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# Call to Action

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EXTINCTION IS AN INTEGRAL PART of natural selection. In recent years, however, the rate of extinction has increased out of all historical proportion, and the existence of many species across our planet is threatened as never before. Human activities increasingly damage or destroy species habitats or directly affect their survival or reproductive success.

Biodiversity is being lost at an alarming rate. It has been calculated that if current deforestation trends continue, some five to ten percent of the world's species will be lost per decade over the next 30 years. With an estimated 10 million species on earth, this would amount to a loss of 50,000 to 100,000 species per year, a rate of extinction unparalleled since the disappearance of the dinosaurs some 65 million years ago.

The challenge faced by today's conservationists is to ensure the persistence of as many species as possible by devising ways in which they can coexist with human activity, often within a small remnant of their former range. Of the 9600 bird species in the world about 1000 are believed to be at risk of global extinction. Since 1958 there have been four reasonably comprehensive attempts to assess the number of globally threatened species. These estimates suggest a steady increase in the proportion of the world's avifauna coming under threat, from about one percent in 1958,

rising to three percent in 1979, with a more rapid increase to 11 percent between 1979 and 1988. While one explanation for this lies in our increasing knowledge of the status of the world's birds and greater precision in defining and identifying threatened species, there is no doubt that the most important underlying reason for the increase in the number of threatened species is the speeding up of environmental degradation.

No fewer than 327 bird species in the Western Hemisphere were recently classified as globally threatened by a detailed process of consultation and analysis by BirdLife International. Over 300 of these birds occur in Central and South America and the Caribbean. A further 325 species were considered to be "near-threatened." This represents a serious loss to avian diversity in what is one of the biologically richest areas of the world.

A breakdown of threatened bird species by family reveals that the danger of extinction is no longer confined to certain highly specialized or adapted groups of birds. Over half the world's bird families contain at least one threatened species, and in 24 families over 30 percent of the species are threatened. The majority of these highly threatened families are non-passerine, and include the

**BY MICHAEL RANDS AND MARTIN KELSEY  
DRAWINGS BY JONATHAN ALDERFER**  
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Cracidae of South and Central America, the Megapodes of Asia, and Cranes world-wide.

While there are threatened species throughout the world, concentrations are greatest in the tropics. Of the 1029 identified by BirdLife International (formerly International Council for Bird Preservation) in 1988, 884 occurred in the developing nations of South and Central America, the Caribbean, Africa, Asia, and the Pacific. Only 66 were found in North America, Europe, the Middle East, the Soviet Far East, and Australia (79 being shared between the developed and developing worlds). Thus the burden of threatened species conservation lies with developing nations, where resources are scarce for the measures required.

An overview of the habitats utilized by these globally threatened species reveals some interesting trends. First, over 80 percent of threatened species are confined to three major habitat types: tropical forests, wetlands, and grassland/savannah. Of these, tropical forests support over 40 percent of the threatened species. The reasons why species are faced with extinction are varied, but the primary threat is, not surprisingly, habitat destruction. For over 41 percent of all threatened species, forest destruction was identified as the primary threat. The next most important was the introduction

of predators or competitors, which poses particular dangers to island species that have no adaptations to deal with exotic introductions.

Hunting was identified as the major threat for nine percent of the world's threatened birds, while the bird trade was identified as the primary problem for two percent.

Threatened species clearly require urgent conservation action, but they are just one aspect of biodiversity loss that needs to be addressed. It is estimated that between 4000 and 6000 of the world's bird species are undergoing some form of decline in either range or abundance, or both. Such losses pose a serious threat to the richness of our environment and undoubtedly are indicative of a major reduction not only in bird diversity but also in the richness of all life on earth.

Of the 1029 globally threatened birds, only 106—just over 10 percent—fall into the category of long-distance migrants. This signifies that migratory species are, in evolutionary terms, more adaptable than the highly specialized endemic and resident species that make up so many of the world's birds on the edge of extinction. Thus these migrants are better equipped to cope with the rapid changes in ecological conditions that result from human impact on natural habitats. However, birds that travel great dis-



## RED-HEADED WOODPECKER

One hundred and eighty years ago Alexander Wilson wrote that there was "perhaps no bird in North America more universally known" than the Red-headed Woodpecker. Sadly, that is no longer the case. Though still common in parts of the East and Midwest, this unmistakable bird no longer approaches its former abundance: John James Audubon reported, for instance, that up to 100 were shot on a single cherry tree.

Red-headed woodpeckers are among the few North American woodpeckers that migrate. During the breeding season they seek out open, parklike areas—often oak or pine woodlands, where they forage extensively on the ground and hawk insects in midair. Many are killed by cars and trucks as they swoop low over roads after insects.

Snags are used for the excavation of nesting cavities. Unfortunately, many landowners remove dead trees from yards and woodlots. Forests managed for timber seldom grow old enough for the creation of such cavities. And those that remain are a

scarce resource coveted by other animals and birds, notably European Starlings.

The aggressive starlings may directly compete with the woodpeckers for housing. Unlike many other cavity nesters, Red-headed woodpeckers rarely, if ever, use bird houses.

In winter Red-headed Woodpeckers can be found in mature woodlands rich with masting nuts, especially acorns and beechnuts. Their distribution is as variable as the abundance of these food items; during some winters they can be found almost to the northern limit of their breeding range. Richard Conner of the United States Forest Service's Southern

Forest Experiment Station calls these crucial forests a "dwindling resource, constantly declining in availability." Throughout the Southeast such woods continue to be cut for timber and conversion to agriculture. And structural changes—such as a decrease in the number of old snags—can be as detrimental to Red-headed Woodpeckers as outright habitat destruction.

Population declines in the last decade have averaged 5.6 percent a year across their range. "If current trends continue," says Conner, "Red-headed woodpeckers could have significant problems, both regionally and throughout their range."

Writer Peter Friederici profiles 12 birds of special management concern to the United States Fish & Wildlife Service.

## DICKCISSEL

Among the most unpredictable of birds, the Dickcissel confounds birders with its irregular breeding habits—here one year, gone the next. Often its movements are local, perhaps reflecting changes in the abundance of the grassland insects that comprise its main food source during the summer. Sometimes the changes are more drastic, as when it disappeared from the entire eastern seaboard in the late 19th century. In 1928, ornithologists were pleasantly surprised to find it nesting again in Pennsylvania, Maryland, and several other eastern states.

The Dickcissel has remained rare and local in the East, where little suitable habitat remains—this ground-nester seeks open grassland with a high proportion of forbs and few trees. It remains common throughout much of the Midwest and the eastern Great Plains. In a few places—Missouri and eastern Kansas—its numbers are on the rise. Overall, though, the population is declining. “We don’t know why, or how,” says Elmer Fink, a biologist at Emporia State University in Kansas. “It doesn’t seem to be tied to anything we can put our finger on.”

