



STATE OF THE WORLD'S BIRDS

TAKING THE PULSE OF THE PLANET



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Whiskered Tern *Chlidonias hybrida*. PHOTO Neelsky/Shutterstock.

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FOREWORD

Biodiversity is in decline across the world, with unsustainable development degrading natural habitats and driving species to extinction. This in turn is reducing the capacity of our planet to sustain us into the future. It is only through well-informed interventions that we can reverse this trend.

State of the World's Birds is BirdLife's flagship science publication, providing a global overview of the state of birds, the pressures they face and the actions underway to save them. Birds are more popular and better studied than any other comparable group and are consequently an excellent means through which to take the pulse of the planet. So, while the report focuses on birds, its conclusions are relevant to biodiversity more generally.

Since the inaugural report in 2004, and thanks to ongoing support from the Aage V Jensen Charity Foundation, *State of the World's Birds* has grown into a globally recognised and respected brand. Drawing on information amassed through BirdLife's worldwide community of conservation practitioners, the report vividly illustrates why BirdLife is a world leader in conservation science.

This latest edition constitutes the first major analysis of BirdLife's data in over five years. It is therefore a timely assessment of the status of the world's birds and biodiversity at a critical juncture for global

conservation efforts—providing a marker against which governments, society and BirdLife can assess progress towards meeting their respective conservation targets.

Although the report provides a sobering update on the state of birds and biodiversity, and of the challenges ahead, it also clearly demonstrates that solutions *do* exist and that significant, lasting success *can* be achieved. BirdLife has an important contribution to make to ending the global biodiversity crisis. As this report emphatically demonstrates, by harnessing local expertise within a global framework of best practice based on sound science, it is possible to achieve far-reaching and enduring impact.



Patricia Zurita
CEO BIRDLIFE INTERNATIONAL

A handwritten signature in black ink, appearing to read 'Patricia Zurita', written over a horizontal line.

INTRODUCTION: THE IMPORTANCE OF BIRDS





Penguins are charismatic and much adored members of the animal kingdom, but they are also important indicators of the health of our oceans. PHOTO Paul Nicklen.

BIRDS: NATURE AT ITS MOST ENTHRALLING

Birds are one of the best known and most highly valued elements of the natural world, comprising more than eleven thousand different species, an extraordinary variety, ranging from hummingbirds to ostriches, from penguins to eagles. Each species is unique, in its appearance, in its habits and in where it is found. Some occur in huge numbers and others are represented by only a handful of remaining individuals; some are relatively sedentary, with individuals spending their entire lives in an area of a few hectares, while others undertake extraordinary annual migrations, covering literally half the world.



The Resplendent Quetzal *Pharomachrus mocinno* dominated the traditions and beliefs of the Maya and Aztec civilisations. PHOTO Luke Seitz.

CASE STUDY 1

Why birds matter

We value birds in many ways: culturally, artistically, philosophically and economically. Throughout history, many of our most enduring cultural symbols have been birds, from Horus the Egyptian god of creation, often depicted as a falcon, to Quetzalcoatl, based on the Resplendent Quetzal *Pharomachrus mocinno*, who dominated the traditions and beliefs of the Maya and Aztec Indians of Central America. Birds feature strongly in the world's painting, poetry and music. Italian painters of the Renaissance used the European Goldfinch *Carduelis carduelis* as a religious symbol, while in music, numerous composers and songwriters have drawn inspiration from birdsong. Birds have played a key role in many important scientific

developments; for instance, Darwin's studies of finches in the Galápagos proved instrumental in shaping his thoughts on evolution through natural selection. Birds also bring us material benefits. The domestication of Red Junglefowl *Gallus gallus* was a seminal event for human food security (on any one day there are now some 25 billion chickens alive on earth). Birds provide a wide variety of ecosystem services. In the USA alone, the role they play in controlling insect pest populations on commercially valuable crops has been estimated to be worth millions of dollars. Birds also provide key benefits as pollinators and seed dispersers, while vultures provide a crucial service through the disposal of animal carcasses.

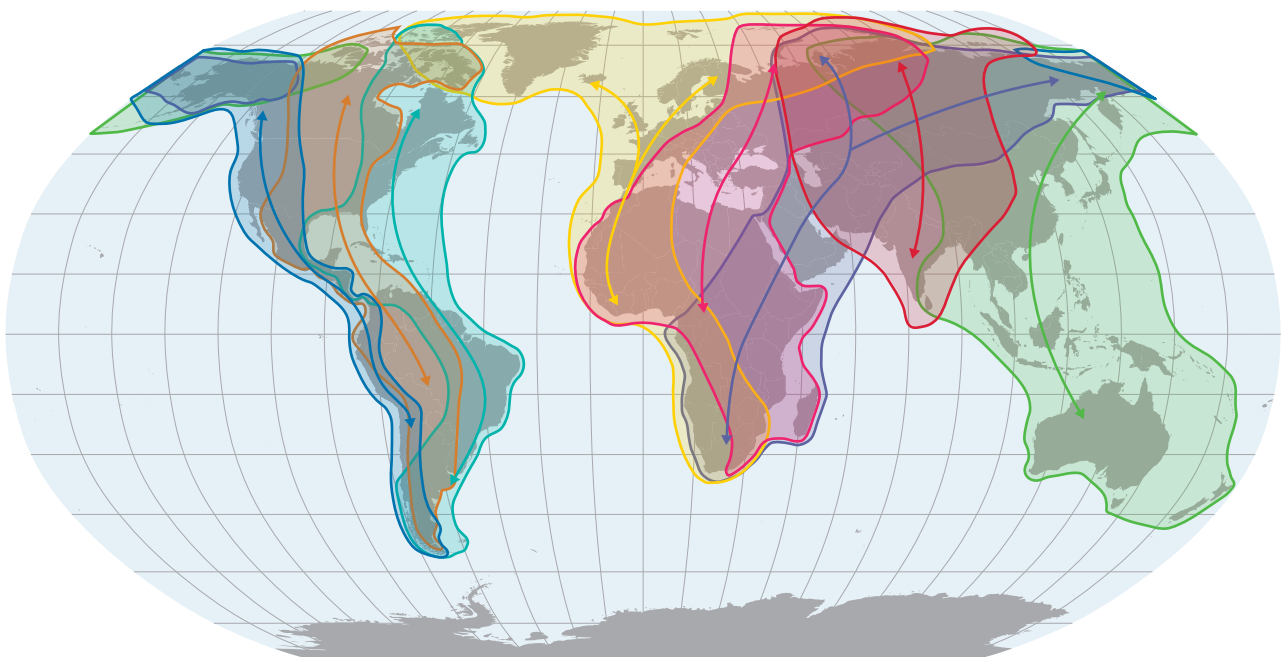
CASE STUDY 2

Flight and a life without boundaries

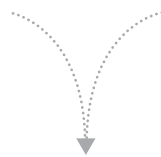
Technological advances—from the jet engine and container ship to the internet and mobile phone—have brought people closer together and made the world a smaller place. Yet, it is perhaps birds that can lay claim to being one of the first globalising influences—their ability to traverse the Earth’s surface through migration is a phenomenon that has forged connections between people in far-flung lands for centuries. This shared natural heritage brings people together for conservation and is one of the factors that has galvanised the

BirdLife Partnership. A fact symbolised through the organisation’s logo—the Arctic Tern *Sterna paradisaea*—a truly global species that migrates from the Arctic to the Antarctic and back again every year. Birds are arguably the most mobile creatures on Earth, often undertaking truly epic journeys. Twice a year, in spring and autumn, billions of birds migrate vast distances across the globe. Many species migrate along broadly similar, well-established routes known as flyways.

GENERALISED GLOBAL FLYWAYS FOR MIGRATORY LANDBIRDS AND WATERBIRDS



- PACIFIC AMERICAS
- CENTRAL AMERICAS
- ATLANTIC AMERICAS
- EAST ATLANTIC



- CENTRAL ASIA
- BLACK SEA, MEDITERRANEAN
- EAST ASIA, EAST AFRICA
- EAST ASIA, AUSTRALASIA

BIRDS UNITE PEOPLE AROUND THE WORLD FOR CONSERVATION

Over the millennia, and across all cultures, people have developed an intimate bond with birds. Their ubiquity, behaviour, colour and song have made them a constant feature of art and music. Despite, or perhaps because of, an increasingly urban, technology-driven world, our fascination and love for birds continues to grow. Today, over 80 million people in the USA watch or feed birds, while almost one in three people in the UK do so. Birdwatching is now big business and a major source of income in many areas. For many, birds are their principal connection to the natural world—an important link to the biological systems upon which we all depend.



A scheme promoting Common Barn-owl *Tyto alba* to control pests is reaching across political and religious divides in the Jordan Valley and uniting Arab and Israeli conservationists in a common cause. PHOTO Hagai Aharon.

CASE STUDY 3

The enduring popularity of birds

Watching birds is now one of the world's most popular pastimes, and its appeal continues to grow. Around 60 million Americans, roughly one fifth of the population, identify as birdwatchers. For comparison, fewer than 23 million play golf. Around 20% more people in the US feed birds in their gardens than go hunting or fishing, while in Canada people spend more time birdwatching than they do gardening. In the UK, 23% of people watch birds recreationally and over 8 million take part in the RSPB's *Big Garden Birdwatch* event each year. Watching birds is not just popular in western countries. In China, the hobby is thought to be growing by 40% each year. Indeed, birdwatching

societies grew from just four in 2000 to 36 in 2010. When, in 2014, a European Robin *Erithacus rubecula* turned up in a Beijing park, thousands turned out to admire it. Birdwatching is hugely important economically, constituting the largest ecotourism sector. In the US alone, birdwatching contributes around \$36 billion to the national economy annually. Globally, 20-40% of all leisure tourists are interested in wildlife watching, and avitourism is now the largest market for trips to developing countries from Europe. Collectively, the world's national parks and nature reserves receive around 8 billion visits annually, many through avitourism, generating around \$600 billion in revenue each year.

CASE STUDY 4

Birds have the power to bring people together

In many ways, the BirdLife Partnership is the ultimate symbol of the power of birds to unite people—121 national organisations, encompassing 10 million members and supporters from all parts of the world and all strata of society, united through a mutual love and concern for birds and the natural world they inhabit. In 1922, the International Council for Bird Preservation became the first global organisation established to work for the protection of birds and nature. In 1993, the organisation was transformed, and BirdLife International, as we know it today, emerged.

Since then, BirdLife has expanded from 20 founding Partners into a truly global organisation. Each Partner is not simply a member of BirdLife, they *are* BirdLife in their respective country, adopting a strategy and set of programmatic priorities shared across the Partnership. This unique local-to-global approach delivers high-impact and long-term conservation that benefits both nature and people. Ninety-five years after its creation, the BirdLife Partnership continues to grow, with new Partners recognised in Georgia and Colombia in 2017.

BIRDLIFE: A GLOBAL PARTNERSHIP FOR NATURE



Supporters
 7 million

Partner staff
 8,000

Members
 3 million

Local conservation groups
 4,000

Partners
 121

Hectares of reserves
 4 million

Regional divisions
 6

UNDERSTANDING THE BIODIVERSITY CRISIS THROUGH BIRDS

We know more about birds than we do about any other comparable group of organisms. They are easy to observe, being relatively large and conspicuous; most are active by day; they can be readily identified in the field, from a distance; and although they are diverse, the number of species is not overwhelming. Because they are so well known and are found all over the world and in virtually all habitats, birds serve as unique barometers for environmental change.



Around the world, birds are the focus of considerable research effort. PHOTO TOP Alamy Stock. PHOTO BOTTOM Maxim Koshkin BirdLife International

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CASE STUDY 5

Our knowledge of birds is unrivalled

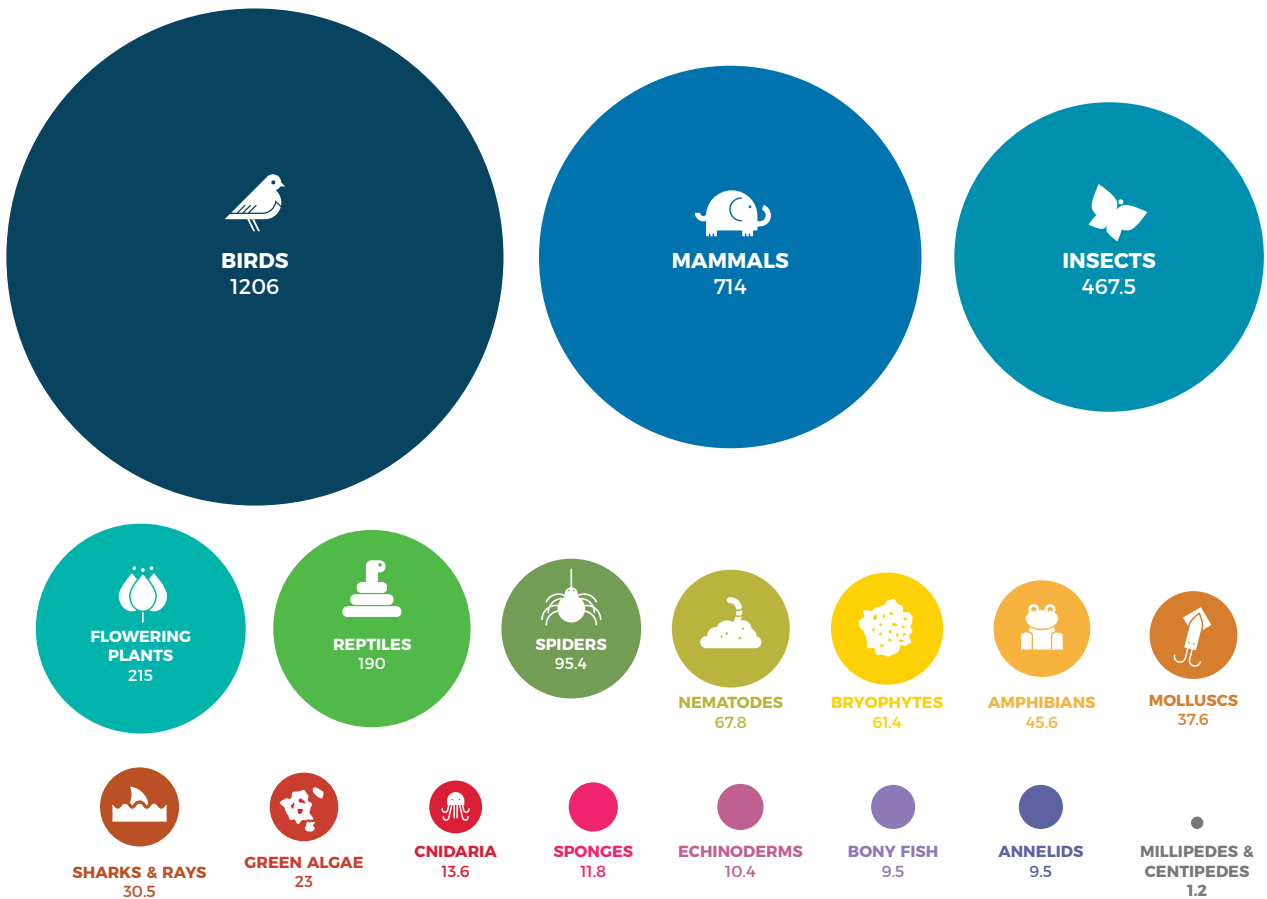
As indicators, the most significant advantage of birds is that we have so much information about them. Scientific research on birds is intensive, and expanding. A “Web of Science” keyword search reveals that since 1900 there have been over 132,000 articles in academic journals with the word “bird” in the title or abstract—over three a day on average! In addition to the numerous professional ornithologists, there is also an army of amateur birdwatchers, many of whom contribute high-quality data to citizen science programmes.

ON AVERAGE, OVER

3 ARTICLES
PER DAY

ABOUT BIRDS ARE PUBLISHED
IN ACADEMIC JOURNALS

THE AVERAGE NUMBER OF CONSERVATION ARTICLES PUBLISHED IN ACADEMIC JOURNALS PER TAXONOMIC GROUP EACH YEAR SINCE 2013



CASE STUDY 6

Birds are exceptional indicators of biodiversity

- Bird taxonomy is well known and relatively stable
- Bird distribution, behaviour and ecology are much better known than for other comparable taxa
- Birds are widespread, occurring almost everywhere around the globe
- Bird population trends often mirror those of other species
- Bird distribution generally reflects that of many other wildlife groups
- Birds are mobile and responsive to environmental change
- There are enough bird species to show meaningful patterns, yet not so many as to be too challenging
- Bird surveys are relatively easy and inexpensive to conduct
- Birds are unparalleled in their popularity, with local experts in every corner of the world

THE SCIENCE THAT UNDERPINS GLOBAL CONSERVATION: THE IUCN RED LIST

Much of what we know about the current status of the world's bird species—and of biodiversity more widely—is due to the IUCN Red List of Threatened Species. BirdLife International, the official Red List Authority for birds, is responsible for assessing the extinction risk of the world's avifauna by analysing past, present and projected status and threat information. As this assessment has been carried out in a consistent, scientifically robust method for many decades, it now provides one of the best, most reliable sources of information for tracking the changing fortunes of birds and, ultimately, the health of the planet.



Talaud Pitta *Erythropitta inspeculata* is one of 12 species previously lumped as Red-bellied Pitta *P. erythrogaster*. It has been assessed by BirdLife as Vulnerable on the IUCN Red List. PHOTO Geoffrey Jones

CASE STUDY 7

Starting with the basics – determining what is, and what is not, a species

As the Red List Authority for birds, BirdLife has a responsibility to ensure that the taxonomy it follows is consistent, comprehensive and derived in a transparent manner. Thus, in collaboration with the publisher Lynx Edicions, BirdLife set out to assess and revise the taxonomic status of all the world's birds. The assessment employed quantitative criteria for species delimitation, applying a new scoring system to evaluate differences in morphology, vocalisations, ecology and geographical relationships.

The result of this endeavour is the two-volume *Illustrated Checklist of the Birds of the World*, covering non-passerines and passerines, published

in 2014 and 2016 respectively. The 11,121 species covered included 742 "new" species, with 46 parrots, 36 hummingbirds and 26 owls previously unrecognised. In the most extreme example, the Red-bellied Pitta *Pitta erythrogaster*, originally Least Concern on the Red List, was split into twelve distinct species, four of them globally threatened. It is apparent that previous approaches to bird taxonomy have underestimated avian diversity by around 10%.

To understand how important taxonomy can be, take the case of the Bearded Helmetcrest *Oxyphaps squamatus*. Until the Checklist was published, this was regarded as one species.

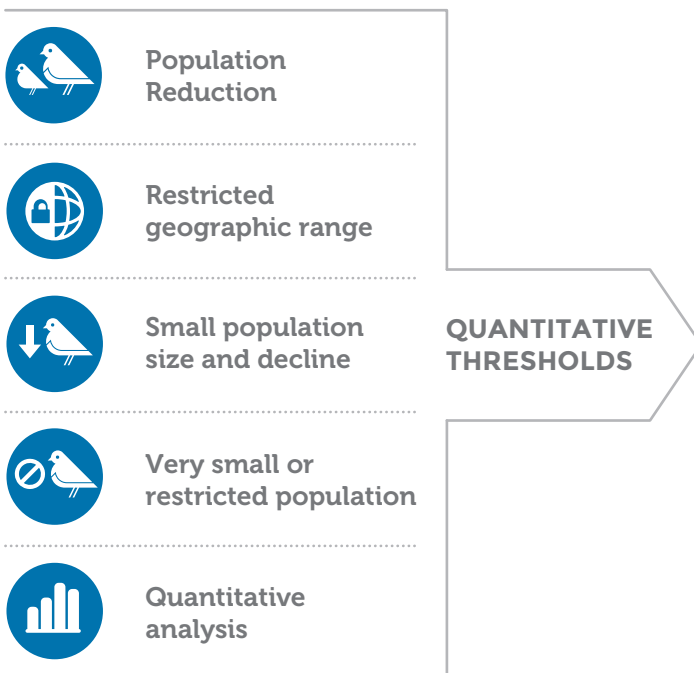
Application of the new criteria made it clear there were four. Blue-bearded Helmetcrest *O. cyanolaemus* had not been seen since 1946. Confined to the Santa Marta massif in Colombia, its habitat has been almost entirely destroyed.

In March 2015, a dedicated search was made, and three birds were found in a tiny area of páramo that had not yet been burnt. The species is clearly right on the brink of extinction, but without the Checklist we would still not even know of its existence.

RED LIST CATEGORIES EXPLAINED

Species are assigned to categories on the IUCN Red List using criteria with clear numeric thresholds relating to five measurable parameters concerning population and range size and structure, and rates of population decline and range contraction. BirdLife updates the Red List annually, undertaking comprehensive assessments of all avian species every four years. These assessments are carried out in collaboration with bird specialist groups and ornithologists from around the world. To date, many thousands of experts have contributed advice, evidence or recommendations to the process.

CRITERIA



CATEGORIES

Extinct (EX)

A taxon is Extinct when there is no reasonable doubt that the last individual has died.

Extinct in the Wild (EW)

A taxon is Extinct in the Wild when it is known only to survive in captivity.

Critically Endangered (CR)

A taxon is Critically Endangered when the evidence indicates that it is facing an extremely high risk of extinction in the wild.

Endangered (EN)

A taxon is Endangered when available evidence indicates that it is facing a very high risk of extinction in the wild.

Vulnerable (VU)

A taxon is Vulnerable when the evidence indicates that it is facing a high risk of extinction in the wild.

Near Threatened (NT)

A taxon is Near Threatened when it is close to qualifying for or is likely to qualify for a threatened category in the near future.

Least Concern (LC)

A taxon is Least Concern when it does not qualify as threatened or Near Threatened. Widespread and abundant taxa are included in this category.

Data Deficient (DD)

A taxon is Data Deficient when there is inadequate information to make an assessment of its risk of extinction

Globally threatened categories

THE SCIENCE THAT UNDERPINS GLOBAL CONSERVATION: IMPORTANT BIRD AND BIODIVERSITY AREAS

In order to conserve nature effectively, it is necessary to identify those places most important for biodiversity and therefore conservation action. Important Bird and Biodiversity Areas—IBAs—constitute the largest and most comprehensive global network of sites that are significant for the global persistence of biodiversity. Over 13,000 IBAs have been identified in virtually all of the world’s countries and territories, both on land and at sea, and many hundreds of protected areas have been designated as a direct consequence. The criteria and methodologies that underpin IBA designation have now been adapted to create a single global “standard” for the identification of sites for all taxonomic groups—known as Key Biodiversity Areas (KBAs). BirdLife joined forces with ten of the world’s other leading conservation organisations to launch the KBA Partnership in 2016.

CASE STUDY 8

From IBAs to KBAs—how BirdLife’s initiative has evolved into a global standard

At the World Conservation Congress held in Bangkok, Thailand, in 2004, BirdLife and other members of the International Union for Conservation of Nature (IUCN) requested a worldwide consultative process to agree a methodology to enable countries to identify those sites that contribute significantly to the global persistence of biodiversity. Now, after consultation with conservation organisations, academia and governments, a set of criteria and methodology has been agreed. The Key Biodiversity Areas (KBAs) approach builds on BirdLife’s Important Bird and Biodiversity Areas (IBAs) initiative, indeed, the current KBA inventory is dominated by the more than 13,000 IBAs identified to date. The influence of IBAs on the creation of this new global conservation standard is a tribute to the scientific robustness of the approach and the enormous influence that IBAs have had in assisting governments and others to identify the most important sites for protected area designation and conservation. BirdLife is set to play an important role in the growth of the KBA initiative. The KBA Secretariat is hosted jointly by BirdLife and IUCN, and BirdLife manages *The World Database of Key Biodiversity Areas*, which is an essential tool in supporting conservation planning and priority setting worldwide.

CASE STUDY 9

How are IBAs identified?

IBAs are identified using a set of standardised, objective and internationally agreed criteria. A site may qualify as an IBA if it meets one or more of the following criteria:

01 It holds a significant number of a bird species of global conservation concern.

Monfragüe IBA in Spain qualifies for supporting the globally threatened Spanish Imperial Eagle *Aquila adalberti* and Egyptian Vulture *Neophron percnopterus*.

02 It holds a significant assemblage of restricted-range bird species.

Taita Hills Forests IBA in Kenya qualifies for supporting highly restricted-range bird species—Taita Apalis *Apalis fuscigularis*, Taita White-eye *Zosterops silvanus* and Taita Thrush *Turdus helleri*—which are found in just a few tiny and fragmented remnant forest patches.

