Red Data Books: *how & why*

by Nigel J. Collar
International Council for Bird Preservation
Cambridge, United Kingdom

First Principles

"How and why" is the usual way we put the words together, but to construct a serious case for Red Data Books (RDBs), the updatable volumes that document threatened species, it is simpler to make the journey from why to how. Moreover, the first and fundamental *why* is not so much "why do we need these books?" as "why do we need these species?" Without an answer to this basic point, the whole process of threatened species documentation is placed in some jeopardy.

In recent years, many different answers to this elemental *why* have been provided, the issue producing an entire branch of philosophical inquiry, as reflected by the titles of several books such as *Why Preserve Natural Variety?* and *Philosophy Gone Wild*. Despite this, of all the answers available, the only one I am comfortable with is my own, if only because at least I understand it and believe it. I set out my views in the essay "Life, liberty and the pursuit of happiness" in *American Birds* (42 [1988]: 19-22). They are that the mere existence of species confers on us all an essential human liberty, that the extinction of species, by reducing the complexity of the world and our capacity to enjoy it for its diversity, erodes our freedom, and that when we fight to save species we are fighting for our basic right to enjoyment — not just of wildlife, but of *life*.

Of course, other things than species extinction contribute to the general deterioration in the quality of our lives. To lose subspecies, populations, areas, even cherished individual plants and animals, is to have life turned greyer, poorer, flatter. By and large there are too many such cases to lament or fight, and we shrug them off; but there has to be a line, and to me — and I am sure to many others — *species* is it.

In order to prevent the extinction of the species, the first and most fundamental step must be to identify the ones at risk and then review, analyze and organize all the data relevant to their conservation. This is the purpose and function of RDBs, which were introduced by IUCN in 1964. They are the cornerstones of successful strategies to preserve the enormous variety of life on earth. Without their dispassionate amassing and sifting of evidence, the world's conservationists and decision makers would simply not possess the information they need to exercise their responsibilities fully and fairly.

I say "fully and fairly" because, while the planet remains extremely rich in species, commonly rather few animals attract a disproportionate amount of concern for their well being. This is not necessarily bad, but the danger remains that, through public or institutional ignorance of other issues, these animals will absorb all the limited conservation resources of a country, to the literal loss of less familiar or less attractive species. The RDBs provide the single most effective mechanism to counter this danger, since their remit is to take an entire group of animals or plants — birds, reptiles, corals, etc. — and evaluate them purely in terms of their security for survival, irrespective of any other factor. Even if a government authority or private body decides to take no action for a species, at least they have the information and the choice; at least another body has the opportunity to step in; and at least the extinction, if it happens, cannot be attributed to mere ignorance.

ICBP's experience has certainly been that its international bird RDB has become increasingly central to the planning and implementation of conservation in countries throughout the world. In Africa, Asia, the Americas and the Pacific, where the majority of threatened birds occur, there has been a major growth in interest in working to save species identified through ICBP's Red Data Book Program. In other words, the RDB actually works: it spurs conservation, it saves species from extinction.

The Problem of Subspecies

ICBP played a leading part in the development of RDBs, with Col. Jack Vincent working for ICBP at IUCN's Swiss headquarters from 1963, and producing the bird volume simultaneously with Noel Simon's mammal book, the first two RDBs ever to appear. The first and second editions of the Bird RDB (the second being produced by Warren King in Washington over the years 1974 through 1979) both treated subspecies as well as species, since at that time the dimensions of the species crisis were less clear, and there was still space to consider subspecies. James Greenway's 1958 prototype RDB, *Extinct and Vanishing Birds of the World,* had treated only 95 threatened species, Vincent's first (1966) RDB treated 190 and later (1971) 220,

King's (1979) 290. Less than 10 years after King, ICBP published its evidence (in an abbreviated RDB called *Birds to Watch*) that no fewer than 1,029 species of bird are at risk of extinction around the world. To document each fully is clearly sufficient work, and grounds enough to leave subspecies, with regret, to fend for themselves (although in fact many threatened subspecies are sympatric with threatened species, and so can be secured through action to secure the habitat of the latter).

All the same, this decision need not be the end for some so-called subspecies. The fist step to be taken on the long trek to a completed RDB (if such books can ever be regarded as completed) is to determine the taxonomy and nomenclature to be followed. In certain respects, it is obviously desirable to stay as much as possible with the system that is most up-to-date and widely accepted, although of course these two characteristics are often mutually exclusive; in practice, it is imperative to remain flexible within the chosen system, and deviate from it where the evidence requires. Taxonomy is in a constant state of flux, and it is vital to keep abreast of new developments, such as the recent perception that the Rusty-faced Parrot *Hapalopsitta amazonina* may actually constitute three or four species, with several of these "new" species having extremely small ranges.