Some ornithologists look south for clues. Dickcissels are seedeaters throughout most of the year, switching to insects only during the summer when their young need a ready supply of protein. In winter they flock to grasslands in northern South America, especially Venezuela. The species’ decline in the late 19th century may have been due to a great increase in grazing on the wintering grounds. Many of those grasslands have since been converted to sorghum fields. In the 1970s Stephen Fretwell of Kansas State University pointed out that the bills of male Dickcissels are large enough to crack sorghum seeds, but those of females are not. The resulting distortion in sex ratios, Fretwell speculated, was causing a low rate of breeding success. Unfortunately, no one has researched this secretive species enough to know whether that’s true. A simpler explanation: Rice is also a popular crop in Venezuela, and many Dickcissels are poisoned by pesticides when they descend on those fields.

On the breeding grounds Dickcissels face threats whose magnitude is also little known: cowbird parasitism, predation, and destruction of nests when fields are mowed. More research will be needed to ensure that this “sparrow-sized meadowlark, singing into the evening”—as Fink terms it—will enliven the prairie for generations to come.

tances and seem to defy countless dangers, hold great fascination for millions of people. Some species concentrate in large numbers at their stopover and wintering quarters and, in some cases on their breeding grounds. Such concentrations give rise to particular conservation problems. Because of their mobility, migratory birds are less easy to monitor, making it difficult to collect precise data about population sizes and trends. Such birds can only be conserved if countries along their flyways are working together.

Birds can serve as valuable indicators of environmental change. We know from extensive long-term monitoring programs and surveys of migratory birds in North America and Europe that widespread declines of many long-distance migrants are taking place. The United States Fish and Wildlife Service, for example, identified 30 of 407 migratory non-game species which were of management concern because of population declines, small populations, or dependence on highly restricted or vulnerable habitats. Out of 42 flyway populations of North American waterfowl, 12 percent have recently shown population declines. For the West Palearctic and Sahelian Africa, 18 percent of waterfowl populations are decreasing, whereas in the East Atlantic Migration flyway 21 percent of wading species are undergoing widespread decreases. During the 1980s, analysis of long-term banding studies in Central Europe revealed the alarming fact that 70 percent of passerine migratory species studied were showing negative population trends. All this evidence suggests that perhaps two-thirds of the world’s species are declining, with 11 percent facing extinction if appropriate conservation action is not taken.

Documenting the status of the world’s birds is an important first step in identifying priorities to be addressed. There is no way, however, in which each of the world’s bird species can be saved by carrying out specific actions on a species-by-species basis. The resources required would be enormous and are simply not available. To try to rationalize the conservation actions needed to save the world’s birds and contribute to biodiversity conservation, BirdLife has embarked upon a number of projects to identify the most important places for which action is required.

One project focuses on identifying areas with concentrations of endemic species,

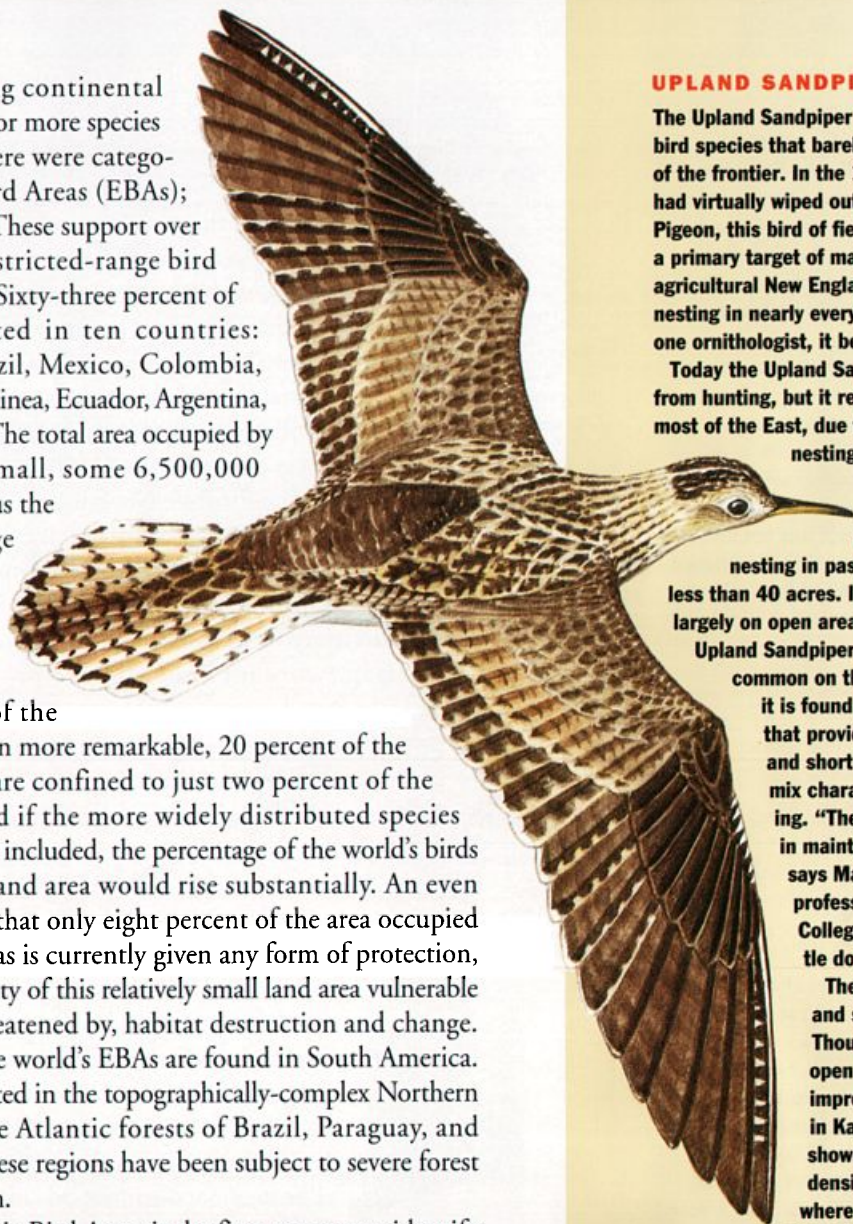
birds with limited distributions which occur no-where else on earth. These unique areas support the most vulnerable components of global biodiversity and, by focusing on these relatively small areas, a high return can be achieved for the conservation effort invested. A three-year program of mapping the distributions of all land birds which have had a breeding range of less than 50,000 square kilometers (approximately the land-surface area of Costa Rica) was undertaken. A total of 2609 bird species had ranges below this threshold, half of which are island species and the



