1996 IUCN Red List of Threatened Animals

A quarter of all known mammal species are at risk of extinction, according to the new *1996 IUCN Red List of Threatened Animals*. Until this new assessment, the conservation world has used the status of birds to estimate the level of threat to all animals because birds were the only group of species that had been fully assessed. Now it is known that 11 per cent of all known bird species are threatened with extinction, as are 20 per cent of reptiles, 25 per cent of amphibians and 34 per cent of fish, mostly freshwater species.

More than 100 species of marine fish were added to the 1996 Red List, including sharks, tuna, coral reef fish and seahorses. While the status of the remaining 14,000 marine species has yet to be assessed, the recent additions indicate that many marine species could be at higher risk than previously thought. All species of sturgeons and paddlefish were found to be threatened or near threatened (see page 1 of this issue). Many freshwater species from other groups are also classified as threatened because land-use changes, pollution and channel modification have led to the deterioration of freshwater habitats world-wide.

The Red List contains 5205 species assessments conducted by more than 500 members of IUCN's Species Survival Commission. More rigorous criteria were used to assess the conservation status for the 1996 Red List than in previous editions. The new list provides alternative approaches to assessing threat, such as population decline, fragmentation of populations or low population numbers. Different scientific approaches were used to assess levels of endangerment, including the rate of population decline over a 10-year period. Using this criterion, critically endangered species are defined as those experiencing an 80 per cent decline, endangered a 50 per cent decline and vulnerable, a 20 per cent decline.

Of the 26 orders of mammals, 24 include threatened species and the six largest orders have more than 50 threatened species each. The highest proportion of threatened species are in the primates (46 per cent); insectivores (36 per cent); artiodactyls – pigs, antelopes and cattle (33 per cent); bats (26 per cent); carnivores (26 per cent) and rodents (17 per cent). Of the 27 orders of birds, 23 contain threatened species, with the five orders containing the highest number being those that include rails and cranes (26 per cent), pheasants and partridges (25 per cent), parrots (25 per cent), pigeons and doves (17 per cent) and kingfishers and bee-eaters (12 per cent).

Among reptiles, 44 per cent of the 23 species of crocodilians are threatened but this is one group of animals where improvements in status have occurred. In 1971 all 23 species were endangered. Today seven are abundant enough to allow sustainable use for trade in skins and five have stable or increasing populations.

Very few invertebrates have been assessed relative to their total numbers: those that have received most attention are crustaceans, insects and molluscs. More threatened molluscs are included in the Red List than any other invertebrate group. Out of 70,000 documented mollusc species, some 2049 were assessed and 920 identified as threatened.

The *1996 IUCN Red List of Threatened Animals* is available on the World Wide Web at: http://www.iucn.org/themes/ssc/index.html

Editor

Species survival versus perpetuation of myth – the case of the Philippine eagle

Two days before New Year 1997 the Philippine eagle *Pithecophaga jefferyi* reached its centenary in zoological nomenclature. Its discovery in June 1896 during exploratory work on Samar by John Whitehead was an astonishing event, on the scale of the finding of the okapi *Okapia johnstoni*, the Congo peafowl *Afropavo congensis* and the recent large ungulates from Vietnam. So many explorers, including Whitehead himself, had missed it for so many

years; and this was not some small retiring nondescript but just about the world's largest raptor and, as it turned out, the top rain-forest carnivore in the four largest islands – Luzon, Samar, Leyte and Mindanao – of the main Philippine archipelago.

Nevertheless, in the first 67 years after its discovery the only interest shown in the species was by an anatomist exploring its affinities, and by foreign museums and zoos wanting to acquire specimens. Indeed, it was the intensifying zoo trade around 1960, coupled with excessive local trophy-hunting, that prompted the late D. S. Rabor to set one of his students on a field study of the species in 1963–64 (Gonzales, 1968). The history of eagle research and management since that pioneering study illustrates some interrelated problems in conservation assessment, including the way assumptions made in one generation of fieldwork become truths in the next, how over-cautious interpretations of data promote possibly inappropriate management responses, how long-term projects develop self-justifying datasets, and how very low-contact species generate distorted beliefs in the degree of their rarity.

