

Priorities for parrot conservation in the New World

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Targeting threatened species

In terms of numbers of species at risk, parrots represent the most challenging family of birds on earth. A recent review³ identified 11% of the global avifauna as threatened and 9% as near-threatened, but analysis of the parrots alone¹⁴ shows that 24% (85) of the planet's 356-odd species are at risk of extinction, with a further 10% (36) near-threatened.

The situation gets worse when the New World component is isolated: Collar *et al.*³ identified 39 parrots (28% of the Neotropical complement of around 140) at risk, rising to 44 (31%) when new information and new criteria were brought to bear in Collar *et al.*⁴. This is a situation whose gravity, in terms of proportion of species threatened, is only approached by one other Neotropical family, the cracids⁶, and in both cases it results from the enhancement of the effects of habitat destruction by direct human exploitation⁵. Here I outline the key species to target for immediate action, based on the above sources. Superscript letters C, E and V refer respectively to the new IUCN categories of Critically Endangered, Endangered and Vulnerable, as applied by Collar *et al.*⁴.

Middle America

Mexico is the key country in this region, hosting six threatened species, four of which are wholly endemic.

The Socorro Parakeet *Aratinga brevipes*^V, confined to forest above 500 m on Isla Socorro in the Pacific, may number only 400-500 individuals, but should benefit from increasing national and international interest in the conservation of biological diversity in the Revillagigedos group.

Two mainly lowland amazons, Yellow-headed *Amazona oratrix*^E and Green-cheeked *A. viridigenalis*^E, have particularly suffered the double impact of habitat loss and persecution for trade. The Yellow-head has much the larger range, on both seaboard of Mexico through Guatemala into Belize (the Green-cheek is confined to the Atlantic lowlands and foothills from Nuevo

León to Veracruz), but has suffered much the severer decline (90% in the past 20 years), being renowned in trade circles as the best of all "talkers". These species urgently need well-defended reserves, sympathetic management on non-reserve land, and intensive efforts to eliminate trade at both local and international levels.

The two *Rhynchopsitta* species, which are in fact highly modified macaws, occupy montane pine forest in the Sierra Madre Occidental (Thick-billed Parrot *R. pachyrhyncha*^E

and Oriental (Maroon-fronted Parrot *R. terrisi*^V). Their dependence on pine cones, which fructify in different quantities from year to year, makes them especially susceptible to the effects of habitat loss, because the food resource, already patchy in both time and space, then becomes even patchier and more energetically expensive to locate. Thick-bills' dependence on holes in dead snags makes their plight all the worse; Maroon-fronts' use of cliffs allows them greater breeding security in the short term but perhaps less overall flexibility, so that they may suffer even more if the forests in which they feed when breeding are all cleared. The primary need for both is to control and rationalise pinewood extraction and to preserve any remaining tracts of mature forest.

Penetrating the Thick-bills' habitat from below is the Military Macaw *Ara militaris*^V, which



Spix's Macaw *Cyanopsitta spixii*, the rarest bird in the world (L. C. Marigo/BirdLife)

(as considered here) includes *A. ambigua* (Great Green Macaw) and which extends patchily through Central America (Honduras, Nicaragua, Costa Rica and Panama) into South America (parts of Colombia, Ecuador, Venezuela, Peru and Bolivia). Populations of this bird are all now extremely localised and small, often subject to substantial, albeit barely recognised, annual movements; habitat loss (in particular the recent exploitation of the extra-hard *Dipteryx* trees which the species uses both for food and breeding) and the poaching of nestlings are major threats.

Caribbean

The islands of the Caribbean have been and remain a disaster area for parrots. Wiley¹³ enumerated a minimum 28 species from the region at the time of Columbus's arrival, of which only 12 are still extant. Of these no fewer than eight are now at risk of extinction, four in the Greater Antilles (Cuban Parakeet *Aratinga euops*^v on Cuba, Hispaniolan Parakeet *A. chloroptera*^v in the Dominican Republic and Haiti, Black-billed Amazon *Amazona agilis*^v on Jamaica, and Puerto Rican Amazon *A. vittata*^c on Puerto Rico) and four, all amazons, in the Lesser (St Lucia *A. versicolor*^v, St Vincent *A. guildingii*^v and Dominica's Red-necked *A. arausiaca*^v and Imperial *A. imperialis*^v). Moreover, three of the remaining four are near-threatened, and there is a thirteenth threatened species, the much-trapped Yellow-shouldered Amazon *A. barbadensis*^v, occupying the Dutch island of Bonaire and Venezuela's Margarita and La Blanquilla, but also found in low numbers in remote arid woodlands on the adjacent mainland.