other half inhabiting continental areas. Areas with two or more species entirely restricted there were categorized as Endemic Bird Areas (EBAs); 221 were identified. These support over 95 percent of the restricted-range bird species of the world. Sixty-three percent of the EBAs are located in ten countries: Indonesia, Peru, Brazil, Mexico, Colombia, China, Papua New Guinea, Ecuador, Argentina, and the Philippines. The total area occupied by EBAs is relatively small, some 6,500,000 square kilometers, thus the 2484 restricted-range species (*i.e.* 26 percent of all birds) found in the 221 EBAs are confined to just 4.5 percent of the world's land area. Even more remarkable, 20 percent of the world's bird species are confined to just two percent of the world's land area and if the more widely distributed species occurring in EBAs are included, the percentage of the world's birds found in this small land area would rise substantially. An even more startling fact is that only eight percent of the area occupied by Endemic Bird Areas is currently given any form of protection, leaving the vast majority of this relatively small land area vulnerable to, if not actually threatened by, habitat destruction and change. About a quarter of the world's EBAs are found in South America. Most of these are located in the topographically-complex Northern Andean zone and the Atlantic forests of Brazil, Paraguay, and Argentina. Both of these regions have been subject to severe forest loss and fragmentation.

Analysis of Endemic Bird Areas is the first attempt to identify centers of endemism on a global scale based on a firm foundation of comparable, quantitative data. Regrettably it is not possible to do the same thing for most animals or plants, other than some very small groups, because suitable data does not yet exist. However, there is some evidence of congruent endemism in birds and other life forms. Patterns of endemism in the flora and fauna of the Caribbean, for example, are relatively well documented, and a general trend across all taxa is the occurrence of a large number of single island or island groups of endemic species on the four Greater Antillean islands of Cuba, Jamaica, Hispaniola, and Puerto Rico. Endemism in birds and herpetofauna clearly correlate closely, and similar patterns were shown in the distribution of mammals before major waves of extinction took place. The limited data that exist on insects from the Caribbean also reflects these patterns.

For Central America the correlation in areas of endemism for birds, reptiles and amphibians, and butterflies clearly demonstrates the overlap. Similar analyses conducted for other regions of the world show similar relationships. While it is not possible to quantify the extent to which birds genuinely reflect biodiversity priorities worldwide, it is clear from data available today that the conserva-



## UPLAND SANDPIPER

The Upland Sandpiper is one of many game-bird species that barely survived the opening of the frontier. In the 1880s, after gunners had virtually wiped out the Passenger Pigeon, this bird of field and prairie became a primary target of many market hunters. In agricultural New England, where "pairs were nesting in nearly every field," according to one ornithologist, it became rare.

Today the Upland Sandpiper is protected from hunting, but it remains rare throughout most of the East, due to lack of suitable nesting habitat. The species likes open, unplowed grasslands; it is typically not found nesting in pastures or prairies of less than 40 acres. In the East it relies largely on open areas around airfields.

Upland Sandpipers remain far more common on the Great Plains, where it is found in unplowed areas that provide a mixture of tall and short grasses and forbs—a mix characteristic of light grazing. "The buffalo played a part in maintaining their habitat," says Max Thompson, biology professor at Southwestern College in Kansas, "and cattle do now."

The relationship of cattle and sandpipers is complex. Though light grazing may open up grasslands and improve sandpiper habitat in Kansas, it has been shown to reduce nesting density in North Dakota, where vegetation is sparser. Still, the Great Plains stronghold is in fairly good shape: Breeding Bird Survey figures show an overall population increase there.

Still largely unknown is the sandpiper's nonbreeding ecology. Upland Sandpipers winter on the pampas of Paraguay, Uruguay, and northern Argentina—a habitat similar to the Great Plains. Some of these dry grasslands, though, have been converted to row crops—indeed, there are hints that the sandpiper's wintering range has shifted west, away from the populous Buenos Aires area, since the early part of this century. But census information that would pinpoint vital habitat is lacking.

In both North and South America the eerie, whistling calls of the Upland Sandpiper seem an embodiment of the wild loneliness of the unbroken grasslands.

"When they arrive on the prairie in early spring you hear their cry way above you," says Max Thompson. "It's very melodic, almost like singing underwater. It's beautiful. It's the call of the prairie."

## BRISTLE-THIGHED CURLEW

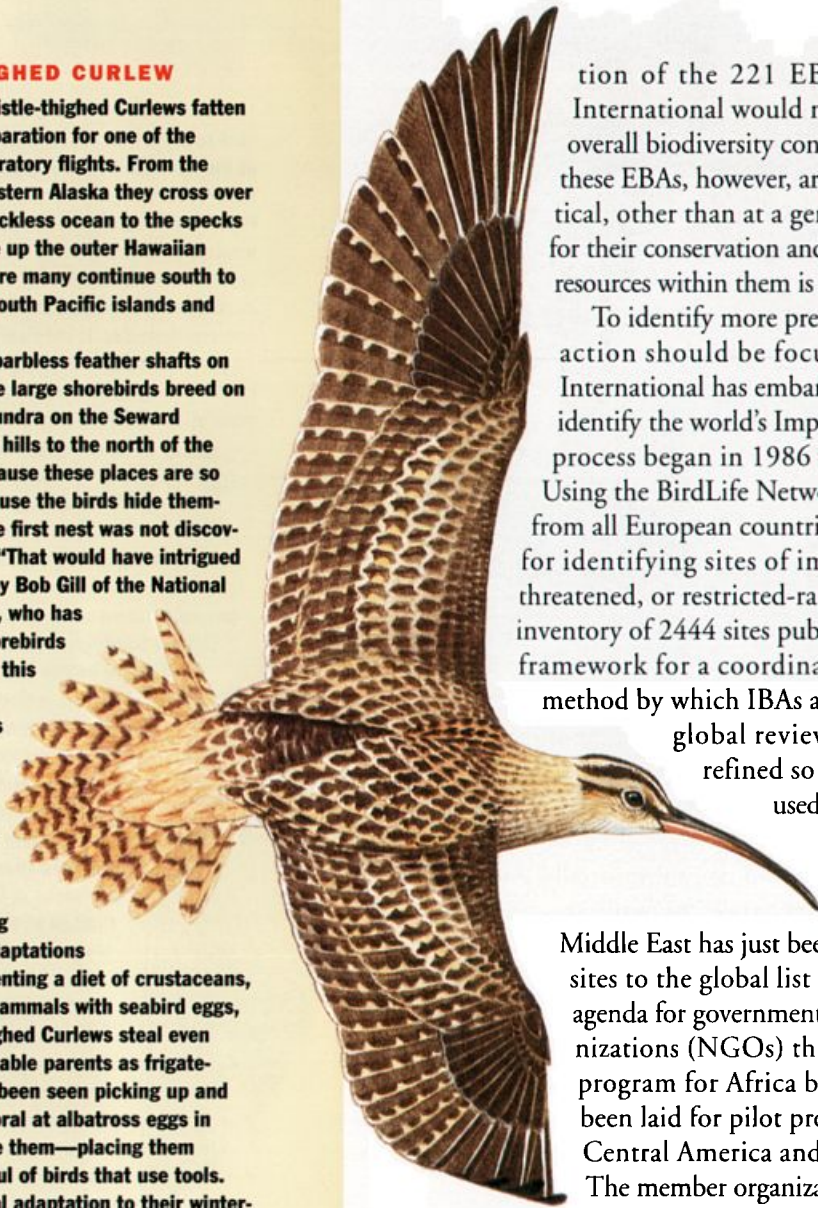
Every autumn, Bristle-thighed Curlews fatten on berries in preparation for one of the world's great migratory flights. From the Yukon flats of western Alaska they cross over 2500 miles of trackless ocean to the specks of land that make up the outer Hawaiian Islands. From there many continue south to winter on small South Pacific islands and atolls.