To begin with, in setting Gonzales's project up, Rabor (1965) had pronounced the bird extinct on Samar and Leyte, and almost so on Luzon (in spite of inexplicably contrary testimony he published elsewhere: see Collar *et al.*, in press), and this opinion, based on his own field experience, was accepted uncritically for at least a decade (ironically, it is Luzon that is now thought may possess the largest and most secure population of the species). Moreover, he declared that no more than 40–50 pairs could possibly survive on Mindanao, the first in a long line of underestimates that have crucially influenced the way conservationists have responded to the species's needs.

Next, Gonzales (1968) decided that the pair of eagles whose nest he studied ranged over an area of 'at least' 100 sq km, a casual, unsupported, one-off remark that has likewise profoundly affected the conservation effort. Gonzales (1969), Kennedy (1977), Bonnit *et al.* (1977) and Krupa (1989) all used this value in calculating population sizes, none of them explaining why, even though at least four lower values for an eagle territory, ranging from 12.5 to 50 sq km, have been suggested by or can be adduced from other – and even their own – fieldwork (see Collar *et al.*, in press).

Kennedy (1977) was particularly diffident. Having ascertained from maps, photographs, overflights and site visits that approximately 29,000 sq km of forest remained on Mindanao, he applied the 100-sq-km value to obtain a population of 580; but he also conducted fieldwork in 640 sq km of this area and, having seen nine eagles, extrapolated a total of 408; moreover he undertook surveys and interviews within roughly one-third of the available habitat, saw 29 birds and learnt of 74 more (i.e. 103, excluding 35 reported captured or killed), and extrapolated a Mindanao total of 309. This last, although it startlingly assumes a 100 per cent encounter rate and yields a density of one pair per 188 sq km, was the one he decided was most appropriate (despite a 12.5-sq-km home range in birds he studied, which suggested to him 'that the area necessary to support a pair of eagles may not be as great as formerly believed'). As a consequence of his own and others' frequent repetitions, the notion that there are or then were roughly 300 eagles on Mindanao (he allowed another 100 for the remaining three islands) quickly gained currency.

Kennedy may well have felt constrained by earlier estimates, which he was substantially revising: to have suggested that Mindanao might harbour 4640 birds (one pair per 12.5 sq km in 29,000 sq km) when the most recent prior estimate was 52 – Alvarez (1973) having accepted there were 'about 5 to 6 pairs more' than the 40 birds he had estimated in 1970 – could perhaps have exposed his work to ridicule. Nevertheless, the full range of possibilities was not allowed (including, incidentally, the factoring in of immature or unpaired birds), and the sense of desperate crisis relating to the eagle was not dispelled: an immediate upshot was the establishment of a captive-breeding programme, which for the past 15 years has been the dominant feature of conservation work directed at the species.

Once the *ex situ* programme was launched, that sense of crisis in the wild, perhaps unsurprisingly, only deepened. Thus Krupa (1989) declared that eagles cannot traverse gaps between forest patches greater than 20 km, and cited five instances where birds were 'downed' in the attempt. Alternative explanations, such as that these were old, wounded or diseased birds, or inexperienced starving youngsters, were not considered, even though the literature reveals that adults will sometimes soar to great heights, which suggests they must be able to cover large distances (again see Collar *et al.*, in press). However, if each isolated forest area (Krupa identified 37) is believed to contain an equally isolated and, without intervention, probably unviable population of eagles (Krupa argued that 'genetic bottleneck can occur at less than 50 individuals' and, once more using the 100-sq-km value, predicted that only two of his 37 fragments held more), the case for taking birds into captivity greatly improves.