03 It holds a significant assemblage of biome-restricted bird species.

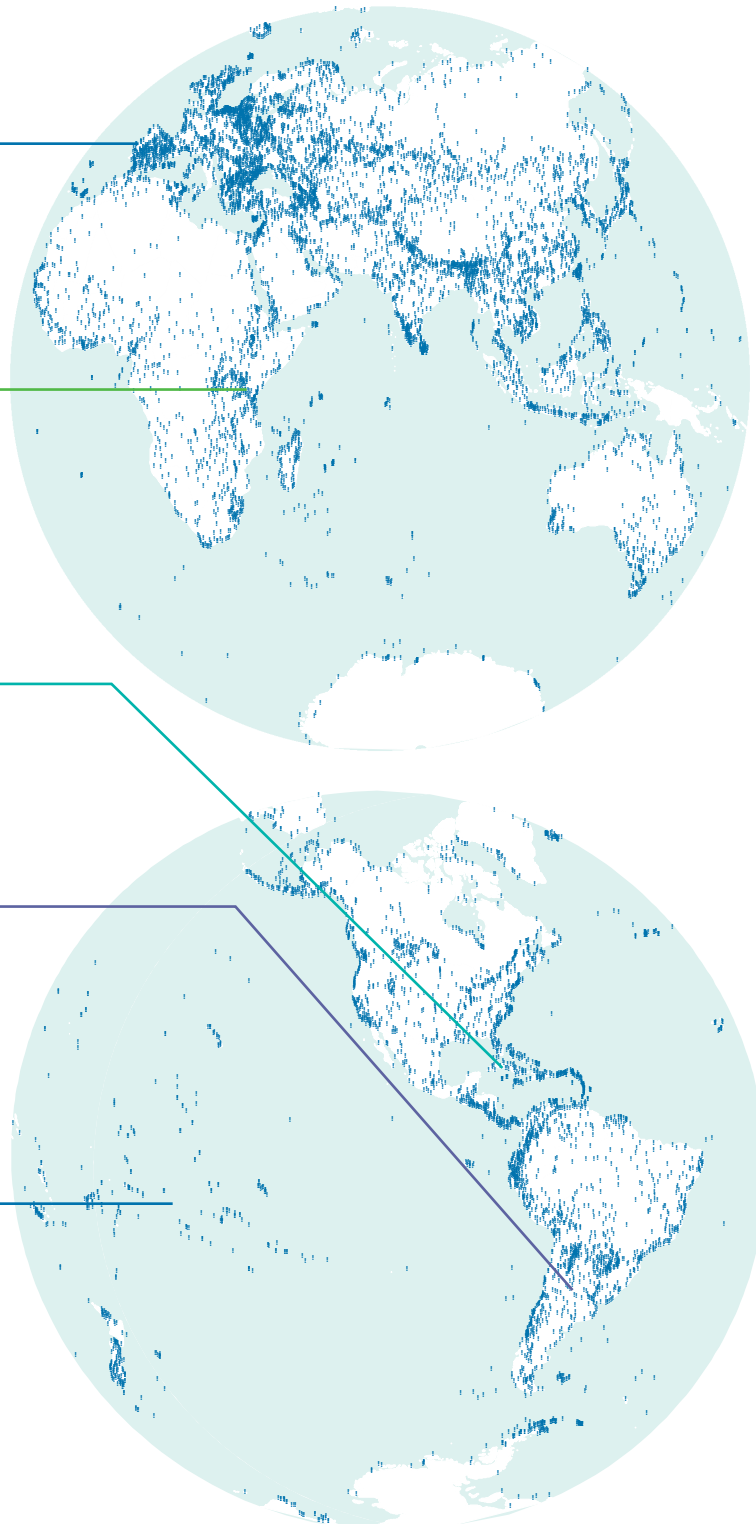
Ciénaga de Zapata IBA in Cuba qualifies for supporting over 40 species that are restricted to the Greater Antilles biome.

04 It holds a threshold number of a congregatory bird species or group.

San Javier IBA in Argentina, an area of rice paddies located on the floodplain of the Paraná, qualifies for hosting between 100,000 and 600,000 wintering Bobolink *Dolichonyx oryzivorus* each year—more than 1% of the global population.

HOW ARE IBAS IDENTIFIED AT SEA?

Although using the same set of criteria, the unique challenges of identifying sites at sea has meant that dedicated techniques have had to be developed. For example, tracking data for Grey-headed Albatross *Thalassarche chrysostoma* have been used to identify the species' key foraging hotspots at sea. This has resulted in an additional 36 IBAs for this species. To date, over 2,000 marine IBAs have been identified in total.



**STATE:
WHAT WE KNOW
ABOUT THE
CONSERVATION
STATUS OF BIRDS**





The status of Old World vultures is deteriorating rapidly and 11 of the 16 species are now classified as globally threatened. PHOTO Madhukar Bangalore.

GLOBALLY BIRDS CONTINUE TO DECLINE AND GO EXTINCT

Analysis of the IUCN Red List shows that there has been a steady and continuing deterioration in the status of the world's birds since the first comprehensive assessment in 1988. Highly threatened species continue to go extinct, while formerly common and widespread species are in sharp decline. At least 40% of bird species worldwide (3,967) have declining populations, compared with 44% that are stable (4,393), 7% that are increasing (653) and 8% with unknown trends (823).

CASE STUDY 10

Numerous avian extinctions have already taken place

— 20 Extinctions have probably been better documented in birds than for any other group of animals. Since the year 1500, we have lost over 161 species—an extinction rate far higher than the natural background rate. This includes five species that have gone extinct in the wild, but that still have populations remaining in captivity. Some species currently categorised as Critically Endangered may actually already be extinct, but cannot be designated as such until we are certain: 22 species are therefore categorised as Critically Endangered (Possibly Extinct). Thus, as many as 183 species may have been lost in the last 500 years.

Extinctions are continuing, with three species thought to have been lost since 2000. The last known wild Spix's Macaw *Cyanopsitta spixii* (CR, Possibly Extinct in the Wild) disappeared in Brazil towards the end of 2000, the last two wild Hawaiian Crows *Corvus hawaiiensis* (EW) disappeared in June 2002, and the last known Poo-uli *Melamprosops phaeosoma* (CR, Possibly Extinct), also from Hawaii, died in captivity in November 2004.

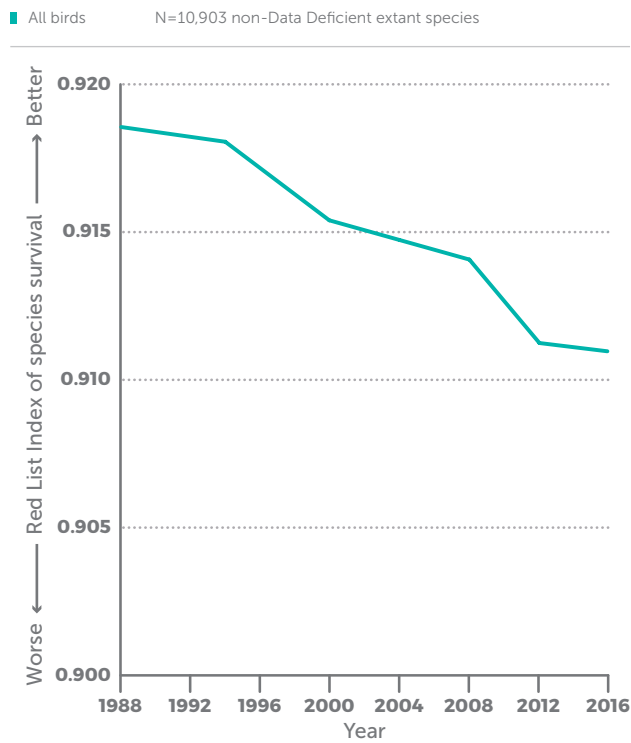
CASE STUDY 11

The status of the world's birds continues to deteriorate and even once common birds are vanishing

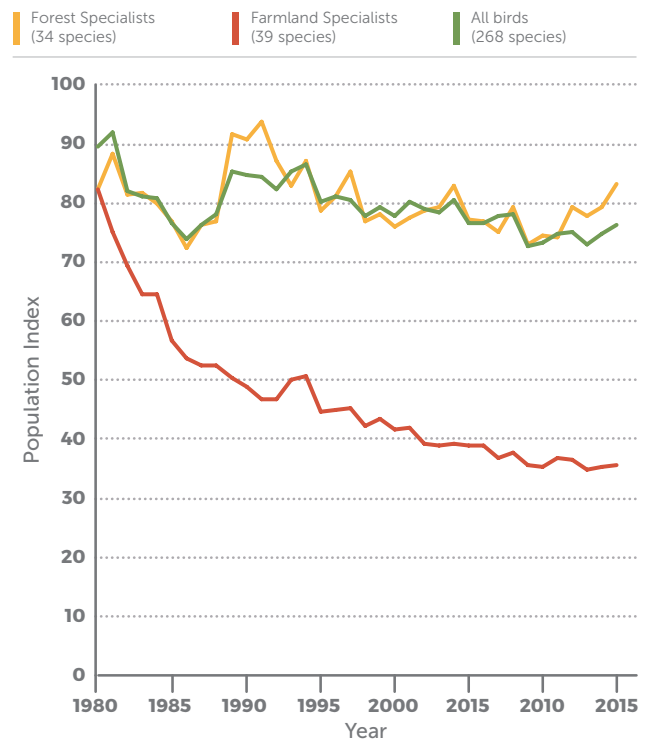
The Red List Index (RLI) reveals that over the past thirty years the status of the world's bird species has deteriorated, with more species slipping closer to extinction. The index is based on the number of species in each Red List category and the number that have moved between categories as a result of genuine changes in status (i.e. excluding moves resulting from improved knowledge or taxonomic changes). Around the world, many once familiar bird species are in decline. These declines are taking place in both temperate and tropical regions and in a variety of habitats, such as farmland, forests and wetlands. There are exceptions: some bird populations are stable and a few are increasing—a reflection of conservation efforts, but also of the fact that some groups can thrive in human-altered habitats.

The status of the world's birds declined during 1988–2016 as shown by the IUCN Red List Index (RLI) for birds. An RLI value of 1 equates to all species being categorised as Least Concern and hence that none is expected to go extinct in the near future. An RLI value of 0 indicates that all species have gone extinct. Wild Bird Indices derived from annual monitoring of common and widespread bird species in Europe, North America, and Botswana and Uganda also show declines. The number of bird species in each group is given in parentheses. Source: data come from the Pan European Common Bird Monitoring Scheme (European Bird Census Council/ RSPB/BirdLife International/Statistics Netherlands), the North American Breeding Bird Survey, BirdLife Botswana and NatureUganda.

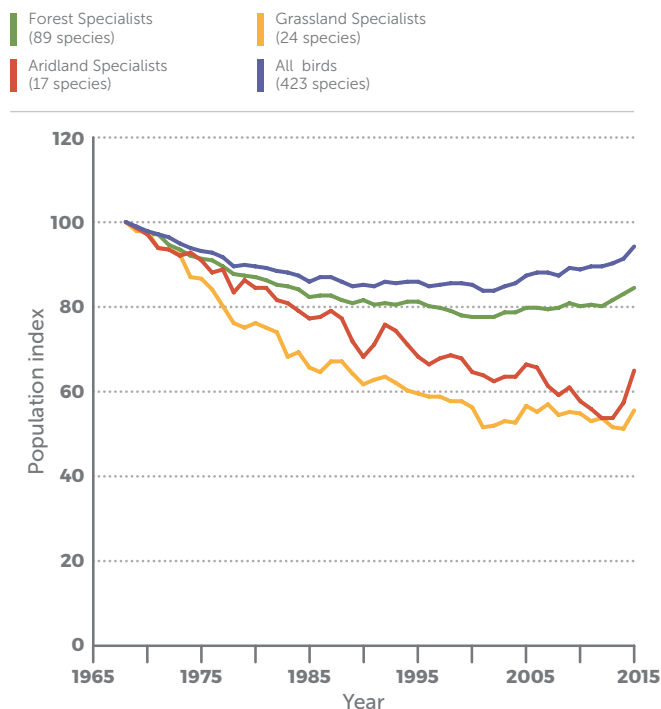
IUCN RED LIST INDEX FOR BIRDS



WILD BIRD INDEX: EUROPE



WILD BIRD INDEX: NORTH AMERICA



WILD BIRD INDEX: BOTSWANA & UGANDA



THE EXTINCTION CRISIS DEEPENS

It is now widely acknowledged that we are in the midst of a mass extinction event, the sixth such episode in our planet's 4.5 billion year history and the first to be driven by the actions of a single species—humans. Scientists estimate that species are disappearing at a rate 100 to 10,000 times faster than the natural rate, with perhaps dozens of species going extinct every day. Yet, as these highly variable estimates reveal, the paucity of our knowledge about the natural world means there is considerable uncertainty as to the true extent of the crisis. A few groups of organisms, however, are well known: none more so than birds, whose risk of extinction is comprehensively assessed by BirdLife using the criteria of the IUCN Red List. The situation they reveal is alarming.

As of the 2017 update, 1,469 bird species (13% of the total, or one in eight) are globally threatened with extinction.



An elephant carcass, laced with poison by poachers, can kill up to 500 vultures. PHOTO Hugo van der Westhuizen

CASE STUDY 12

Many vultures face imminent extinction

Across Africa, Asia and parts of Europe, vulture populations are in freefall. The IUCN Red List charts a relentless decline over recent years. In 1994, 75% of the world's 16 Old World vulture species were classified as Least Concern, meaning that they were not considered at risk of extinction. Only one species—Cape Vulture *Gyps coprotheres*—was thought to be globally threatened and was classified as Vulnerable. Today, just two species remain Least Concern. Of the rest, eight, half of all species, are classified as Critically Endangered and are at risk of

imminent extinction; three are almost as imperilled and are classified as Endangered; and three are Near Threatened.

Populations in South Asia were the first to collapse, with declines of around 95% between 1993 and 2000. These were principally the result of acute poisoning linked to livestock carcasses contaminated with the veterinary drug diclofenac. Worryingly, vultures are also disappearing across vast swathes of Africa. Over a period of just 30 years, populations

of seven African vulture species have fallen by 80-97%. Here, the threats are more varied. They include deliberate persecution, such as by elephant poachers who kill vultures so that they do not draw attention to their illegal activities. Vultures are also killed for their body parts, which are traded for their

supposed mystical properties. Other threats include habitat loss and degradation, decreasing food availability, fragmentation of remaining populations, human disturbance, collisions with wind turbines and powerlines, and electrocution on electricity infrastructure.

CASE STUDY 13

One in eight of all birds is globally threatened with extinction

1,469 species - 13% of extant species (10,966) or roughly one in eight - are globally threatened with extinction, of these:


 **Critically Endangered**
222 (2%)

 **Endangered**
461 (4%)

 **Vulnerable**
786 (7%)

An additional **1,017** species are considered Near Threatened because they are assessed as close to qualifying as globally threatened.

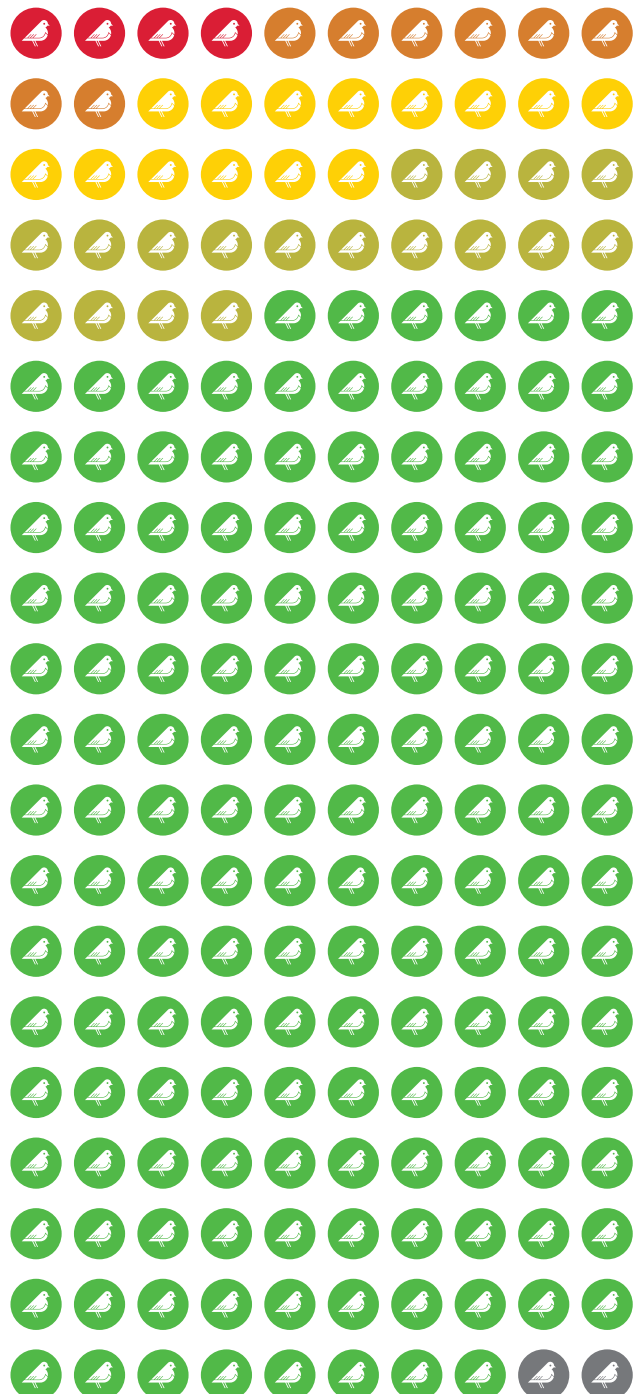
Hence a total of **2,486** species, or a fifth of all the world's birds, can be considered as being of significant global concern.

 **Near Threatened**
1,017 (9%)

 **Least Concern**
8,417 (77%)

Only **58** species (0.5% of the total) are considered insufficiently known to be able to assess their threat status, and so are classified as Data Deficient.

 **Data Deficient**
58 (<1%)



SOME BIRD SPECIES AND GROUPS ARE DECLINING FAST

Threatened species are not evenly distributed among bird groups. For instance, there are particularly high proportions of threatened species among cranes (73%), Old World vultures (68%), albatrosses (68%) and parrots (29%). Although most threatened birds have small populations and ranges, widespread and once numerous species are increasingly at risk of extinction.



Yellow-breasted Buntings *Emberiza aureola* in a holding cage after being trapped for food. PHOTO Huang Qiusheng.

CASE STUDY 14

Widespread and familiar bird species are increasingly at risk of extinction

Many globally threatened bird species have tiny populations and very small ranges. They are restricted to remote mountaintops, oceanic islands or forest patches and are often poorly known beyond ornithologists and intrepid birders. Increasingly, however, widely distributed and familiar bird species are also coming under threat of extinction, often as the result of large-scale exploitation and habitat degradation. Until recently, Yellow-breasted Bunting *Emberiza aureola* was one of Eurasia's most abundant bird species, breeding from Finland to Japan. However, since 1980, its population has declined by 90%, its range has contracted eastwards by 5,000 km, and the species is now considered Critically Endangered. Although now officially banned, large-scale hunting of this Chinese delicacy continues: In 2001, an estimated one million buntings, known colloquially as "the rice bird", were consumed in China's Guangdong province alone. Rampant overexploitation also lies behind the ongoing decline of Grey Parrot *Psittacus erithacus* and its sister species, Timneh Parrot

P. timneh. These intelligent, gregarious birds are a favourite pet around the world; this popularity fuels an illegal trade that now renders both species Endangered. European Turtle-dove *Streptopelia turtur* was once a familiar migrant to Europe, Central Asia and the Middle East from the Sahel zone of Africa. Because of habitat loss and hunting, the species is now declining across its range, especially in Western Europe, and has recently been uplisted to Vulnerable. Snowy Owl *Bubo scandiacus* is surely one of the most widely recognised birds in the world. It is also widespread, occurring throughout the Arctic tundra of the Northern Hemisphere. Yet, it is experiencing a rapid decline, most likely connected to climate change, and has recently been uplisted to Vulnerable. In the marine realm, the depletion of fish through overfishing and climate change has caused rapid declines in widespread and much loved seabirds such as Atlantic Puffin *Fratercula arctica* and Black-legged Kittiwake *Rissa tridactyla*—both are now considered Vulnerable to extinction.

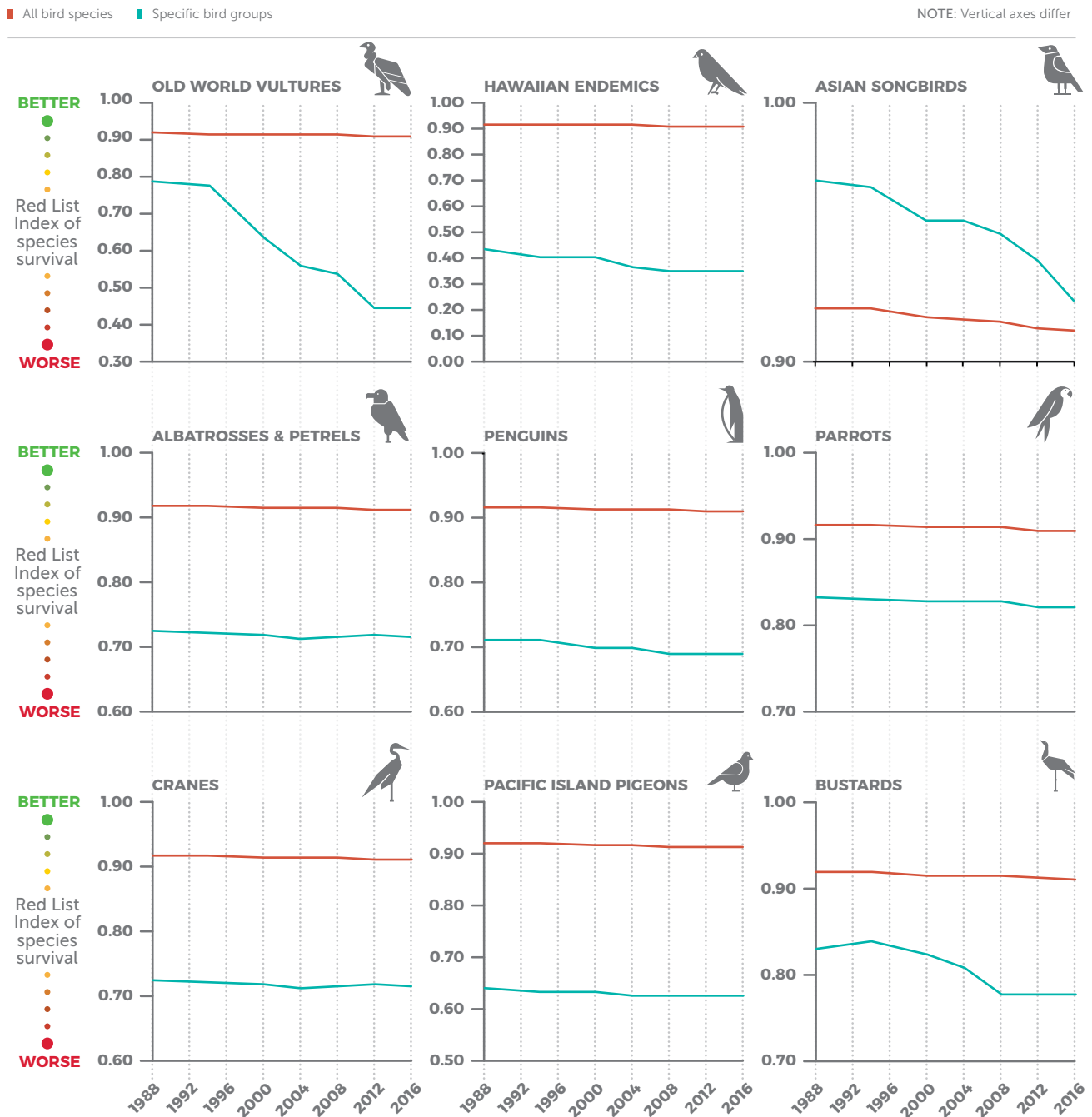
CASE STUDY 15

Some bird groups are particularly in trouble

The Red List Index (RLI) can be disaggregated to show trends for different subsets of species. For example, the RLI for Old World vultures shows that they are both much more threatened than birds in general, and also declining at a significantly faster rate. Other groups, such as Pacific Island pigeons

and albatrosses and petrels, are also considerably more threatened than birds in general, but have not suffered the same precipitous recent declines. In contrast, groups such as Asian songbirds are less threatened overall than birds in general, but are currently declining at a much more alarming rate.

