

THE **10-YEAR** CHALLENGE

The restoration revolution that must succeed and how we're showing what's possible



PLUS

A STARTLING NEW SYMBOL OF ASIAN BIRD TRADE

Together we are BirdLife International Partnership for nature and people



www.birdlife.org

BirdLife International is the world's largest nature conservation partnership. Through our unique local-to-global approach, we deliver high impact and long term conservation for the benefit of nature and people

DISCOVER THIS RESTORED PACIFIC PARADISE ON PAGE 18

BIRDS HAVE SUNG THIS TUNE ALL ALONG

he UN just launched the Decade on Ecosystem Restoration, a ten-year challenge that must not simply be a catchphrase (or indeed, a social media meme). It's a gauntlet with life on Earth itself at stake. Likewise, a just-issued joint report from the climate experts at the IPCC and the biodiversity mavens at the IPBES unequivocally confirms the need – and our long-held approach – to fight the climate and biodiversity crises hand-in-glove; we will fail on climate if we fail on nature, and vice versa. And leaders at the G7 in Cornwall issued laudable commitments to a net-zero and nature-positive world – a Nature Compact to address both crises.

We've said it before. So has our bird data. This joint approach reflects work BirdLife and our Partners have long advanced and it is gratifying to see these values break through the vice-like grip of prioritising our vaunted economies over the planet. Our 1Planet1Right campaign represents another arrow in the quiver we bring to mobilising a movement on behalf of a healthy planet for people and nature alike. Our new song **[p62]** beats this drum.

When you read about the ground-breaking conservation of species and sites in this issue, so powerfully portrayed in Operation Restoration **[p18]**, The Atlantic Forest Way **[p26]**, and A Startling Situation **[p50]**, and contemplate our contributions to policies finally being embraced across the political spectrum, you can truly appreciate the strategic coherence and effectiveness of the BirdLife Partnership. We'll keep pushing – this autumn brings Biodiversity COP15 and Climate COP26 where our policy people will be urging strong commitments. We appreciate your support. **CHRISTOPHER SANDS, EDITOR-IN-CHIEF**

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MARTIN HARPER

Previously Executive Director of Global Conservation at RSPB (BirdLife UK), Martin Harper knows BirdLife and its work inside out. His wisdom and expertise remains in the Partnership as BirdLife's Regional Director of Europe & Central Asia, the new role from which he explains – with a sprinkling of personal experience on **p12** – his tenpoint plan for the restoration revolution.



JOANA ANDRADE

Joana Andrade has been conserving seabirds with SPEA (BirdLife in Portugal) since 2008. She heads up their marine conservation team, focusing on designating Special Protected Areas, tackling seabird bycatch and removing invasive alien species from islands – such as the Berlengas where, as she reports on **p16**, their restoration work was 'blooming' successful.



LEWIS KIHUMBA

An experienced communications professional with a background in international relations and development, Lewis Kihumba (Communications Manager, BirdLife Africa) was the ideal choice to report on the ambitious cross-border restoration and sustainable development initiative, the Great Green Wall. Find out why some walls can be liberating on **p24**.

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FRONT COVER Drone view of the Sahel © United Nations Convention to Combat Desertification; caged Javan Pied Starling *Gracupica jalla* © Simon Bruslund

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The latest news, insight and success stories from 115 partners in 113 countries



EUROPE

Every year, bird conservation stamps its mark in **Belarus** to commemorate Bird of the Year – as chosen by APB

(BirdLife in Belarus). This year, 35,000 European Nightjar postage stamps were released, raising awareness of the insectivorous species, which often gets run over on forest roads when resting on warm asphalt during the day. To date, 187 bird-themed stamps have been published in Belarus. www.ptushki.org



56. E.S.

KEY TO MAP BIRDLIFE PARTNER

BIRDLIFE COUNTRY PROGRAMME



AMERICAS

The Argentinian government has announced the creation of Ansenuza National Park in Córdoba, Argentina. Home to over

320 bird species and a wealth of other wildlife, the park will encompass Mar Chiquita, the largest salt lake in South America. This is a huge result for Aves Argentinas' work, supported by the Wyss Foundation, British Birdwatching Fair, NMBCA, Bobolink Foundation and more. Legal recognition is expected in six months. www.avesargentinas.org.ar



Andean Flamingo (Vulnerable) © Pablo Rodas

BirdLife South Africa is using life-like model penguin decoys to encourage African

Penguins (Endangered) to form new colonies in De Hoop Nature Reserve, **South Africa**. Overfishing has caused a mismatch between the locations of penguin colonies and the best fish stocks, and this new haven aims to redress the balance. Staff are also working with the fishing industry to introduce more sustainable practices. www.birdlife.org.za





MIDDLE EAST

Over 600 metres of illegal mist nets were seized from seven sites in Iqlim al Kharroub in **Lebanon**. These fine, near-invisible nets

trap hundreds of birds for the black market. Reported to SPNL (BirdLife in Lebanon) by 'responsible hunters' (whom they'd previously engaged in workshops), SPNL then reacted to remove the nets in co-operation with the Internal Security Forces, CABS and the MESHC. www.spnl.org



Seized mistnets © SPNL



ASIA

Three BirdLife Partners have embarked on a three-year project to protect the Helmeted Hornbill (Critically Endangered) and other hornbill species at key sites in **Myanmar**, Peninsular **Malaysia** and **Thailand** – alongside the BirdLife Secretariat and with support from Fondation Segré. We are working closely with protected area authorities and forest and wildlife departments to improve sitemanagement efforts and engage communities to become hornbill guardians. See p54 to see how your support is also helping hornbill work. **www.birdlife.org/hornbill**





PACIFIC

BirdLife Pacific is excited to announce a new project with a women's group in Suva, **Fiji**, led by their portbased Outreach Officer. The

project empowers women to become part of the solution to seabird bycatch through creating hand-made bird-scaring lines – called 'tori lines' – that deter birds from hooks and gear on fishing vessels. Their participation will enable the group to become important conservation advocates in Fiji. www.birdlife.org/pacific



BIRD Bulletin



KEEPING AN EYE ON THE FLYWAY

The East African-Eurasian flyway is one of the world's most important routes for migratory soaring birds. Every spring and autumn, at least 37 species of large birds such as raptors and storks navigate between Europe and Africa, often being funnelled through narrow 'bottlenecks' by geographical features. As featured in our previous issue, over a million birds pass through the largest of these bottlenecks, creating the perfect opportunity to record which species are going where.

Seized Helmeted Hornbill casques © Bonie Dewantara

Bird-scaring lines © John Paterson

New research led by BirdLife scientist Ben Jobson pinpoints ten key sites that would allow robust monitoring of the most abundant migratory soaring bird species in the flyway. Several of these sites, including Sarimazi, Turkey, have already contributed valuable data that have helped us to revise regional population estimates for Endangered species such as Egyptian Vulture. Monitoring these bottlenecks also provides excellent opportunities for ecotourism and nature education, and to raise awareness of threats such as illegal bird killing. The study recommends formalising a collaborative network of experts to share best practice across key observation sites, taking inspiration from flyways in the Americas.

POLLY WANTS A FUTURE

THE YELLOW-NAPED AMAZON'S GLOBAL

POPULARITY as a pet is leading to its rapid demise. This shimmering green parrot is renowned for its vocal and mimicking abilities, meaning it can emulate human speech in captivity – where it can live for up to 60, or even 90 years in some cases. Websites offering pet advice describe the bird's 'outgoing personality', 'playfulness' and 'ability to bond with its owner', and they can sell for thousands of dollars. Yet, of course, any caged birds today originated from the wild (either as chicks or descendants), where such traits evolved in social roosts of hundreds of individuals that used to gather in Central America and southern Mexico, flashing their yellow napes (back of the neck) and eating fruit and seeds in tropical forests and mangroves.

The species was uplisted to Endangered in 2017 and more recent population surveys are showing a catastrophic crash in numbers, meaning the species could very soon be uplisted again to Critically Endangered. While the population in southern Guatemala numbered 30,000-50,000 individuals in the 1980s and 1990s, fewer than 500 individuals were found in the same area in 2019 – that's a reduction of c.99% – and there are now an estimated 1,500-1,600 mature wild birds remaining worldwide.

Across the species' range, the extreme declines are caused by unsustainable levels of poaching for the pet trade and ongoing habitat destruction. Nest raiding reportedly causes the failure of most, or even all, breeding attempts in many areas. This can also affect future breeding: damage of nest trees when extracting nestlings can leave the tree unusable.

In Latin America, hundreds of thousands of wild parrots are illegally caught and traded every year despite national laws and international trade agreements (such as this species being listed on CITES Appendix I), and as many as 75% die during capture and transit. In Mexico alone this can be 50,000–60,500 birds every year. There has been some suggestion that the introduction of a ban on the trade of Yellow-naped Amazons in Nicaragua may have slowed or halted declines, though some sites that had previously held large numbers may now hold very few. Costa Rica is now considered the species' stronghold – albeit not very 'strong'.

Those pet websites also warn that some (particularly male) Yellow-naped Amazons can become aggressive. With such a dire future faced by their wild cousins, who could blame them?

YELLOW-NAPED AMAZON

Amazona auropalliata

Photo © Ondrej Prosicky/Shutterstock



IRREPLACEABLE



'Getbol' Tidal Flats, Republic of Korea

illions of waterbirds depend on the tidal mudflats or 'getbol' in the Republic of Korea. They rely on the abundance of food hidden in the soft mud to refuel on their annual migrations between breeding grounds in the north and non-breeding grounds in Southeast Asia and Australasia. The birds that gather in spectacular flocks on the Getbol mudflats are shared by over 20 countries along the East Asian-Australasian Flvwav.

