

**PRESSURE** People cause the immediate pressures on biodiversity. Habitat destruction, driven especially by agriculture and unsustainable forestry, is the worst threat at present, but climate change will have major impacts in the future. Threats are intensifying and often interlinked. They are rooted in difficult human problems—including a consistent undervaluation of biodiversity.

## Habitat destruction is the largest of the many threats to biodiversity

*Humans cause the majority of threats to species, sites and habitats. These threats are often interconnected and reinforce each other. Habitat destruction and conversion for agricultural and forestry activities—and the associated degradation and fragmentation—are the biggest problems.*

P. 30: Forest fire © BIRDLIFE  
 Logger, Thailand © MARK EDWARDS/BIRDLIFE  
 P. 31: Cut tree stump © CARLTON WARD JR  
 Strange-tailed Tyrant © ALEJANDRO DI GIACOMO



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### Most threats are caused by human activities

We cause nearly all of the many immediate threats that directly impact bird species and the sites and habitats in which they live. For example, some 95% of European Important Bird Areas (IBAs) are used for human activities, which often involve the entire site, and over 40% are subject to one or more high-impact threats. Threats are often interconnected and reinforce

one another. For example, over 90% of Globally Threatened Birds (GTBs) that are currently threatened by over-exploitation are also affected by the destruction of their habitats.

### Habitat destruction is the most serious threat

Habitat destruction and degradation threaten over 86% of GTBs and are currently the most serious pressures on the world's birds. Over-exploitation

(see pp. 42–43) and the effects of alien invasive species (pp. 44–45) are also major threats and others—notably pollution (pp. 40–41) and climate change (pp. 46–49)—are of increasing concern. Some of these threats can be reversed, given enough resources, but others are difficult to combat and can become the final cause of extinction for species that are already reduced to tiny numbers (see **box 1**).

### 1 Habitat destruction, over-exploitation and the effects of alien invasive species are the most prevalent threats to birds

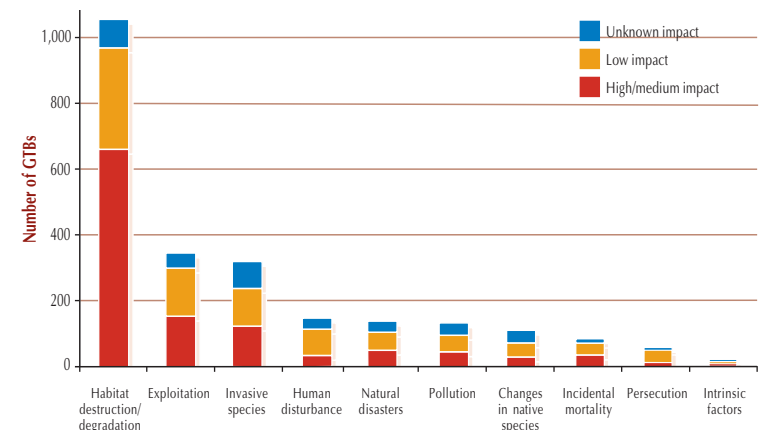


Habitat destruction and degradation currently impact 1,045 Globally Threatened Birds (GTBs), 86% of the total. Over-exploitation (mainly hunting for food and trapping for the cage-bird trade) and the effects of alien invasive species (especially predators) each directly threaten over 300 GTBs (nearly 30%). These are currently the most serious threats to bird species (see figure), with 40% of GTBs threatened by two out of three of these threats. There are other factors, however, that are increasing as problems, such as human disturbance (e.g. to congregatory birds), incidental mortality (notably the drowning of seabirds in commercial longline fisheries) and environmental pollution (on land, in wetlands and seas, and in the air)<sup>1,2</sup>. All these threats are taken into account in the IUCN Red List evaluation of species and contribute to their classification as globally threatened (Critically Endangered, Endangered or Vulnerable, see pp. 14–15). High-impact threats affect the majority of the population and cause rapid declines, while low-impact ones affect the minority and cause slower, albeit still significant, declines.

Some of these threats can be reversed given enough resources. When species populations become very small, however, there is an increased risk of extinction from threats such as natural disasters (e.g. volcanoes, cyclones and drought) or changes in native species dynamics (e.g. increases in competition) that are difficult to combat. There are also factors that are intrinsic to highly reduced populations (e.g. inbreeding, limited dispersal, skewed sex-ratios) that can significantly increase extinction risk. Currently, nearly 60 species classified as Critically Endangered (>30%) are considered threatened by at least one of these factors. Without intensive management, threats such as these may become the final cause of a species's extinction.