Conservationists clearly have difficulties here. It is important to err on the side of caution and allow specific status if reasonable doubt exists; on the other hand, to see scarce conservation money spent on a form that is barely differentiated from another that is secure, while much more distinctive creatures remain unattended, is always frustrating. Hence ICBP readily splits Banded Wattle-eye *Platysteira laticincta* from Black-throated Wattle-eye *P. peltata* (because distinct in both plumage and habitat requirements), Guadelupe Junco *Junco insularis* from Dark-eyed Junco *J. hyemalis* (on a recent observer's assessment of its voice, morphology and plumage), and Sumatran Cochoa *Cochoa beccarii* from Javan Cochoa *C. azurea* (because the two are utterly different, the problem being that so few museum skins of the former exist no taxonomist had compared the forms for half a century).

By contrast, ICBP resists splitting if the grounds are not in some degree convincing to or accepted by others, as in the case of the Ngoye Green Barbet *Stactolaema olivacea woodwardi,* which one taxonomist upgraded to species level in a new genus *Cryptolybia woodwardi,* or the Cuban (Hook-billed) Kite *Chondrohierax (uncinatus) wilsonii,* often regarded as distinct but whose skins are virtually identical to mainland forms. Indeed, ICBP's own RDB work revealed that the threatened Van Dam's Vanga *Xenopirostris damii* could well prove conspecific with (and even doubtfully distinct at the subspecific level from) Lafresnaye's Vanga *X. xenopirostris,* a perception that has certainly downgraded the bird in ICBP's priorities on Madagascar.

Single-specimen Species

RDBs also have to grapple with the problem of species known only from a single specimen. The White-chested Tinkerbird *Pogoniulus makawai* is one such, collected in a broad belt of evergreen thicket in Zambia. No one else has been able to find it, although the habitat is apparently uniform over thousands of square miles, and the longer this situation remains the stronger the view becomes that the type-specimen is aberrant or even possibly hybrid. There are a dozen or more such "species" in the Americas alone that ICBP currently accepts as invalid (probably hybrid or aberrant), including many hummingbirds such as Decorated Woodstar *Acestrura decorata,* Small-billed Azurecrown *Amazilia microrhyncha* and Cabanis's Emerald *Chlorostilbon auratus,* plus for example White-masked Antbird *Pithys castanea* and White-tailed Tityra *Tityra leucura.*

The virtue of such caution, particularly with regard to hummingbirds, is borne out by recent studies that show that no fewer than three described from southeast Brazil within the past 20 years — Klabin Hermit *Phaethornis margarettae,* Black-billed Hermit *P. nigrirostris* and Black Barbthroat *Threnetes grzimeki* — are invalid taxa, being variants or immatures of known forms. All three were listed in King's (1979) RDB, because recorded from very small areas of Atlantic forest, and had therefore been targets of conservation action: a great deal of money could easily have been wasted on them.

On the other hand, there are dangers in complacency over species represented by a single specimen. Storrs Olson, retrieving one such form from obscurity, commented sharply that "there is a regrettable reluctance among modern ornithologists to accept unique specimens as representing valid species, the tendency being to regard them as freaks, hybrids, or as a subspecies of some better known form, so that such specimens are often relegated to a status sufficiently dubious to insure that they will be overlooked and ignored." Very clearly, the RDBs have a responsibility to evaluate the claims of such species and specimens, and not merely follow the easier, traditional line of rejection. This can be hard work. Apart from anything else, the specimens in question may be lodged in museums no longer active in the relevant taxonomic studies, yet their uniqueness prohibits their mailing to other institutions for temporary examination, so that expensive and time-consuming travel becomes requisite if any progress is to be made with them.

Of course, there are some species known from one specimen that are generally undisputed, such as the Orange-necked Partridge *Arborophila davidi,* Negros Fruit Dove *Ptilinopus arcanus,* Itombwe Owl *Phodilus prigoginei,* Caerulean Paradise-flycatcher *Eutrichomyias rowleyi,* Cone-billed Tanager *Conothraupis mesoleuca* and Cherry-throated Tanager *Nemosia rourei,* of which three have never otherwise been seen and three (the owl, flycatcher and second tanager) are claimed to have been glimpsed, once. All these are listed in the RDB, as would be expected: all such species *must* qualify for threatened status by almost any criteria.