Collectively the coastal zones of the Yellow Sea (or West Sea as it is known in Korea) of the People's Republic of China, the Democratic Republic of Korea and the Republic of Korea are the most important staging areas for waterbirds on the flyway. But in recent decades many coastal wetlands have been lost. Of the remaining tidal mudflats in the Republic of Korea, those in the Geum Estuary in Seocheon County (including the low-lying islet of Yubu) are the most important, providing vital roosting and foraging sites for many threatened waterbirds.

The Republic of Korea has nominated four areas to be inscribed as a UNESCO World Heritage Site – the most prestigious conservation status - in the first phase of the 'Getbol, Korean Tidal Flat' serial nomination. At the same time, degraded areas of mudflats are being restored – actions that show that the government is serious about conserving coastal wetlands.

The Getbol sites are not only important for bird migration but also for breeding. They hold >1% of the global population of nine species that are globally threatened with extinction. These include Hooded Crane, Saunders's Gull, Far Eastern Curlew [see boxes], Spotted Greenshank Tringa guttifer, Great Knot Calidris tenuirostris and Spoon-billed Sandpiper Calidris pygmaea. Chinese Egret Egretta eulophotes and Black-faced Spoonbill Platalea minor also breed on small islands off the coast and regularly forage on these flats in spring.

For the Korean Getbol to be awarded World Heritage status, the World Heritage Committee will need to agree that the sites have 'Outstanding Universal Value' for migratory waterbirds. Also, the Republic of Korea will need to extend the areas proposed in the current and next phase, and commit to conserving the key attributes of the sites for generations to come. Once successful, this vital and irreplaceable link in the chain of wetlands will be secured - a big win for flyway conservation in Asia.



ENDANGERED GIANT The largest shorebird in the East Asian-Australasian Flyway. About 12% of the world population (over 3,700 birds) gather each year on the tidal flats of the Geum Estuary and Yubu to refuel on their journeys between their northern breeding grounds and Australia, where they spend the northern winter.





HOODED CRANE

TOURISM SPECTACLE Hooded Crane (Vulnerable) is one of eight crane species occurring in East Asia. They breed in Russia and Mongolia and spend the northern winter across the Korean Peninsula, Japan and parts of China. Up to 42% of the world population gather in Suncheon's wetlands.

Many people come to enjoy the spectacular congregations.

SAUNDERS'S GULL

SAUNDERSILARUS SAUNDERSI

VITAL FEEDING STATION The entire population of Saunders's Gull (Vulnerable) breeds along the coast of the Yellow Sea between the Korean Peninsula and eastern China. In the Republic of Korea, Saunders's Gull breeds at Songdo in Incheon City. In the northern winter, around 2,000 individuals depend on Seocheon and Suncheon Bay.

A 10-POINT PLAN FOR THE RESTORATION REVOLUTION

Why the UN Decade on Ecosystem Restoration has to be more than a catchphrase. It must be the catalyst for transformational change of our economy, of our food and energy systems, and of ourselves



MARTIN HARPER Regional Director, BirdLife Europe & Central Asia

The sun had yet to rise and we had been walking silently in the forest for 45 minutes. As we approached a rocky outcrop, Patrick Douda, brilliant birder and our guide for the morning, waved at us to be still and pointed to

the small nest, made of mud, stuck to the side of the rock. Peering over the top of the nest was a White-necked Picathartes – made famous by David Attenborough in his 1955 *Zoo Quest* to West Africa. I carefully raised my camera but only managed a photo of an empty nest, because the bird had already spotted us and disappeared into the forest, never to be seen again.

The picathartes is the pin-up bird for Gola National Park in Sierra Leone, and one of more than 60 other threatened species in the park. It is part of the Greater Gola landscape which straddles the Liberian border and is one of the largest remnants of the Upper Guinean forest – itself one of the world's 35 Global Biodiversity Hotspots. I was visiting to see the work that the RSPB (BirdLife in the UK) had been doing to protect the forest with the Liberian and Sierra Leone governments, local communities and local BirdLife Partners the Conservation Society of Sierra Leone and the Society for the Conservation of Nature in Liberia.

The RSPB and BirdLife have been working in Gola for more than 30 years, through civil wars, Ebola and now, of course, the COVID-19 pandemic. The vision is to create a trans-boundary peace park which protects the incredible biodiversity of the forest, supported

"What will it take for the 2020s to be remembered as the decade where we turned the tide and restored nature?" by local communities who live and work in harmony with the forest. More than that, we want and need Gola to be an inspiration for how to protect and restore forests across the region. Carbon financing, a sustainable supply chain of forest-friendly chocolate and an application of community forest concepts are just some of the interventions that have been key to success.

There is a lot to learn from Gola and from many other projects led by my former employer, the RSPB. In my 17 years with the society, I was privileged to work alongside people who strived tirelessly with partners to protect and restore a huge range of habitats and species, from the blanket bogs of the Scottish Flow Country and the heathlands of Purbeck in southern England to the lowland rainforest of Sumatra and the seabirds of Gough Island in the South Atlantic.

I have now started my new job as Regional Director for BirdLife International in Europe & Central Asia. I join a small but determined team that supports partners in 46 countries (from Iceland to Kazakhstan and in all EU countries),

HOW TO DRIVE A REVOLUTION IN NATURE RESTORATION

1 Agree ambitious global deals for nature and climate change at the two UN summits scheduled at the end of 2021.

2 Translate targets for nature's recovery into domestic law as is currently being proposed by the European Union and UK Government.

3 Use maps to identify priority areas for protection or restoration which will deliver benefits for wildlife, for climate and for people. These maps can also help reconcile the needs of people and wildlife.

4 End perverse subsidies that harm nature, for example by overhauling agriculture policy and reforming agriculture incentives to reward wildlifefriendly farming, ending fossil fuel subsidies and ensuring all overseas development assistance support rather than undermine environmental protection objectives.

5 Influence private sector investment to help rather than hinder efforts to tackle the nature and climate emergencies, for example by being transparent to investors and consumers about the impact of different commercial activities.

6 Grow public sector finance for nature to drive more restoration efforts.

Develop an 'industrial' strategy for nature conservation by supporting the skills and capacity needed by institutions and civil society organisations to grow their impact.

8 Signal to businesses that they need to change – their business models in 2030 must be very different to what they are today. Early movers to more sustainable practices, such as regenerative agriculture or renewable energy in harmony with nature, should secure market advantage because their approach must become the norm by 2030. The sooner that businesses acknowledge they need to change, the better for all of us.

9 Harness the public anger and passion about the state of the planet that already exists and create an unstoppable movement clamouring for change.

10 Share best practice about how to restore wildlife at scale. From our practical experience, the recipe for success includes: forging the right partnership to develop a shared vision, exceptional planning, mobilising funding, delivering the plan, evaluating impact and sustaining success.

supported by two million citizens who play their part in tackling the emergency. In support of our recent *#RestoreNature* campaign, we have been profiling a huge range of projects that our partners have led to restore nature – from the islands of Greece to the grasslands of Belgium and from the Spanish wetlands to the Georgian steppes. As with the RSPB examples, these demonstrate that conservation is not just about documenting decline: it is about making things better.

The UN Decade on Ecosystem Restoration was officially launched on World Environment Day on 5 June. We are already facing a nature and climate emergency and the window of opportunity to prevent catastrophic consequences is rapidly closing, so many think that this is *the* crucial decade – so *we* are the generation that must act.

That's why the UN Decade has to be more than just a good catchphrase. It must be the catalyst for transformational change of our economy, of our food and energy systems, of ourselves.

In short, we have to:

Stop the rot by reducing the growing pressures on nature driven by a model of economic growth that is dependent on exploitation of the natural environment.
 Protect the best by ensuring that at least 30% of land and sea are well protected and managed for nature by the end of the decade.

Restore the rest by taking action to put back what we have lost, which means a massive drive in habitat restoration so that 15% of new habitat is created to provide more space for nature.

Yet, action by NGOs will never be enough: we need governments to act as if we are in an emergency and businesses to recognise that they need to change. So my final point is this: **keep going and don't give up**. We all need to be at our best this coming decade, so take inspiration from nature and roll up your sleeves. By 2030, we want and need BirdLife to be leading the world in restoring nature. We have the knowledge and experience to share and inspire. We have the responsibility to act. But for success to happen, governments, businesses and civil society all need to step up. BirdLife is up for it: are you?

THE REWARDS OF NATURE RESTORATION

A consequence of the rapid growth in industry and agriculture in Europe has caused an inverse in the health of natural ecosystems. But it is possible to heal and repair nature. These BirdLife Partners are showing us how

ince 1990, our planet has lost more than 80 million hectares of old-growth forest. Additionally, 64% of

the world's wetlands have disappeared since 1900. And one million species are currently threatened with extinction. In Europe, nature is in serious, continuing decline. As much as 81% of the European Union's habitats are in poor or bad condition.

For too long, much of humankind has had an unsustainable relationship with nature. Destructive activities such as intensive farming, fishing and forestry have led to its degradation. The consequences are both severe and wide-ranging. The extreme degradation of nature is driving extinctions, exacerbating the climate crisis, causing floods and droughts, eroding coastlines, damaging the economy, harming people's wellbeing and enabling the emergence of zoonotic diseases.