Named for the barbless feather shafts on their flanks, these large shorebirds breed on sloping, brushy tundra on the Seward Peninsula and on hills to the north of the Yukon Delta. Because these places are so remote, and because the birds hide themselves so well, the first nest was not discovered until 1948. "That would have intrigued any scientist," say Bob Gill of the National Biological Survey, who has studied these shorebirds extensively. "But this bird is unique in other ways. It has had a lot of evolutionary pressures placed on it, and has come up with odd adaptations."

On the wintering grounds those adaptations include supplementing a diet of crustaceans, fish, and small mammals with seabird eggs, which Bristle-thighed Curlews steal even from such formidable parents as frigatebirds. They have been seen picking up and flinging bits of coral at albatross eggs in order to puncture them—placing them among the handful of birds that use tools.

Another unusual adaptation to their wintering habitat has become a grave handicap. These curlews are the only shorebirds known to undergo a flightless molt. On predator-free islands that was no problem—indeed, recoveries of banded birds have shown that they can reach an age of at least 22 years, the longest known for any North American shorebird. But dogs, cats, rats, and pigs imported to those islands now prey easily on any flightless birds. And on some islands human residents still trap the birds for the dinner table.

Those human-induced pressures have kept the estimated worldwide population of Bristle-thighed Curlews below 10,000. Increased raven numbers in Alaska—an echo of increased human population—have perhaps increased predation on the breeding grounds. But Bob Gill emphasizes that the real problems for this species lie in the South Pacific, where more research is needed on habitat use and population demographics. "What it looks like so far," he says, "is that where you have people you don't have curlews."



tion of the 221 EBAs identified by BirdLife International would make a major contribution to overall biodiversity conservation worldwide. Many of these EBAs, however, are large in size and it is impractical, other than at a general policy level, to advocate for their conservation and ensure that any use of natural resources within them is sustainable.

To identify more precisely where bird conservation action should be focused in the world, BirdLife International has embarked upon a major program to identify the world's Important Bird Areas (IBAs). This process began in 1986 with an initiative in Europe. Using the BirdLife Network of Member Organisations from all European countries, it applied the same criteria for identifying sites of importance for congregating, threatened, or restricted-range species. The result was an inventory of 2444 sites published in 1989 that provides a framework for a coordinated program of action. The method by which IBAs are identified has undergone a global review and the criteria have been refined so that a global standard can be used throughout the world to identify sites of comparable importance. The Important Bird Areas Inventory for the

Middle East has just been completed, adding over 390 sites to the global list and providing a conservation agenda for governments and non-governmental organizations (NGOs) throughout the region. An IBA program for Africa began in 1993 and plans have been laid for pilot programs in Asia and South and Central America and the Caribbean during 1994. The member organizations of BirdLife International in the United States, under the coordination of the

prospective BirdLife partner, are planning an Important Bird Areas Program for the United States. This program will build upon the information that exists on within the United States National Wildlife Refuge System, the Western Hemisphere Shorebird Reserve Network, and Hawk Mountain's Hawks Aloft World Wide Raptor Atlas Project, as well as work undertaken under the banner of the Partners in Flight.

Identifying and conserving IBAs is particularly effective for the conservation of restricted-range species and many migratory birds, as well as for patchy habitats, such as wetlands. Some more wide-ranging birds require different actions, however, often involving agricultural or forestry land-use practices. To identify measures required for the conservation of such dispersed species and to identify the underlying causes of the widespread decline of over half of the bird species cited above, BirdLife International has embarked upon a program to assess the status of all the world's birds. Maps showing the distribution and population trends of over 200 species of European conservation concern are now nearing completion. These data, collected through a network of ornithologists and conservationists, can be used to help identify the habitats upon which

such dispersed species depend. Through a series of consultative workshops carried out on a habitat-by-habitat basis, BirdLife has been able to establish the underlying causes of declines acting within such habitats as temperate and boreal forests, intensive agricultural lands, pastoral woodlands, wet grasslands, dry grasslands, and extensive cereal lands. These workshops produce habitat action plans for conservation actions to be undertaken at local, national and regional levels, based upon the bird data collected across the region and analyzed against a set of global criteria.

**T**he process of priority setting forms the basis to develop a coherent program for the conservation of the world's birds, thereby making a substantive contribution to the maintenance of biodiversity. Data are collected and collated at local and national levels, synthesized and analyzed at national and regional levels using a set of globally coherent and comparable criteria, making the process both national and global in its effectiveness. Partners collect, maintain, and analyze the data nationally, forming a basis in many cases for a conservation program for a national partner. It provides opportunities for an organization to promote a coherent conservation message to its government and its members, and also provides a clear process for the implementation of its own conservation program. Thus a network of national conservation organizations are linked by a common agenda within regions and are able to cooperate together to influence regional and global mechanisms to promote a shared objective.