With the 100-sq-km value the total holdings of pairs of birds in these 37 fragments (total area 22,170 sq km) was found to lie in the range 89–222 (Krupa having allowed for 40–100 per cent habitat occupancy), fairly close to Kennedy's estimate a decade earlier. Most recently, however, both Salvador (1994) and PEWG (1996) have mistaken Krupa's numbers as referring to individuals, not pairs, so the population has been halved at a stroke. Worse, PEWG (1996), an official document with ministerial approval, lists the number of birds recently sighted (60) in a table labelled as the 'Total Wild Population', to which is then added the 17 captive animals plus two suspected extras, making 'a total of 79 birds [that] could be counted for the entire species'. One cannot help noticing the convergence of 79 and 89 (inevitably suggesting support for the lower of Krupa's already halved and in any case highly cautious values).

This all tends to reinforce the view that *ex-situ* management is vital to the eagle. However, any programme that has cost a great deal of money over the years will inevitably seek to portray itself as necessary and relevant, and if caution is needed anywhere it is surely in the evaluation of current management options, based on the best possible information, irrespective of previous investments. There are many reasons for concern about captive breeding, not least the issues of disease transmission to wild birds and the programme's current need for eggs or eaglets from wild nests. Moreover, if it may take fledged birds 6 months before they can catch their own food, and a year on top of that before they are adequately independent to quit the protection of their parents' territories (Kennedy, 1985), the question of how (and at what expense) any captive-bred bird can be trained in a way that begins to match such long-term preparation for self-sufficiency is something that requires urgent airing.

Most basic of all, however, is the nagging doubt that any captive effort is really appropriate. Because, in any case, captive breeding only makes sense if there is somewhere to return the birds to, the greatest emphasis *must* fall on habitat preservation; and what that habitat might yet be found to contain, even at this late stage in the degradation of the Philippine environment, is worth considering afresh. Right back at the start Ogilvie Grant (1897) had observed:

> That so large a Raptor should have remained unknown till the present time only shows how easily these great Forest-Eagles may be overlooked. As an instance of this, it is worth mentioning that during the years Mr Salvin spent collecting birds in Central America he only once saw a Harpy Eagle [*Harpia harpyja*]. The fact is that in the dense and lofty forests where these birds make their home it is almost impossible to see them.

All the evidence tends to suggest that this perception is correct: it explains why the eagle went undetected by so many early explorers for so long, how Rabor failed to find it on Luzon, Samar and Leyte, and how the rates at which birds were reported killed or captured could have been as high as they were, e.g. 35 in 40 months (Kennedy, 1977), or 12 shot in 12 years by a single hunter at Mt Matutum

(Gonzales, 1971). It is, at any rate, encouraging to learn that very recent analysis of harpy eagle density throughout its range now shows the species living at roughly one pair per 13–60 sq km, depending on the fertility of the soil (E. Alvarez Cordero, pers. comm.). Philippine soils are, for the most part, very fertile.

None of this is to argue that the Philippine eagle is not a highly threatened species deserving our full attention; it is simply to suggest that the attention we need to give it is *in the wild*. The underestimation of population sizes is a common phenomenon (see Gaston, 1994), and it is this, other than the appalling loss of habitat in so much of its range, which may well emerge as the fundamental problem afflicting the Philippine eagle in recent years. Whether so magnificent an animal will live to see its bicentenary is not a question we should even have to ask; but I worry that it will only get that far if the myths about it do not.

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The Niger Delta colobus – discovered in 1993 and now in danger of extinction

In 1993 a population of red colobus monkeys, until then unknown to occur between Ghana and Cameroon, was found in a very limited area of the Niger Delta in Nigeria (Powell, 1993). The population is being described as a new subspecies of *Procolobus badius* (*sensu lato*) in the *pennantii* group (C. B. Powell and P. Grubb, pers. comm.). Their distribution appears to be restricted to the 'marsh forest' zone – the freshwater tidal sector with permanently