And yet, there's reason for hope. Solutions exist. One of them is called nature restoration. This is the process of

Jeremy Herry

assisting the recovery of an ecosystem that has suffered degradation. It means bringing nature back for people and for wildlife. It's the opposite of destruction: it's healing and repair. Restoration can take many forms, from removing dams or invasive species to reintroducing native vegetation and recreating habitats. Restoration is on the political agendas of both Europe and the world.

A NEW DECADE

We are currently at the very beginning of the UN Decade on Ecosystem Restoration (2021-2030). Moreover, the European Union has committed to develop a proposal for legally binding restoration targets this year: one of President von der Leyen's top priorities is the European Green Deal, which aims to make the EU carbon-neutral by 2050.

Over the course of 2021, the BirdLife Europe & Central Asia team are going to take a deep dive into the many benefits of nature restoration with a special series of articles entitled 'the rewards of nature restoration'. It will feature fascinating stories of large-scale nature restoration in Europe, and the people behind them. From northern grasslands to southern lakes, this series will not only show that restoring Europe is possible, but that at a large scale it holds enormous potential to meet some of the most pressing challenges of our time. To kick things off, the following pages include a few great examples plus a personal account from BirdLife in Portugal, who have experienced first-hand how nature rebounds and flourishes in just a couple of years when effort is put in to restore it.

The wonderful thing about nature restoration is that it provides a vast array of benefits for people and wildlife: it helps improve the status of endangered species, counter the climate emergency, prevent floods and bring wider economic advantages.

Small changes have small impacts. Given the vastness of the biodiversity and climate crises, we need to go big. The science is clear: we need wide-reaching nature restoration now. Nature may be vulnerable, but it's incredibly powerful, too...



THE ANTIDOTE TO DESTRUCTION & DEGRADATION



RESTORING AKROTIRI MARSH BIRDLIFE CYPRUS

Important Bird & Biodiversity Areas (IBAs) with wetlands are particularly threatened and need careful attention for restoration. Akrotiri Marsh, a botanical hotspot and IBA in Cyprus, had suffered a loss of bird and plant diversity. This was due to the overexpansion of invasive reeds exacerbated by lack of traditional grazing and water management for decades, as well as nutrient inflow to the sensitive wetland. BirdLife Cyprus led a two-year restoration project that entailed mechanically clearing 38,000 m² of reeds and introducing grazing cattle into the area, as well as creating seven pools and a mosaic of habitats to help wetland wildlife. It's working: today, Ferruginous Duck Aythya nyroca (Near Threatened), Spur-winged Lapwing Vanellus spinosus and Black-winged Stilt Himantopus himantopus are coming back!



SAVING THE AQUATIC WARBLER OTOP (BIRDLIFE IN POLAND)

A focus on restoring species is also a great way to regenerate a natural landscape. Did you know that Aquatic Warbler Acrocephalus paludicola was the rarest and only globally threatened passerine bird in mainland Europe? Major threats include loss and degradation of its marshy and wetland habitat. Our Polish Partner OTOP is leading a restoration project to protect this species [see also p38]. They are protecting part of the Aquatic Warbler's migration route by creating and maintaining a chain of stepping-stone habitats - patches of sedge fen mires and marshy meadows with low vegetation. This entails building ten dykes across field drainage ditches to restore a total area of over 300 hectares. Valves in dykes will be adjusted, ensuring nature protection and also securing the landowners' interests.

FROM EXTRACTION TO RESTORATION RSPB (BIRDLIFE IN THE UK)

When done correctly, working with the quarrying sector can boost restoration and biodiversity, as the Royal Society for the Protection of Birds (RSPB)'s 'Nature After Minerals' programme has shown. A great example is the Floodplain Forest Nature Reserve – a newly restored 50-hectare protected wetland north of Milton Keynes, UK. Having an advisory role, the RSPB assisted in establishing the principles of a project that aimed to recreate original prehistoric forest. This positive change was achieved by working with Hanson UK (a subsidiary of the HeidelbergCement Group), who were responsible for the gravel extraction and the restoration. On top of increasing biodiversity, restoring this site has also created a natural flood barrier and attracts a wide range of important bird species.

AFTER Oroklini Lake in Cyprus is another restoration success, shown here in 2019 and before BirdLife Cyprus' project began in 2012. Both photos © Ben Porter



BERLENGAS RE-BLOOMS

How we brought biodiversity back to the Portuguese archipelago

hen I first visited the Berlengas - a group of islands off the coast of Portugal – the state of the local biodiversity was alarming, to say the least. Invasive species that had been unintentionally introduced by humans, such as the Hottentot Fig Carpobrotus edulis, Black Rat Rattus rattus and European Rabbit Oryctolagus cuniculus, were threatening the native flora and fauna. As a result, breeding seabirds like Cory's Shearwater Calonectris borealis were in decline. Endemic plants such as the Berlengas Thrift Armeria berlenguensis were disappearing. Overabundant Yellow-legged Gulls Larus michahellis were threatening local plants, lizards and seabird nestlings. Excessive and disorganised tourism was degrading nature as well.

As a biologist, but also as a human being, it was difficult to see wildlife suffer such degradation. It pained me to think that all these species, from plants to birds and reptiles, had evolved for millions of years without the need to defend themselves against the human-made problems which were now causing their decline. I wanted to do something about it.



Joana Andrade, Head of Marine Conservation, SPEA/ BirdLife Portugal

BELOW The Berlangas Fleabane, a small sunflower, adorns the plains once again © Isabel Fagundes One morning in 2014, I received a phone call that would quench my thirst for action and determine the next five years of my life: I was going to co-ordinate the restoration of the Berlengas islands' natural habitat! In partnership with other organisations, my employer, the Portuguese Society for the Study of Birds (SPEA, BirdLife Partner), had applied for EU funding to help restore the Berlengas – and our project proposal had just been approved. I was overjoyed. For me, being able to restore these islands' ecosystems was a fantastic opportunity to give nature a chance to bounce back.

Restoring the diverse habitat of the Berlengas was a highly collaborative endeavour. We (SPEA) joined forces with the Institute for Nature Conservation and Forests, the municipality of Peniche, the Faculty of Social Sciences and Humanities, the School of Tourism and Maritime Technology, the Civil Protection Services, the National Maritime Authority and over 300 volunteers.

Together, we worked to bring nature back. Among other things, we mapped out and removed invasive species, set up measures to prevent the arrival of new rodents, built artificial nests for

"I AM PROUD OF THE GREAT RESULTS WE WERE ABLE TO ACHIEVE. WE HAVE PROVEN THAT ECOLOGICAL DEGRADATION IS NOT INESCAPABLE OR IRREVERSIBLE"

THE RESTORATION CHALLENGE





seabirds, and led an awareness-raising campaign for tourists, teaching them about island species and biodiversity.

The operation was a resounding success for biodiversity. The native flora recovered incredibly quickly. It was a pleasure to witness the Berlengas Fleabane *Pulicaria microcephala*, a small sunflower, adorn the Berlengas plains once again. The breeding population of Cory's Shearwater is now growing, which is important because the Berlengas archipelago is one of only two places in all of continental Europe where this bird breeds.

THANKS TO FUNDERS

SPFA would like to thank all the project partners, as well as the European Commission and the Portuguese Environmental Fund for their crucial support. It wouldn't have been possible without them. This feature is part of a series called 'The rewards of nature restoration', a joint project run by BirdLife Europe & Central Asia and UNEP-WCMC, and supported by the Endangered Landscapes Programme, with funding from Arcadia, a charitable fund of Lisbet Rausing and Peter Baldwin. Band-rumped Storm-petrels *Hydrobates castro* now have a wider breeding range, European Shags *Gulosus aristotelis* are bouncing back, and the population of the endemic Berlenga Wall Lizard *Podarcis bocagei berlengensis* is in better shape.

Beyond biodiversity, this project has also helped develop higher quality and more responsible tourism – trails have been restored and tourists are given important information on the status of the local wildlife and the threats that it faces.

I am proud of the great results we were able to achieve. We have proven that ecological degradation is not inescapable or irreversible. Projects like this one can and should be replicated elsewhere. There is so much potential to restore nature on a large scale – something we desperately need given the severity of the climate and biodiversity crises. We've mastered the science: bringing nature back is now a question of resources and political will.

It was the most ambitious and logistically challenging island restoration project to date. The aim in 2015: to turn some of the world's rarest birds back from a path to extinction by removing introduced predators from remote French Polynesian islands. Now the birds are truly bouncing back, giving hope for future restorations

> Loading equipment, Acteon and Gambier islands, French Polynesia © Steve Cranwell

Marcela Bellettini



ut in the middle of the Pacific Ocean, there is a group of islands that host some of the most beautiful and unique birds in the world. The Acteon

and Gambier Archipelago, part of French Polynesia, lies approximately 1,600 km from Tahiti, the nation's political centre. Boasting some of the highest numbers of endemic birds in the tropical Pacific, this far-off piece of paradise is a nature-lover's dream. Sadly, even these remote islands have not escaped human interference. Like numerous islands in the Pacific, for many years they were under severe threat from introduced species. From predators including rats to aggressive tangles of non-native vegetation, havoc was wrought on these delicately balanced coral atoll and volcanic ecosystems.