RED LIST INDICES FOR SELECTED DECLINING BIRD GROUPS



ESSENTIAL ECOSYSTEMS ARE IN PERIL

Healthy, intact habitats are essential not only for securing the future of birds and other wildlife, but also for providing the vital ecosystem services that sustain local communities and that ultimately keep our planet habitable. Unfortunately, many key sites remain inadequately protected and in a deteriorating condition. Those sites that are in the gravest state are classified as “IBAs in Danger”.

CASE STUDY 16

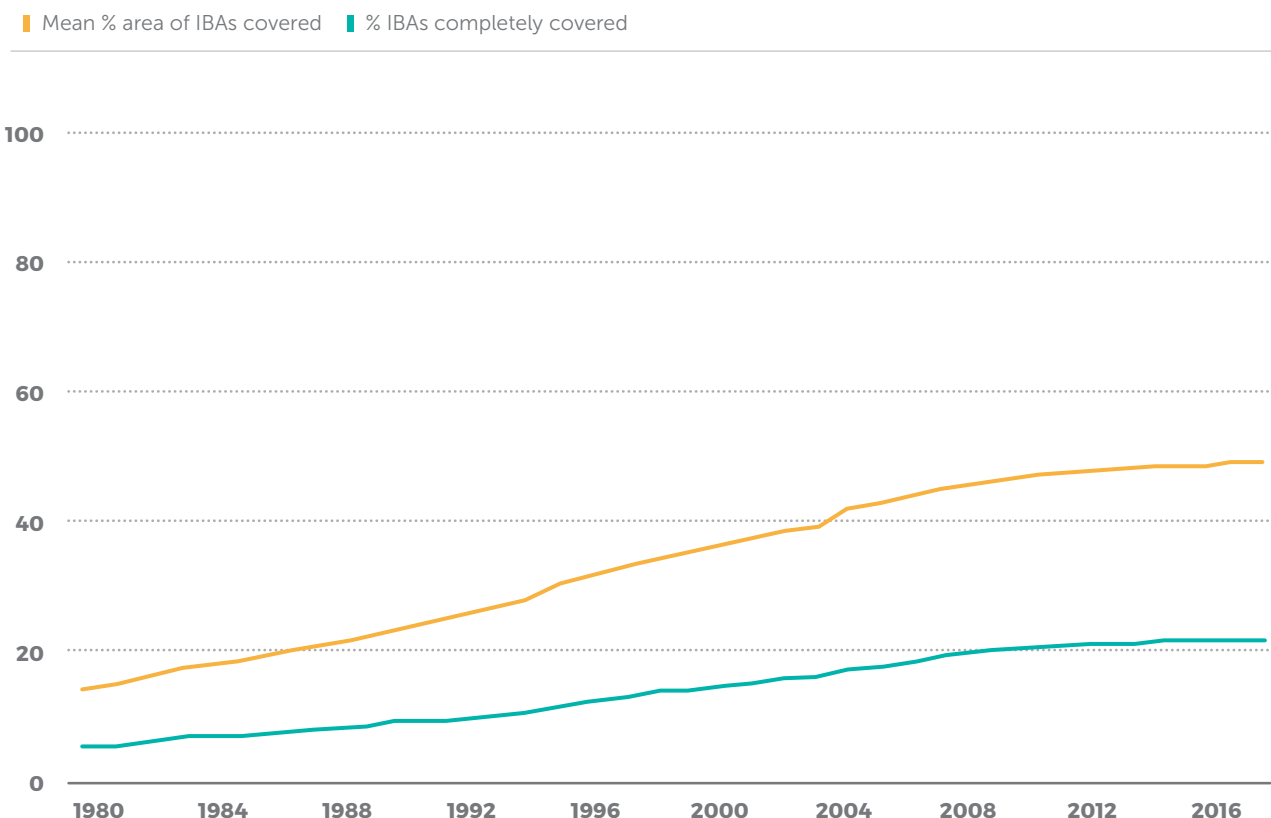
Many IBAs remain unprotected

Many IBAs still lack legal protection and adequate management. The IBA Protection Index shows that 80% of IBAs are inadequately covered by protected areas and one third are entirely unprotected. These sites should be considered as priorities for appropriate forms of statutory recognition and protection.

THE IBA PROTECTION INDEX 1980-2017

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The IBA Protection Index measures the degree to which IBAs are covered by protected areas and provides a useful metric to judge progress in addressing biodiversity loss.



CASE STUDY 17

Many IBAs are in danger

The current list of IBAs in Danger includes 338 sites in 81 countries and territories worldwide. All face intense threats and need urgent attention. Examples from across each region highlight the diversity of pressures and the urgency with which actions are required.

GEDIZ DELTA, TURKEY

Gediz Delta is a stronghold for threatened waterbirds such as Dalmatian Pelican *Pelecanus crispus* and Red-breasted Goose *Branta ruficollis*, and a vital wintering and stopover site for the Greater Flamingo *Phoenicopterus roseus* (holding 5-10% of the global population). The site is threatened by a proposed mega bridge project, which would result in the loss of breeding and foraging areas for birds.



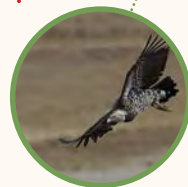
BOEUNG PREK LAPOUV, CAMBODIA

Boeung Prek Lapouv is one of the last remnants of seasonally inundated wet grassland in the Lower Mekong in Cambodia. It supports over half of the Mekong's population of the Vulnerable Sarus Crane *Antigone antigone*. It is under threat from an irrigation scheme that has greatly reduced the cranes' feeding habitat.



MAR CHIQUITA, ARGENTINA

Covering over 1 million ha, Mar Chiquita is the biggest saline wetland in South America. It is an important wintering site for hundreds of thousands of migratory waterbirds, including three species of flamingo and Wilson's Phalarope *Steganopus tricolor*. Despite its protected status, Ma Chiquita is facing many pressures, including agricultural expansion, deforestation, water extraction and lack of management capacity.



KWENIA, KENYA

These cliffs are one of the most important breeding sites for the Critically Endangered Rüppell's Vulture *Gyps rueppelli* in Kenya. The site is threatened by a planned wind farm at Kipeto, less than 15 km away, which could pose a serious collision risk to the vultures.



CHRISTMAS ISLAND, AUSTRALIA

The unique biodiversity of Christmas Island—which includes five endemic bird species, including Abbott's Booby *Papasula abbotti* and Christmas Frigatebird *Fregata andrewsi*—is under threat by phosphate mining, which destroys breeding habitats and facilitates access for invasive species.

PRESSURE: WHY BIRDS ARE DECLINING



A mosquito lands near the eye of an liwi *Drepanis coccinea* in Hawaii. Climate change is enabling avian malaria-carrying mosquitos to spread. PHOTO Chris Johns/National Geographic Creative.

HUMAN ACTIONS ARE DRIVING THE BIODIVERSITY CRISIS

The threats driving the extinction crisis are many and varied, but invariably of humanity's making. Agricultural expansion, logging, overexploitation, urbanisation, pollution, disturbance and the effects of invasive alien species are all driving bird declines and diminishing the natural world. Longer term, human-induced climate change may prove to be the most serious threat of all. Most species are impacted by multiple threats and many threats are interrelated. For example, land clearance for agriculture is often preceded by deforestation or wetland drainage. Similarly, many threats act to compound and intensify the impacts associated with other threats. For instance, in some places climate change is exacerbating the threat posed by avian malaria by extending the area of suitable habitat for malaria-transmitting mosquitoes.



Many species are assailed by multiple threats. PHOTO Olivier Asselin / Alamy Stock Photo

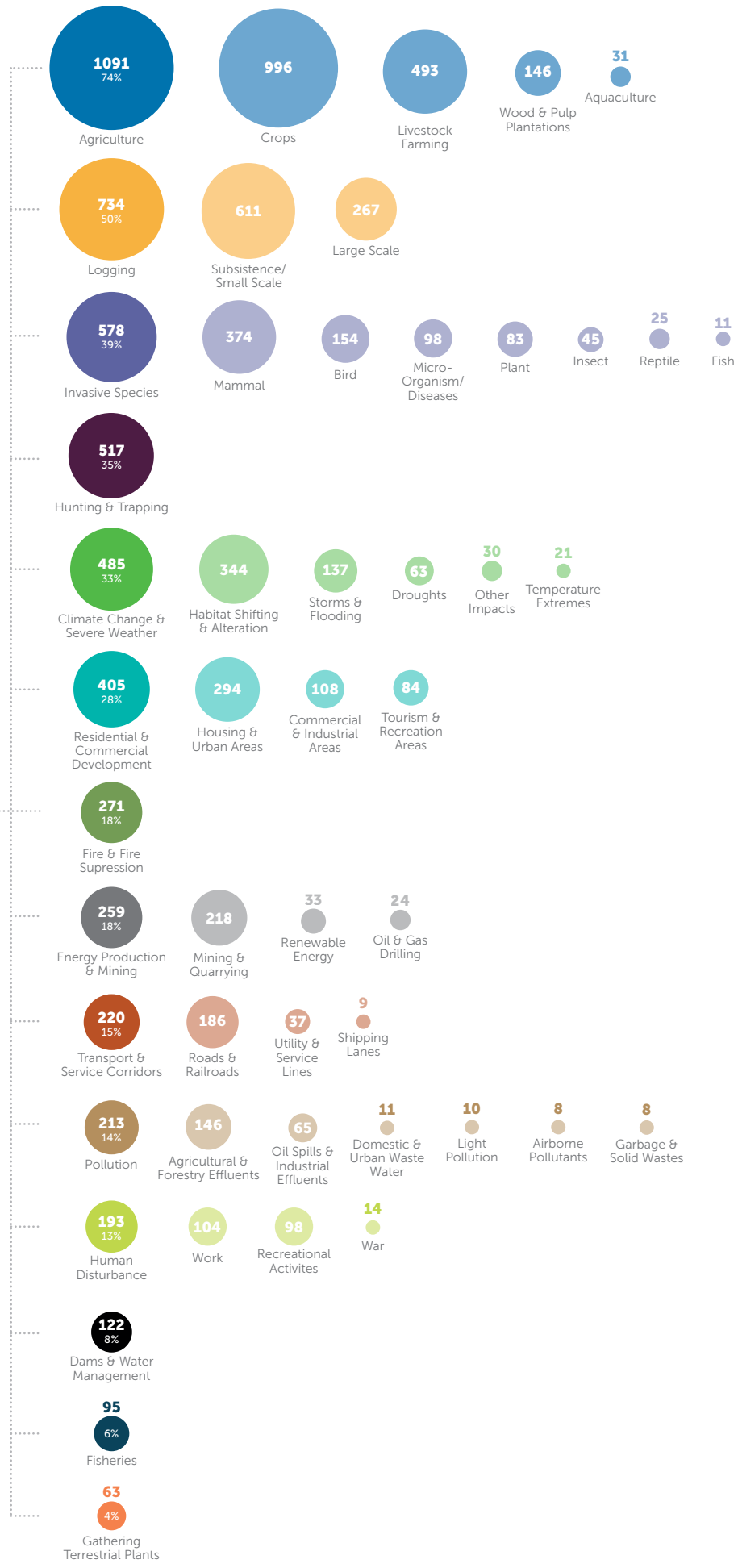
CASE STUDY 18

A range of threats drives declines in bird populations

BirdLife systematically evaluates the threats facing globally threatened bird species as part of its work assessing avian extinction risk for the IUCN Red List. This provides an important insight into the principal drivers not only of bird extinction, but of the biodiversity crisis more widely and informs BirdLife's conservation strategies and approaches. Humans are responsible for most of the threats to birds. Foremost among them are: agricultural expansion

and intensification, which impacts 1,091 globally threatened birds (74%); logging, affecting 734 species (50%); invasive alien species, which threaten 578 (39%) species; and hunting and trapping, which puts 517 (35%) species at risk. Climate change represents an emerging and increasingly serious threat—currently affecting 33% of globally threatened species—and one that often exacerbates existing threats.

1,469
GLOBALLY
THREATENED
BIRD SPECIES



UNSUSTAINABLE AGRICULTURAL PRACTICES

The expansion of agriculture, and the resultant habitat destruction, is one of the greatest threats to the world's biodiversity. The area of Earth's land surface given over to agriculture has increased more than sixfold over the past 300 years, from less than 6% in 1700 to more than 38% today. The conversion of natural habitats to farmland is now occurring most rapidly in tropical regions—driven by global demand for commodities such as coffee, cocoa, sugar, palm oil and soya.



Seed-eating birds, like White-crowned Sparrows *Zonotrichia leucophrys*, may be seriously impacted by some insecticides. PHOTO Tim Lenz.

CASE STUDY 19

Pesticides associated with farming continue to have a big impact

There is mounting evidence that neurotoxic insecticides known as neonicotinoids are having a detrimental impact on farmland birds. Neonicotinoids are widely used across North America, Europe and elsewhere to pre-treat crops, enabling them to collect in high concentrations in surface water and on the surface of seeds. One recent study from the USA found that migrating White-crowned Sparrows *Zonotrichia leucophrys*

exposed to concentrations of neonicotinoids lost a quarter of their body mass and fat stores. The neurotoxin also impaired their migratory orientation. Neonicotinoids clearly pose a serious risk to migratory seed-eating birds. However, there is also concern that they may build up along food chains and be retained by soils and plants for many years. Consequently, the effects may be far-reaching and long-lasting.

CASE STUDY 20

Overconsumption is driving agricultural expansion and intensification

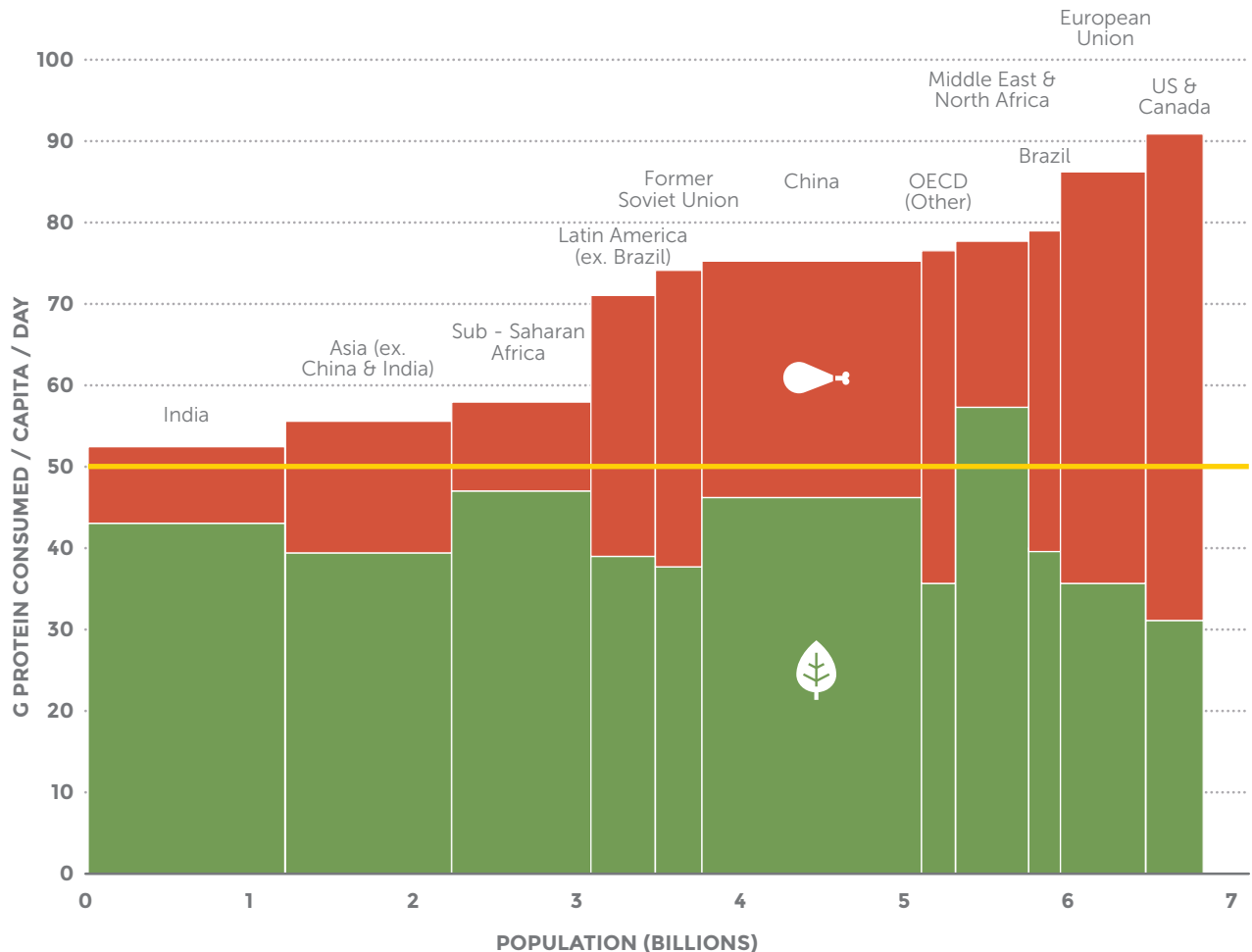
There is unquestionably a need to ensure that the world's population is adequately fed. Yet providing enough food for the 13% of the world's people who suffer from hunger would require raising world supplies by just 1%. Increasingly, much of the expansion in agriculture is driven by patterns of consumption that are unhealthy, unnecessary and ultimately unsustainable. Globally, there is a trend toward overconsumption and the adoption of diets high in calories, protein and animal-based

foods. Today, two-and-a-half times more people are overweight than undernourished, and the average global citizen's daily protein consumption is more than one-third higher than needed. As well as driving the destruction of natural habitats and the loss of biodiversity, overconsumption widens the food gap between rich and poor, and leads to obesity related health problems, which in turn contribute to rising healthcare costs and lower productivity.

OVERCONSUMPTION OF PROTEIN NOW OCCURS IN ALL OF THE WORLD'S REGIONS

Adapted from Ranganathan, J. et al. 2016. *Shifting Diets for a Sustainable Food Future*.
 Accessible at <http://www.worldresourcesreport.org>.

■ Animal-based protein ■ Plant-based protein — Average daily protein requirement



DEFORESTATION AND UNSUSTAINABLE LOGGING

Nearly two-thirds of bird species are found in forests, mainly in the tropics, and many can live nowhere else. Yet more than seven million hectares of forest are destroyed each year, driven by global demand for timber, paper and land for commodity crops and biofuels. Much of what remains is subject to unsustainable and unlawful forestry practises. Selective logging degrades standing forests and almost always impoverishes bird communities. It also facilitates further disturbance, including encroachment and increased hunting pressure, which can have greater and more lasting impacts than the logging itself. For example, forest ecosystems compromised by selective logging are more susceptible than intact forests to devastating fires. Deforestation also affects the world’s climate, accounting for about one-fifth of all human-induced greenhouse gas emissions every year.

34

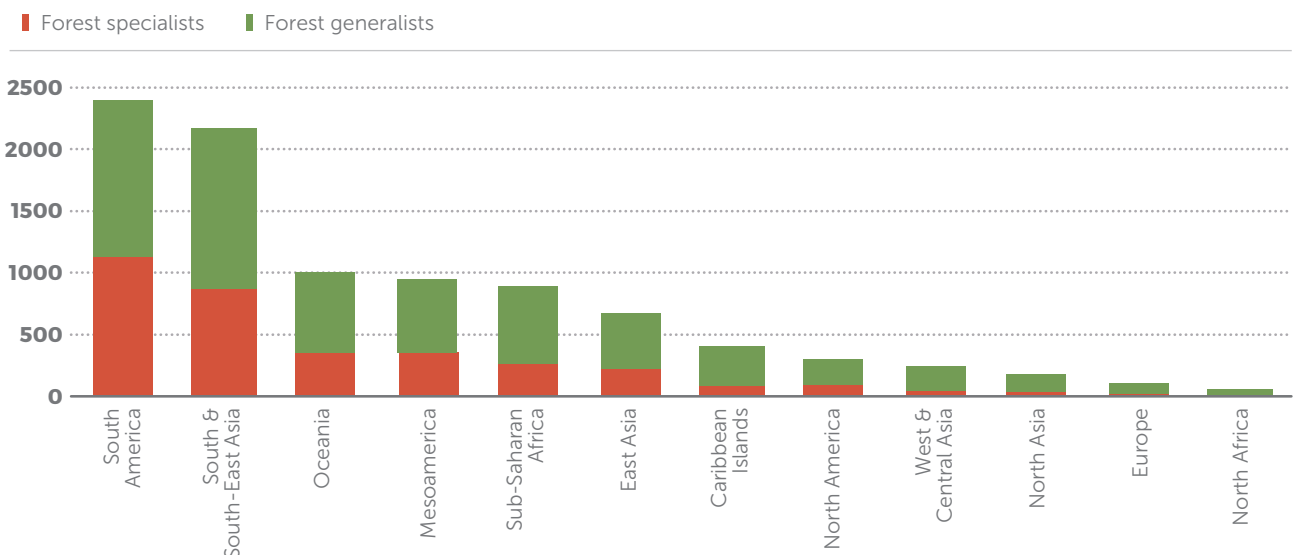
CASE STUDY 21

Many species depend on forests, which are being lost at an alarming rate

Deforestation and unsustainable forestry is particularly rampant in South America, South and South-East Asia and sub-Saharan Africa. For instance, in parts of South-East Asia, there is now so little primary forest left that many forests will

be logged for the second or third time in the near future. This is especially concerning as these regions support considerable numbers of forest-dependent bird species, including forest specialists that are entirely reliant on forest for their survival.

FOREST-DEPENDENT BIRD SPECIES PER REGION



CASE STUDY 22

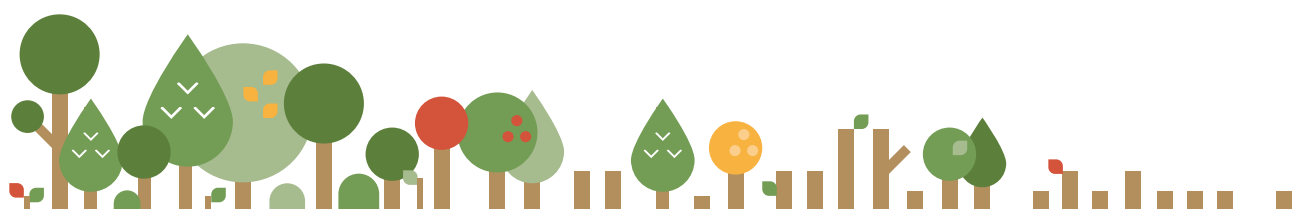
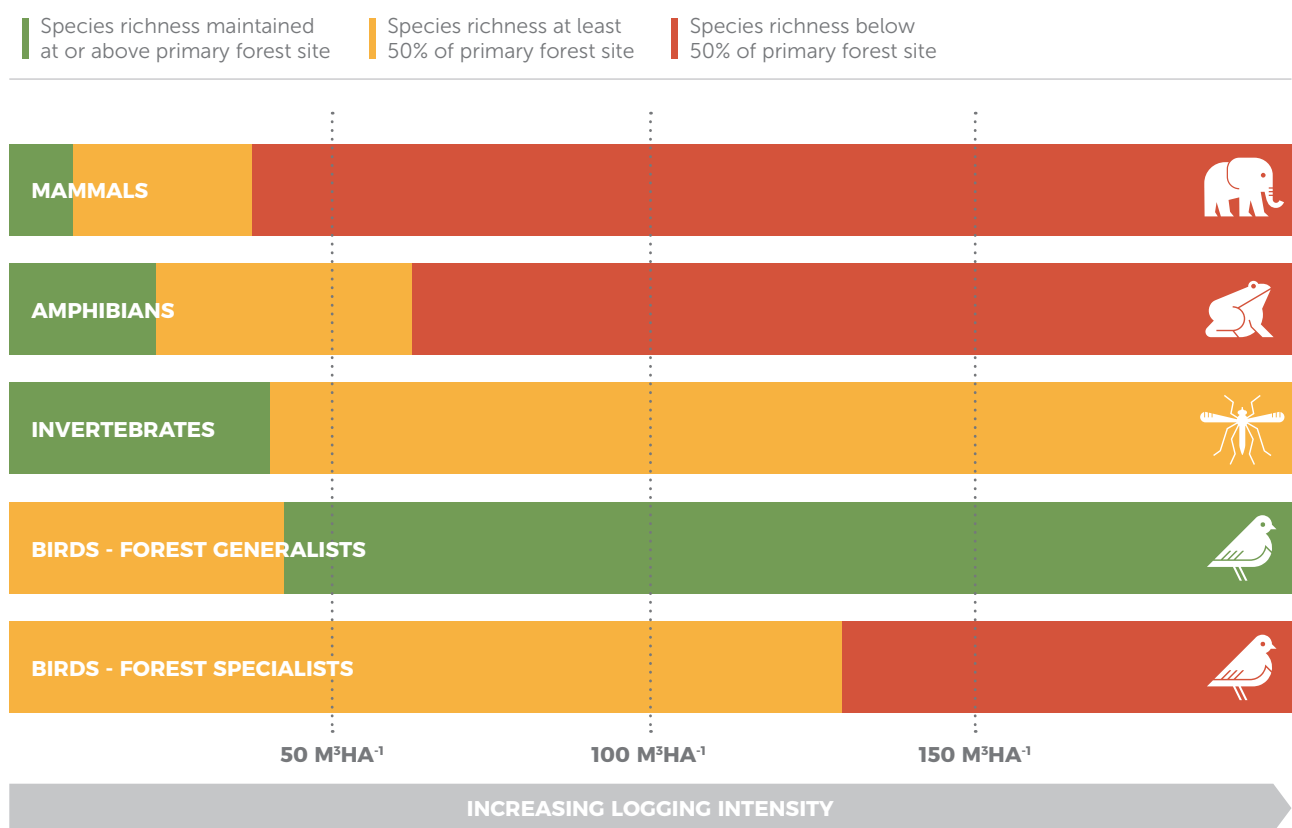
Selective logging damages forest structure and affects many bird species

Selective logging is substantially less damaging to biodiversity than intensive timber extraction or clear-felling. Nevertheless, it still results in a significant reduction in both the diversity and abundance of species. Birds may be less seriously impacted than some other comparable groups. Research suggests that the species richness of mammals and amphibians declines rapidly with increased logging intensity, while invertebrate

species richness decreases more gradually. In contrast, bird species richness actually increases with logging intensity. However, this is due to the influx of habitat generalists into heavily logged areas. When only forest specialists are considered there is a clear decline. While selectively logged forests remain important for some bird species and should be protected, intact, primary forest is necessary to retain many forest specialists.