The existence of a scientifically based program of priority actions, be it for species, sites, or habitats, provides a very clear agenda. Conservation action by any group of organizations or individuals can take two forms, either promoting priorities to others or by carrying out the necessary conservation action themselves. Persuading others to carry out the action can be enormously cost effective compared to the extremely expensive, though more controlled, option of doing everything oneself. Such policy work can be aimed at national legislators in government and multilateral institutions, especially those lending or giving financial support for development, and by addressing nations' obligations through ratification of global or regional treaties, whether broad in nature or more narrowly focused on wildlife. The process of advocating Endemic Bird Areas as places where development should not be financially supported without the appropriate environmental impact assessment has begun. There is a real chance that these areas will receive greater protection as a result of their identification. On a regional scale, the 2444 IBAs in Europe have been used by the European Commission, under the European Economic Council Directive on the Conservation of Wild Birds,

## WOOD THRUSH

"My greatest favourite of the feathered tribes of our woods," John James Audubon pronounced the Wood Thrush, whose mellifluous song he heard throughout the forests of the East. "The thickest and darkest woods always appear to please it best."

Audubon was right about the Wood Thrush's predilection for deep deciduous forests. Male thrushes seem to prefer trees at least 40 feet high for singing perches. An understory of shrubs or small trees helps hide the nest. And mature forests produce great quantities of moist leaf litter among which the birds forage for earthworms, spiders, and other invertebrates.

Unfortunately, Audubon's thick and dark woods have been disappearing. Even where large trees remain, many woodlands are no longer hospitable to Wood Thrushes. The increasing fragmentation of eastern forests has brought many interior areas within reach of Brown-headed Cowbirds, which feed on abundant waste grain in surrounding agricultural areas. And Wood Thrushes are extraordinarily susceptible to nest parasitism in the Midwest, where cowbirds are abundant. In one study of large southern Illinois woodlands, over 90 percent of the thrush nests located contained cowbird eggs. The "edge effect" in such areas has perhaps also increased nest predation by Blue Jays, crows, raccoons, and cats.

In the East, the thrushes are less imperiled. Studies in Delaware have found Wood Thrushes nesting in woodlots as small as half an acre, as well as in wooded residential areas—though nest success in such fragments is lower than in larger forests.

Wood Thrushes winter on the Caribbean slope of eastern Mexico and Central America, where the clearing of primary forest has been proceeding at a rapid rate. Here, too, they prefer mature forest habitat—birds found in less heavily wooded or secondary forest appear to be transients with a lower survival rate. It is the combination of habitat fragmentation on both ends of its migratory route that may spell the greatest trouble for the thrush—a potential loss that is psychological as well as biological. As Audubon wrote: "Seldom, indeed, have I heard the song of this Thrush, without feeling all that tranquillity of mind, to which the secluded situation in which it delights is so favourable."



## AMERICAN BITTERN

Thoreau's "genius of the bog," as a resident of seemingly desolate marshes, was long considered a bird of evil, a disregard echoing the sentiment that led to the great destruction of wetlands in North America within the last century. These secretive herons rely on shallow, heavily vegetated fresh-

water marshes. They conduct their lives by stealth. They hunt mainly by waiting stock-still until fish, amphibians, crayfish, or insects move nearby, then lunging with remarkable speed. They may escape the notice of predators by freezing in place, long bill raised upright among the marsh grasses, until danger passes. Only their vocalizations are bold; the quality of their odd, low-pitched crepuscular calls is well represented by such onomatopoeic common names as "dunk-a-doo" and "thunder-pumper."

Bitterns breed from the central United States north through Canada's boreal forest. Some southern birds, especially in coastal areas, are nonmigratory, but the bulk of the population winters in the southern states, through Mexico, and at scattered locations as far south as Panama.

Thanks to its secrecy, little is known about the bittern's natural history and conservation. Though sometimes found in wetlands of less than an acre in extent, it is more abundant in larger marshes. It is unclear how pollution, acid rain, and the stabilization of water regimes affect habitat quality and food supply. The impact of exotic plants that crowd out native species, such as the highly invasive purple loosestrife, has also been little studied.

But ornithologists agree that bitterns have suffered mainly from the outright destruction of their habitat. The lower 48 states have lost over half of their original acreage of wetlands, with a predictable decline in populations of many wetland species. Though no comparable loss appears to have taken place in Canada, Breeding Bird Survey data from the United States show an average annual decline of 2.6 percent in bittern populations from 1966 through 1991.

"When we decrease the quantity of their habitat the quality of the remainder had better be real high," says Fritz Reid, a Ducks Unlimited biologist who has extensively studied the species. "And those wetlands that remain are under constant threat of degradation through pollution or sedimentation."

as a basis for site protection measures in all member states of the European Union. The information has also been used by the World Bank in Europe to identify areas of special ecological sensitivity, and is widely used by European governments as a basis for refining their networks of protected areas.



The Convention on Biological Diversity, launched at the 1992 Earth Summit in Rio de Janeiro, marks an historical commitment by the world's nations to conserve biodiversity, and to ensure that resources are used sustainably and that the benefits are shared equitably. Other conventions have covered portions of biodiversity, but the Biodiversity Convention is the first international agreement to cover all genes, species, and ecosystems. Over 160 countries have now signed the convention and there appears to be a worldwide commitment to adhere to it. The convention makes provision for nations to create inventories of national biodiversity and to draw up conservation strategies and action plans to ensure that use of this biodiversity is carried out in sustainable ways. While this convention is still in its infancy, if used appropriately it could provide a major mechanism for conserving the world's priority bird species and their habitats.

Worldwide there are many international legal instruments dealing with the protection of nature in general and migratory birds in specifics. A short overview of those that exist for the West Palearctic Flyway reveal no less than eight conventions or treaties of relevance. The oldest is the Africa Convention on the Conservation of Nature and Natural Resources, which was prepared in 1968 under the auspices of the Organization of African Unity and aims for both individual and joint action for the conservation, utilization, and development of soil, water, flora, and faunal resources by establishing and maintaining their rational use for the present and future welfare of mankind. This convention has appendices of lists of protected species, but has largely been ineffectual and unenforced as a tool for conservation in Africa.

In contrast, the Convention on Wetlands of International Importance, especially as Waterfowl Habitat (the Ramsar Convention), has been much more effective. Prepared by UNESCO (United Nations Educational, Scientific and Cultural Organization), this worldwide convention aims to conserve wetlands and their flora and fauna by national policies and coordinated international action. Interactions with the Convention Secretariat, the International Wetland and Waterfowl Research Bureau—which provides a great deal of scientific backing to the convention—and many governments that have signed this convention have enabled BirdLife to significantly improve the status of a number of bird species and sites important for birds through this convention.