For the islands' birds, it is a life or death situation. In the Pacific, up to two thirds of all bird extinctions are directly linked to the introduction of alien species. For some of the rarest birds in the world – like *Tutururu*, Polynesian Ground-dove *Alopecoenas erythropterus* (Critically Endangered), and *Titi*, Tuamotu Sandpiper *Prosobonia parvirostris* (Endangered), that evolved in the absence of mammalian predators – time was running out. In 2015, BirdLife, SOP Manu (BirdLife Partner in French Polynesia) and Island Conservation took on their most ambitious conservation project ever: the challenge of restoring the habitat and removing



ABOVE Koko (Atoll Fruit-dove) has increased exponentially following the removal of rats © Steve Cranwell

BELOW 200 tonnes of equipment was shipped 1,600 km from Tahiti to the islands © Dave Wills / Island Conservation



introduced species from six islands (Vahanga, Tenania, Temoe, Kamaka, Makaroa and Manui), thereby securing a future for four threatened bird species and many others.

'Operation Restoration', as it was dubbed, was not without its difficulties. Getting 200 tonnes of equipment shipped to these remote islands required diligent logistics, 165 helicopter hours, more than two years of planning and a team of 31 people across three continents to deliver the operation. If that doesn't sound hard enough, the prospect of adverse weather conditions, sleep deprivation, sharks, seasickness, tropical sores, clouds of flies and a castaway's diet would make any sane person turn their boat around and sail straight back to the idyllic island of Tahiti.

Despite all of this, the team were not fazed and, if anything, it just added to the adventure. Over the following two months, the operation was rolled out over the six islands, working alongside local communities throughout. An immense amount of human power was needed in particular to remove the invasive tangles of the *Lantana* plant, but blood and sweat was well spent in the knowledge that many native plant species would recover and allow the fruit- and seed-eating birds to thrive again.

Despite the operation having gone to plan, proof of success would not be known for another few years, and so they left the island chain tired but

THE RESTORATION CHALLENGE





ABOVE Coconuts are managed on Tenararo to prevent the loss of critical native forest habitat © Tommy Hall / Island Conservation

BELOW Steve Cranwell doing what he does best: saving rare birds from invasive species on remote islands © BirdLife



with immense hope for the recovery to come. A follow-up survey in 2017 revealed that the team was successful in eliminating invasive species from five out of the six islands – a ground-breaking 1,200 hectares in total – and there were early promising signs of the recovery. Five years on, in November 2020, SOP MANU and BirdLife were able to return and capture a snapshot of the islands and their species' recovery.

SAVED FROM EXTINCTION

Prior to the operation, the once-widespread Polynesian Ground-dove persisted as a single functional population on their only remaining predator-free island, Tenararo. As of 2020, there are now three flourishing populations all on restored islands. The few that previously remained on Vahanga have since doubled, and on the neighbouring Tenania atoll they have re-established a secure and permanent presence for the first time

"TUTURU AND *TITI* HAVE BEEN PULLED BACK FROM THE BRINK OF EXTINCTION. *KOKO* ARE NOW ABUNDANT, DARTING THROUGH THE LUSH FOLIAGE"



PARADISE SAVED Key results from the 2020 survey and changes since 2015

SEABIRDS

Five new seabird populations have established on three islands and one population has doubled: Polynesian Stormpetrel (EN) doubled on Manui between 2016 and 2020 Christmas Shearwater (LC) on Kamaka (2018) and Temoe (2020), **Tropical Shearwater** (LC) on Makaroa (2018) Black Noddy (LC) on Makaroa (2016) Red-tailed Tropicbird (LC) on Manui (2018)

• Murphy's Petrel (LC) gradually increasing on Vahanga and Temoe

LANDBIRDS

• Polynesian Grounddove (Tuturu, CR) has a new secure population on Tenania (now a minimum of 24 individuals) and on Vahanga

 Tuamotu Sandpiper
 (*Titi*, EN) population has doubled on Vahanga
 Atoll Fruit-dove
 (*Koko*, NT) now abundant on Tenania and Vahanga, having increased significantly

LIVELIHOODS

Reported 50% increase in copra (coconut kernel) production

in hundreds of years. Tuamotu Sandpiper, another endemic, and an ancient cohort of migratory sandpipers that have lost their migratory ability, is making a slower but steady comeback. The population in Vahanga has not increased significantly and is also yet to establish on Tenania. Nonetheless, with over a thousand Tuamotu Sandpipers on Tenararo, they remain the most numerous species there.

Then there's the *Koko*, Atoll Fruit-dove *Ptilinopus coralensis* (Near Threatened). Needing no search, their soft coos clearly audible and a constant flash of yellow and red hues visible to everyone, these now abundant birds dart through the lush foliage.

In addition to landbirds, the islands provide critical habitat for nineteen species of seabird, and the changes being witnessed here are no less than inspiring. Since 2015, five new seabird populations have established on three of the islands including Christmas Shearwater *Puffinus nativitatis* on two islands, whilst Tropical Shearwater *Puffinus bailloni*, Red-tailed Tropicbird *Phaethon rubricauda* and Black Noddy *Anous minutus* all inhabit one each.

In a further affirmation of the recovery, nesting Polynesian Storm-petrels *Nesofregetta fuliginosa* (Endangered) have increased year on year and by more than 100% of their estimated 2015 population





[see graph]. Murphy's Petrel *Pterodroma ultima* is another species signalling its intent to reclaim these islands from its stronghold of a thousand pairs on Temoe, to gradually increasing numbers on Vahanga and prospecting a return to Tenania. The isolation and expense of accessing these islands means the monitoring is limited but "The changes taking place are apparent, particularly the avian comeback", says Tehani Withers (SOP Manu's Restoration Manager). "Given that five years of recovery is barely a ripple in the prior hundreds of years of harm, it's deeply satisfying to see such a vibrant transformation."

"This restoration success has demonstrated that carefully planned and well-executed operations across multiple remote islands can provide significant benefits for the biodiversity and local community simultaneously", says Steve Cranwell, BirdLife's invasive species expert, who headed up the operation. "The five restored islands of the Acteon and Gambier group are allowing wildlife to expand and establish new secure populations, as witnessed for *Tutururu* and several species of seabird and other animals. For highly mobile species, like seabirds, this expansion is expected to continue and we may see the return of some long lost extirpated species, like the threatened Phoenix



NESTING POLYNESIAN STORM-PETREL per plot (15 x 100 m²) on Manui following the removal of introduced vertebrates in 2015

and Henderson Petrels. To progress the recovery of *Titi* and *Tutururu*, we will translocate them to one of the more distant restored atolls [Temoe, over 300 km away from their current populations] helping secure them a more stable future."

OTHER BENEFITS

But it has not all just been for the birds. Coconut farming, alongside fishing, is the main source of income for these Island communities. In the Tenania atoll, coconut plantations were being damaged by Black Rats, impacting the community's ability to generate a continuous source of income. Following the successful eradication of the rodents, no one was more grateful than the Mayor of Tureia, who has reported that the harvest has increased by 50% since the operation, helping families with their children's education and living expenses.

Critical to the ongoing recovery of the islands and their species is biosecurity: to prevent the return of removed species and other harmful TOP Titi (Tuamotu Sandpiper) exceed 1,000 birds on Tenararo and are gradually increasing on predator free Vahanga © Ray Pierce / EcoOceania

ABOVE LEFT

Polynesian Storm-petrel are defenceless to rats © Steve Cranwell

GRAPH

Polynesian Storm-petrel recovery 2015-2020 © Thomas Ghestemme / SOP Manu

ABOVE Tutururu (Polynesian Grounddove) have increased from 1 to 3 secure populations © Tommy Hall / Island Conservation

TOP RIGHT

Prior to removal, rats would reach high densities © Steve Cranwell



Ground-dove Alopecoenas erythropterus

RED LIST STATUS: Critically Endangered

THREATS: introduced species, habitat loss, tropical storms

POPULATION: <250

RANGE: endemic to French Polynesia, once widespread, now functional populations on three atolls

FAST FACT: Alopecoenas is a genus endemic to the tropical Pacific comprising 13 species; 2 are extinct, 7 are highly threatened introductions. Here, the leadership from local people is crucial. Local communities, the Catholic Church and the French Polynesian government are partners who not only helped make the restoration possible, but also ensure it continues as they remain vigilant in applying biosecurity and educating others in doing the same.

The Polynesian people are deeply connected with nature, playing a crucial role in their traditions, history and way of life [this is also why we use the species' original names in this article]. So when nature is degraded, cultures are too.

Unfortunately, many Pacific islands, including those in French Polynesia, continue to face threats from invasive species and climate change, severely impacting both biodiversity and the Pacific people's way of life. This form of restoration and capacity building offers a clear solution. It resets the natural balance to a time probably not known on these islands since Polynesian ancestors colonised the thriving ecosystems.

LESSONS FOR FUTURE ISLAND RESTORATIONS

So what's next? SOP Manu is following up with further habitat restoration – clearing more *Lantana* and removing coconuts that have spread outside plantations. Of course, lessons have been learned from the one island where the eradication of rats failed, Kamaka, and a renewed operation is planned for later this year. "The use of drone technology is an exciting new innovation to make rodent







eradications more accessible on remote islands like Kamaka", says Tom Ghestemme, Director of SOP Manu. The emotional drive to succeed is now extra strong for this island: "The landowner, the late Johnny Reasin, committed his life to restoring Kamaka and his family are equally committed to continuing the work. SOP Manu will honour his life-long wish and realise his legacy of protecting French Polynesia's birds and biodiversity." Situated among three of the other predator-free islands, the potential for seabird recovery on Kamaka is huge.