What Makes a Threatened Species?

Different people have different ideas about what constitutes a threatened species. The important thing for anyone taking a decision on this issue is to operate with clear criteria that others understand and accept, so that the matter remains as much as possible in the public domain. Even if, as is inevitable, a measure of subjectivity informs the process, the closer the adherence to the criteria, the more *consistently* subjective the deliberations will be. In other words, it is a matter of critical substance that the decision-maker is answerable for his or her decisions.

When the criteria were developed for the IUCN/ICBP RDBs, it was also decided to make categorizations of taxa based on the degree of danger they faced. Thus, although "threatened" and "endangered" are synonyms,. for the sake of clarity, IUCN adopted "threatened" as a general term for any species at risk of extinction (i.e. worthy of inclusion in the RDB), and "endangered" as the highest category of threat that a species could be under, applicable to forms in immediate danger of extinction. Four other official categories exist: "vulnerable" for forms whose present decline will take them "in the near future" into the endangered bracket, "rare" for forms with small but largely stable world populations that are always likely to encounter problems (this includes forms that are quite common or even abundant within very restricted ranges, or that are relatively widespread but at very low densities throughout), "indeterminate" for forms known to be either endangered, vulnerable or rare but where evidence is insufficient for more precise judgement, and "insufficiently known" for forms that are suspected but not known certainly to be threatened.

To these, ICBP added a sixth, unofficial category, "of special concern," for species habitually thought of and treated as threatened (this is often the case with species that are genuinely threatened in several but not all the countries in their ranges), but which the full accumulation of evidence proves otherwise. Publication of this evidence satisfies the investment of time and resources expended on the research, saves others repeating the exercise, and provides the concerned public with the species' true status. Jackass Penguin *Spheniscus demersus,* Shoebill *Balaeniceps rex,* Congo Peafowl *Afropavo congensis* and Wattled Crane *Bugeranus carunculatus* all proved, on careful consideration, to be widespread enough and in sufficiently secure habitat not to be (yet) in danger, but the research on these birds took a total of 14 man-weeks and seemed absurd to waste by not publishing.

The decision whether a species is truly at risk is often difficult, despite IUCN's categories. "Immediate danger of extinction" (endangered cases) may be readily identifiable, but declines towards that condition (vulnerable cases) are not; and the problems faced by species as a *function of* their restricted ranges or low densities (rare cases) can become highly subjective. I have tended always to include species with very restricted ranges if their habitat is vulnerable, whether or not that habitat is currently under pressure (tropical forest birds on small islands are the commonest example): change in today's world is so rapid that the RDB has a responsibility to be preemptive. Nevertheless, each case is judged on merit; and, as a failsafe, ICBP has instituted a "near-threatened" species list that indicates those birds on the fringes of concern which may, on closer scrutiny, merit recognition as threatened species and which should, wherever possible, be accommodated into strategies for the conservation of areas and other species.

The RDB Treatment

The ICBP Red Data Book has been the chief source of reliable scientific information on threatened birds since the prototype of the first edition appeared in loose-leaf form in 1964. These early editions were, however, compiled on a part-time basis to relatively constrained time-scales. The third edition, initiated soon after the creation of ICBP's international secretariat in 1980, has, for the first time, operated a continuous program of documentation and analysis. To rationalize the use of resources, and to maximize the benefits of continuity in research, a geographically defined approach has been adopted. The first volume of the third edition, ***Threatened Birds of Africa and Related Islands,*** was published in 1985, and treated 177 species in 796 pages. Three more volumes are planned to complete the edition: the second for the Americas, the third for Europe and Asia, and the fourth for Australasia and the Pacific.

The entry on each species thus has the equivalence of a scientific review paper, yet does not merely repeat information gathered from published sources but also analyzes, reorganizes and, through the incorporation of new data from correspondents and museums, extends it. All such work commonly leads to wholly new insights about the prospects for saving a bird or the need to do so. These desk-study investigations are therefore vital in determining the most appropriate courses of action for the species under review, and in minimizing the wastage of precious con-

servation resources (money, expertise, time) on inappropriate activities; where two or more threatened species occur together, the RDB makes this clear and thus indicates where and how to save the maximum number of species with the minimum input of finances. In conservation terms, such detailed analysis becomes a highly cost-effective investment for future action.