A third relevant convention within the West Palearctic concerns

the protection of the world cultural and national heritage, known as the World Heritage Convention. To date this has proved of little value for bird conservation but may be of greater value in the future. The Bonn Convention was initiated by the United Nations Conference on the Human Environment in 1972 and has global scope, although most of the action to date has focused on Europe and Africa. This convention is designed to address the conservation and effective management of migratory species of wild animals. It has specific species lists and makes provision for international cooperation and the preparation and implementation of agreements. While the convention requires strengthening, it has the potential to be of substantial benefit to migratory birds around the world and for certain species has already proved a valuable mechanism. In addition, two conventions, the European Community Birds Directive and the Convention on the Conservation of European Wildlife and Natural Habitats (the Berne Convention), have been strengthened by the work of BirdLife International on both Important Bird Areas and, to a lesser extent, dispersed species.

There is little doubt that all these conventions can be used to a greater extent as mechanisms for the promotion of the objectives and work of bird conservation organizations. The combined strengths of international cooperation and grass roots national representation mean that it is a partnership that can effectively utilize the mechanisms available through these conventions, and this will be a priority for further work. Within the Americas one particularly important convention is currently undergoing revitalization. The Convention on Nature Protection and Wildlife Preservation in the Western Hemisphere (the Western Hemisphere Convention) makes provision for considerable conservation action. The BirdLife Network in the United States has played a key role in promoting this convention, especially the RESERVA program which focuses on graduate-level training in biodiversity management, manager training in protected areas, undergraduate level environmental education, information management and training workshops, and seminars on impact assessment, enforcement and resource management. Such initiatives are a vital foundation for developing a strong relationship among American nations, especially for the conservation of migratory birds. These issues are closely related to the impending implementation of North American Free Trade Agreement, which has major implications for bird conservation, especially in Mexico. At a national level BirdLife, through its network of partner organizations, sections, and representatives is able to influence government decision making and financial expenditure to address the priorities identified for species, sites, and habitats. In each nation the strategy

## GOLDEN-WINGED WARBLER

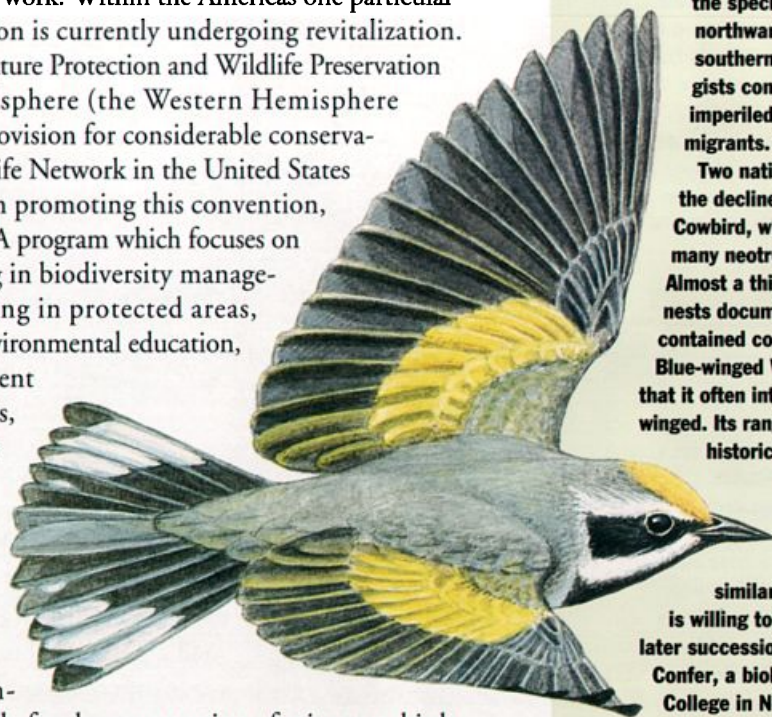
Deforestation in South and Central America is often implicated in the decline of neotropical migrants, but it has probably had little to do with the problems faced by Golden-winged Warblers. These strikingly colored insectivores have been sighted in a variety of habitats on their winter range, from Guatemala south to northern Colombia and Venezuela. They do not appear to rely as heavily on threatened primary forest as many other species do.

Besides, Golden-winged Warbler populations were on the decline well before deforestation began in earnest in Central America. Few species better illustrate how bird populations fluctuate with human activity. A native of the deciduous forest zone of the Northeast and upper Midwest, the Golden-winged has always sought out the shrubby thickets and forested edges that result after mature forest is opened by fires or human clearing. It thrived as the settlement of the western frontier in the 19th century led to the abandonment of much marginal farmland throughout the Northeast.

Urban development and the regrowth of dense forest have since drastically reduced the quantity of suitable habitat. Golden-wing populations have declined in much of the Northeast and Appalachia. Meanwhile, the species' range continues to expand northward into northern New York and southern Canada. But many ornithologists consider it one of the most imperiled of widespread neotropical migrants.

Two native species are implicated in the decline. One is the Brown-headed Cowbird, which parasitizes the nests of many neotropical migrant songbirds. Almost a third of Golden-winged Warbler nests documented by nest records have contained cowbird eggs. The other is the Blue-winged Warbler, such a close relative that it often interbreeds with the Golden-winged. Its range continues to expand into historical Golden-winged range.

Interactions between these two species are complex, but some evidence suggests the two compete for similar territories. The Blue-winged is willing to occupy habitats in a slightly later successional state than its cousin. John Confer, a biology professor at Ithaca College in New York, suggests that its success may simply reflect a lack of the shrubbier habitat the Golden-winged prefers. "Very few areas provide good habitat for Golden-winged Warblers," he says. "In the future, it may be only in areas that are consciously managed for shrub habitat."





## HENSLOW'S SPARROW

Henslow's Sparrow is a skulker, unnoticed by those who move less than carefully through its habitat of weedy fields and wet sedge meadows. It is as apt to run, mouselike, as fly; indeed, one 19th-century observer labeled its short, furtive flights "respectable jumps over the grass."

This sparrow is particular about where it will nest. Charles Smith of Cornell University's Department of Natural Resources has studied the species' habitat preferences in New York State. He has found the birds nesting in thick vegetation typically one- to two-feet high, and only in pastures no smaller than 74 acres. Meadows and fields that large are disappearing throughout the East. "Our farmlands are reverting in two directions, neither of which is good for the Henslow's Sparrow," Smith says, "either to urban or suburban development, or growing back to forest."

Historical accounts tell of Henslow's Sparrows nesting in much smaller habitat patches—which may indicate that the birds were once more abundant, and therefore more inclined to use marginal habitat. The species appears to be rare and declining throughout most of its range, though just how rare is hard to say, given its secretive nature. Breeding Bird Surveys show some striking declines—over 12 percent annually in the Upper Midwest—but they are based on relatively few sightings. One detailed study, in Illinois, estimated a 94 percent decline in northern and central regions of the state between 1958 and 1983. The factors largely responsible—urban development and the conversion of pastures and hayfields to row crops—are at play throughout the sparrow's breeding range.