THE IMPACT OF INCREASING LOGGING INTENSITY

The impact of increasing logging intensity (based on amount of extraction per hectare) on species richness for mammals, amphibians, invertebrates and birds. The impact on birds appears minimal due to the influx of habitat generalists following logging activity; however, when only forest specialists are included, the true scale of the impact becomes apparent. Graphic reproduced from Burivalova et al. (2014) *Current Biology* 24: 1893-1898.



THE CATASTROPHIC IMPACT OF INVASIVE ALIEN SPECIES

Humans have been transporting animals and plants around the world for thousands of years, sometimes intentionally, as with livestock and companion animals, and sometimes accidentally, as with rats and mice that have stowed away on boats. Typically, introduced species fail to establish themselves in the wild in new locations. However, a proportion thrive and spread. Such “invasive alien species” (IAS) can have catastrophic impacts on local wildlife. Over the last five hundred years, IAS have been partly or wholly responsible for the extinction of at least 112 bird species, more than 70% of those known to have gone extinct, making this the most common factor contributing to recent bird extinctions.

CASE STUDY 23

Birds on remote oceanic islands are most at risk from invasive alien species

Birds on remote islands are particularly susceptible to IAS: 75% of globally threatened species on oceanic islands are affected by invasives, compared with 27% on continental islands and just 13% on continental landmasses. Having evolved with only limited competitors and predators, island taxa are often ill-prepared for exposure to humans and, more significantly, the novel organisms that they bring with them. A total of 390 islands worldwide support populations of one or more Critically Endangered or Endangered bird species and one or more vertebrate IAS that threatens them.

CASE STUDY 24

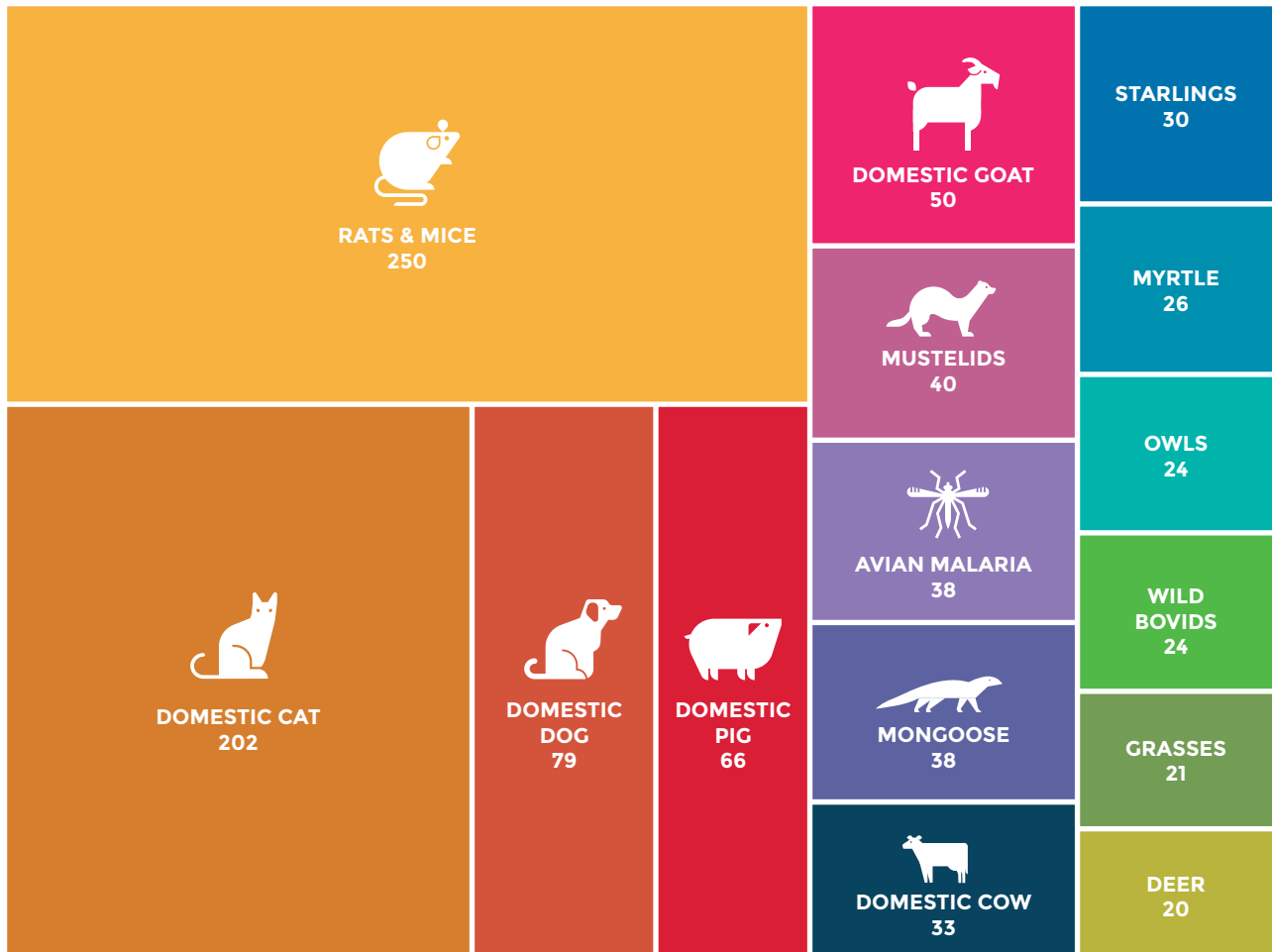
A wide range of Invasive Alien Species threaten birds

Over 1,500 species have become established outside their natural geographical ranges as the result of human activity. Such IAS can have a devastating impact on native wildlife. The majority of bird species at risk from invasives are affected by introduced predators, which often target chicks and eggs. Rats and cats have had by far the greatest effect, threatening the survival of hundreds of bird species worldwide. Many threatened birds are subject to multiple impacts from a range of non-native species. One such example is Galápagos Petrel *Pterodroma phaeopygia* (Critically Endangered) which has undergone an extremely rapid decline since the early 1980s owing to a variety of threats, including predation by introduced rats, cats and dogs, and the destruction of breeding habitat by introduced goats and cattle.

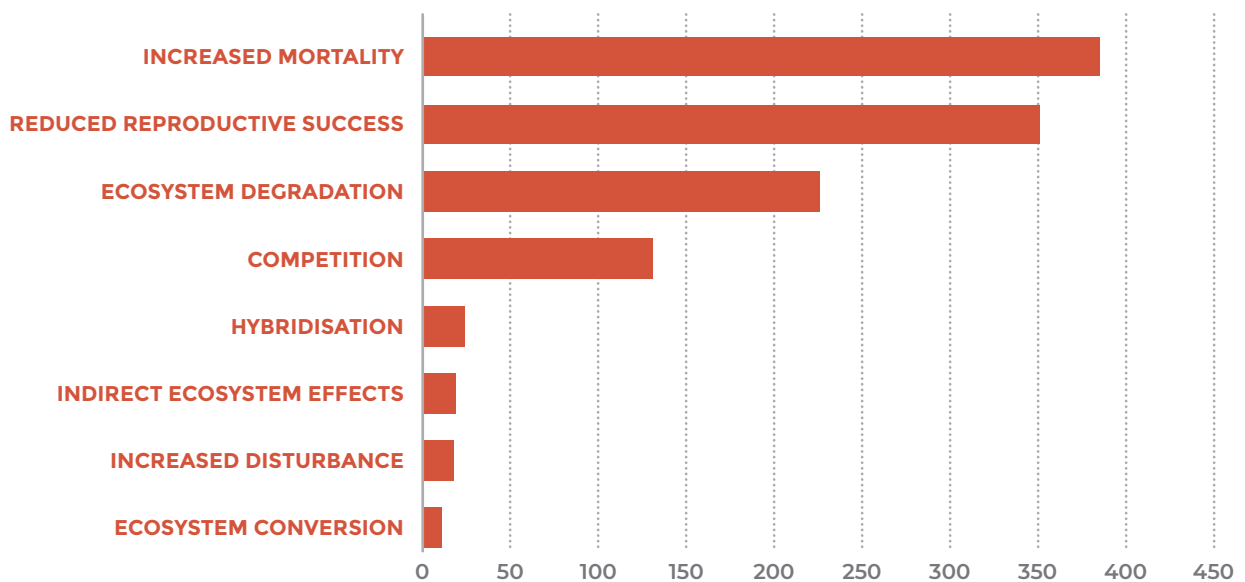


Evidence of mouse predation on nesting Laysan Albatross *Phoebastria immutabilis* on Midway Atoll National Wildlife Refuge. PHOTO USGS National Wildlife Health Center

NUMBER OF GLOBALLY THREATENED BIRD SPECIES AFFECTED BY DIFFERENT TYPES OF INVASIVE ALIEN SPECIES



MAIN WAYS IN WHICH IAS AFFECT GLOBALLY THREATENED BIRD SPECIES



OVEREXPLOITATION

Unsustainable hunting for food or sport and trapping for the cage-bird trade has been implicated in the extinction of many bird species and remains a significant threat today. Overexploitation is a particular problem for some bird families, including parrots, pigeons and pheasants, and is most prevalent in Asia.

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A sudden explosion of demand for the Helmeted Hornbill's *Rhinoplax vigil* casque known as "red ivory" is driving the species towards extinction. PHOTO Dewantoro/WCS.

CASE STUDY 25 Asian songbird trade

Songbird-keeping is a deeply entrenched pastime in many parts of South-East Asia, especially in the Greater Sunda region. The trade in birds is immense, involving hundreds of species and millions of individual birds each year. It is particularly prevalent in Indonesia: a 2015 survey of Jakarta's three main bird markets by the organisation TRAFFIC counted 19,000 birds of 206 species in just three days. Of the birds for sale, 98% were both native to Indonesia and illegally traded; one-fifth of these were endemic to the country. The bird trade is now recognised as the primary threat to many of the region's species. In 2016, BirdLife uplisted 19 Indonesian songbirds to higher threat categories, including six to Critically Endangered.

Some, such as Greater Green Leafbird *Chloropsis sonnerati* (now Vulnerable) were until recently common across the country's forests. Others, such as Rufous-fronted Laughingthrush *Garrulax rufifrons*, went from Near Threatened to Critically Endangered in an alarmingly short time and are now on the brink of extinction. The problem is not confined to songbirds. For instance, in 2015, Helmeted Hornbill *Rhinoplax vigil* was uplisted from Near Threatened to Critically Endangered. As well as severe loss of its South-East Asian forest habitat, the species is targeted by hunters for its feathers and for its solid "ivory" casque, which is used to produce handicrafts and traded with China.

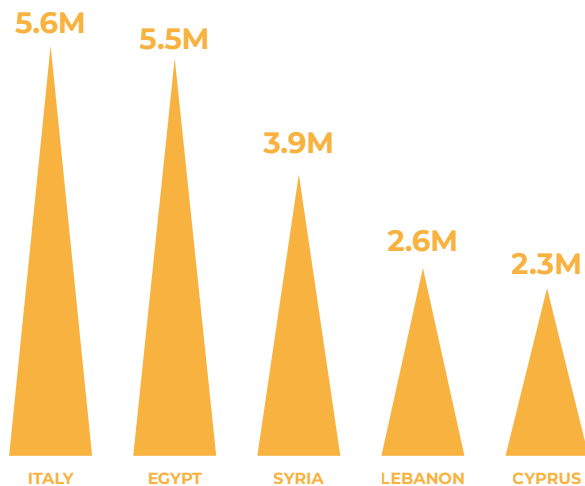
CASE STUDY 26

Illegal killing of birds in the Mediterranean, Northern and Central Europe and the Caucasus

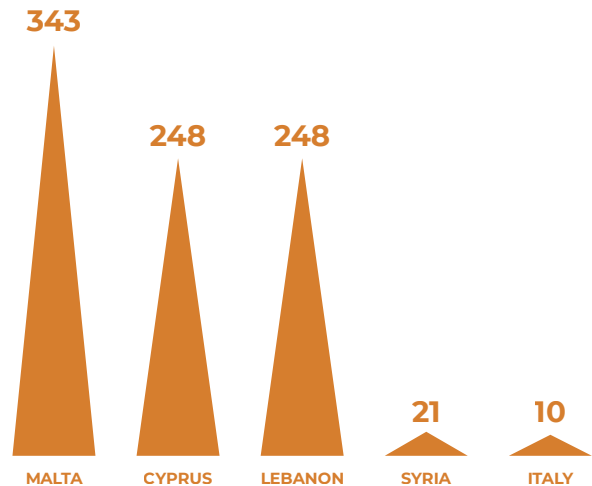
The illegal killing and taking of wild birds remains a major threat to birds across the Mediterranean, Northern and Central Europe and the Caucasus. Using a diverse range of data sources and expert knowledge, BirdLife recently quantified the scale and

scope of this issue for the first time. Staggeringly, it is estimated that 12-38 million individual birds may be killed or taken illegally every year in the region, many of them on migration, involving at least 503 species (82% of the species regularly occurring in the region).

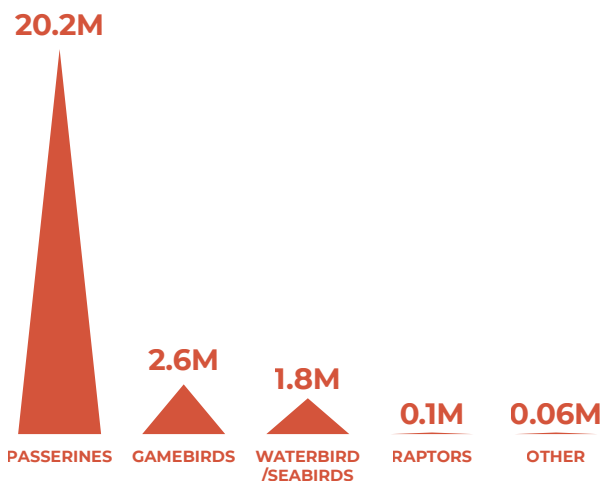
FIVE COUNTRIES WITH THE HIGHEST NUMBER OF BIRDS ILLEGALLY KILLED (MILLIONS PER YEAR)



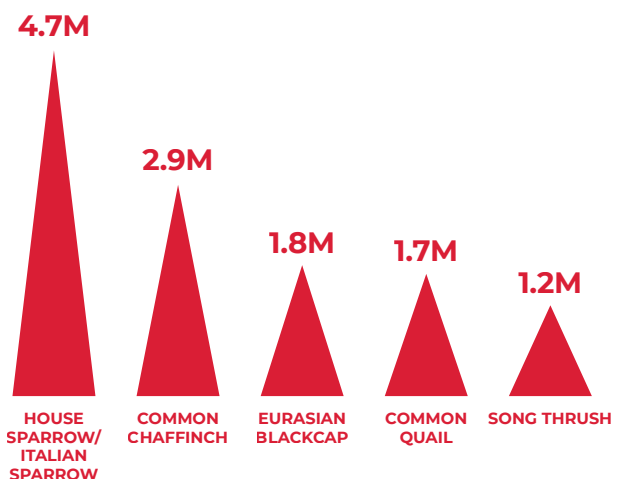
FIVE COUNTRIES WITH THE HIGHEST KILLING INTENSITY (MEAN NO. BIRDS KILLED PER KM² PER YEAR)



BIRDS KILLED BY GROUP (MILLIONS PER YEAR)



MOST AFFECTED SPECIES (MILLIONS PER YEAR)



UNSUSTAINABLE AND POORLY PLANNED INFRASTRUCTURE DEVELOPMENT

The expansion of the human-built environment has a significant impact on biodiversity, mainly through the destruction, degradation and fragmentation of natural habitats. Transport networks, including roads, railways, shipping lanes and flight paths, are proliferating worldwide. Although such infrastructure can benefit economic development, when poorly-planned it can have far-reaching negative impacts on ecosystems and help facilitate the spread of invasive alien species and damaging activities such as poaching and logging.

CASE STUDY 27

Loss of intertidal habitat in the Yellow Sea

The Yellow Sea, located between China and Korea, is one of the most important stopover sites along the East Asia-Australasia Flyway. Tens of millions of long-distance migratory shorebirds rely on its intertidal mudflats to rest and refuel. Unfortunately, the area's mudflats have been progressively lost to land reclamation for agriculture, ports, industrial

developments and urbanisation. Two-thirds of the Yellow Sea's intertidal habitat has been reclaimed since the 1950s. In China, nearly 40% has been lost since the 1980s. Shorebird population declines have been estimated at 43-78% over the last 15 years, with Great Knot *Calidris tenuirostris* populations having declined by over 80%.



The main threat to the globally threatened Great Knot *Calidris tenuirostris* is reclamation in the Yellow Sea. PHOTO Zhang Ming.

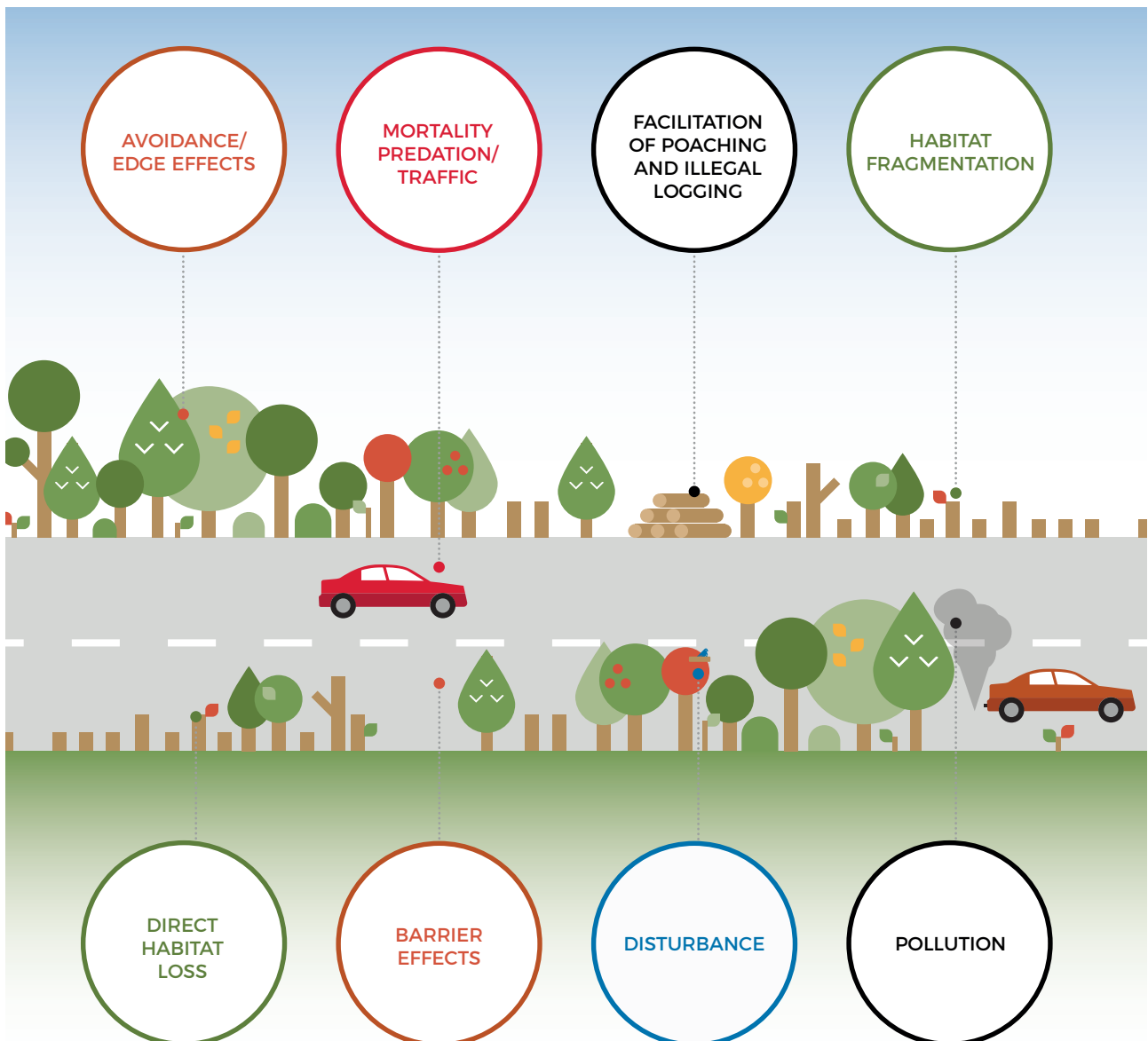
CASE STUDY 28

Relentless road expansion in the Amazon basin threatens forest birds

The states of Amazonia and Parà in northern Brazil contain some of the largest remaining tracts of tropical forest in the world and support an exceptionally diverse avifauna. The region is, however, undergoing a rapid proliferation of its road networks, which could have dire consequences for this unique ecosystem. In Parà state alone, an estimated 27,000 km of roads are expected to be built, improved or expanded by 2031—an amount

nearly double London's entire road network. Road construction affects birds directly through habitat loss, roadkill mortality and pollution, and indirectly from edge effects (changes in fauna and flora that occur at habitat boundaries) and fragmentation. Crucially, the development of transportation infrastructure facilitates human access to frontier areas, and thus facilitates illegal logging and poaching.

ROAD CONSTRUCTION AFFECTS BIRDS BOTH DIRECTLY AND INDIRECTLY



SEABIRDS ARE IN SERIOUS DANGER FROM FISHERIES BYCATCH

Commercial fisheries have expanded dramatically since the 1960s, both geographically and in their intensity. Many seabird species now encounter considerable fishing activity during the course of their annual movements. Perhaps the most significant impact is from “bycatch”—the incidental capture of seabirds in fishing gear—which is responsible for the deaths of hundreds of thousands of birds each year, mostly from gillnet, longline and trawl gear types.