**SOURCES** 1. BirdLife International (2004) *Threatened birds of the world 2004*. CD-ROM. Cambridge, UK: BirdLife International.  
 2. Analysis of data held in BirdLife's World Bird Database.

The main threats to GTBs world-wide<sup>1,2</sup>



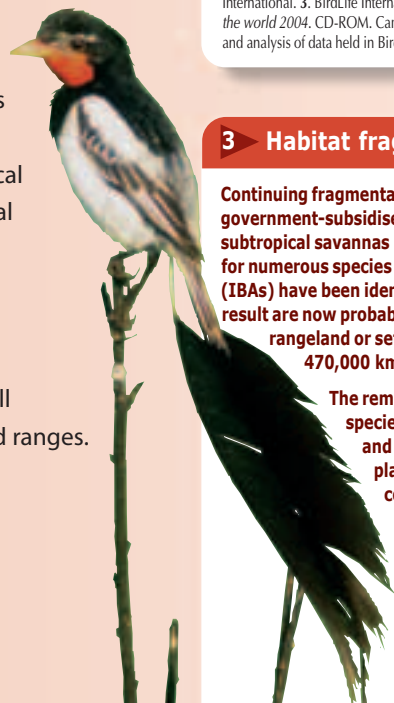
## Habitat is destroyed mainly for agriculture and forestry

The expansion of agricultural activity has led to the destruction of huge areas of natural habitats, including forests, grasslands and wetlands, in nearly all regions of the world (see pp. 32–33). For tropical forests, the richest habitat for biodiversity, logging is typically the first major pressure, often providing access to remote areas and leading to further clearance and degradation (pp. 36–37). The expansion and development of urban areas and infrastructure also reduces natural habitats, and new roads give access to additional areas, which results in further losses (pp. 38–39). The relative importance of these factors varies in different parts of the world (box 2), but all play a significant part in the destruction of habitats and therefore in driving ecosystem change.

## Habitat degradation and fragmentation compound the problem

For many species the habitat degradation that accompanies 'selective' resource exploitation, or

that occurs in habitats next to cleared areas, can have serious consequences. Many tropical forest birds, for instance, rely on pristine or near-pristine primary forest, and show low tolerance to selective logging (see p. 20, box 1, figure c). Even for non-threatened bird species that have adapted to rural, semi-natural habitats, the intensification of agricultural practices is causing significant population declines in temperate and tropical regions alike (pp. 8–9). The problem is made worse by the fragmentation of natural habitats across much of the world, most notably in tropical and sub-tropical forests, but also in open-country habitats (box 3). Such fragmentation results in smaller, more isolated sub-populations, with reduced possibilities for dispersal and increased risks of local and ultimately global extinction. In total, 252 bird species are considered globally threatened by a combination of small severely fragmented ranges.



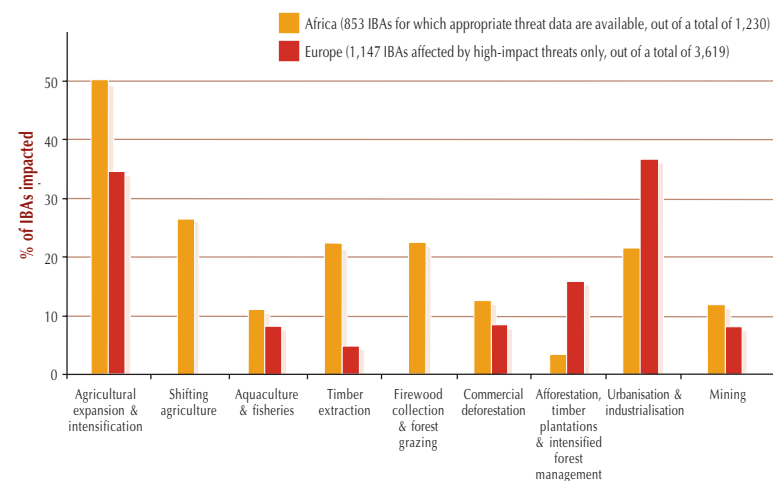
## 2 Agriculture and forestry are key drivers of habitat destruction in Important Bird Areas in Africa and Europe

In Africa, habitat clearance for agriculture threatens over 50% of Important Bird Areas (IBAs), with shifting agriculture an additional pressure<sup>1</sup>. In Europe too, agricultural expansion and intensification are among the most serious threats affecting IBAs, with a high impact at 35%<sup>2</sup>. In Africa, selective logging or tree-cutting affects 23% of IBAs, with firewood collection (including charcoal production) and forest grazing being additional, often related pressures (these threats are of less importance in Europe where little old-growth forest remains). In Africa, ongoing or planned infrastructure development (including dam and road building) is a further key cause of habitat destruction, with 21% of IBAs affected. In Europe this is also a major factor affecting IBAs, with a high impact at 37%<sup>3</sup> (see figure).