Even less is known about the species' wintering habits. It seems to be most regular in areas a little north of the Gulf Coast, from east-central Texas to northern Florida. Historic accounts describe the species' occurrence in the wiregrass understory of open pine woods—most of which have been turned into plantations managed for timber production. Such areas have a homogenous species composition and structure, and an altered forest fire regime; how Henslow's Sparrows have reacted to such changes is, like so much else about this secretive species, unknown.



adopted is different, although there are many parallels and a process of sharing and exchanging ideas on approaches made to influence governments has been initiated.

However well the priorities are promoted to governments and other agencies, it is most unlikely that all the problems facing the world of birds will be adequately addressed. A crucial role that non-governmental organizations may play is that of protecting and managing critical species, sites, and habitats themselves. National conservation organizations are the building blocks for effective global conservation action, thus the importance of developing strong membership-based organizations that provide local expertise, resources, and influence upon decision makers. It is through the growth of such grassroots support that the impetus for fundamental changes in attitudes towards conservation and the environment emerges. Through the collaboration and partnership of a network of such organizations, a powerful international movement is growing.

Tropical forests, clearly, are the most biologically rich of the world's habitats, supporting at least half the planet's species. At current rates of deforestation it is estimated that an additional 1.3 million square kilometers of rainforest will be lost by the end of the century. Many of the 221 Endemic Bird Areas are forests. An example of action that can be taken to conserve such places is found in the Kilum Mountain Forest Project, in the northern highlands of Cameroon, where local communities are developing long-term natural resource management initiatives with the assistance of international conservationists. Two globally threatened species, Bannerman's Tauraco and the Banded Wattle-eye, are found only in this relatively small area, which is a high priority for

biodiversity preservation. For over 100,000 people the forests of Mount Kilum are a life-support system, and their future, together with that of a wide range of threatened and endemic species, is dependent upon the long-term survival of the forest. Forest protection

schemes have been implemented to maintain the forest boundaries, counter the threat of fire, and prevent over-grazing and habitat degradation by goats, sheep and cattle. The forest is used by the people of Kilum for bee keeping, wood carving, traditional medicines, and the manufacture of hand-made papers. A number of tree nurseries has been established, which is essential to the management of forest resources. The project has put considerable effort into soil conservation and improving agricultural output by introducing innovative farming practices.

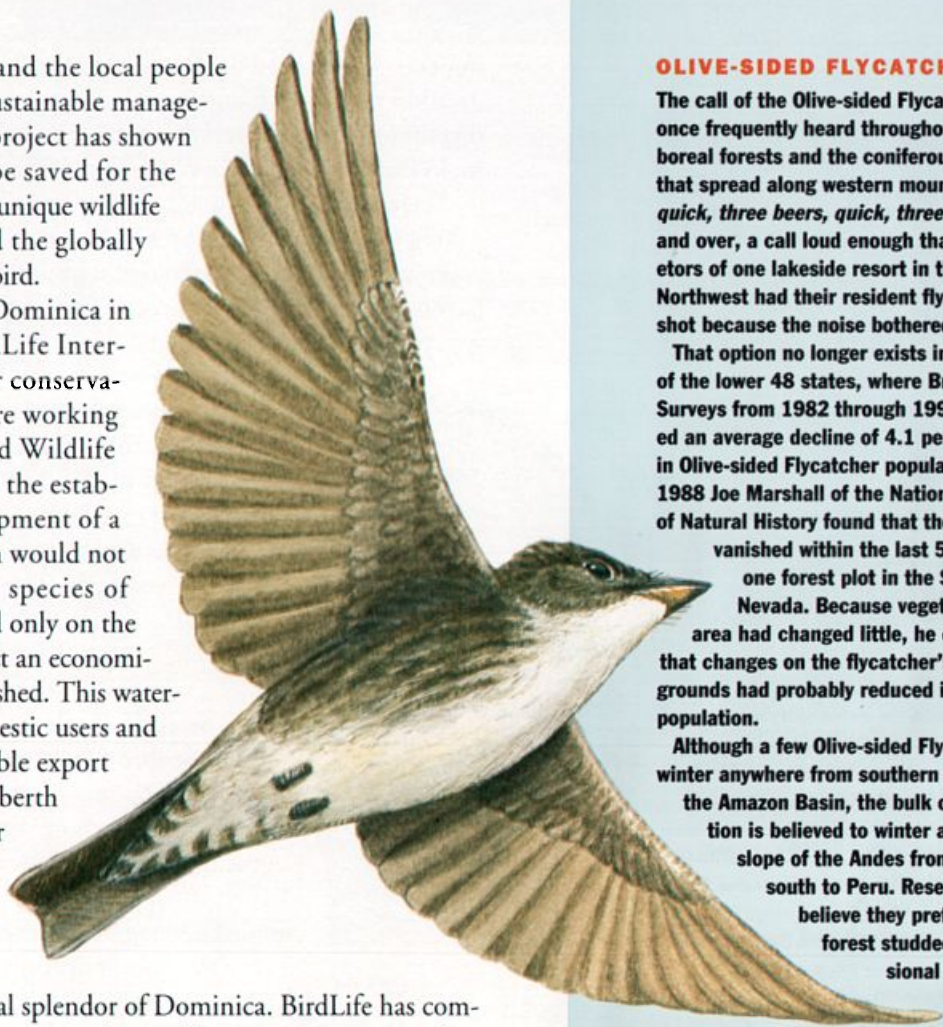
These enhance productivity, minimize soil erosion and impoverishment, and decrease the need for agricultural encroachment on the forest. By demonstrating the economic and cultural interdepen-

dence of the forests and the local people and by developing sustainable management practices, the project has shown that the forest can be saved for the people, the wealth of unique wildlife that exists there, and the globally threatened species of bird.

On the island of Dominica in the Caribbean, BirdLife International and partner conservation organizations are working with the Forestry and Wildlife Division to promote the establishment and development of a National Park, which would not only safeguard two species of Amazon parrot found only on the island, but also protect an economically important watershed. This watershed serves both domestic users and an increasingly valuable export market. Cruise ships berth to replenish their water supplies, while disembarking tourists provide opportunities for the islanders

to promote the natural splendor of Dominica. BirdLife has commissioned research to examine how well-managed nature tourism can provide for the financial upkeep of the National Park system and provide revenue for local service industries. In Colombia, the conservation organisation Herencia Verde is developing a program of integrated conservation and community work. By working with local municipalities, Herencia Verde is combining environmental awareness, sustainable land-use methods, habitat restoration, and forest management in an area of the Colombian Central Andes of critical importance for threatened and endemic birds. The area also supports the stunning Wax Palm, the national tree of Colombia and a source of great cultural pride among the local people.