And it doesn't end with these islands. BirdLife and BirdLife Partners are currently supporting invasive species operations across at least 16 sites in seven Pacific Island countries, safeguarding 15 threatened bird species and many others, such as the Marquesas and Rapa Iti. "While there is still much to do, the learnings from the Acteon and Gambier operation have been instrumental in making a difference," says Cranwell. "With your continued support we will turn back the tide of extinction and continue to protect, secure, and restore the unique biodiversity of the Pacific."

The results of Operation Restoration are a remarkable testament to the rate at which native wildlife can recover given the right opportunity, a heroic effort and with strong local support.

While the *Tutururu* and *Titi* are not completely safe yet, we can say they have certainly been pulled back from the brink of extinction, and as they continue to increase and expand their ranges across these restored islands, so will the certainty of their future.

Dedicated to the many donors and supporters that have, and continue to make, these achievements possible. Thank you.



WHICH SITES SHOULD WE RESTORE FIRST?



Conservation isn't just about preserving pristine natural habitats. To

thoroughly address the climate and extinction crises, we also need to restore ecosystems that have been degraded or converted to other uses such as farming. But where to start? BirdLife's Chief Scientist Dr Stuart Butchart sheds some light.

WHICH FACTORS MAKE SOME LOCATIONS HIGHER PRIORITY THAN OTHERS?

The benefits and costs of restoration vary substantially across the world. The amount of carbon that would be captured by restoring a site differs depending on habitat and location, and the biodiversity value of locations also varies. Added to this, habitat restoration is much cheaper in some locations than others.

HOW DID YOU EXPLORE THESE TRADE-OFFS?

We collaborated with scientists at the International Institute for Sustainability in Brazil – along with other institutions – to use an approach called 'linear programming'. Through this method, we calculated the optimal distribution of restored sites under three criteria (minimising extinctions, mitigating climate change and minimising costs) under 1,200 different scenarios.

WHAT WERE THE KEY FINDINGS?

Priority areas for restoration varied wildly depending on which of the criteria we focused on. Overall, we found that restoring 15% of converted lands in priority areas could avoid 60%



of expected extinctions while capturing 299 gigatonnes of $CO_2 - 30\%$ of the total CO_2 increase in the atmosphere since the Industrial Revolution. Importantly, we found that it is much more cost-effective to optimise across multiple criteria simultaneously. This highlights the importance of spatial planning and pursuing climate and biodiversity goals simultaneously rather than separately.

WHICH KINDS OF HABITAT ARE IMPORTANT FOR RESTORATION?

All biomes have an important role, but priority areas tended to be concentrated in wetlands and tropical and subtropical forests. These sites typically had high carbon stocks, high species diversity and considerable loss of natural habitat.

WHAT WERE THE LIMITATIONS OF THE STUDY?

We focused exclusively on areas that had been converted to other uses, since the costs and benefits of restoring degraded ecosystems are less well known. We also did not consider the way climate change is affecting the distributions of species, biomass and agricultural production. Finally, at local and national scales it is critical to consider socio-economic issues such as social equity and land tenure.

HOW CAN WE TURN INFORMATION INTO ACTION?

Governments have made bold commitments to restore ecosystems, including in relation to the UN Decade on Ecosystem Restoration (2021-2030), Bonn Challenge, New York Declaration on Forests and the Paris Climate Accord. Our methods and results can help nations to develop efficient spatial plans that ensure such restoration delivers maximum benefit for biodiversity and climate change, while minimising costs.

Global priority areas for ecosystem restoration is published in Nature.

GREAT GREEN WALL

Metre by metre, climate change and over-farming are degrading Africa's formerly productive Sahel region and threatening not just wildlife habitat, but also people's survival. However, there's epic ambition to restore depleted lands and grow a 7,000-km natural wonder across the entire width of the continent. It's showing that some walls can actually be liberating...

Lewis Kihumba

stretching the breadth of the continent – vegetation that will bind the soil, retain water and create 10 million green jobs, in addition to providing food security for more than 20 million people by 2030.

KEEPING IT PERSONAL

Every country in the Sahel is different, and so are the reasons for land degradation. A key aspect of the Great Green Wall initiative is its localised approach, where participating countries address the problem using local contexts. Given the nature of the problem and the

"THESE RESTORATION EFFORTS ARE A TESTAMENT THAT ORDINARY PEOPLE WITH CONVICTION CAN HAVE AN EXTRAORDINARY IMPACT ON THEIR WORLD"

DJIBRIL DIALLO, EXECUTIVE DIRECTOR, NATURE MAURITANIA (BIRDLIFE PARTNER) needs of people, nations may choose to focus on agroforestry, reforestation, irrigation systems or even fixing sand dunes in place with native vegetation.

Their efforts are already beginning to bear fruit. An report released in 2020 shows that about 20 million hectares of land have been restored so far. In Senegal, 11 million trees have been planted, while across Burkina Faso, Chad, Mali, Nigeria and Ethiopia, more than 540,000 hectares of land have been reforested, creating over 280,000 jobs.

Nature Mauritania (BirdLife Partner) is carrying out a habitat restoration program in partnership with the National Agency of the Great Green Wall and supported by Vogelbescherming (BirdLife in the Netherlands). So far, 10,000 seedlings of various local species including Acacia Senegal, Umbrella Thorn and Indian Jujube have been grown. The seedlings, bolstered by 20,000 others from Nature Mauritania's nursery, have gone a long way towards reforesting the degraded land around Lake Mâle – a site that is crucial to fishing and farming communities, as well as an Important Bird & Biodiversity Area. Furthermore, local communities are benefiting from various livelihood schemes including poultry raising and market gardening.

"These restoration efforts are a testament that ordinary people with

The Sahel region stretches across the African continent. Main photos © United Nations Convention to Combat Desertification

Growing more than trees: food and water security, gender equity, green jobs and a global symbol

estoration is not just about

improving things for nature,

it can mean life or death for

millions of people. In Africa's

Sahel region, a largely semi-arid expanse

of land that stretches the breadth of the

continent on the southern fringes of the

Sahara Desert, 80% of people depend on

agriculture. But years of climate change,

To tackle this crisis, in 2007 the African

Union and the UN Convention to Combat

Desertification joined forces to launch the

Great Green Wall initiative, spanning 11

countries west to east from Senegal to

Djibouti. The initiative aims to restore

degraded soil by creating a mosaic of

different land uses, including sustainable

farming and restored patches of natural

habitat. Their vision is to see 7,000 km of

trees, grasslands and verdant vegetation

over-farming and over-grazing have

endangering the food security and

livelihoods of 130 million people.

eroded this once green band,

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conviction can have an extraordinary impact on their world," says Djibril Diallo, Executive Director of Nature Mauritania.

PUTTING WILDLIFE AT THE CENTRE

Restoring the land is no doubt beneficial for agriculture – but it is also vital to consider nature conservation at every turn. To this end, BirdLife and our Partners are collaborating with the Great Green Wall initiative to make sure that wildlife also reaps the rewards of restoration.

"BirdLife and Partners have been involved in a lot of conservation efforts in the region, such as the Living on the Edge project in the Sahel. Building on what has been done, this collaboration will ensure that as activities are implemented, biodiversity conservation is also considered and integrated for sustainability," says Geoffroy Citegetse, BirdLife's lead co-ordinator in mainstreaming conservation in Great Green Wall activities.

Major areas of co-operation include restoring wildlife habitats, monitoring biodiversity along the Great Green Wall corridor and building the capacity of national and local conservation organisations. Partners have also helped raise awareness of the initiative and campaign to decision-makers.

In January 2021, the Great Green Wall initiative received a boost at the fourth One Planet Summit, which brought together decision-makers from around the world to accelerate international action for the protection of biodiversity. At the summit, the initiative's partners pledged almost €14 billion for the 11 countries to preserve biodiversity and meet UN Sustainable Development Goals by 2025.

"While each country has its own restoration goals and ways to achieve them, the implementation activities are being performed at the local level, which means that local communities own the process and are directly benefiting from restoration efforts and the conservation of biodiversity. Greater support for communities will help the green revolution to take shape in the Sahel, and with it the promise of better lives for its people," concludes Citegetse.

Find out more: www.grandemurailleverte.org and www.greatgreenwall.org

LEFT Drought, hunger, poverty: the Sahel is the frontline of climate change

BELOW Future generations will reap the rewards of this work © Nature Mauritania



A GREAT GREEN RECOVERY IN NIGERIA

As countries seek to recover from the impacts of COVID-19, putting nature at the heart of this regeneration is critical. The Nigerian Conservation Foundation (NCF; BirdLife Partner) is implementing the Green Recovery Nigeria initiative in partnership with Nnamdi Azikiwe University and the Federal Government, through the Ministry of **Environment's National Forestry Trust** Fund. Partnering with local communities and other institutions including private sector players, more than 1.7 million seedlings were planted across the country in 2020. In addition, a 'Regreening Nigeria' programme has provided an opportunity for environmental education and awareness-raising in the country.



THE FUTURE OF RESTORATION: THE ATLANTIC FOREST WAY

From new forest corridors to the production of shade-grown commodities, restoration work in the Atlantic Forest of Argentina, Brazil and Paraguay is crossing country borders and taking landscape conservation into new realms of ingenuity

Alan Hesse

Atlantic Forest landscape in Paraguay © Cindy Galeano



he Atlantic Forest was once an unbroken tapestry stretching from northeast Brazil along the coast down to northern Argentina and Paraguay. Considered one of the top five global biodiversity hotspots and historically one of the world's largest forests, the biome has been significantly degraded, and now only 16% remains: the ancient tapestry is in tatters.