Some of these birds have, however, been well studied, and indeed our knowledge of parrot conservation techniques at the global level is dominated by Caribbean experience. Work by (e.g.) Snyder *et*

*al.*¹¹, Evans⁷, Butler² and Rojas-Suárez¹⁰ has provided major insights into the way small island ranges compound the effects of direct and indirect man-made threats to parrots, and outline the appropriate management responses. The result is that the species on the smallest islands, or the species with the smallest populations, are perhaps now of less immediate concern than some of the wider-ranging birds on the larger islands: a general ornithological survey of Hispaniola, and in particular the Dominican Republic, is long overdue, and parrot-specific status work on Cuba and Jamaica, although under way, deserves augmentation from every visiting birdwatcher with time to spare. The identification of conservable areas (some perhaps already inside parks and reserves) is an urgent priority for these species.

This is not, of course, to invite complacency over the Puerto Rican and Lesser Antillean amazons. These birds can only survive in the long term through the continuing commitment of people and funds to current programmes of active management.

Andes

Upland South America makes for the most heterogeneous grouping of threatened parrots, involving seven genera. Colombia is particularly important, with four species entirely within its



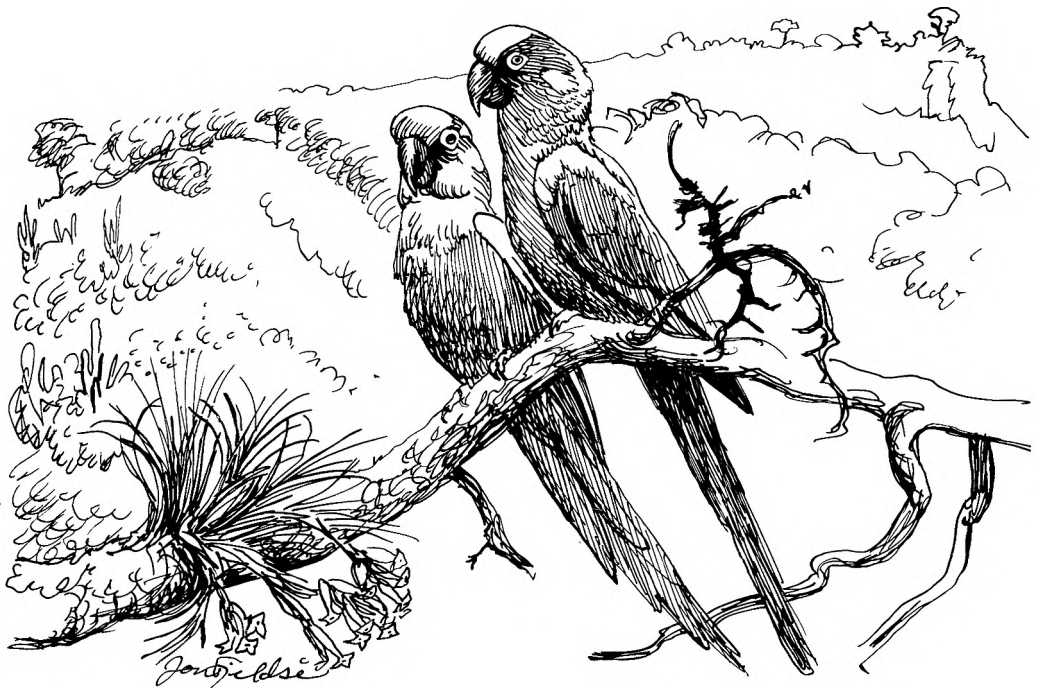
Rusty-faced Parrot *Hapalopsittaca amazonina* (Jon Fjeldså)

borders – Santa Marta Parakeet *Pyrrhura viridicata*^V (only in the Sierra Nevada, whose forests have been massively compromised by a drugs war), Flame-winged Parakeet *P. calliptera*^V (a tree-limit/páramo species whose few remaining populations face decline as trees are cleared), Rufous-fronted Parakeet *Bolborhynchus ferrugineifrons*^E (another treeline/páramo species losing out to habitat loss including grass burning and overgrazing) and Fuertes's Parrot *Hapalopsittaca fuertesi*^C (always very rare and now known from a single small reserve). These four parrots will best be conserved by the full implementation of protection for four reserves, respectively: Santa Marta National Park, Chingaza National Park and adjacent private reserves, Los Nevados National Park and the Alto Quindío Reserve.