CASE STUDY 29

Bycatch is responsible for seabird declines in South Georgia

South Georgia and the South Sandwich Islands are a British Overseas Territory in the southern Atlantic Ocean, supporting globally important breeding populations of seabirds, including Grey-headed Albatross *Thalassarche chrysostoma*, Black-browed Albatross *T. melanophris*, Wandering Albatross *Diomedea exulans* and White-chinned Petrel *Procellaria aequinoctialis*. Despite a dramatic reduction in the number of albatrosses caught in the waters immediately surrounding South Georgia, these populations have continued to undergo major declines. For instance, the population of Endangered Grey-headed Albatross has declined by 44% in the last 11 years. The cause is incidental bycatch in pelagic and demersal longline and trawl fisheries operating in the birds’ high seas foraging areas. Recent research by the RSPB (BirdLife in the UK) and the British Antarctic Survey has identified the major hotspots of overlap between foraging birds and fisheries in the Southern Ocean. Hotspots of overlap with pelagic longline fisheries were identified in the southwest Atlantic, the southeast Atlantic and the southwest Indian oceans, and with demersal longline and trawl fisheries in the southwest Atlantic and southeast Atlantic Ocean.



Some seabirds, such as Black-browed Albatross *Thalassarche melanophris*, are highly susceptible to being caught in fishing gear. PHOTO Dimas Gianuca, RSPB.

CASE STUDY 30

Seabird bycatch is a serious issue in fisheries around the world

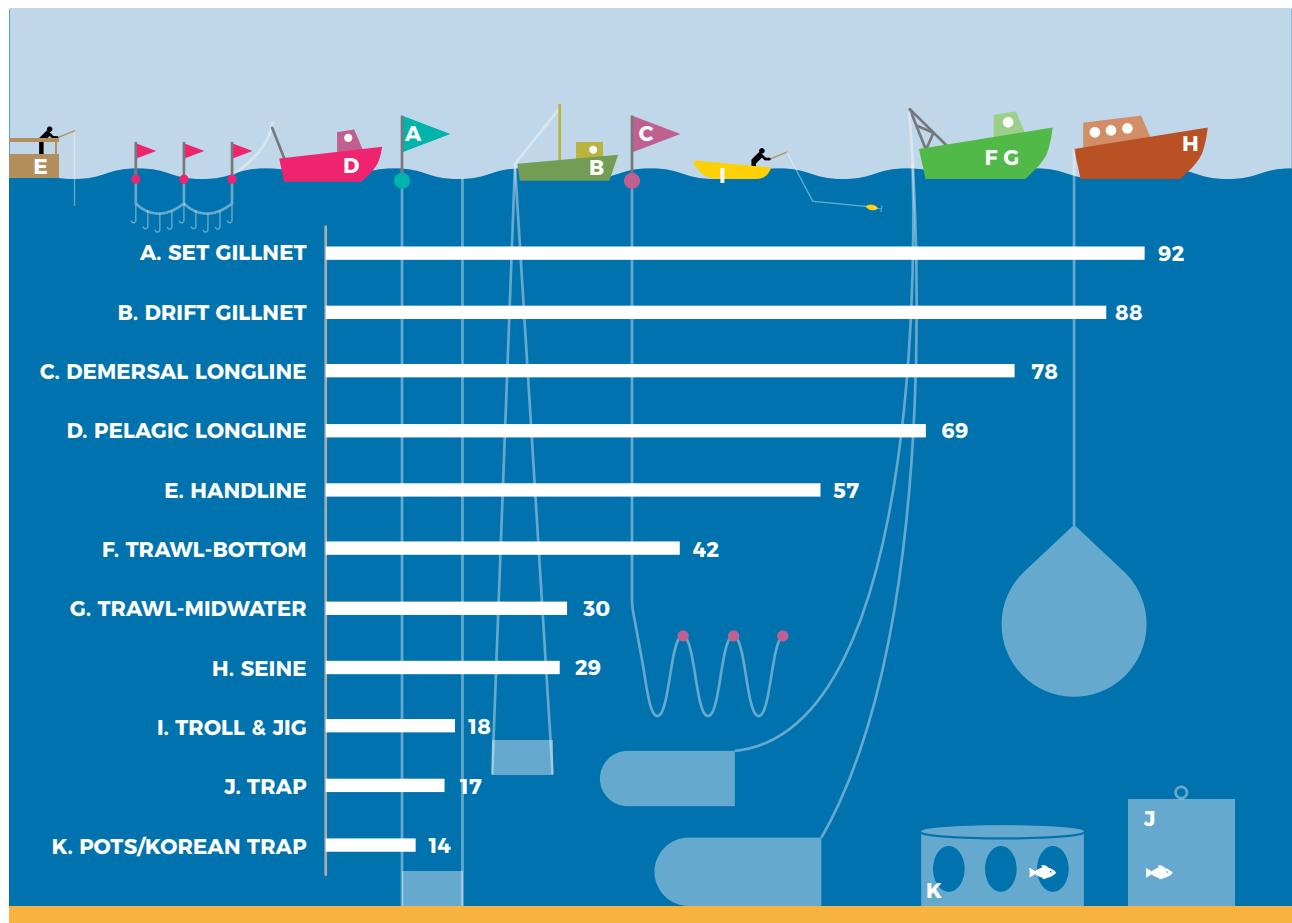
Seabird bycatch is an issue associated with numerous fisheries around the world. Set and drift gillnets are documented to have affected the greatest number of seabird species: 92 and 88 species respectively. Hook gear (longlines and handlines) have documented impacts on 127 seabird species. Together, these gear types have caused documented bycatch in 193 species.

Gillnet fisheries use a “curtain” of netting that hangs in the water to catch fish around the gills. They can be set at different depths and can be static (set) or drifting (drift). Gillnet fisheries are responsible for over 400,000 seabird deaths each year, mostly

of coastal and diving species. Longline fisheries are those that trail a line of baited hooks behind a fishing vessel. They can be set for pelagic (surface/midwater) or demersal (bottom) fishing, depending on the target species. Globally, longline fisheries are thought to cause over 160,000 seabird deaths each year, mostly of albatross and petrel species. Trawl fisheries are those in which one or two boats pull large nets through the water behind them. Seabird deaths typically occur through collision with the warp cables, or during the setting and hauling of the nets. Trawlers cause tens of thousands of seabird deaths each year, usually of larger species.

NUMBER OF SEABIRD SPECIES DOCUMENTED INTERACTING WITH DIFFERENT FISHING GEAR

Data from Pott & Wiedenfeld (2017) Biological Conservation 210: 192–204.



CLIMATE CHANGE IS ALREADY HAVING NEGATIVE IMPACTS ON NATURE

The climate of our planet is changing as a direct result of human activities, mainly the burning of fossil fuels. Many bird species are already struggling to adapt to the pace of these changes. Rising temperatures are driving species' distributions towards the poles and towards higher ground. Migratory and breeding cycles are changing, leading to disrupted relationships with prey, predators and competitors. In many cases, these effects have driven population declines. As warming continues, negative impacts will multiply and intensify. While some species may benefit from rising temperatures, it is likely that more than twice as many species will lose out.

CASE STUDY 31

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Nearly one quarter of bird species so far studied have already been negatively affected by climate change

A recent review of the scientific literature shows that 24% of the 570 bird species studied globally have already been negatively affected by climate change to date, while only 13% have responded positively. For half of those studied, the impact remains uncertain. Of those species negatively affected, declines in abundance and range size are the most

common impacts. Given that scientific research has been largely limited to Europe and North America, this figure is certainly an underestimation and indicates that even the relatively modest temperature increase experienced to date has had a considerable impact on global biological diversity.

SPECIES' RESPONSES TO RECENT CLIMATE CHANGE



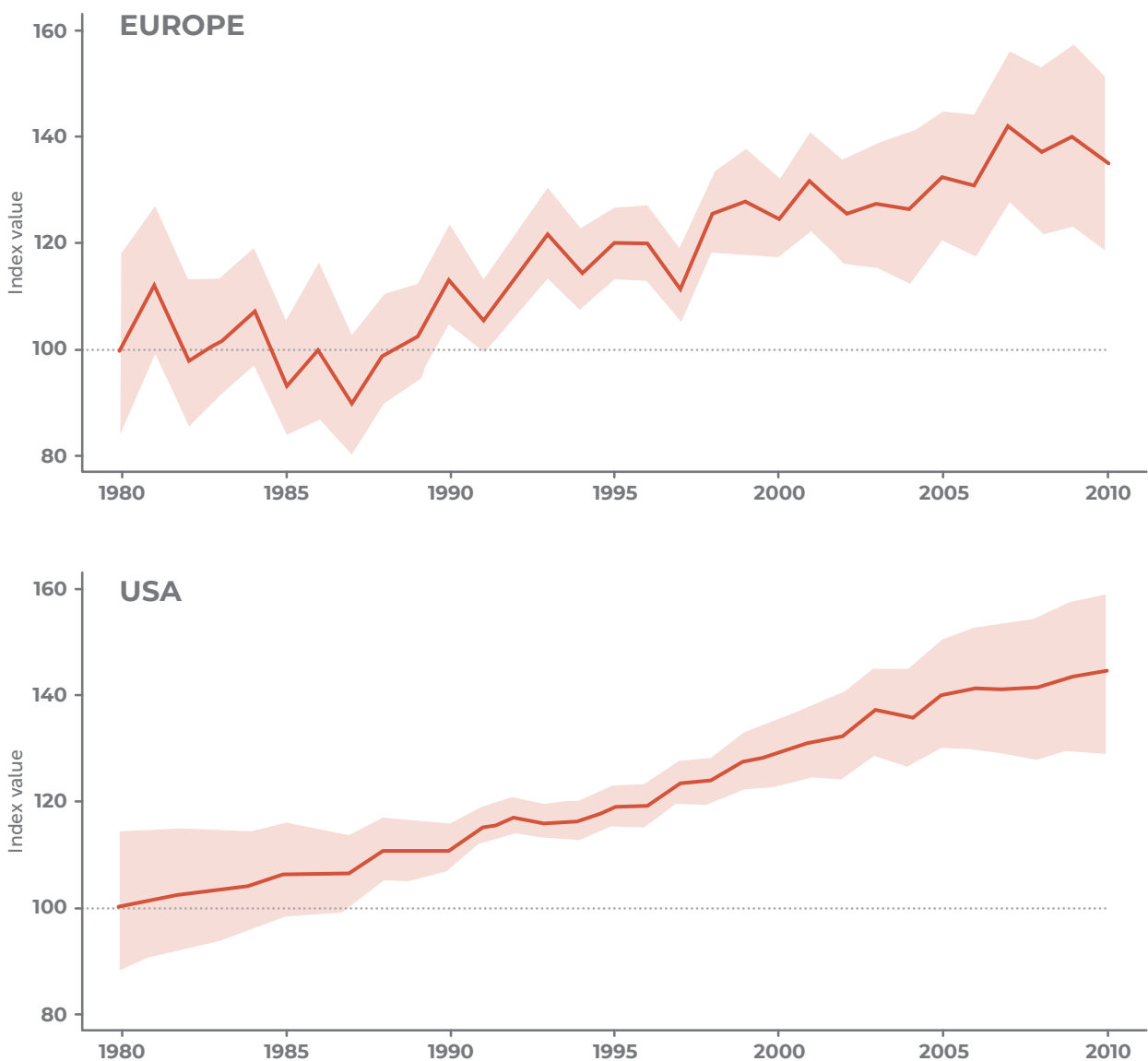
CASE STUDY 32

Recent bird population trends show a strong and consistent signal of climate change

Climate change is not just a concern for the future: it is already impacting species. Recent common bird population trends in Europe and North America show a strong and consistent signal of climate change. Warm-adapted species (those whose distributions are projected to expand under climate change) have increased in abundance over recent decades, while cool-adapted species (those

whose distributions are projected to contract) have decreased in numbers. The ratio of trends for the two sets of species – the Climatic Impact Index – shows a strong signal of climate change on bird populations over the last 30 years, consistent across the two continents, with increasing values indicating that the overall impact of climate change on birds is growing.

THE CLIMATIC IMPACT INDEX FOR COMMON EUROPEAN AND NORTH AMERICAN BIRDS



ULTIMATELY, HUMAN OVERCONSUMPTION LIES BEHIND THE GLOBAL BIODIVERSITY CRISIS

The preceding pages outline the proximate drivers of avian extinction and of biodiversity loss more widely. However, behind these driving mechanisms are causal factors relating to the rise in both human population and individual consumption, but also linked to imbalances in power and wealth, poor governance, systemic economic failings and resource inefficiencies. Addressing these underlying causes is challenging, and requires radical changes to the way we run our global economies and live our individual lives, yet it is essential if the impending biodiversity crisis is to be averted.

CASE STUDY 33

Unsustainable and inequitable resource use

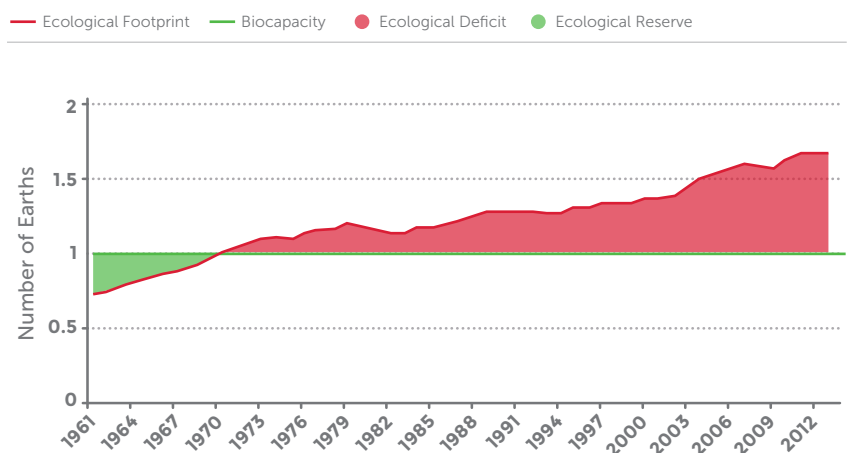
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Humanity has reached a point where its collective size and individual expectations have grown such that we have started to deplete the Earth's resources faster than they can be renewed. Earth's natural capital must now sustain 7.6 billion people, including a rapidly expanding global middle class that enjoys an unprecedented level of individual material consumption. Humanity has reached

a point where it is living beyond the biological capacity of the planet. Demand for the planet's resources is now equivalent to more than 1.7 Earths. The natural systems that underpin all life and every aspect of human existence are beginning to buckle. The race is now on to develop sustainable methods of living before these vital ecological systems and cycles are irreversibly compromised.

ECOLOGICAL FOOTPRINT

The ecological footprint measures human demand on nature. It shows an alarming and consistent trend: one of continuous growth. As of 2013, the global ecological footprint equates to almost 1.7 Earths; effectively, the planet's ecological services are being used 1.7 times faster than they can be renewed. SOURCE: Global Footprint Network, 2017 National Footprint Accounts.



CASE STUDY 34

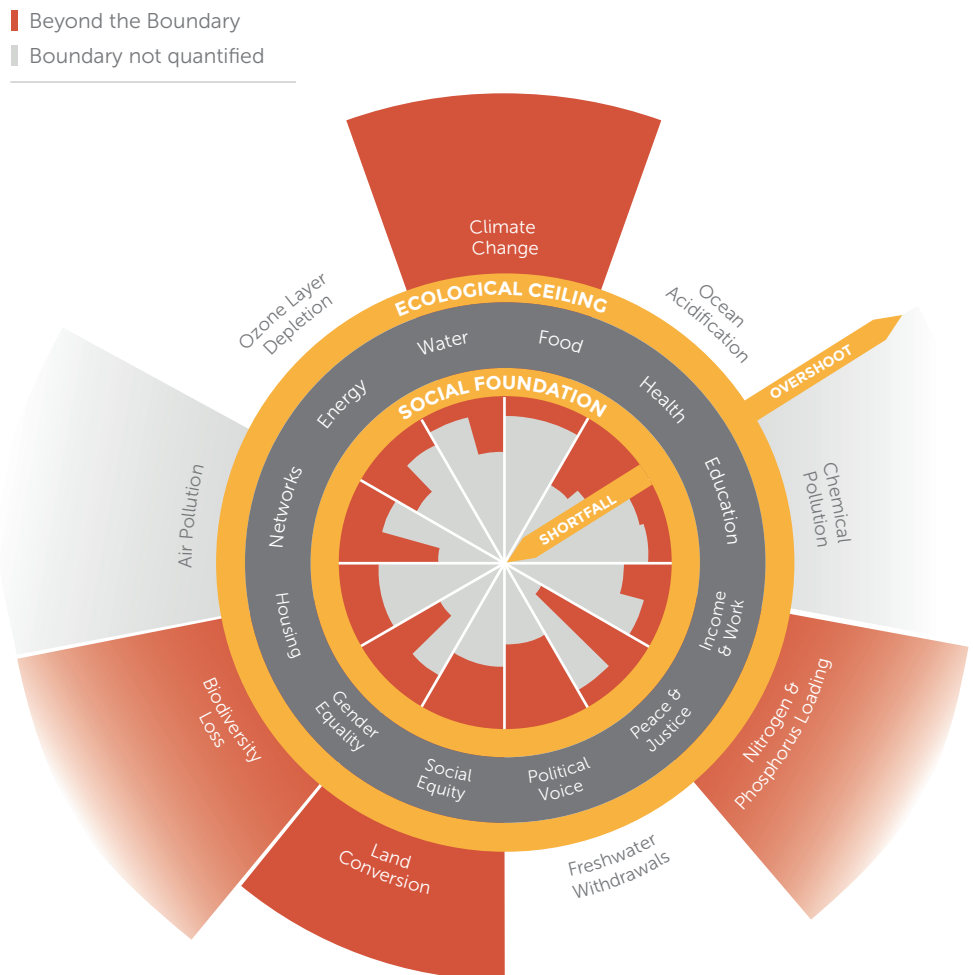
Perverse and outdated economic models

Prevailing economic orthodoxies treat natural resources as if they were limitless, and fail to value adequately the enormous services delivered by wild nature. These conventional models prioritise economic growth, irrespective of whether it is derived through sustainable practices or not. However, growth that is achieved by degrading natural resources and disrupting natural systems is, in the long-term, economically counterproductive. Examples of “uneconomic” growth abound. For example, the conversion of biodiverse rainforests into biofuel monocultures makes neither economic nor environmental sense in the long-term. Not only does the production of biofuels on formerly

forested lands result in significant CO₂ emissions, but also the financial gains accrued by a small number of current developers pale in comparison to the economic cost inflicted on society through lost ecological services. It is increasingly apparent that we must rethink conventional economic models, which prioritise unending growth as the definitive measure of progress. To achieve a genuinely “green economy” we need a new economic goal, one that seeks to meet the needs of all within the means of the planet. For instance, some argue that we should transform economics’ end goal—from endless growth to thriving in balance.

THE DOUGHNUT OF SOCIAL AND PLANETARY BOUNDARIES

Economist Kate Raworth argues that we should rethink economics’ end goal—from endless growth to thriving in balance. She likens this new economic goal to a doughnut where the planet’s environmental limits set the outer circle or “ecological ceiling”, whilst the essential necessities for universal human health and wellbeing set the inner circle or “social foundation”. Exceeding (“overshoot”) the ecological ceiling has damaging consequences, such as climate change and biodiversity loss. Similarly, falling short (“shortfall”) of the social foundations leaves fundamental human needs such as health, food and social equity, inadequately met. Developing economic models that enable us to live within these boundaries should be a priority for global society. SOURCE Raworth (2017) Doughnut Economics: Seven Ways to Think Like a 21st-Century Economist. Random House, UK.



**RESPONSE:
THE ACTIONS
NEEDED TO
CONSERVE BIRDS
AND BIODIVERSITY**





Targeted conservation is helping the Critically Endangered Kakapo *Strigops habroptila* to recover and numbers are increasing steadily. PHOTO Shane McInnes.

DESPITE THE SCALE OF THE CHALLENGE, CONSERVATION IS WORKING

The pressures on the world’s flora and fauna and the habitats where they live are considerable. Yet conservation does work. For birds in particular, there are numerous inspiring success stories demonstrating that, given sufficient resources and political will, species can recover and habitats can be restored. The BirdLife Partnership has been responsible for many of these successes and continues to find innovative ways to safeguard biodiversity that maximise the benefits to, and involvement of, local communities and wider society.

CASE STUDY 35

Measuring the impact of conservation for birds

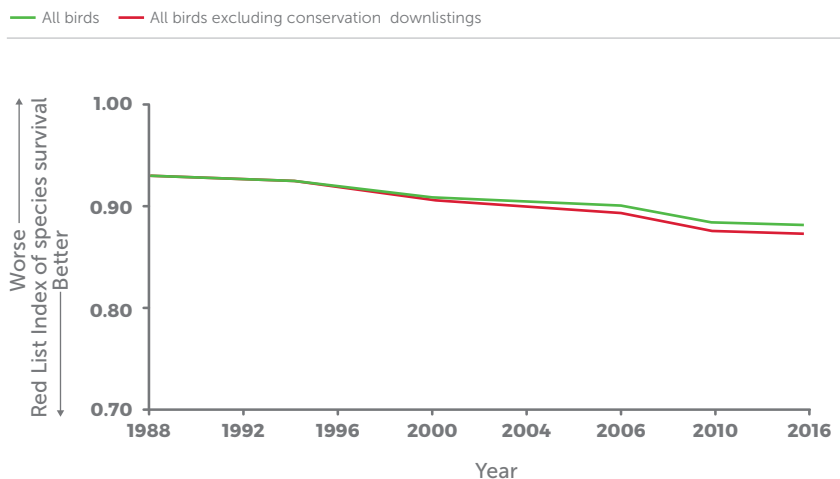
Biodiversity metrics, such as the Red List Index (RLI), reveal an ongoing deterioration in biodiversity and confirm that much greater conservation effort is required. Yet, they also unequivocally demonstrate that conservation efforts are making a real and lasting difference. The counterfactual RLI for birds, in which the impact of past downlistings due to conservation is removed, clearly shows that

without conservation interventions, trends in avian extinction would be far worse. Indeed, these results underestimate the impact of conservation on trends because, among other reasons, they do not account for species whose extinction risk did not change over time but that would have deteriorated further in the absence of conservation actions.

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TRENDS IN BIRD SURVIVAL WITH AND WITHOUT CONSERVATION

The Red List Index (RLI) for birds showing a counterfactual trend depicting what would have occurred without conservation action. An RLI value of 1 equates to all species being categorised as Least Concern, and hence that none is expected to go extinct in the near future. An RLI value of 0 indicates that all species have gone extinct.



CASE STUDY 36

At least twenty-five bird species have been brought back from the brink of extinction so far this century.

The following species have all been downlisted from Critically Endangered since 2000 due to conservation action. There are additional Critically Endangered species for which conservation action is happening, but which is not yet sufficient to warrant downlisting, yet without which the species would surely have deteriorated further and perhaps even vanished altogether.



Red-billed Curassow
(*Crax blumenbachii*)
downlisted to Endangered in 2000



Pink Pigeon (*Nesoenas mayeri*)
downlisted to Endangered in 2000



Black-faced Spoonbill
(*Platalea minor*)
downlisted to Endangered in 2000



Asian Crested Ibis
(*Nipponia nippon*)
downlisted to Endangered in 2000



Rarotonga Monarch
(*Pomarea dimidiata*)
downlisted to Endangered in 2000
and to Vulnerable in 2012



Rodrigues Warbler
(*Acrocephalus rodericanus*)
downlisted to Endangered in 2000,
and to Near Threatened in 2013



Tongan Scrubfowl
(*Megapodius pritchardii*)
downlisted to Endangered in 2004



Christmas Boobook
(*Ninox natalis*)
downlisted to Vulnerable in 2004



Zino's Petrel
(*Pterodroma madeira*)
downlisted to Endangered in 2005



Abbott's Booby
(*Papasula abbotti*)
downlisted to Endangered in 2005



Seychelles White-eye
(*Acrocephalus modestus*)
downlisted to Endangered in 2000,
and to Vulnerable in 2016



Seychelles Magpie-robin
(*Copsychus sechellarum*)
downlisted to Endangered in 2005



Echo Parakeet
(*Psittacula eques*)
downlisted to Endangered in 2007



Nukuhiva Imperial-pigeon
(*Ducula galeata*)
downlisted to Endangered in 2008



Chatham Petrel
(*Pterodroma axillaris*)
downlisted to Endangered in 2009
and to Vulnerable in 2015



Lear's Macaw
(*Anodorhynchus leari*)
downlisted to Endangered in 2009



Mauritius Fody
(*Foudia rubra*)
downlisted to Endangered in 2009



Yellow-eared Parrot
(*Ognorhynchus icterotis*)
downlisted to Endangered in 2010



Azores Bullfinch
(*Pyrrhula murina*)
downlisted to Endangered in 2010,
and to Vulnerable in 2016



Campbell Teal
(*Anas nesiotis*)
downlisted to Endangered in 2011



Pale-headed Brush-finch
(*Atlapetes pallidiceps*)
downlisted to Endangered in 2011



St Helena Plover
(*Charadrius sanctaehelenae*)
downlisted to Vulnerable in 2016



Amami Thrush
(*Zoothera major*)
downlisted to Near Threatened in 2016



Guadalupe Junco
(*Junco insularis*)
downlisted to Endangered in 2016



Montserrat Oriole
(*Icterus oberi*)
downlisted to Vulnerable in 2016

PROTECTING THE MOST IMPORTANT SITES FOR BIRDS AND WIDER BIODIVERSITY

For many species, including birds, effective conservation depends on targeting resources at the site scale. Conserving the Important Bird and Biodiversity Areas network would make an enormous contribution towards maintaining not just the planet's bird species, but much other biodiversity. While formal protection often remains the preferred option, there are many other approaches that can also be highly effective.