Despite this dire situation, isolated patches of Atlantic Forest still provide key services to millions of people and habitat for important species. The restoration challenge is to reconnect these patches and weave the tapestry whole again.

It is of course not simple, and innovative solutions must be found. The ancient Atlantic Forest tapestry is now a modern patchwork landscape – a social as well as an ecological system – meaning that for conservation success and restoration to be sustainable, the needs of people today must be met without compromising the future.

A LANDSCAPE APPROACH

One way to achieve this is through the sustainable production of commodities. "Today, conservationfriendly production is considered not only innovative," says Andrés Bosso from Aves Argentinas (BirdLife in Argentina). "It is also perceived as a positive and – thinking empathetically – inevitable course of action."

Drivers of deforestation such as timber sales, cattle farming or even illegal marijuana cultivation are often also sources of immediate income for local inhabitants with few viable alternatives. Such is the case for a large number of smallholders inhabiting what remains of the Atlantic Forest. Transitioning to sustainable land-use practices – a truly modern approach if done properly – is thus a fundamental conservation goal.

To make this work, BirdLife and Partners are

seeking solutions that make economic as well as ecological sense. Forest restoration is inextricably linked with land-use practices and policy, strategic alliances and co-management, market-driven agroforestry projects and ecotourism. For the three Atlantic Forest BirdLife Partners – Aves Argentinas, Guyra Paraguay and SAVE Brasil – all of these strategies are on the table.

CONNECTING THE DOTS

In BirdLife's Atlantic Forest Programme, restoring ecological connectivity and thereby recovering overall forest health basically boils down to two interweaving threads: joining one forest fragment to another, and working with the right people. In the northern reaches of the biome, SAVE Brasil Above left Training for ecotourism guides © SAVE Brasil

Above right

White-throated Woodcreeper *Xiphocolaptes albicollis* in the Atlantic Forests of Misiones, Argentina © Emilio White

THE MODERN SCIENCE OF DEFINING FOREST CORRIDORS

Establishing a forest corridor is not a simple matter of merely fencing off a rectangle of land. Multiple criteria need to be taken into account, such as the distribution of threatened species, quality of forest patches, watershed boundaries and the human uses of the forest and landscape. SAVE Brasil is busy gathering fresh data, particularly geospatial, to allow the host of scientists and experts from the Atlantic Forest Restoration Pact [see box p26] to define the corridor boundaries on a finer scale – a prerequisite for setting priority actions in different areas of the corridor, taking into account ecological health as well as human well-being.









SAVE Brasil's version of the 'ten-year

showing how its Serra

do Urubu reserve has

Photos © SAVE Brasil

challenge' meme.

regenerated

helped establish and supports the management of the 6,000-hectare Murici Ecological Station and purchased 360 hectares of Atlantic Forest in the 100-km distant Serra do Urubu, where a private reserve was established. With these two strongholds, SAVE is now designing a Serra do Urubu-Murici forest corridor to connect existing forest patches between the two sites, and prioritise areas for forest restoration [see box p23].

There are essentially two ways to restore a forest: you can fence off forest fragments and let nature do the rest, or you can plant native plant seedlings and monitor them to ensure optimal survival rates and actively reconstruct the original habitat. In many cases, a mixed approach is used.

"THE REGION RECENTLY LOST TWO OF ITS UNIQUE BIRD SPECIES: THE ALAGOAS FOLIAGE-GLEANER AND CRYPTIC TREEHUNTER WERE DECLARED OFFICIALLY EXTINCT BY BIRDLIFE IN 2019"

ALICE REISFELD AND PEDRO DEVELEY, SAVE BRASIL

THE THREATENED BIRDS OF BRAZIL THAT ARE REBUILDING FOREST

SAVE Brasil reports a dramatic comeback of bird diversity at Serra do Urubu, from just three bird species in 2005 to 70 species today in the restoration plot at SAVE's Reserve, which has 285 bird species in total. Through the diverse ecological roles played by different bird species, such as seed dispersal and plant fertilisation, the forest ecosystem is being replenished in an entirely natural way. Regardless of which restoration strategy is used by humans, the birds themselves actively help to restore their own habitats, working in silent synchrony with the efforts of conservationists.



'Jump starting' forest recovery with active restoration gets things moving but is expensive. Passive restoration is cheaper, but it takes a long time. SAVE Brasil is doing both, having started restoration activities within the Murici Reserve, and helping to establish a network of native plant nurseries, seed collectors and knowledgeable individuals to deliver and monitor restoration efforts in the region.

When the idea is to restore the natural flow of things, nature always helps out: planting more trees effectively attracts more birds and insects, which then actively take over much of the required ecological ground work to regenerate the ecosystem [see box above].

Even with help from the birds, forest restoration is a massive endeavour that can quickly exhaust resources. Nor is it guaranteed to work, especially if conservationists fail to consider the presence of human residents and their activities. In the Atlantic Forest, this typically means farmers and livestock producers.

"We want to encourage a system that combines agriculture, animal rearing and forest restoration, and generates mixed-revenue streams to help keep forests standing," says Alice Reisfeld, SAVE Brazil Program Manager. "We expect this approach to



have measurable benefits for the livelihoods of local landowners."

Matters can get complicated when the landowners involved are reticent, even when the dialogue is about sustainable production practices that will benefit them. "Many landowners are not aware of the possibility of raising crops and cattle in a more sustainable way that will increase their productivity and help them access new markets, while also generating environmental services," says Bárbara Cavalcante, Co-ordinator of the Northeast Atlantic Forest Project, SAVE Brasil. "That's why we will implement demonstrative units in a few properties, so that others can also learn and allow replication of this model."

IT STARTS WITH A CUP OF TEA

Meanwhile, in the southern Atlantic Forest, Guyra Paraguay and Aves Argentinas are under similar pressure to reconcile forest restoration with local economic interests. Their main answer to this conundrum is shade-grown yerba mate (used to make a popular caffeinated drink), an impressively simple yet sophisticated agroforestry initiative whereby local producers receive a premium for a forest-friendly product [see box to the right].

Guyra Paraguay is looking to take its shade-

SHADE-GROWN YERBA MATE: A CASE STUDY OF MODERN CONSERVATION

In the Argentinian province of Misiones alone, there are more than 160,000 hectares of yerba mate farms. Just across the border in Paraguay's last-remaining patch of Atlantic Forest, the San Rafael Reserve, Guyra Paraguay is working with 129 indigenous people and 51 smallholders producing more than 100 hectares of organic, shade-grown yerba mate. The first harvest of 13,500 kg of premium, organic, fair-trade yerba mate was completed in 2019 through a partnership with Guayakí, a US-based company committed to purchasing all Guyra-supported produce up until the 2021 harvest. As the volume of shade-grown yerba mate increases with the expansion of reforested areas, annual harvests are expected



to reach 300,000 kg in the mid-term. Along with the yerba mate marketing strategy and upcoming support from the Hempel Foundation, Guyra has started developing an in-house business unit to manage the commercialisation of all the production activities carried out within its network of reserves. This is a prime example of conservation innovation, dissolving entrenched silos separating the world of business from environmental interests.

THE RESTORATION CHALLENGE



grown yerba mate model to scale. However, as always there are challenges. Among these is the illegal production of marijuana in the San Rafael Reserve. The prospect of producing forest-friendly yerba mate alone is often insufficient to convince smallholders to forego the highly lucrative marijuana business, a major driver of forest degradation and forest fires. For such reasons, Guyra Paraguay is promoting the diversification of smallholder farms, so that farmers can tap into multiple income streams at different times of the year.

CROSS-BORDER RESTORATION

A key element in scaling the shade-grown yerba mate initiative is to work with other organisations wanting to do the same things for the same reasons. Thus, Guyra Paraguay has teamed up with Aves Argentinas to stitch together farms adopting forest-friendly yerba mate production to create an 'eco-productive' corridor linking Atlantic Forest fragments and Key Biodiversity Areas between south-eastern Paraguay and north-eastern Argentina. This corridor is already showing measurable benefits for birds and other biodiversity within the agroforestry plantations; furthermore, it provides a framework for the shade-grown yerba mate initiative to expand, all the while growing synergy between the relevant BirdLife Partners and their respective local alliances. Such alliances are the stuff of 21st century conservation.

By way of localised patchwork initiatives, the Atlantic Forest as a whole is gradually being reassembled. Working alongside and in the interests of the local people who work and influence the landscape, BirdLife Partners and their allies are implementing modern conservation initiatives that draw transformative power from the union of economy with ecology. Piece by piece, the Atlantic Forest tapestry is gradually being woven back together again. Josefa Caetano, a farmer in Brazil's Atlantic Forest, captures the reason why this is working: "I could cut everything down, sell all the wood and plant crops, but I don't do this because I understand the damage I would cause for the future."

WORKING TOGETHER TO SCALE-UP RESTORATION



1 FOREST, 3 COUNTRIES The Trinational Alliance for the Restoration of the Atlantic Forest unites three BirdLife Partners (Aves Argentinas, SAVE Brasil and Guyra Paraguay) with a broad network of other NGOs, public and private institutions, academics, community leaders and restoration warriors to share technical information, build capacities of its members and unify efforts to attract funding for largescale restoration of the biome.