Colombia shares four more threatened upland species with its neighbours. The extremely local Rusty-faced Parrot *Hapalopsittaca amazonina*^E extends from the north-east of the country into Venezuela, while the recently unfindable Yellow-eared Parrot *Ognorhynchus icterotis*^C, which is believed to specialise on Colombia's national tree, the wax palm *Ceroxylon quindiuense*, itself on the verge of extinction, goes (or once went) in the opposite direction into

north-west Ecuador; the Golden-plumed Parakeet *Leptosittaca branickii*^V, an apparent specialist on *Podocarpus* cones and therefore facing the same danger of space/time patchiness of food that threatens Mexico's *Rhynchopsitta* parrots, extends through the upland forest zones of Ecuador into northern Peru, as does (very patchily) the Spot-winged Parrotlet *Touit stictoptera*^V which, although probably under-recorded, occupies the upper tropical and lower subtropical forest zone, much coveted by man for its climate and agricultural potential.

In addition, Ecuador hosts two endemic threatened upland parrots and one shared (only just) with Peru. These are, respectively, the El Oro Parakeet *Pyrrhura orcesi*^V (a denizen of upper tropical forest on the already largely denuded lower Pacific slopes), White-necked Parakeet *P. albipectus*^V (a very local creature, known from three general areas up to around 2,000 m) and Red-faced Parrot *Hapalopsittaca pyrrhops*^E (an upper-edge cloud-forest species confined to a few areas in the south-west of the country). Peru possesses just one additional species, the Yellow-faced Parrotlet *Forpus xanthops*^V, confined to dry woodland in the upper Marañón valley and the only species in the entire Andean complement to be seriously affected by trade (all



Red-fronted Macaw *Ara rubrogenys* (Jon Fjeldså)

apparently to supply national demand). Bolivia possesses another: the Red-fronted Macaw *Ara rubrogenys*^E of the arid intermontane valleys of Santa Cruz, Cochabamba and Chuquisaca has certainly suffered in the recent past from trade, but now faces threats from habitat loss and local disturbance within its restricted range. (Bolivia of course possesses a second endemic macaw, dealt with below.)

Lowland South America

In theory, lowland areas of South America ought not to hold large numbers of threatened parrots, since unlike in the Andes or the Caribbean there are relatively few features to confine strong-flying, wide-ranging frugivores to areas small enough to render them obviously susceptible to extinction. In practice, however, there is the Atlantic Forest, reduced over five centuries of settlement to tiny (yet still declining) fragments of its former glory, and there is trade, whittling away at populations of species even while the habitat (in a few places) remains ostensibly intact. The focus in both cases is Brazil.

The Atlantic Forest once ran from the north-eastern seaboard of Brazil in Alagoas and Pernambuco south through Bahia, Minas Gerais, Espírito Santo and Rio de Janeiro into São Paulo and Paraná, where a subtle shift to what is sometimes called Paranaense forest occurs, this extending into Rio Grande do Sul and through adjacent eastern Paraguay and the province of Misiones in Argentina. Four species – Brown-backed *Touit melanonota*^E and Golden-tailed Parrotlets *T. surda*^E, Blue-chested Parakeet *Pyrrhura cruentata*^V and Red-browed Amazon *Amazona rhodocorytha*^E – are confined to the northern half of this belt. Two species – the Red-tailed *A. brasiliensis*^E and the Red-spectacled Amazons *A. pretrei*^E – only occur in the southern half, the former replacing its close relative *rhodocorytha* in coastal São Paulo and Paraná, the latter being virtually endemic to Rio Grande do Sul. Two species – the Vinaceous Amazon *A. vinacea*^E and the very curious Blue-bellied Parrot *Triclarina malachitacea*^E – extend much more widely (from Bahia to Misiones, the former also into eastern Paraguay), but are everywhere in doubtfully viable numbers.