A new reserve offers hope to the Critically Endangered Cherry-throated Tanager *Nemosia rourei*. PHOTO: [Ciro Albano](#).

CASE STUDY 37

Newly created Águia Branca Private Reserve helps Cherry-throated Tanager

The Critically Endangered Cherry-throated Tanager *Nemosia rourei* was rediscovered in the Atlantic Forest of Brazil in the 1990s—over fifty years after its last sighting. Its population is estimated to be between 30 and 200 individuals, although infrequent sightings combined with sustained deforestation indicate a continuous population decline. SAVE Brasil (BirdLife in Brazil) has been active in the area since 2005, and has supported Grupo Águia Branca, Brazil's largest transportation and logistics company, to set aside 1,688 hectares of their land for a private reserve.

The Águia Branca Private Reserve is the second largest of its kind in the state of Espírito Santo and could one day become the foundation for a wildlife corridor connecting three adjacent state parks: Forno Grande, Castelo and Pedra Azul. As well as safeguarding Cherry-throated Tanager, the new reserve will protect over 250 bird species, including five other globally threatened species. SAVE Brasil's next step is to develop an adjacent public reserve, which will result in a combined wildlife refuge of around 6,000 hectares.

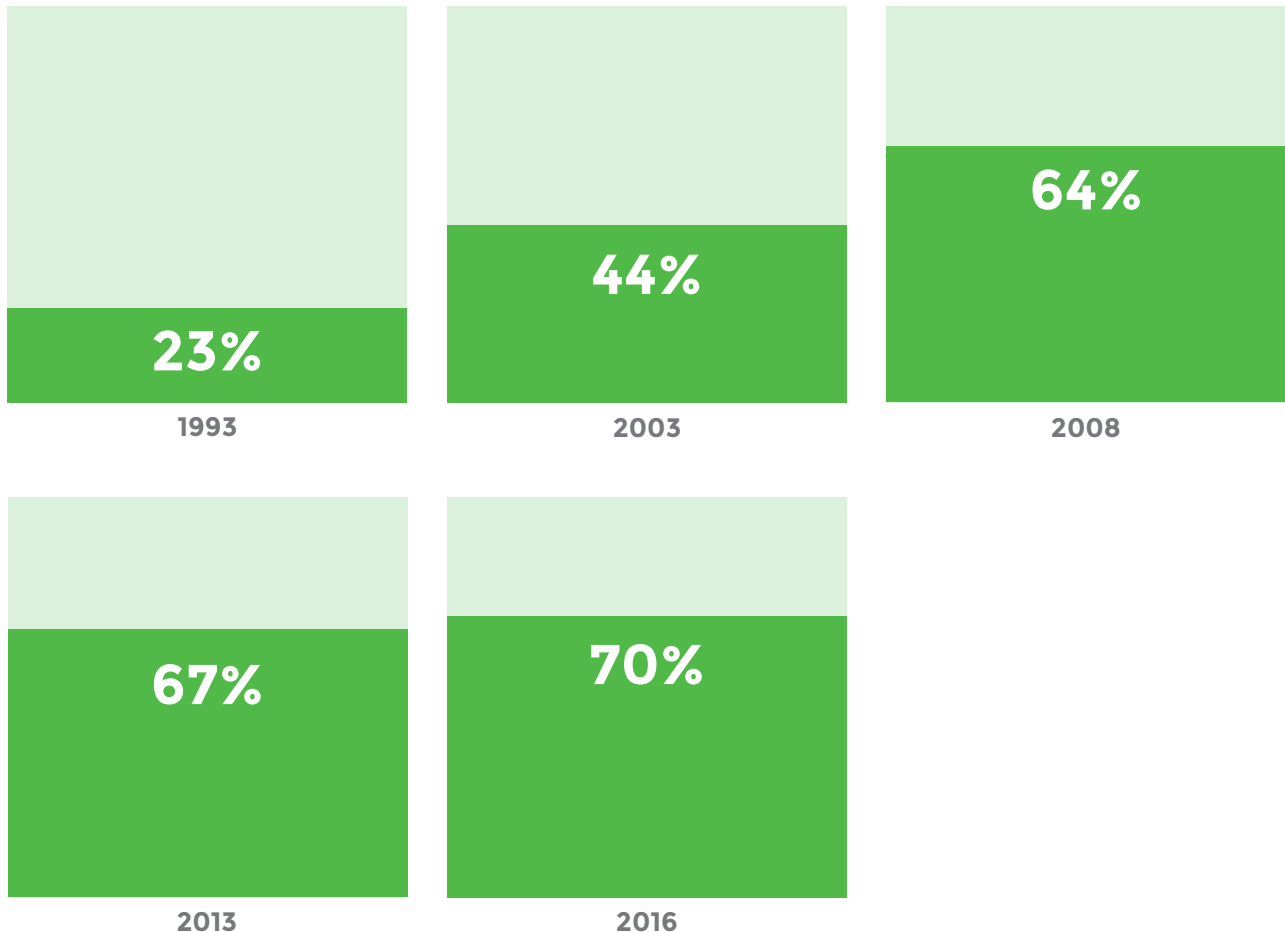
CASE STUDY 38

IBAs are used to inform protected area designation in the European Union

In the European Union, the IBA inventory has helped inform the designation of hundreds of Special Protection Areas (SPAs), which, together with Special Areas of Conservation (SACs), form the Natura 2000 network of sites that provide legal protection to Europe's most important habitats and species. For example, the Dutch Government used the national IBA directory as the basis for its SPA designation; as a result, 91% of the area of the country's IBA network is now protected by SPAs. The IBA criteria applied in the EU were deliberately aligned with SPA selection criteria. Consequently,

the value of the IBA inventory as a "shadow list" of SPAs has repeatedly been recognised by the European Court of Justice and the European Commission in a series of cases brought against Member States for failure to designate sufficient SPAs. A number of EU Member States now have 90% or more of their total terrestrial IBA area protected by SPAs, including Estonia, the Netherlands, Bulgaria and Latvia. Croatia, which only joined the EU in 2013, has designated 30% of its land area as SPAs - a higher proportion than any other Member State.

PERCENTAGE OF TERRESTRIAL IBA AREA IN THE EU DESIGNATED AS SPECIAL PROTECTION AREAS



HABITAT RESTORATION IS ESSENTIAL

In order to avert the biodiversity crisis we need to go beyond protecting remaining nature-rich sites and also restore and reconnect wider degraded landscapes. BirdLife is leading efforts around the world to do just this. The RSPB (BirdLife in the UK) is involved in a wetland restoration scheme on a scale never before attempted in Europe. When completed in 2025, the project at Wallasea Island in southern England will have reinstated a total of 670 hectares of wetland. In the Caribbean, 13 BirdLife Partners have formed the Neotropical Mangrove Alliance to conserve and restore mangrove forest, while, in the Pacific, BirdLife is systematically restoring dozens of island ecosystems across French Polynesia.

CASE STUDY 39

Restoring coastal saltpans

Although built for the primary purpose of extracting salt from water through natural evaporation, saltpans are often extraordinarily important habitats for wildlife, frequently attracting large numbers of migratory waterbirds. Unfortunately, many saltpans are being abandoned and lost, as they are no longer viewed as commercially viable. To reverse this trend, BirdLife Partners from across Southern Europe and Northern Africa have teamed up to save and restore saltpans. As well as removing invasive vegetation and managing water regimes, they are working with local communities and salt producers to develop economic activities, such as environmental certification and ecotourism, which will help ensure that salt extraction through saltpans remains profitable.



Saltpans can be extraordinarily important habitats for wildlife. PHOTO Dimitri Messinis

CASE STUDY 40

Ending deforestation and restoring forest

BirdLife is at the forefront of efforts to restore the world's forests. In partnership with WWF and the Wildlife Conservation Society, it has set an ambitious target that will see one trillion trees re-grown, saved from loss or receiving better protection by 2050. The initiative builds on BirdLife's already extensive programme of work on forest

restoration. For example, at Harapan Rainforest in Indonesia, BirdLife introduced an innovative forest management license, which has seen around 100,000 hectares of logging concession restored and conserved. The scheme has since been adopted at sites throughout the country.

THE TRILLION TREES PROJECT



THE TRILLION TREES VISION IS TO REVERSE THIS TREND BY 2050 BY SAVING AND PLANTING ONE TRILLION NEW TREES



360 BILLION
NEW TREES THROUGH
FOREST RESTORATION

Tree planting and assisted natural regeneration

170 BILLION
TREES SAVED
THROUGH AVOIDED
DEFORESTATION

470 BILLION
TREES PROTECTED THROUGH
FOREST LANDSCAPES

ERADICATION AND CONTROL OF INVASIVE ALIEN SPECIES

Across the globe, BirdLife is tackling invasives through biosecurity, eradication and control. The last two decades have seen considerable advances in eradication techniques, and a number of recent and ongoing island restoration projects attest to the dramatic success that can be achieved when there are sufficient resources and political will. Several formerly Critically Endangered bird species, including Black Robin *Petroica traversi*, Seychelles Magpie-robin *Copsychus sechellarum*, Echo Parakeet *Psittacula eques* and Rarotonga Monarch *Pomarea dimidiata*, have been saved from extinction by addressing invasive species.

CASE STUDY 41

Eradicating invasive species in the Pacific

Since 2006, BirdLife has rid over 30 islands across the Pacific of five invasive vertebrate species. In addition, invasive control is underway at numerous other sites throughout New Caledonia, Fiji, the Cook Islands and French Polynesia. As a result, 17 globally threatened birds, including Polynesian Ground-dove *Alopecoenas erythropterus* and Tuamotu Sandpiper *Prosobonia parvirostris*, are now showing some signs of recovery. In addition, three threatened reptiles, including the Fiji Crested Iguana *Brachylophus vitiensis*, have been protected, while other native wildlife is also thriving.



The globally Endangered Tuamotu Sandpiper *Prosobonia parvirostris* is recovering on islands now free of invasive predators.
PHOTO Marie-Helene Burle / Island Conservation.

CASE STUDY 42

Globally important islands for eradications

BirdLife, in collaboration with Island Conservation and others, has identified 88 islands worldwide where highly threatened native bird species are impacted by invasive mammals and where

eradication efforts are feasible to initiate by 2030. Successful eradications across all these islands would safeguard populations of some 55 globally threatened bird species.

GLOBALLY IMPORTANT ISLANDS FOR ERADICATING INVASIVE SPECIES

KAYANGEL, PALAU

Palau's northernmost Atoll, Kayangel, has suffered a devastating explosion of invasive rats that threatens several endemic species, such as the Endangered Micronesian Scrubfowl *Megapodius laperouse*. Efforts are already underway involving BirdLife and its national Partner, the Palau Conservation Society, to eradicate the invasive rodents.



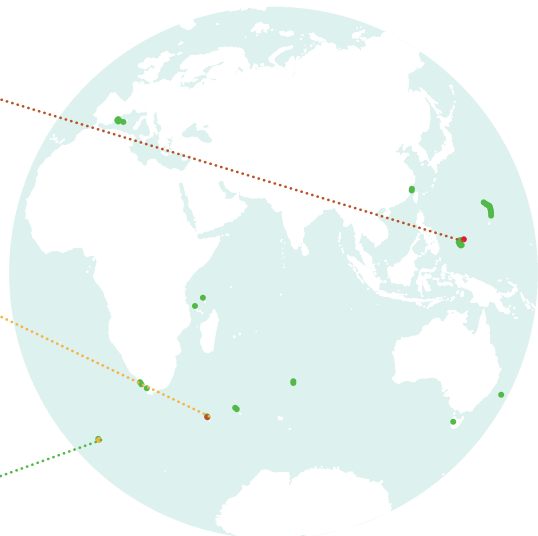
MARION ISLAND, SOUTH AFRICA

Marion Island supports millions of seabirds of 28 species, including the globally Vulnerable Wandering Albatross *Diomedea exulans*. A successful feral cat eradication campaign was concluded in 1991. However, since then invasive mice have emerged as a serious threat, known to predate on petrel and albatross chicks. BirdLife South Africa is now leading a collaborative effort to eradicate mice, and has just concluded a feasibility study.



GOUGH ISLAND, TRISTAN DA CUNHA

Gough Island is home to more than eight million birds of at least 23 different species, including the Critically Endangered Tristan Albatross *Diomedea dabbenena* and Gough Finch *Rowettia goughensis*. Mice were accidentally introduced in the 19th century and are having a devastating impact on the native birds. The RSPB and Tristan da Cunha Island Council have developed an ambitious programme that will use bait spread by helicopters to eliminate the invasive mice.



SANTA LUZIA, CAPE VERDE

Invasive cats have recently been eradicated from Santa Luzia, paving the way for the reintroduction of the Critically Endangered Raso Lark *Alauda razae*. The project, led by BirdLife Partner, the Portuguese Society for the Study of Birds (SPEA), will constitute one of the first successful cat eradications on an African island and provide a massive boost to the survival chances of one of Africa's rarest songbirds.



MARQUESAS ARCHIPELAGO, FRENCH POLYNESIA

The Marquesas is one of the most important archipelagos for bird conservation in the world. It comprises six main volcanic islands, and many islets. BirdLife has ambitious predator eradication plans, which aim to secure predator-free habitat for 22 species of seabird (including globally Endangered Phoenix Petrel *Pterodroma alba* and Polynesian Storm-petrel *Nesofregatta fuliginosa*) and two globally Endangered landbirds—Marquesas Ground-dove *Alopecoenas rubescens* and Marquesas Monarch *Pomarea mendozae*.



TARGETED SPECIES RECOVERY

At least 30 bird species, including Northern Bald Ibis *Geronticus eremita* and Seychelles Warbler *Acrocephalus sechellensis*, would have gone extinct in the last century without the targeted actions of conservationists. The BirdLife Partnership has been responsible for many of these success stories. The dedicated actions of conservationists continue to bear fruit and, as a result, most years BirdLife is able to downlist a number of species on the IUCN Red List. In 2017, this included New Zealand's Okarito Kiwi *Apteryx rowi* and Northern Brown Kiwi *A. mantelli*, both downlisted from Endangered to Vulnerable following nearly 30 years of committed conservation effort by government bodies, local conservation groups and the Maori community.



A quick response by conservationists has helped secure the last known population of Santa Cruz Ground-dove *Alopecoenas sanctaegrucis*. PHOTO Joe Wood

CASE STUDY 43

Dramatic rescue of the Santa Cruz Ground-dove

The last known population of the Endangered Santa Cruz Ground-dove *Alopecoenas sanctaegrucis* is found on the tiny (8 km²) volcanic island of Tinakula in the southern Solomon Islands. It suffered a double setback in 2017 when what is thought to be a large proportion of the remaining population was illegally trapped for export to the Middle East; following this the island experienced a serious eruption that covered much of the remnant forest in thick ash. But a quick response by BirdLife and its conservation partners has helped avert disaster, and a captive breeding project is now being put in

place that will hopefully ensure the species' long-term survival. A project led by BirdLife, funded by an emergency donation from the Mohamed bin Zayed Conservation Fund and drawing on the expertise of various zoo curators with deep knowledge of pigeons and doves, was immediately set in motion to recover the caged birds, build them the best facilities possible, and nurse them back to health. In total 109 birds were recovered, of which 25 pairs are planned to be sent to Singapore's Jurong Bird Park to serve as an *ex situ* insurance population and also to be bred rapidly in order to provide stock for

use in reintroduction programmes in the future. The rest will remain in the Solomon Islands to be bred in the newly constructed aviary. Meanwhile, in December 2017, 15 wild Santa Cruz Ground-doves were sighted on Tinakula—so some birds at least

survived the eruption. Now, thanks to the quick response of conservationists and with a recovery plan already drawn up, the work can begin to rebuild the population.

CASE STUDY 44

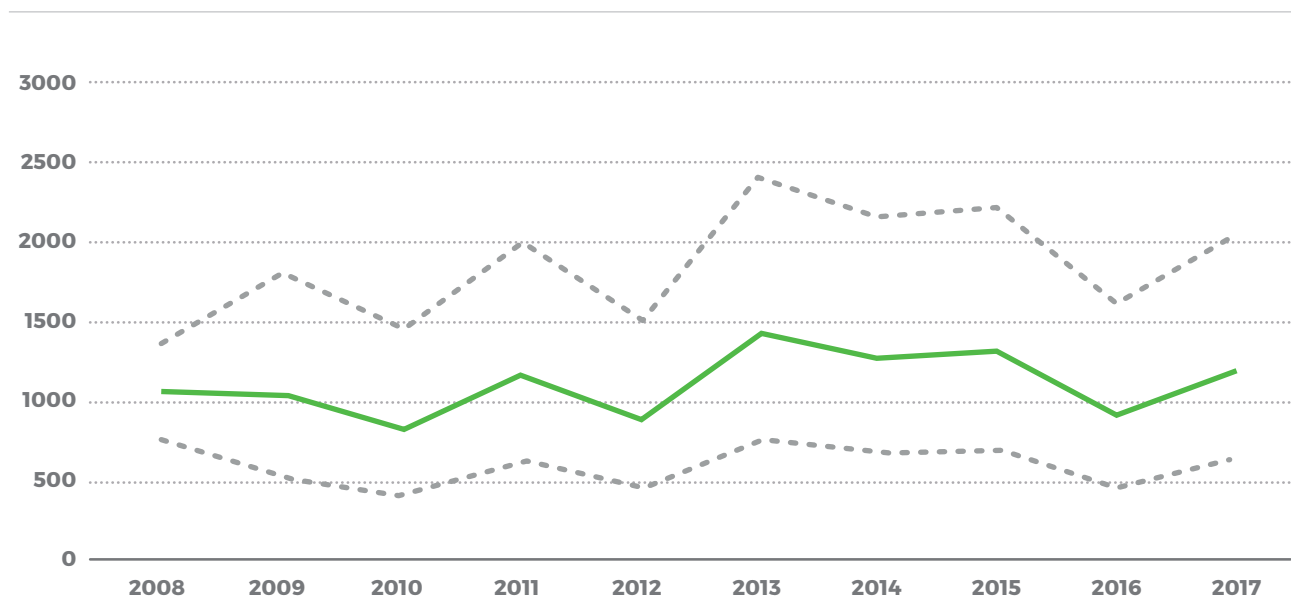
A committed conservation effort has led to the recovery of Azores Bullfinch

The Azores Bullfinch *Pyrrhula murina* or Priolo—once Europe’s most threatened songbird—has undergone an impressive reversal of fortune thanks to the actions of the Portuguese Society for the Study of Birds (SPEA, BirdLife in Portugal). After decades of decline, which saw the population fall to perhaps as few as 40 pairs, the species is now bouncing back. The recovery was made possible through a number of EU-funded LIFE projects, the first of which began in 2003. These have resulted

in the restoration of over 300 hectares of native laurel forest through the removal of alien species and the establishment of native plants. As a result, BirdLife downlisted Azores Bullfinch from Critically Endangered to Endangered in 2010. Work is now reconnecting isolated forest patches to create one large contiguous habitat. The population is now stable at around 1,000 individuals. In the 2016 Red List, the species was downlisted for the second time in under a decade—this time to Vulnerable.

AFTER SUCCESSFUL CONSERVATION THE AZORES BULLFINCH *PYRRHULA MURINA* POPULATION IS NOW STABLE.

— Estimated population - - - Minimum and Maximum



Data from the Portuguese Society for the Study of Birds (SPEA, BirdLife in Portugal)

CAPTIVE BREEDING AND REINTRODUCTION

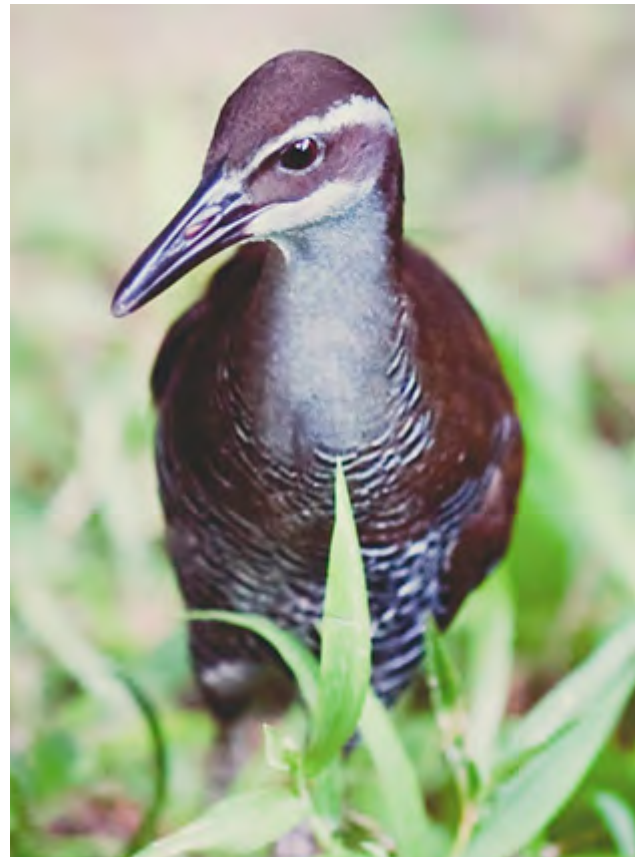
Captive breeding and reintroduction are often the only choice for species that have been reduced to very small numbers. Several species have been rescued from the brink of extinction in this manner, including Pink Pigeon *Nesoenas mayeri*, California Condor *Gymnogyps californianus*, Regent Honeyeater *Anthochaera phrygia* and Asian Crested Ibis *Nipponia nippon*.

CASE STUDY 45

Return of the Guam Rail

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Guam, located in the Mariana archipelago, lost almost all its endemic bird species after the Brown Treesnake *Boiga irregularis* was accidentally introduced in the 1940s. The flightless Guam Rail *Hypotaenidia owstoni* was one casualty. Lacking any experience of such predators, its numbers rapidly declined following the arrival of the snake and, by 1987, it was extirpated from the wild. Luckily, a small number of rails survived in captivity on Guam and in USA zoos. Now, thanks to a captive breeding and reintroduction effort coordinated by the Guam Department of Agriculture, the species is on the threshold of returning from the abyss. Rails have been successfully introduced to Cocos Island, an islet located off the southern tip of Guam. They have also been introduced to Rota island located 90 km north of Guam. Although it may be too early to conclude that a fully self-sustaining wild population has been established, the signs are looking increasingly good, and it is hoped that soon BirdLife will be able to officially reclassify Guam Rail as extant in the wild.



Guam Rail *Hypotaenidia owstoni* on Cocos Island. PHOTO Ginger Haddock, Fernbird Photography.