REGIONAL RESTORATION SAVE Brasil is the northeastern regional focal point for the *Pacto pela Restauração da Mata Atlantica* (Atlantic Forest Restoration Pact), a consortium comprising more than 50 organisations that has been active for more than 20 years in conserving Brazilian Atlantic Forest. The transborder corridor joining Atlantic Forest patches in Paraguay and Argentina also exemplifies the regional ambition of BirdLife and its Partners.



WITH DIFFERENT SECTORS

Guyra Paraguay co-manages large areas of healthy Atlantic Forest with a Mbya Guaraní indigenous community. It has also donated 500 hectares to the Paraguayan Ministry of Environment in exchange for support in its management, monitoring and surveillance. Other collaborations with NGOs and the private sector helped Guyra form community fire-fighting brigades to help protect future forest and agroforestry production.



TRILLION TREES

Trillion Trees is a joint venture between BirdLife, WCS and WWF to urgently speed up and scale-up the positive power of forests, helping the world protect and restore one trillion trees by 2050. The Atlantic Forest is a priority Landscape Venture and Trillion Trees is attracting global finance, investment and philanthropic funding to scale up restoration efforts. Find out more at: www.trilliontrees.org



© Guyra Paraguay

This Atlantic Forest work is currently supported by the Aage V. Jensen Charity Foundation, the Hempel Foundation, WWF-Brazil, Trillion Trees and the BirdLife Forest Accelerator.

WITH A NEW FOREWORD BY MARGARET ATWOOD

The BEDSIDE BOOK of BIRDS

~ An Avian Miscellany ~

GRAEME GIBSON







ABOVE The Graeme Gibson Fellowship will support conservation leaders such as Tehani Withers (right), whose great work is featured on p18

LEFT Graeme with **BirdLife's CEO** Patricia Zurita and Margaret Atwood

THE BEDSIDE BOOK OF BIRDS By Graeme Gibson

Bloomsbury Publishing / Hardback / £45

ubtitled An Avian Miscellany, this work is a treasure trove of anecdotes, musings, ideas, folk stories and cultural insights about birds and the history of our relationship with them. It was first published in 2005 but such is its enduring appeal that The Bedside Book of Birds lives on in new editions beyond the author's passing.

In the introduction, Graeme Gibson says he came late to birds. You would not know it. Perhaps making up for lost years, he invested much effort, imagination and time assembling material for this unique volume. The result is an enriching collection arranged over nine chapters under such broad themes as birds observed and recorded (Oh, The Birds ...), folk tales and parables (Death Comes as a Rooster), birds we exploit (A Bird In The Hand) and birds and the nostalgic human

soul (Some Blessed Hope).

From Pliny the Elder to Peter Matthiessen via Charles Darwin, Alfred Russel Wallace, Franz Kafka and Patrick Leigh Fermor, and peppered with the author's own material, there is writing to stimulate every mind - discovery, exploration, contemplation, philosophy, poetry, humour, religion and yet more. Unsurprisingly because of their cultural associations, some birds - albatrosses, raptors and crows, for example - feature more prominently than others, and many are also depicted in reproductions of avian art or artefacts, ranging from the paintings of Audubon and Keulemans to images of Aztec ceramics, Maori kites and Ghanaian sculpture.

The latest edition of this eclectic collection has a new foreword by Margaret Atwood, the author's partner for more than 45 years. In it she reveals that

he was surprised by the book's success, but promptly gave away the profits: "birds had been a gift to him, and gifts must be reciprocated." Both are well-known supporters of conservation, championing BirdLife's work at home in Canada and internationally, and among other things serving as joint Presidents of the Rare Bird Club.

It seems fitting that this latest edition is published ahead of BirdLife's launch in 2021-22 of the Graeme Gibson Fellowship. As well as honouring his love for birds and conservation, this new initiative is designed to empower a diversity of new leaders across the charity's expanding network to rise to the challenges of a changing and precarious world something of which Graeme Gibson, who confessed to having "the zeal of a convert", would surely have approved. **REVIEWED BY** Dominic Mitchell

BIRD BRAIN

Scientists are taking a fresh look at how birds talk, work, play, parent and think. From what they're discovering, it seems there is more than one way to make a highly intelligent mind. We interview **Jennifer Ackerman**, author of *The Bird Way*, on what this means for our perceptions not only of birds, but also ourselves

Mireia Peris

n the past, naturalists thought that birds had small brains only capable of simple processes. But today, 'bird brain' is no longer a disparaging descriptor. Author of the New York Times bestseller The Genius of Birds, Jennifer Ackerman shines a light on the nature of animal intelligence through birds in her latest book, The Bird Way. Combining modern research with personal experience, she gives us a new look at how birds play, talk, parent, work and think, showing us that they are capable of activities we once considered unique to our own kind - such as manipulation, altruism or communication among species – and proving that our avian friends are far more complex than we ever imagined. As prominent biologist E. O. Wilson said: "When you have seen one bird, you have not seen them all."

YOU'VE BEEN WRITING ABOUT SCIENCE AND NATURE FOR MANY YEARS, FROM THE HUMAN BODY TO OCEANS – WHY DID YOU DECIDE TO PICK BIRDS' BRAINS?

As a bird lover and science writer, I am an avid reader of scientific journals. Recently, I started noticing an abundance of new research on birds' behaviour, and saw that our understanding of birds was shifting. I've been a birdwatching enthusiast since I was a kid – I used to think: "What is going on in their minds when they are going about their ABOVE Corvids are well known for their intelligence but notably lack a neocortex – found in the brains of 'clever' primates. However, says Ackerman: "New findings show that birds do, in fact, have a brain structure comparable to the neocortex, though it takes a different shape." © Philip Openshaw / Shutterstock daily lives?" – so the whole idea of birds being more intelligent than we thought fascinates me. I always believed birds were very resourceful, but writing these books has been revealing! How can a tiny brain have such an extraordinary capacity?

WHY USE EXPRESSIONS LIKE 'THE BIRD WAY' OR 'GENIUS', AND NOT JUST 'INTELLIGENCE'?

I like 'genius' because, in my understanding, the word includes not only exceptional abilities but also the 'genius' of evolution: how adaptation creates extraordinary skills to find solutions.

A few years ago, I got intrigued by the quote "There is a mammal's way and there is a bird's way," and understanding what it meant. Birds have these remarkable mental capacities because they have had to solve difficult ecological and social problems – just as we have. I hope the title of my latest book raises the question: "Do birds actually have a 'way' of being in the world?", and motivates people to learn more about these feathered masterminds.

HUMANS SOMETIMES TEND TO ANTHROPOMORPHISE OTHER CREATURES IN AN ATTEMPT TO UNDERSTAND THEIR BEHAVIOURS. HOW DO YOU OVERCOME THIS INSTINCT?

The idea of attributing to non-human species mental qualities we consider unique to humans is very controversial... My job is to be a translator of 'hard science' and make it both engaging and



"THE WAY WE UNDERSTAND OTHER CREATURES IS CURRENTLY CHANGING, AND THE UNEXPECTED CAPABILITIES AND BEHAVIOURS OF BIRDS HAVE BEEN A KEY PART OF THIS PROGRESS"

accurate. I think the way we understand other creatures is currently changing, and birds have been a key part of this progress. Through research, scientists are observing unsuspected capabilities and behaviours we thought unique to humans. For example, members of the corvid family were documented playing in the snow for pleasure and assembling complex tools that a 3-4 year old child could not; and lyrebirds were observed learning other species' calls to fool their own kind. Some birds, such as Japanese Tits, may even use grammatical rules to decode combinations of alarm calls, while Pied Babblers have alarm calls that appear to encode messages that go beyond the meaning of their individual parts - both interesting parallels with human language. So I would say it is not anthropomorphism, but scientific observation and research.

IN YOUR BOOK YOU EXPLAIN AMAZING BEHAVIOURS FROM MANY DIFFERENT BIRD



Find out more at: jenniferackerman author.com This is such a difficult question! I used to answer chickadees, as I have always been amazed by their complex communication skills, but the bird I fell in love with while writing *The Bird Way* was the Kea. These birds are so child-like – smart and exploratory – and they even have a 'play-call' that elicits them to play and chase each other, which is quite an amusing thing to watch.

ONE OF THE PROBLEMS WITH HUMANS ABUSING NATURE IS THAT WE CONSIDER OURSELVES TO BE 'HIGHER' THAN OTHER SPECIES. WITH YOUR PERSPECTIVE ON AVIAN INTELLIGENCE, WHAT DO YOU MAKE OF THIS?

Birds show there are different ways to wire a smart brain. Their behaviour helps us realise we are not as unique as we thought. Rachel Carson wrote: "The more clearly we can focus our attention on the wonders of life around us, the less taste we shall have for destruction." More than ever, birds are threatened by habitat destruction and climate change. We must work to ensure we have the chance to learn more from them (and other species) in the future. I hope my books promote an appreciation for birds as the innovative and thoughtful creatures they are. Maybe, by better understanding the intelligence of other non-human species, we will treat nature with the respect it deserves.



ENFOLDED INTO CULTURE

The age-old symbolism of cranes in Japanese art

prized collaboration by the artist Tawaraya Sōtatsu and calligrapher Hon'ami Kōetsu, Anthology with Cranes, is held in the Kyoto Museum of Art. A scroll, the work is almost 14 m in length, and the cranes – beautifully rendered in gold and silver - stand and fly, alone and in flocks. Dating from the 17th century, the piece is revered as a celebration of Sōtatsu and Kōetsu's friendship, and because of the core role cranes play in Japanese and wider Asian culture. With simple elegant lines Sotatsu fills the space with the effervescent energy cranes always seem to express.

