>Falco peregrinus anatum</u>	Throughout the country. A rare migrant from eastern N. America, Aug.-Feb.
<u>Falco peregrinus (cassini?)</u>	Inter-Andean valleys of Pichincha Prov. A few pairs, less than 50 individuals, still remain in these valleys (cf. Jenny <u>et al.</u> 1981).
<u>Falco deiroleucus</u>	Trop. E. The rarest falcon of America; nor is it common in Ecuador due to deforestation in the E, but it might survive in the national parks.

<u>Falco rufigularis</u> <u>albogularis</u>	Trop. and lower subtrop. E & W. Still common within and around intact native and tall secondary forest.
<u>Falco femoralis</u> <u>pichinchae</u>	Barren uplands. Uncommon, very local.
<u>Falco c. columbarius</u>	Trop. W. (Esmeraldas, Guayas) and inter-Andean region. A migrant from N. America, Nov.-Feb.
<u>Falco sparverius</u>	Inter-Andean valleys, uplands and trop.W. Common even in large cities (Quito).

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