Wetlands are of fundamental importance to many birds, often providing key staging areas for huge concentrations of migrants. After crossing the vast, hostile Sahara desert, the wetlands of sub-Saharan Africa are literally lifesaving for many exhausted migratory birds. But they are also essential for hundreds of thousands of people. The Hadejia-Nguru wetlands in northern Nigeria are a good example. For centuries man and birds coexisted, sharing the rich land and both equally dependent on the annual floods which fertilized the soil, replenished the ground water stocks, and supported vital fisheries. Major development schemes now threaten this area. A consortium of conservationists, including BirdLife International, its United Kingdom partner the Royal Society for the Protection of Birds, the Nigerian Conservation Foundation, the World Conservation Union and the Nigerian state and federal governments, is working to keep these wetlands flooded. Data on the



#### OLIVE-SIDED FLYCATCHER

The call of the Olive-sided Flycatcher was once frequently heard throughout northern boreal forests and the coniferous forests that spread along western mountain spines: *quick, three beers, quick, three beers—over and over*, a call loud enough that the proprietors of one lakeside resort in the Pacific Northwest had their resident flycatchers shot because the noise bothered guests.

That option no longer exists in many parts of the lower 48 states, where Breeding Bird Surveys from 1982 through 1991 documented an average decline of 4.1 percent a year in Olive-sided Flycatcher populations. In 1988 Joe Marshall of the National Museum of Natural History found that the species had vanished within the last 50 years from one forest plot in the Sierra Nevada. Because vegetation in the area had changed little, he concluded that changes on the flycatcher's wintering grounds had probably reduced its breeding population.

Although a few Olive-sided Flycatchers may winter anywhere from southern Mexico to the Amazon Basin, the bulk of the population is believed to winter along the east slope of the Andes from Colombia south to Peru. Researchers believe they prefer primary forest studded with occasional large, dead trees that furnish

perches, from which the birds hawk flying insects. Conversion to agriculture is a serious threat to most of the primary forest left along the relatively temperate east slope.

The logging of old-growth forests in the United States and Canada has probably also impacted the species.

"We're driven to say that habitat destruction is primarily responsible, but it seems to me that it's not all that clear what's happening to them," says Tom Pogson, director of the Alaska Bird Observatory. "I think there can be far more insidious factors involved, such as changes in the way insect populations cycle in the long term, or changes in forest structure due to logging. Species like the Olive-sided Flycatcher indicate a lot more about the state of the world than we can come to grips with right now."

## YELLOW-BILLED CUCKOO

Sounding "almost exactly like the first four or five utterances of a stuttering person who is trying hard to twist his tongue into shape to say some simple word" (as one turn-of-the-century birder put it), the Yellow-billed Cuckoo's loud and distinctive call is heard in moist woodlands. In the arid West this sinuously graceful bird has become rare as scarce riparian habitat has been developed, dried up, or submerged under reservoirs. Populations are also declining in many parts of the East—by as much as 4.9 percent yearly from 1982 to 1991, according to Breeding Bird Survey data.

The Yellow-billed Cuckoo does not migrate north until the heat and humidity of its

breeding areas

approximate that of the tropics. It is highly irregular in the dates of its nesting and in the number of eggs it lays. And it has a poorly understood social structure—Stephen Laymon of California's Kern River Research Center has found cuckoos nesting communally during periods of food abundance, with two females and sometimes even two males tending a single nest. They prey on large food items—tent caterpillars in the East, moth larvae, katydids, and tree frogs in the West.

In winter Yellow-billed Cuckoos can be found in forests of South America. Our knowledge of their wintering habitat is slight, but Laymon believes the birds that breed in western North America migrate to forests north of the Amazon basin, while birds from the East travel to forests of southern Brazil, Paraguay, and northern Argentina. One mysterious, alarming finding: The eggshells of cuckoos nesting in California are significantly thinner than they were 40 years ago, which suggests they may be picking up doses of DDT somewhere.

"It doesn't appear to affect reproductive success," says Laymon, "but if they are carrying persistent pesticides in their fat it could have an adverse effect, say, during the stress of migration."

But habitat fragmentation in both North and South America may be the main threat to these forest dwellers—in California they don't breed in woodlands of less than 25 acres. "They need to be watched nationwide," says Laymon. "They're a good indicator of habitat fragmentation. They rely on large food items that are also susceptible to habitat changes. They're a connection with the tropics."

impacts of proposed dam schemes have been used to influence decision makers and improved land uses are being investigated, together with an education program explaining the aims of the project and how the needs of wildlife and people can be integrated.

There is also an important new initiative from Wetlands for the Americas, an assessment of the wetlands of South America which combines an appraisal of biological importance, socio-economic factors, threats, and future conservation possibilities for each major watershed. This exercise will be tremendously important for the development of wetland management policies throughout the region and dovetails closely with the BirdLife IBA program.

As shown elsewhere in this article, steppes and other grasslands are increasingly important as a habitat for globally threatened species. The arid grasslands from

Turkey through the Middle East to India have, for example, suffered a significant

decline. South American grasslands are also under threat from cattle ranching and crop growing. The Spanish steppes have been created over thousands of years by man's activities. Agricultural changes now threaten this delicately balanced semi-natural habitat. European Union funded developments are promoting agricultural intensification, irrigation and land-use change that threatens the wildlife there. More than half the world's population of Great Bustards depend upon these steppe habitats, together with two other globally threatened species, the Little Bustard and the

Lesser Kestrel. The Spanish Ornithological Society, the BirdLife partner in Spain, is leading the campaign for the protection and sustainable farming of these steppes with political and financial support from BirdLife partners in France, Germany, the Netherlands, Switzerland, and the United Kingdom. Together, this alliance of bird conservation organizations represents a powerful voice for the conservation of this vital area for wildlife, and demonstrates how Important Bird Areas for globally threatened species can be conserved by the united actions of national conservation organizations.

A network of similar projects exists around the world, many of which are demonstrations of practical action to conserve the world's network of Important Bird Areas. Such action provides the practical conservation work that builds upon the network of national conservation organizations that is BirdLife International. Such a united force is committed to actions that will strengthen the network still further, and in so doing play an ever-increasing and more successful role in conserving the world's birds and biodiversity. ♣

*Michael Rands is Deputy Director-General and Director of Planning and Policy of BirdLife International. Martin Kelsey is head of the Americas Division for the organization.*