In the drier western fringes of the Atlantic Forest and associated outliers, the beautiful Golden-capped Parakeet *Aratinga auricapilla*^V hangs on in the face of persistent attrition of its habitat. In similar wise the Blue-winged Macaw *Ara maracana*^V has been in steady retreat north-

wards (not fully attributable to habitat loss) from Argentina, Paraguay and southern Brazil, its main strongholds and key areas for protection now being the Serra Negra in Pernambuco and the Serra do Cachimbo in Pará.

Further yet into the interior of eastern Brazil and the focus switches to perhaps the most dramatically beautiful of all parrots: the blue macaws. The most celebrated, listed in the *Guinness book of records 1996* as the rarest bird in the world, is the highly distinctive Spix's Macaw *Cyanopsitta spixii*^C, of which a single individual survived in its only known haunts, caraiba woodland along seasonal creeks in arid northern Bahia, until in 1995 a wild-caught captive bird was released in the hope of breeding with it. A committee of Brazilian authorities and captive owners now presides over the future of this species, but the total failure of attempts to introduce captive-bred Thick-billed Parrots into Arizona (captive-bred birds are incapable of recognising food or predators and die within hours of release) has demonstrated the unconditional necessity of returning all captive-held wild-caught Spix's Macaws to their native habitat as soon as humanly possible if there is to be any genuine hope for the species's ultimate recovery.

Almost adjacent to the site where the Spix's saga is unfolding, the next-most threatened Brazilian parrot, Lear's Macaw *Anodorhynchus leari*^C, struggles for survival against the impact of food-plant (licuri palm) clearance in a handful of small, highly vulnerable cliff colonies, one of them only discovered in 1995 (see *Neotropical News*, this issue). Vigilance against trappers and long-term management of farmland over a wide area around nest-sites are essential investments in this bird's future. Its close relative, the Glaucous Macaw *A. glaucus*, has already been lost, almost certainly in part owing to the elimination over much of its range of yatay palms. This bird once penetrated the Atlantic Forest region as far as the coast of Santa Catarina, and bred in cliffs at Caçapava do Sul, Rio Grande do Sul (a site now of critical importance for Red-spectacled Amazon), but was recorded over a wide area embracing north-west Uruguay, southern Paraguay and northern Argentina.

The Hyacinth Macaw *A. hyacinthinus*^V originally occupied much of the region that separates the ranges of Lear's and Glaucous, and doubtless these three were mutually exclusive. The Hyacinth, largest parrot in the world and a purer blue than any other, has suffered from massive exploitation for trade in the past 20 years, such

that as few as 3,000 individuals may now survive throughout its vast range from the wetlands fringing Paraguay and Bolivia north to Piauí and west into the more open parts of the Amazonian rainforest in Pará. Status surveys in these poorly explored north-western areas (including Amapá) are required; but several independent studies have recently begun to shed light on the species's ecology and management needs in the Pantanal.

At the north-westernmost edges of the Hyacinth's range there occurs the species Helmut Sick wanted to see become the national bird of Brazil owing to its yellow and green plumage: the Golden Parakeet *Guaruba guarouba*^E of terra firme rainforest in Maranhão, Pará and (from a remarkable recent record) Rondônia. This wonderful animal suffers from both habitat loss and high trapping pressure (for domestic consumption), and is difficult to conserve owing to an apparently nomadic habit, which confounds attempts to identify key areas for its survival. The problem of nomadism also afflicts the Yellow-faced Amazon *Amazona xanthops*^V, a cerrado endemic which penetrates into eastern Bolivia and northern Paraguay and whose habitat has endured a staggering 60-70% conversion to agriculture in the past 20 years.

Outside Brazil there are only three threatened parrots in lowland South America. Two, the Military Macaw and Yellow-shouldered Amazon, have already been mentioned. The third is the Blue-throated Macaw *Ara glaucogularis*^E, a very few of which were recently located in a forest-savanna mosaic in northern Bolivia, and which face permanent danger from trapping interests.