CASE STUDY 46

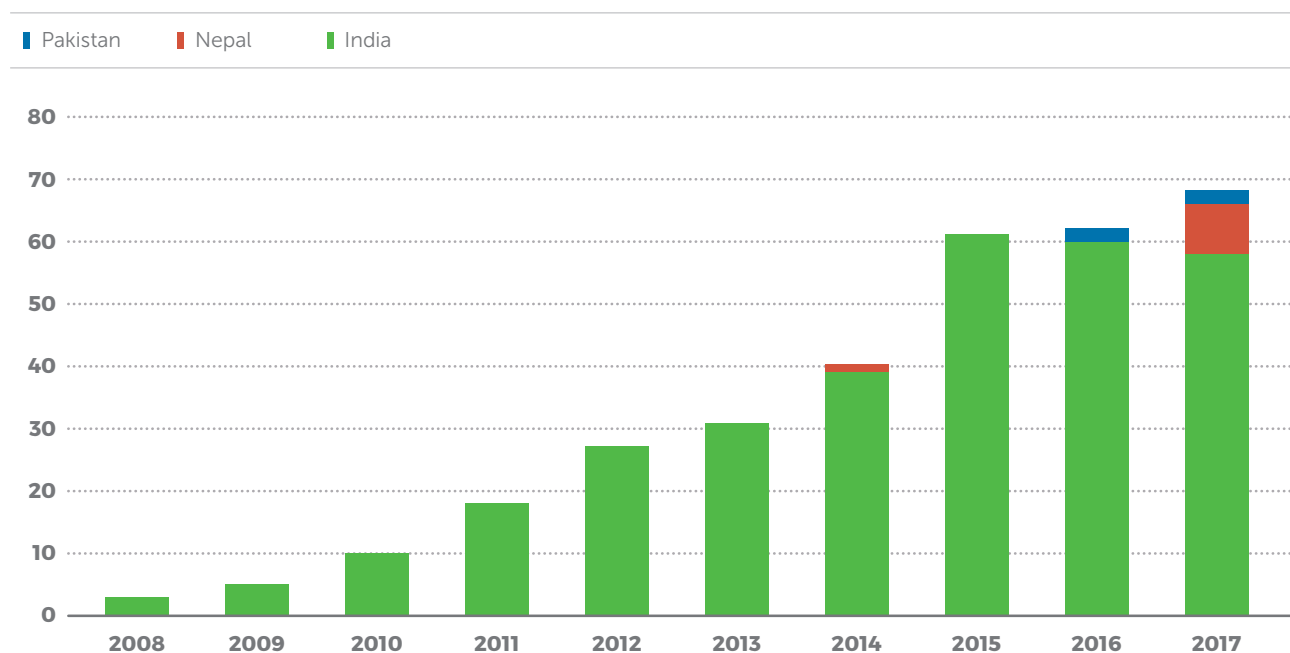
Bringing vultures back to the Indian subcontinent

From tens of millions of individuals to the brink of extinction in just a few short years: the collapse of vulture populations across the Indian subcontinent has been one of the most devastating avian tragedies of recent history and has left all three of the region's resident *Gyps* vulture species Critically Endangered. The cause of the catastrophe—exposure to carcasses with lethal residues of the veterinary drug diclofenac—is being addressed by BirdLife and its partners in the SAVE (Saving Asia's Vultures from Extinction) Consortium. Efforts are underway to make the banning of veterinary diclofenac more effective, and promote and identify safe alternatives, while Vulture Safe Zones have been established as a more localised approach to clear huge (100 km radius) areas of dangers to the vultures, and in some cases provide safe supplementary food. Although removing diclofenac (and other similarly

dangerous drugs like ketoprofen and aceclofenac) from the environment will be crucial to the eventual recovery of the region's vultures, in practice this may take several years. It is therefore essential to protect vultures from exposure to the drug in the meantime. Consequently, vulture conservation breeding centres have been established at five sites in India, as well as at sites in Nepal and Pakistan. The number of captive-bred vultures has risen sharply, and the first successful reintroductions have already taken place in a Vulture Safe Zone in Nepal. While an important step in the recovery of vultures in its own right, captive breeding and reintroduction has also proven to be a highly effective way of focusing political attention on the plight of vultures, reinforcing the steps needed to make the environment safe, and of mobilising much needed resources to save these iconic species.

NUMBER OF CAPTIVE-REARED VULTURES FLEDGED PER YEAR

Number of captive reared vultures fledged per year at five breeding centres in India, one in Nepal and one in Pakistan. All three species—White-rumped Vulture *Gyps bengalensis*, Slender-billed Vulture *Gyps tenuirostris* and Indian Vulture *Gyps indicus*—have been successfully bred at centres in India, while White-rumped Vulture has been bred at the centres in Nepal and Pakistan. In total, 323 vultures have been successfully fledged.



CURBING THE OVEREXPLOITATION OF BIRDS

Central to curbing the overexploitation of birds, whether it be the result of unsustainable hunting for food and sport, trapping for the cage-bird trade, or the incidental bycatch of seabirds in fisheries, is international collaboration and the engagement of a broad range of stakeholders. Particularly important is effective global and national legislation. The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) plays an important role in regulating the wild bird trade. Currently, 155 bird species are listed on Appendix I of the Convention and are thus not permitted to be traded commercially, while there are 1,278 bird species on Appendix II, which can only be traded internationally under specific circumstances. Recently, Grey Parrot *Psittacus erithacus* and Timneh Parrot *P. timneh* have been transferred from Appendix II to Appendix I, effectively prohibiting the commercial trade in wild individuals. The Convention on the Conservation of Migratory Species of Wild Animals (CMS) is also tackling overexploitation, and has recently launched an Intergovernmental Task Force on Illegal Killing, Taking and Trade of Migratory Birds in the Mediterranean (MIKT).

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CASE STUDY 47

Tackling illegal killing in the Mediterranean

BirdLife Partners are working throughout the Mediterranean region to combat the illegal killing and taking of birds. In Lebanon, the Society for the Protection of Nature in Lebanon has worked tirelessly to highlight the issue. The country's government is taking note—in 2017 Lebanon's President suggested "a peace treaty between Man and Birds" and the Ministry of the Environment announced that the 2004 hunting law—the first revision to Lebanese hunting legislation since the 1950s—would be fully implemented. In Italy, Lega Italiana Protezione Uccelli are undertaking

a range of activities aimed at reducing illegal killing, including trialling the use of drones for the surveillance of illegal bird trapping in southern Sardinia. The RSPB (BirdLife in the UK) and BirdLife Cyprus have introduced covert surveillance to gather evidence on illegal bird trapping in Cyprus. So far, 19 individuals have been secretly filmed illegally catching birds in mist nets and successfully convicted. In Egypt, Nature Conservation Egypt has begun to implement an ambitious multi-stakeholder Action Plan on illegal killing with the support of national authorities.

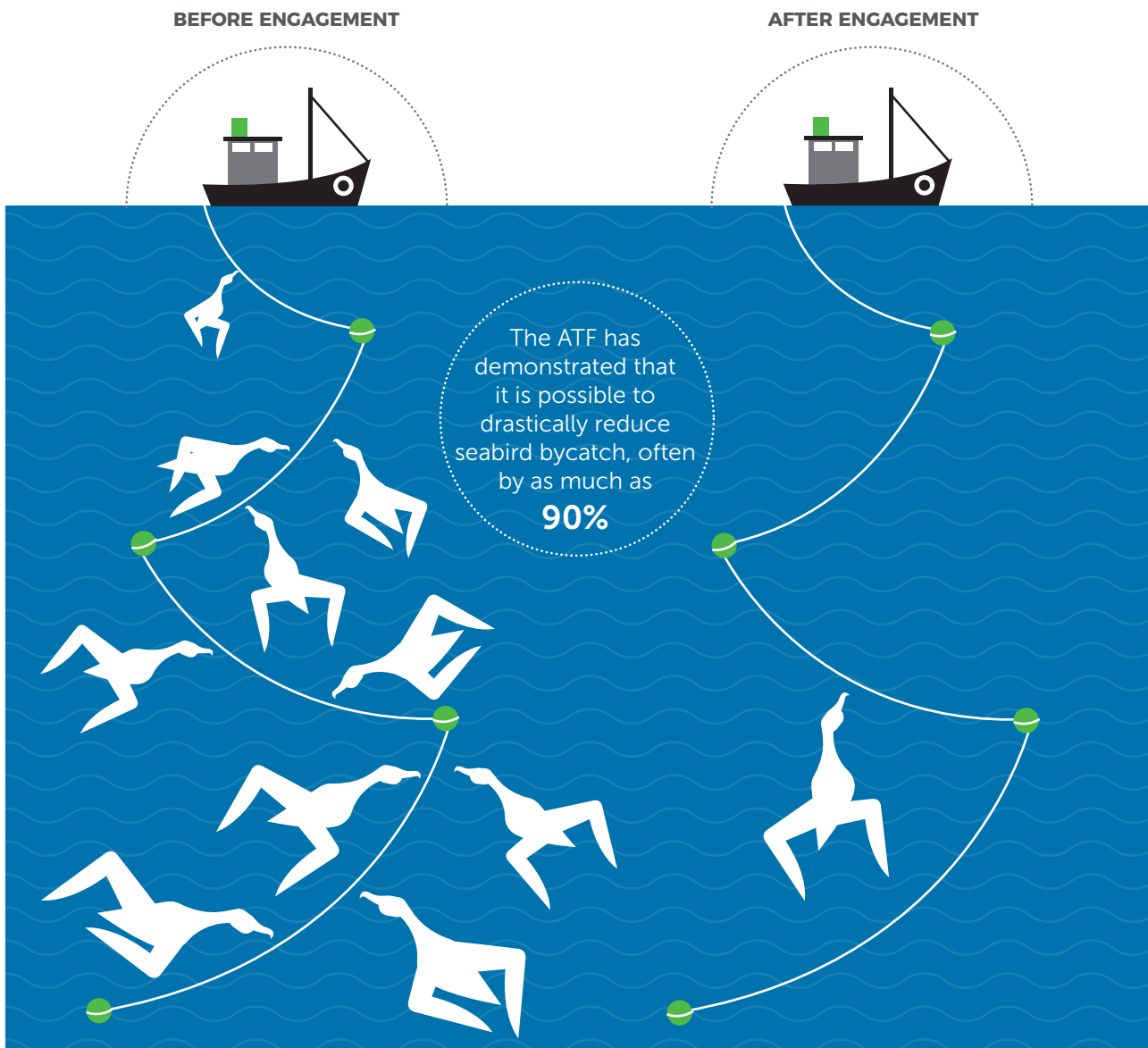
CASE STUDY 48

Preventing seabird bycatch

Since its establishment in 2005, BirdLife's Albatross Task Force (ATF) has had remarkable success in reducing albatross and petrel bycatch in targeted fisheries around the world. Using a range of at-sea mitigation measures, the ATF has demonstrated that it is possible to reduce drastically seabird bycatch, typically by as much as 85% and often over 90%. Indeed, in South Africa, albatross bycatch in the Hake demersal trawl fleet was reduced by 99% over six years. In Chile, modifying the nets used

in the purse-seine fleet reduced bycatch by 98%, and trials in Peru have shown that net lights show promise in reducing seabird bycatch in gillnet fisheries. Following sustained work by the ATF, Argentina and Chile have recently announced new seabird regulations, which are set to save over 10,000 Black-browed Albatrosses *Thalassarche melanophris* in one Argentinean fishery alone.

REDUCING SEABIRD BYCATCH



EDUCATION AND AWARENESS RAISING

Educating people about birds and nature is a crucial component of successful conservation. Communities and individuals who are able to connect with nature, and are made aware of its importance to sustaining our own existence, are more likely to prioritise nature and take action to save it. Around the world, BirdLife Partners are laying the foundation for future conservation by inspiring young people and harnessing their passion and enthusiasm for nature. In so doing, they are building the next generation of conservation supporters and practitioners.



Thanks to Spring Alive, thousands of children have gained a better understanding of the birds they see around them. PHOTO Spring Alive.

CASE STUDY 49

BirdLife's Spring Alive initiative has been introducing children to the wonders of bird migration for more than a decade

Spring Alive, organised by OTOPI (BirdLife in Poland), on behalf of the BirdLife Partnership, is an international project to nurture children's interest in nature and the conservation of migratory birds. The initiative began in 2006 as a European project, which soon spread to Central Asia, and in 2010, it was extended to Africa. Spring Alive encourages children across these regions to record their first sightings of five iconic and easily recognised migratory birds: Barn Swallow *Hirundo rustica*, White Stork *Ciconia ciconia*, Common Cuckoo

Cuculus canorus, Common Swift *Apus apus* and European Bee-eater *Merops apiaster*. In 2017, Spring Alive published its first children's storybook, *Ringo: the Journey of a White Stork*, which follows the eponymous Ringo on her journey from a nestling in Germany through to her first migration to Wakkerstroom in South Africa. The book has already been distributed in electronic form to 60 schools across South Africa, with the plan to expand to another 40 schools in 2018.

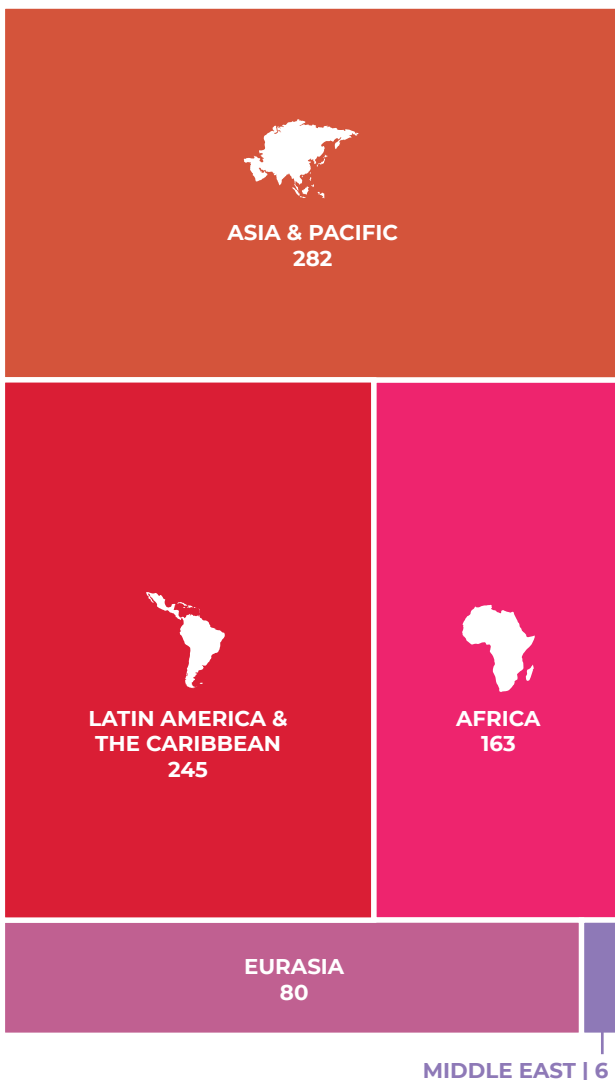
CASE STUDY 50

Transforming early-career conservationists into tomorrow's conservation leaders

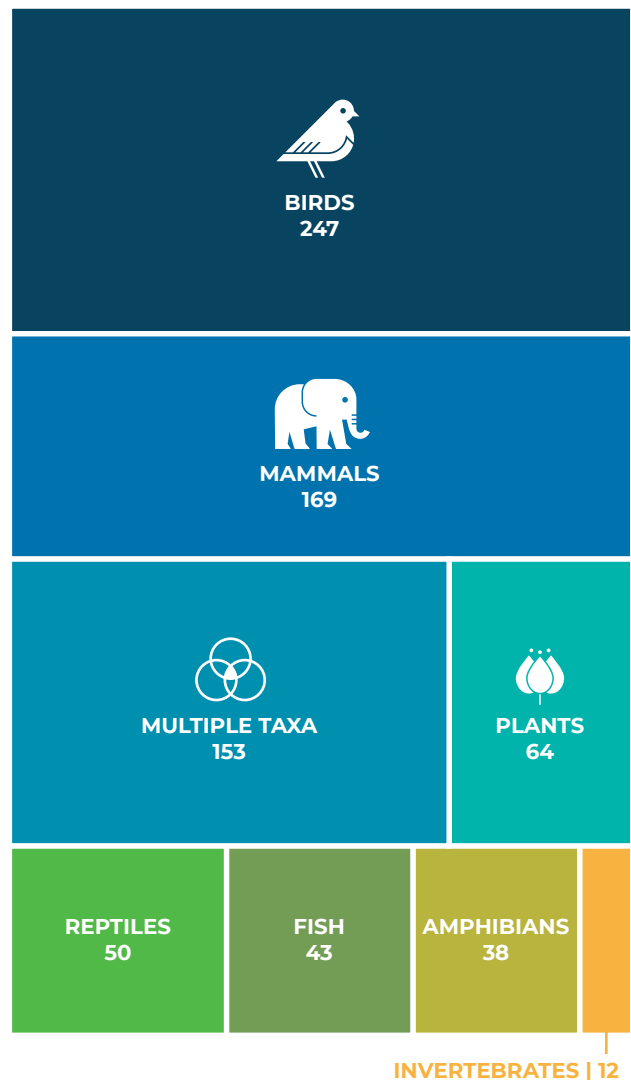
Started in 1985 by BirdLife, the Conservation Leadership Programme is a partnership of three of the world's leading biodiversity conservation organisations—BirdLife International, Fauna & Flora International, and the Wildlife Conservation Society. Drawing upon the expertise of conservation professionals from across the globe, the programme directs project funding and training to early-career conservationists from developing countries who are tackling priority conservation challenges. Over its more than 30-year history,

the programme has supported 776 team-based projects and internships, encompassing nearly 3,000 individuals in 100 countries, many of whom have continued working in the field of conservation. In an overwhelming number of cases, projects initiated by these individuals have continued to grow and flourish. As a direct result of the programme, more than 140 species have been discovered or rediscovered, over 80 sites have been designated for their conservation importance and more than 50 new NGOs have been established.

CONSERVATION LEADERSHIP PROGRAMME PROJECTS PER REGION 1985-2017



SPECIES SUPPORTED BY PROJECTS FROM 1985-2017



ECONOMIC AND LIVELIHOODS INCENTIVES

By understanding the needs of local communities it is possible to develop sustainable livelihood options linked to well-managed and innovative natural resource use. Around the world, BirdLife and its Partners are empowering local communities to conserve and restore degraded ecosystems and to develop livelihood options that both benefit wildlife and deliver economic stability.

CASE STUDY 51

Promoting wildlife-friendly rice farming in Cambodia

The Western Siem Pang Wildlife Sanctuary in Cambodia is home to five Critically Endangered bird species, including Giant Ibis *Thaumatibis gigantea* and White-shouldered Ibis *Pseudibis davisoni*.

The sanctuary is bordered by human settlements, and traditional land management practices are important to maintaining biodiversity. Since the late 2000s, BirdLife's Cambodia Programme and IBIS Rice, a not-for-profit conservation enterprise,

have been working with local farmers to grow Wildlife Friendly™ organic jasmine rice. In return for not using pesticides or herbicides and refraining from hunting or logging, the farmers receive a premium price that guarantees them food security and an increased household income. There are now over 1,000 certified farmers across 12 villages benefiting from the scheme.

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66



IBIS rice protects Giant Ibis *Thaumatibis gigantea* habitat from unsustainable farming practices. PHOTO J C Eames.

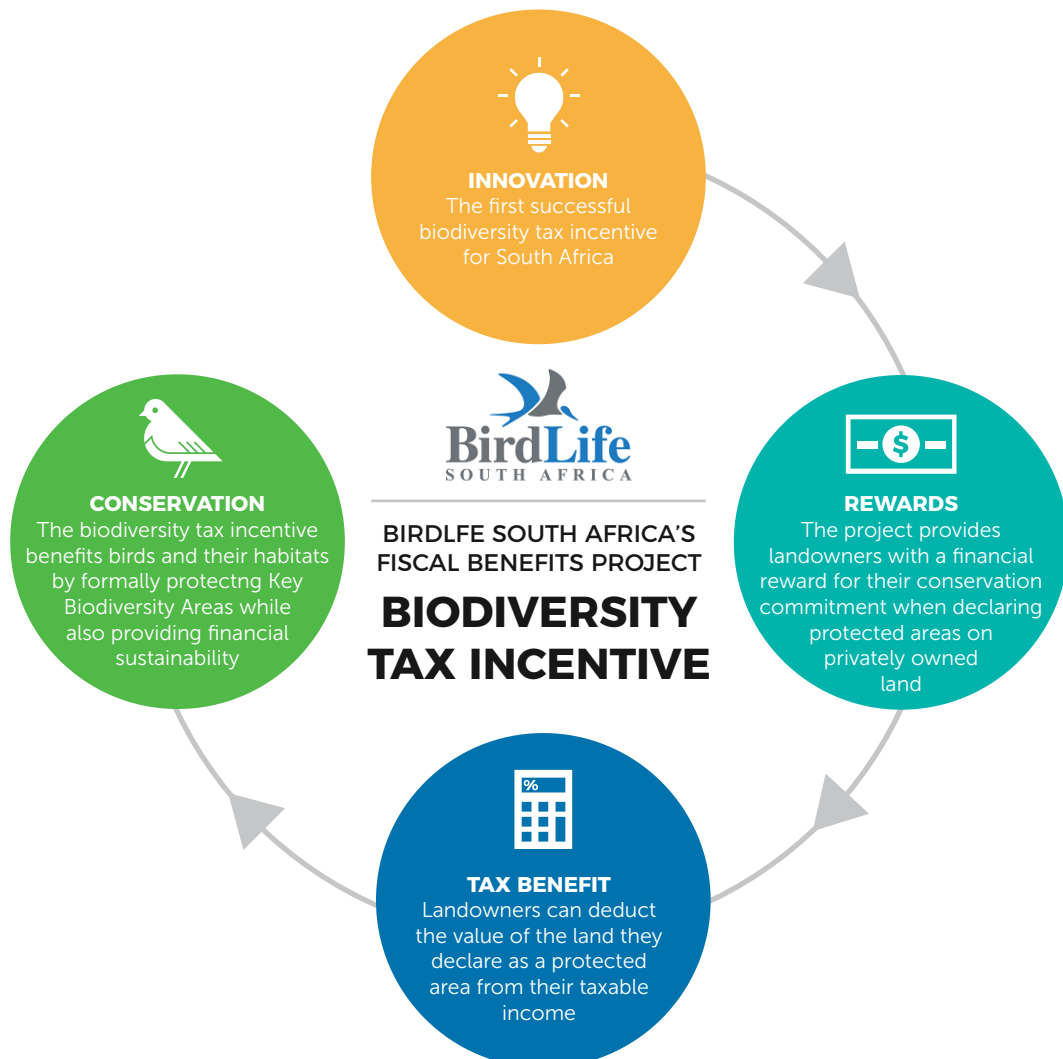
CASE STUDY 52

Rewarding conservation-focused farming through biodiversity tax incentives

BirdLife South Africa is pioneering an innovative Fiscal Benefits Project that provides landowners with tax incentives for declaring their land as protected areas. Within South Africa, there are huge tracts of biodiversity-rich land in private ownership. Often landowners go to considerable lengths to manage their lands in ways that benefit wildlife. They take great pride in their role as land stewards and are typically keen to see their lands preserved in perpetuity. They are, however, also at the mercy of economic pressures that can often counteract these ambitions. The new tax incentive gives

landowners a tax deduction for their conservation commitment, effectively allowing the value of the protected area to be deducted from their taxable income. The Fiscal Benefits Project assists landowners to offset some of the costs of declaring their properties as protected areas and helps them to mobilise resources for better management. The project has been successfully trialled in the country's mist belt grasslands, where isolated patches of privately owned grassland are vital to the survival of the Vulnerable Blue Swallow *Hirundo atrocaerulea*.

BIRDLIFE SOUTH AFRICA'S FISCAL BENEFITS PROJECT



THE IMPORTANCE OF INFLUENCING POLICY AND LEGISLATION

While individual conservation projects are important, laws and environmental policy set the wider framework into which all conservation efforts fit. Reform of legislation and environmental policy, while often challenging to accomplish, can therefore have more far-reaching consequences than work that is focused on a single site or a single species. Even where strong policy commitments exist, advocacy and monitoring are often essential to ensure that they are properly implemented.



BirdLife is working to ensure that energy developments do not negatively impact birds and other wildlife. PHOTO Nick Upton (rspb-images.com).

CASE STUDY 53

International collaboration to reconcile renewable energy and migratory species

It is vital that we transition from fossil fuels to low carbon sources of energy as quickly as possible in order to escape the worst ravages of climate change. In doing so, we must avoid creating new hazards for wildlife, such as those caused by siting wind turbines in areas where they pose a collision risk to vulnerable migratory birds. Meeting this challenge is now a key objective of the Convention on the Conservation of Migratory Species of Wild Animals (CMS), an environmental treaty under the aegis of UN Environment. At the meeting of the CMS Parties in 2014, a resolution was adopted to establish “a multi-stakeholder Task Force on

Reconciling Selected Energy Sector Developments with Migratory Species Conservation”. Known simply as the Energy Task Force, it provides a platform where government ministries, conservation organisations, international financial institutions and the energy sector can collaborate to identify and implement solutions for sustainable, wildlife-friendly, renewable energy development. As a global expert on the impacts of renewable energy on wildlife, with a vast network of local Partners around the world, BirdLife is playing a central role in this important initiative.