The key causes of habitat destruction threatening Globally Threatened Birds (GTBs) present a similar picture. Of the 1,045 GTBs affected by habitat destruction, large-scale agricultural activities (including crop farming, livestock ranching and perennial crops such as coffee and oil palm) impact nearly half. A similar proportion is affected by small-holder or subsistence farming. Selective logging or tree-cutting threaten c.40% of these GTBs, clear-felling and general deforestation affect some 30%, firewood collection and the harvesting of non-woody vegetation affect c.15% and conversion to tree plantations some 10%. Overall, over 60% of GTBs are impacted by forestry activities. Infrastructure development is a threat to over 30%<sup>3</sup>.

**SOURCES** 1. Fishpool & Evans, eds (2001) *Important Bird Areas in Africa and associated islands: priority sites for conservation*. Newbury and Cambridge, UK: Pisces Publications and BirdLife International. 2. Heath & Evans, eds (2000) *Important Bird Areas in Europe: priority sites for conservation*. Cambridge, UK: BirdLife International. 3. BirdLife International (2004) *Threatened birds of the world 2004*. CD-ROM. Cambridge, UK: BirdLife International and analysis of data held in BirdLife's World Bird Database.

Agricultural expansion and intensification threaten 50% and 35% of African and European IBAs respectively<sup>1,2,3</sup>



## 3 Habitat fragmentation puts pressure on remaining natural grasslands in Argentina

Continuing fragmentation is a major threat to the remaining natural grasslands of Argentina, caused most recently by an expansion in government-subsidised private forestry. The grassland biome in Argentina originally comprised a vast mosaic of temperate steppes (pampas) and subtropical savannas (campos) spread across several major flood-plains<sup>1</sup>. These grassland regions are a globally important centre of endemism for numerous species of fauna and flora<sup>1,2</sup>. About 60 grassland-dependent bird species occur in Argentina<sup>1</sup>, and 98 potential Important Bird Areas (IBAs) have been identified in the grasslands, especially in the campos<sup>3</sup>. However, these grasslands are also very suitable for agriculture, and as a result are now probably the most threatened terrestrial biome in Argentina<sup>1,3</sup>. The great majority have already been converted to cropland, rangeland or settlement—less than 3% of the original pampas remain in a natural state<sup>4</sup>, and only 0.3% of the original grassland area of 470,000 km<sup>2</sup> receives any form of statutory protection<sup>4</sup>.

The remaining large blocks of once open and tree-less grasslands are being afforested with plantations of trees, usually non-native species of pine and eucalyptus<sup>1</sup>, following land preparation that often involves road building and wetland drainage<sup>5</sup>. Between 1995 and 2000, the area of such monocultures increased by more than 500%<sup>5</sup>, with over 1,000 km<sup>2</sup> of grassland converted to plantations in 2001 alone<sup>6</sup>. Several potential grassland IBAs have already been destroyed, before their importance could be confirmed<sup>5</sup>. Moreover, the negative impacts of tree plantations on grassland ecosystems can extend well beyond the actual converted habitat, for example through edge effects caused by road building<sup>7</sup> and through increased densities of non-grassland predators<sup>8</sup>.

**SOURCES** 1. Krapovickas & Di Giacomo (1998) *Parks* 8: 47–53. 2. Stattersfield et al. (1998) *Endemic Bird Areas of the world: priorities for biodiversity conservation*. Cambridge, UK: BirdLife International. 3. Krapovickas & Di Giacomo (2000) *Pampas Argentinas: Important Bird Areas in temperate and subtropical grasslands from Argentina*. Buenos Aires: Aves Argentinas/AOP. 4. Roman (2000) *Clarín* [27 July]: 40. 5. Di Giacomo & Krapovickas (2001) *World Birdwatch* 23: 24–25. 6. Laura (2002) *Metas para el Año 2010, Argentinos a las Obras*. Buenos Aires: Xavier Verstraeten. 7. O'Leary & Nyberg (2000) *Nat. Areas J.* 20: 243–249. 8. Herkert et al. (2003) *Conserv. Biol.* 17: 587–594. **ACKNOWLEDGEMENT** Data and background materials kindly provided by Adrián Di Giacomo (Aves Argentinas/AOP).