ICBP's procedure for creating an RDB falls into three phases. First comes the identification of candidates and the general groundwork. In this, previous RDB species for the region in question are listed, and other sources on threatened species are checked; suggestions for additions and alterations are solicited from key correspondents, specialist groups, and ICBP sections; key works (i.e. books on families or birds of particular countries) are gleaned for further candidates; lists of all possible contributors of data, and lists of major museums that may hold important unpublished data, are drawn up; a list of all candidate species, with a brief summary of their distribution and why they may be at risk, is circulated to all potential contributors with the invitation to comment with their judgement and information; these comments are duly stored in individual correspondents' files, cross-referring to each species treated by that correspondent; the candidate list is then modified to accommodate the breadth of new information, and becomes the working list for the book.

Second, the species accounts are drafted. This is done on a word processor following exhaustive combings of the literature and incorporating all the relevant unpublished material returned in correspondence. The drafts are posted out to the same set of contributors for further comment, and to as many other sources as emerge in the course of the detailed research on each species, and all incoming information is duly added. The literature continues to be monitored for new evidence or possible new sources of evidence, and drafts are repeatedly updated and circulated. A gazetteer is maintained for easy cross reference, certain appendices (on near-threatened species, or the distribution of threatened species by country, for example) are compiled, and notes are kept on issues needing clarification in the book's introduction. Museums are visited or at least written to for the additional data, mostly on distribution, that previously undocumented specimens may possess, and this information is also added to the drafts.

Third, the text is primed for publication. This involves standardizing and correcting all the drafts, including the references, composing and completing the various appendices, preparing an introduction, compiling the complete acknowledgements, proofreading the entire book, copying it to independent readers for in-house review, adding final corrections and additions from latecoming sources, checking them, and compiling an index.

The Complete Guide

A standard entry consists of eight obligatory sections, with a ninth optional. These are a Summary, then: Distribution, Population, Ecology, Threats, Conservation Measures Taken, Conservation Measures Proposed, Remarks (optional), and References. The content of these sections is self-evident from their names, except for Remarks, which is reserved for some specific observation (such as pointing out taxonomic problems with the species under review, or mistakes in the literature that need correction).

As a general principle (at least in ICBP's approach to RDB work), the entry aims to be as complete and comprehensive an account as possible of a species in relation to its conservation needs: anything that could have a bearing on how to save the species must be accounted for in the text. This is vital: some scientists seem all too ready to rely on what material they can scrape together in an *ad hoc* manner, often ignoring work in foreign languages and the older literature on the fatalistic assumption or mere hope that it holds nothing of direct significance or value. ICBP sees it as a duty to publish independently all the evidence it can muster, so that no one can ever blame the failure to follow a potentially life-saving course of action on ignorance of the options available from a proper scrutiny of the sources.

That the Red Data Book is both independent and comprehensive is crucial. These qualities mean that no special considerations or constraints apply to the work except those of scientific excellence. The *independence* means that a species with an international distribution is fully evaluated and its status assessed not on national but on global criteria. This commonly leads to valuable insights of two kinds: (1) a species considered nationally at risk proves secure, so that cash for its conservation can be diverted; (2) a species considered nationally secure proves at risk everywhere else, so that the country in question understands the international and ultimate responsibility it then has. The *comprehensiveness* means that all the birds are evaluated at the initial stage, that files are opened and maintained on all candidate species and that the final documentation covers every aspect of the species that could be of use to anyone seeking to rescue it from extinction. It is not sufficient to know that a species is recorded from a country; it is important also to know (e.g.) if it is common or rare there, whether it is resident or migratory, when it was last reported, from which localities it is known, what news there is of its habitat today, whether it or at least its habitat occurs in a protected area, whether the protected area is genuinely secure, whether the species could be conserved at one or more localities where other threatened birds or other wildlife occur, and so on.

Further important qualities of the Red Data Book Program as a long-term initiative are consistency, experience and trust. The consistency and experience derive from a set of authors who have a common understanding of the criteria they employ and the materials they consult. The trust derives from the ever greater development of a network of correspondents and contacts who appreciate the value of the program and contribute their data freely to it. All of this activity, and the principles behind it whereby everything is accountable, make for what I like to think of as the democratization of the work. ICBP shoulders the responsibility, but invites everyone with knowledge of birds, their habitats and so on, to contribute. In this way, the RDB provides a major public service by setting an agenda that everyone can accept as reliable and realistic, because everyone can understand and enhance the process through which that agenda developed.

Nigel J. Collar is the senior author of the ICBP's Red Data Book, and is currently working on the second part of the third edition, "Threatened Birds of the Americas," due to appear in 1992. ●