Next steps

There is no shortage of parrots in need of support in the Americas. With 44 formally listed as threatened, another 12 near-threatened (Appendix 1), and 17 subspecies of otherwise low risk species also classifiable as threatened or near-threatened (Appendix 2), there is a great deal to accomplish.

The primary objective must be the preservation of key sites for the threatened species, and a fully rationalised blueprint for this already exists in Wege & Long¹². The value of this book in providing the basis for bird species conservation in the Neotropics cannot be overemphasised. Nevertheless, parrots represent a particular challenge owing to their often wide-ranging foraging behaviour, which means that site protection may be insufficient unless the "site"

in question is very substantial, or unless habitat management over large adjacent areas is simultaneously implemented. This then raises the much larger problem of the zonation of natural habitat utilisation and all the other interests that legitimately bear on such processes; but it is a nettle that one day will have to be grasped.

Another such nettle is the problem of trade. It remains entirely unresolved whether its continuing legality simply stimulates the growth of covert systems of exploitation, or whether its total outlawing would make the monitoring of that exploitation all the harder while at the same time depriving developing countries of a source of income and of the stimulus to manage their wildlife sustainably. However, a reduction in trade levels generally in the Americas, and for species such as Red-masked Parakeet *Aratinga erythrogenys* and Grey-cheeked Parakeet *Brotogeris pyrrhopterus* in particular (see¹), is highly desirable. The kind of campaign needed to bring this about can be mounted at local, national and international levels, and will integrate well with education and awareness initiatives aiming at the creation of appropriate conditions for site and/or species management programmes.

In-depth ecological study of any parrot is likely to produce insights into the biology of rarer congeners, but clearly the more the truly problematic species are targeted for such work the better. Birdwatchers can always help by making their records available or even by undertaking their own (self-paid) status surveys, so long as these conform with the laws and protocols of the host nations. The important thing always to bear in mind is that all such fieldwork needs to be done in ways that can easily be replicated, because the longevity of parrots, and their between-year differences in resource exploitation, mean that long-term monitoring and data-collection are essential to the confidence with which their conservation can be prescribed.

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- Appendix 1.** Near-threatened species of Neotropical parrot (taken from Collar et al. 1994).
- Red-masked Parakeet *Aratinga erythrogyne* (Ecuador, Peru)
 Rose-headed Parakeet *Pyrrhura rholocephala* (Venezuela)
 Slender-billed Parakeet *Enicognathus leptorhynchus* (Chile)
 Grey-cheeked Parakeet *Brotogeris pyrrhopterus* (Ecuador, Peru)
 Amazonian Parrotlet *Nannopsittaca dachilleae* (Peru)
 Red-fronted Parrotlet *Touit costaricensis* (Costa Rica, Panama)
 Pileated Parrot *Pionopsitta pileata* (Argentina, Brazil, Paraguay)
 Cuban Amazon *Amazona leucocephala* (Bahamas, Cayman Islands, Cuba)
 Yellow-billed Amazon *Amazona collaria* (Jamaica)
 Hispaniolan Amazon *Amazona ventralis* (Dominican Republic, Haiti)
 Lilac-crowned Amazon *Amazona finschi* (Mexico)
 Blue-cheeked Amazon *Amazona dufresniana* (French Guiana, Guyana, Suriname, Venezuela)
- Appendix 2.** Threatened and near-threatened subspecies of Neotropical parrot (the former excluding subspecies of already threatened or near-threatened species) (taken from Wirth et al.¹⁴).
- Critical**
Pyrrhura picta coeruleascens
Aratinga acuticaudata neoxena
- Endangered**
Pyrrhura picta subandina
Pyrrhura picta caeruleiceps
Pyrrhura picta pantchenkoi
Pyrrhura picta eisenmanni
Pyrrhura leucotis griseipectus
Pionus menstruus reichenowi
Amazona autumnalis lilacina
- Vulnerable**
Aratinga mitrata alticola
Aratinga nana nana
Myiopsitta monachus luchsii
Cyanoliseus patagonus byroni
Pyrrhura leucotis pfrimeri
Pyrrhura leucotis leucotis
- Near-threatened**
Brotogeris cyanoptera gustavi
Amazona ochrocephala xantholaema