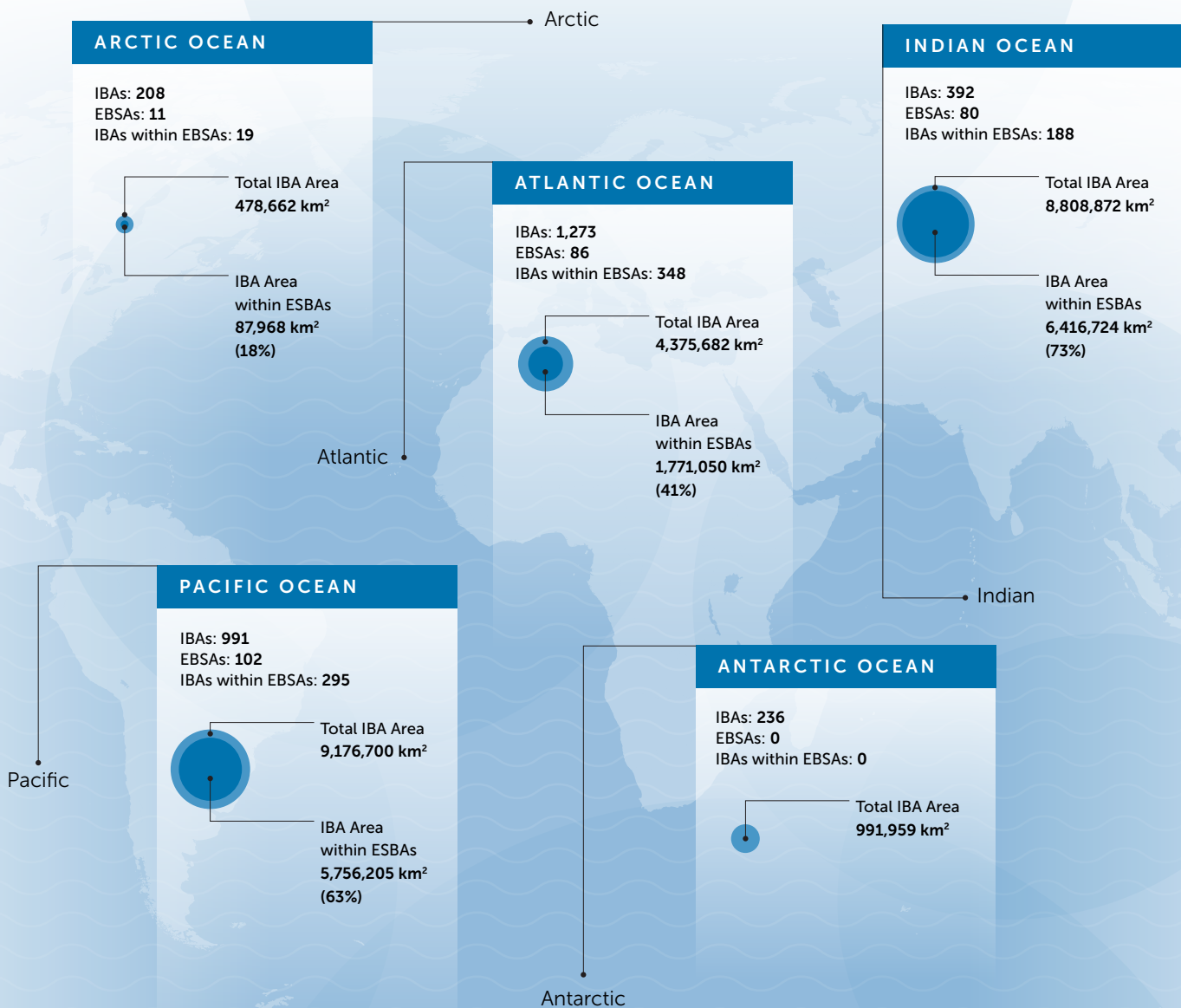
CASE STUDY 54

Filling the gaps in biodiversity knowledge and protection in the oceans

Although the high seas (international waters) cover more than 60% of the world's oceans, there has, until recently, been a significant gap in biodiversity information and protection for these areas. Consequently, the Convention on Biological Diversity, in support of the United Nations General Assembly, has convened a series of expert workshops to describe Ecologically or Biologically Significant marine Areas (EBSAs). These have been identified using the EBSA criteria, applied to data on many different taxa and habitats. BirdLife has

been an active stakeholder in the process, having provided robust scientific information to guide the description of EBSAs. There is substantial alignment between the criteria used for the identification of marine IBAs and those for describing EBSAs. To date, data from as many as 600 marine IBAs have contributed to the identification of the EBSA network. The process is an excellent example of where scientific evidence is embedded within policy processes to help optimise conservation decision-making.

NUMBER OF MARINE IBAs NOW CONTAINED BY ECOLOGICALLY OR BIOLOGICALLY SIGNIFICANT MARINE AREAS (EBSAs)



CAMPAIGNING

BirdLife's structure as a global network of national Partners with strong local representation in many countries provides an ideal mechanism for effective campaigning. Local campaigns can be supported by national Partners, or a number of national Partners can campaign together on transboundary issues, with support from BirdLife's regional secretariats. Campaigns addressing threats to sites with global significance can be escalated with the help of the BirdLife International Secretariat, to gain international attention.



Successful campaigning has helped secure an important habitat for Australia's Regent Honeyeater *Anthochaera phrygia*. PHOTO Dean Ingwersen/BirdLife Australia

CASE STUDY 55

Local residents and BirdLife Australia join forces to save an IBA from development

The Lower Hunter Valley IBA regularly supports significant numbers of two Critically Endangered woodland birds—Regent Honeyeater *Anthochaera phrygia* and Swift Parrot *Lathamus discolor*. The area is a particularly important breeding site for the former and has been known to support up to 25% of the world population. Despite the area's importance, the local council recently voted to grant approval for a development application for a steel fabrication facility. Appalled by the disregard for this important IBA, a local residents' group, the Friends of Tumblebee (supported by the Environmental Defenders Office), decided to take the council to court on the basis that the impacts on Regent Honeyeaters were not duly considered.

BirdLife Australia provided expert evidence in the case, much of it based on data submitted by amateur birdwatchers to BirdLife Australia's Birddata database and published in BirdLife Australia's peer-reviewed Australian Field Ornithology journal. They were able to demonstrate successfully that the council's ecological assessments inadequately reflected the impacts that the development would have on the honeyeaters. The court found in favour of the residents' group, ruling that the council's approval was invalid. There is still much work to be done to secure the IBA from future development, but this ruling is a major step forward, and BirdLife Australia is now campaigning for permanent protection.

CASE STUDY 56

An unprecedented public campaign to save the EU nature laws

The European Union has some of the world's most effective conservation legislation. Its nature laws – known as the Birds and Habitats Directives – safeguard more than 1,400 threatened species and one million square kilometres of natural habitats.

However, in October 2013, the European Commission announced that it would be carrying out a “fitness check” of these Directives. Unfortunately, a “Mission Letter” issued to the newly appointed Environment Commissioner appeared to pre-empt the findings, raising concerns that only one outcome could be expected: an “overhaul” and “merging” of these flagship laws and a lowering of the EU's environmental standards.

A major awareness raising campaign—Nature Alert—was launched by BirdLife, the European Environmental Bureau, Friends of the Earth, WWF and over 120 European NGOs. The campaign galvanised public support for the Nature Directives to such an extent that when the European Commission ran a public consultation on the proposal, over half a million European citizens responded, urging the EU to save their nature laws. On 7th December 2016, the European Commission finally bowed to public pressure and announced that the laws that protect Europe's nature were safe.

520,325

PEOPLE RESPONDED TO THE NATURE ALERT CAMPAIGN,

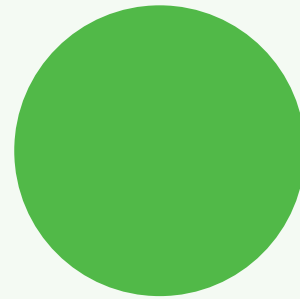
94%

OF ALL RESPONDENTS TO THE PUBLIC CONSULTATION

THE NATURE ALERT CAMPAIGN IN NUMBERS

75

The average number of citizens who respond to European Commission public consultations



150,000

The previous largest response to a EC public consultation

552,472

The number of citizens who responded to the consultation on the Nature Directives, of which

520,325

responded via the Nature Alert campaign

EVIDENCE-BASED CONSERVATION IS CRUCIAL

Resources for conservation are limited. If conservation practitioners are to maximise their impact they must ensure that the actions they undertake are effective. To do this, they must base them on the best available scientific evidence, design projects with clear, measurable objectives and collect sufficient data to judge if their goals have been reached. Ultimately, they must discontinue actions that do not deliver the intended outcomes.

CASE STUDY 58 PRISM – Improving project evaluation

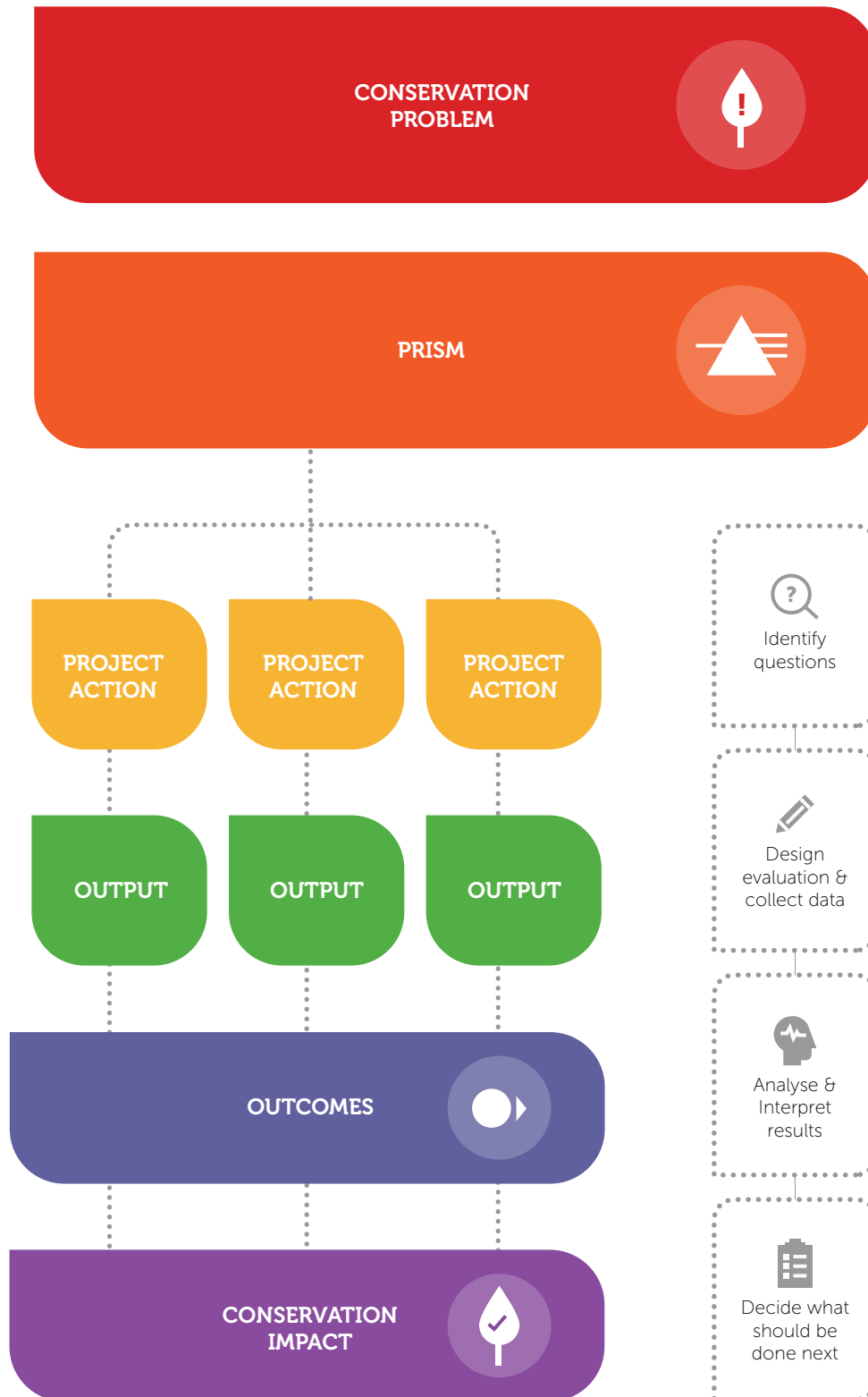
It is essential that conservation practitioners are able to evaluate their impacts, demonstrate success and share their experiences. Consequently, BirdLife is leading a collaborative project, involving a range of academic institutions and conservation organisations, to build the capacity of practitioners so that they are able to design and carry out effective monitoring and evaluation using a range of methods and approaches. The project— entitled PRISM— recently launched a free to access toolkit of evaluation methods, available via the web platform www.conservationevaluation.org.

As a glass prism separates white light to reveal the different colours of the spectrum, so the PRISM toolkit allows conservationists to separate out the different elements of a project, focus on the key measurable outcomes and then use appropriate methods to evaluate success. Within the timescale of a typical conservation project, it can often be difficult to demonstrate ultimate success; however, there are invariably intermediate outcomes that are measurable and that can provide a good indication of the likelihood of long-term, lasting change. PRISM helps practitioners identify what to measure and how to devise appropriate experimental questions, collect suitable data and employ the best analytical approaches. The toolkit has already been successfully trialled in Vietnam, Thailand, Indonesia, Zimbabwe and Kenya.

CASE STUDY 57 It is vital to monitor conservation actions to ensure they have the desired effect

Egyptian Vultures *Neophron percnopterus* are declining across their range and are now regarded as globally Endangered. The BirdLife Partnership is engaged in numerous activities to stem the decline in the species. In the Balkans, this has included nest guarding and supplementary feeding. Instead of simply assuming that these actions were having the desired effect, the project team made sure that they carefully monitored breeding success and territory occupancy. This revealed that these actions alone were insufficient to offset the loss of adult birds to poisoning. Equipped with this information, BirdLife is now intensifying its efforts to end this criminal activity.

THE PRISM CONCEPT EXPLAINED



TURNING A CORNER—WHAT NEEDS TO HAPPEN NOW

Everyone has a role to play in tackling the currently unsustainable impacts of human activities on the planet. Individually, we need to minimise the effects of our lifestyles on biodiversity, particularly through consumption and carbon emissions. Governments have a particular responsibility to implement policies that lead to environmentally sustainable development; all made commitments through the Convention on Biological Diversity and other multilateral environmental agreement, as well as the Sustainable Development Goals, to end the biodiversity crisis. It is the role of governments to work with civil society and the business sector to ensure that these commitments are met.

CASE STUDY 59

Sustainable Development Goals

74

The Sustainable Development Goals (SDGs) are a collection of 17 global goals set by the United Nations and committed to by the world’s governments. They cover a broad range of social, economic and environmental issues, including poverty, hunger, health, education, climate

change, water, energy, biodiversity loss and social justice. The unsustainable use of natural resources underpins many of these issues, and it is therefore vital that conservation strategies are effectively employed in the delivery of targets across all goals.



CASE STUDY 60

What next? The highest priority actions needed

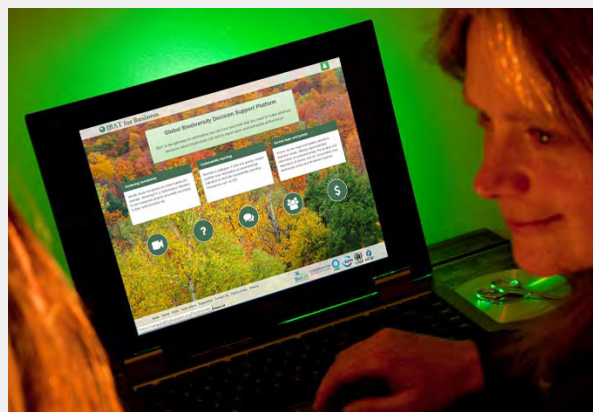
-  Protect, safeguard and appropriately manage the global network of Important Bird and Biodiversity Areas, as part of a wider network of Key Biodiversity Areas.
-  Implement existing action plans for threatened species swiftly and comprehensively, especially for highly threatened groups such as vultures, and develop new plans as needed.
-  Halt the destruction of forests (especially in the tropics), ensuring that forestry is sustainable, and restore and reconnect degraded forest landscapes.
-  Implement measures to restrict the further spread of alien invasive species, and eradicate or control those on a priority suite of islands holding highly threatened species and/or important seabird colonies.
-  Implement appropriate mitigation measures to reduce seabird bycatch by fishing fleets in the world's oceans in order to benefit many threatened species that are declining rapidly owing to incidental mortality.
-  Strengthen the control and management of unsustainable hunting and the cagebird trade (including through national laws and CITES), especially in South-East Asia, and work to eliminate the illegal killing of birds, particularly in the worst locations for this criminal activity.
-  Mitigate climate change by keeping fossil fuels in the ground, investing in nature-based solutions, ensuring that renewable energy developments are sited and managed to avoid negative impacts on birds and by helping species adapt.
-  Mainstream biodiversity into broader policies, sectors and programmes, especially agriculture, forestry, fisheries and the extractive industry, to reduce their impacts, ensuring that the multiple and diverse benefits of nature are integrated into all decision-making and delivered through multi-stakeholder collaboration.
-  Heighten public awareness and engagement and ensure that every child's education is firmly rooted in environmental sustainability.
-  Scale up investment in nature through innovative finance mechanism and the transition to a "green economy" centred on the principles of sustainable development and a recognition of the value that goods and services derived from natural ecosystems provide to delivering economic prosperity and poverty eradication.
-  Strengthen the capacity of civil society organisations to undertake these actions or to advocate for their uptake by other sectors of society.

DELIVERING BIRDLIFE'S BIODIVERSITY KNOWLEDGE TO IMPROVE DECISIONS FOR SUSTAINABLE DEVELOPMENT

BirdLife is unrivalled in terms of the volume and quality of biodiversity data that it assembles, manages and makes available online. The Data Zone <http://datazone.birdlife.org> is the most popular section of BirdLife's website, visited by nearly one million people from almost every country and territory in the world each year. Through the Data Zone, users can access detailed factsheets on the conservation status of all 11,000 of the world's bird species, information on each of the world's 13,000 IBAs, including a dynamic and interactive Marine e-atlas, and over 400 case studies expanding on the information provided in the *State of the World's Birds* report.

BirdLife also manages the World Database of Key Biodiversity Areas www.keybiodiversityareas.org on behalf of the KBA Partnership. Data on KBAs have multiple uses and can support the strategic expansion of protected area networks, assist the identification of sites under international conventions and inform private sector safeguard policies and environmental standards.

The Integrated Biodiversity Assessment Tool (IBAT) www.ibat-alliance.org is an online data discovery, visualisation, and dissemination tool that provides users with unique single point access to the most authoritative global datasets on biodiversity and conservation available. These include the IUCN Red List of Threatened Species, the World Database on Protected Areas, and the World Database of Key Biodiversity Areas. Decision-makers from commercial organisations, governments and civil society use these data to help them make better decisions about biodiversity. Access to IBAT is free for non-commercial use, with additional features such as data downloads and report generation requiring a license for commercial users. IBAT has been developed by the IBAT Alliance, a partnership of leading conservation organisations, including BirdLife International, Conservation International,



the International Union for Conservation of Nature, and the United Nations Environment World Conservation Monitoring Centre. Through IBAT, the Alliance seeks to support both better-informed decision-making by users and the improved collection, update and management of biodiversity data to inform those decisions.

BirdLife's data can also be tailored to assist specific sectors. For example, the Soaring Bird Sensitivity Mapping Tool tinyurl.com/MSBmap has been developed to aid the appropriate siting of wind farms in the Mediterranean, Middle East and Northern Africa. It is used by developers, governments and funders to ensure that sites chosen for wind energy development do not conflict with bird populations that may be vulnerable to collision with turbines.

The Critical Site Network Tool 2.0 <http://criticalsites.wetlands.org>, developed in collaboration with Wetlands International, draws together information on African-Eurasian waterbirds and the critical sites upon which they depend. It is designed to help a range of different users from site managers to national authorities and international organisations.

Additional photos: Page 5: Patricia Zurita PHOTO Fidel Tamayo. Page 27: Dalmatian Pelican *Pelecanus crispus* PHOTO Andrej Vizi; Sarus Crane *Antigone antigone* PHOTO J C Eames; Chilean Flamingo *Phoenicopterus chilensis* PHOTO Pablo Rodríguez Merkel; Rüppell's Vulture *Gyps rueppelli* PHOTO Andre Botha; Abbott's Booby *Papasula abbotti* PHOTO Sarah Summers. Page 51: Red-billed Curassow *Crax blumenbachii* PHOTO Leonardo Merçon; Pink Pigeon *Nesoenas mayeri* PHOTO Durrell Wildlife Conservation Trust; Asian Crested Ibis *Nipponia nippon* PHOTO Quan Min Li; Rarotonga Monarch *Pomarea dimidiata* PHOTO Jack Folkers; Rodrigues Warbler *Acrocephalus rodericanus* PHOTO Jacques Spéville; Tongan Scrubfowl *Megapodius pritchardii* PHOTO Jonathan Beilby; Christmas Boobook *Ninox natalis* PHOTO Geoff Jones; Zino's Petrel *Pterodroma madeira* PHOTO Carlos Viveiros; Abbott's Booby *Papasula abbotti* PHOTO Ian Montgomery; Seychelles White-eye *Zosterops modestus* PHOTO Jon Irvine; Seychelles Magpie-robin *Copsychus sechellarum* PHOTO Phillip Perry; Echo Parakeet *Psittacula eques* PHOTO Dennis Hansen; Nukuhiva Imperial-pigeon *Ducula galeata* PHOTO Jean Iron; Chatham Petrel *Pterodroma axillaris* PHOTO Graeme Taylor, NZ Dept. Conservation; Lear's Macaw *Anodorhynchus leari* PHOTO Andy & Gill Swash; Mauritius Fody *Foudia rubra* PHOTO Phillip Edwards; Yellow-eared Parrot *Ognorhynchus icterotis* PHOTO Tom Friedel; Azores Bullfinch *Pyrrhula murina* PHOTO Carlos Ribeiros; Campbell Teal *Anas nesiotis* PHOTO John Anderson; Pale-headed Brush-finch *Atlappetes pallidiceps* PHOTO Dusan Brinkhuizen; St Helena Plover *Charadrius sanctaehelenae* PHOTO Mike Danzenbaker / avesphoto.com; Amami Thrush *Zoothera major* PHOTO Carlos Bocos; Guadalupe Junco *Junco insularis* PHOTO Jaime Rojo; Montserrat Oriole *Icterus oberi* PHOTO Alistair Homer. Page 57: Micronesian Scrubfowl *Megapodius laperouse* PHOTO Michael Lusk; Wandering Albatross *Diomedea exulans* PHOTO Guy Shorrock; Gough Finch *Rowettia goughensis* PHOTO Peter Ryan; Raso Lark *Alauda razae* PHOTO Edwin Winkel; Polynesian Storm-petrel *Nesofregatta fuliginosa* PHOTO Diego Miranda Urbina.



AAGE V. JENSEN CHARITY FOUNDATION

The first *State of the World's Birds* report was launched in March 2004 at BirdLife's World Conference in Durban, South Africa. This was followed by reports in 2008, 2013 and now 2018. This latest version, like its predecessors, has been made possible through the generous support of the Aage V Jensen Charity Foundation (AVJCF). Their long-term backing has helped establish *State of the World's Birds* as the definitive assessment of the status of birds and one of the leading and best-respected conservation reports of its kind.

AVJCF's support extends much farther than this series of reports. Over the last decade, it has been instrumental in shaping BirdLife's science communication strategy—ensuring that comprehensive and authoritative biodiversity data reaches an audience of millions. Their support has helped to improve and expand BirdLife's online Data Zone, through which the organisation makes available much of its scientific data, and has enabled the development of over 40 science and advocacy publications, including 17 national 'State of the Birds' reports.







Every year hundreds of local people turn out to help ring Greater Flamingo *Phoenicopterus roseus* chicks at Fuente de Piedra in Spain. PHOTO age fotostock / Alamy Stock Photo.