Taken more than 400 years later, David Tipling's wonderful image of Red-crowned Cranes *Grus japonensis* dancing and bugling, their breath catching the sun and condensing in the chill air of Hokkaido, captures an ageless scene. Only the sound is missing, of course, though listening to recordings on the *Xeno-canto* website

John Fanshawe

allow a sense of how the sight, calls and movements of these remarkable birds has flooded people's imaginations for as long as we have shared common ground.

Although Red-crowned Cranes remain Endangered on the Red List, the story of their recovery on Hokkaido and the development of the marshes at Kushiro as a national park has been a major success.



ABOVE A page from the original *Hiden* Senbazuru Orikata (A Thosand Cranes & How to Fold Them), the first known book on origami, published in Japan in 1797.

Fewer than 20 resident birds were present in the 1920s, but numbers have now grown to an average annual population of over 1,500. The Wild Bird Society of Japan (BirdLife Partner) has played a key role in supporting action for the cranes and opened a visitor centre at the Tsurui-Ito Tancho Sanctuary in 1987 – an Important Bird & Biodiversity Area and popular site with ecotourists. The close interweave of natural and cultural values in Japan has played a key role in creating momentum.

Few of us who have held paper have not, at some stage, folded a bird, or some bird-form, a pair of wings, and flown them, literally, or with arms whirling to create the magic of flight. Cranes are core to *origami*, and the tradition of folding a 1,000, or *senzaburu*, dates back to a Confucian belief that they could live to be 1,000 years' old. To fold so many is to conjure up the long-standing association between these remarkable birds, longevity, happiness and good fortune.

NATURE & CULTURE





ABOVE Anthology with Cranes, 17th century, by painter Tawaraya Sōtatsu and calligrapher Hon'ami Kōetsu

BELOW Breathtaking: Red-crowned Cranes *Grus japonensis* calling in Hokkaido, Japan © David Tipling



SADAKO SASAKI

Cranes are also closely associated with peace in Japan. In 1955, a schoolgirl named Sadako Sasaki, who had miraculously survived the atomic bomb which had devasted Hiroshima a decade earlier, fell ill with leukaemia. When a school friend visited her hospital bed bearing a gift of origami paper, she also told Sadako of *senzaburu* and its association with good fortune. Determined to recover, Sadako began to fold cranes, and reputedly reached 644 before succumbing to the relentless radiation cancer. Her story soon spread, and schoolchildren from all around Japan and overseas gave money to build a monument in her memory at the Hiroshima Peace Park. A small bell hangs there, donated by the first Japanese Nobel Laureate, Hideki Yukawa. People still hang paper cranes below the bell, both to celebrate Sadako's life, and the enduring association between cranes and peace.



RIGHT The *Velociraptors* in Jurassic Park were actually covered in feathers, with quill knobs on their arm bones like those of modern birds



ORIGINS

Drop any preconceptions of dinosaurs, which are likely reptile-centric and warped by Spielberg; the real dinosaurs are outside your window. Yes, birds *are* dinosaurs. Shaun Hurrell interviews **Professor Roger Benson** to unearth the latest

rofessor Roger Benson's latest paper features a feathered, chicken-sized, bird-like dinosaur revealed to have the hearing ability to rival a barn owl – a specialised nocturnal predator. Combined with short, muscular arms ending in a single giant claw for digging, Shuvuuia deserti is not what you might classically expect from a dinosaur. Such are the revelations of fossil discoveries in recent decades that are changing how we see birds today. Benson researches the evolution of dinosaurs - including bird origins and large-scale evolutionary patterns. He explains why 'dinosaur' is more 'incredible bird' than 'terrible lizard'...

ARE BIRDS REALLY DINOSAURS? IS IT DISPUTED ANYMORE?

There's no longer really any doubt that birds are a type of dinosaur. These days, the debate is about details. The strong evidence doesn't just come from fossilised bones and similarities found across the skeleton, but from fossilised soft tissue – especially feathers. Many dinosaurs had not just some kind of body covering but actually distinctive bird-like feathers. Rare fossils also give us glimpses of the behaviour of bird-like dinosaurs, such as *Mei long,* a small, duck-sized bipedal dinosaur from the Cretaceous. It was found preserved in volcanic ash falls – a bit like Pompeii – captured curled up in a sleeping position very similar to how a lot of birds roost today.

Rather than a sluggish, reptile-like *T. rex* waiting for prey, we can think of dinosaurs more as active, curious bird-like creatures.

IF FEATHERS EVOLVED IN DINOSAURS, WHEN IS THE ORIGIN OF BIRDS?

Birds belong to the theropod group of dinosaurs that included *T. rex.* Theropods are all bipedal and some of them share more bird-like features than others.



Archaeopteryx, discovered in 1861, was for a long time the only truly bird-like dinosaur – it's from the Late Jurassic (150 million years ago). Others closely related to birds, like *Velociraptor*, can be from the Late Cretaceous (100-66 million years ago) and so they've also had a lot of time to evolve independently. It's the Late Jurassic where we start finding really interesting, distinctive bird-like dinosaurs – especially with recent fossils from China preserved in fine grain lakebed sediments.

SUCH AS?

Anchiornis is a Late Jurassic winged dinosaur, with large feather arrays on its legs. Fossils like this suggest the intriguing possibility that birds evolved from a gliding ancestor that had effectively four wings. That is cool. Also, Yi qi was discovered in the last couple of years. It preserves soft tissue with a bat-like wing membrane.

COULD THEY FLY?

Not all of the dinosaurian close relatives of birds could fly. But those that could flew in a range of different ways – suggesting early evolutionary experiments of flight, with birds being the most successful of those experiments and persisting to the present.





RIGHT Representation of *Microraptor* based on likely iridescent colouration. Artists have only recently let go of scaly, reptilian-like depictions of dinosaurs

BELOW Anchiornis wing fossil from China showing skin (white) and remains of feathers (darker)



FLIGHT IS KEY TO THE ORIGIN OF BIRDS THEN?

Palaeontologists ask 'what makes Archaeopteryx a fossil bird rather than another bird-like dinosaur?' And it's the capability of powered flight. The wing feather arrangement is much more similar to modern birds. But the more we know about bird-like dinosaurs, the more we find that specific features of birds have an older origin. Walking on two legs, having feathers, laying eggs, warm-bloodedness – they're just inherited features from dinosaurs. Beaks also evolved independently across various groups.

HOW DID POWERED FLIGHT BEGIN IN BIRD-LIKE DINOSAURS?

Not everyone agrees, but many think they were tree-climbing animals. I think they evolved flight from the trees down. From an aerodynamic perspective it's easier to see how that would work. To evolve flight from the ground up, evolution would need to master a number of different things about flight control and power quickly. That's more difficult. When did they learn to climb trees? We'd like to know!

WHY WERE BIRDS THE ONLY DINOSAURS THAT SURVIVED THE MASS EXTINCTION AT THE END OF CRETACEOUS?

We know from the fossil record that large-bodied land animals were hit hard. Only the tiny survived. The smallest dinosaurs weighed about 500 g, but to survive as a land mammal you needed to weigh less than 50 g, and even then the chances were very slim. Lots of bird groups also went extinct. All sorts of reasons have been suggested – such as being a seed-eater or fish-eater (after the 10-km diameter meteor struck, there was a lack of sunlight due to dust, and freshwater ecosystems were a refuge). Some places would have been less terrible than others – clearly proximity to the impact zone in Mexico would have been terrible – but there were global effects.

WILL ONLY SMALL ANIMALS SURVIVE THE SIXTH MASS EXTINCTION THEN?

We know from the fossil record that mass extinctions happen, but each one has a different cause and pattern. So we can't predict what will happen next based on past mass extinctions. Monitoring birds is one of the most important things we can do to catch species before they're unknowingly lost. The extinction of the dinosaurs is the most abrupt – it could have happened in a single year. The current mass extinction seems a lot faster than some of the other mass extinction events, though, in terms of rate of decline of abundance and rate of species loss.

The other thing it tells us is that the biosphere will recover. But not in our

WHEN YOU UNDERSTAND THAT BIRDS ARE A TYPE OF DINOSAUR, EVERYTHING STARTS TO MAKE MORE SENSE lifetimes – only in timescales that aren't useful for human society. It's terrifying, but only if it continues. We have some control of this if people take action.

FAVOURITE BIRD?

I really like the Inaccessible Island Rail, the smallest flightless bird, living precariously on a tiny island. How can it be so small? It's got something to tell us about evolution. No dinosaur had ever been that small. Islands are fascinating for an evolutionary biologist and we can't risk losing this information from science, the sum of human knowledge. That's just one reason why BirdLife's work to protect island birds from introduced species is so important.

GIVEN YOUR EXPERTISE, HOW DO YOU FEEL WHEN YOU LOOK AT BIRDS NOW?

I like watching them because I like animals and birds are some of the most visible. You can say that a pigeon's foot is similar to a dinosaur's - birds have inherited so much from dinosaurs but are also so distinctive in their own right. I respect that and see them doing something fundamentally different to what most dinosaurs would have done. They use resources in a way that ground-walking animals can't. At any one time there were probably only about 1,000 species of dinosaur on earth, whereas birds have taken what they've inherited from dinosaurs and done a lot more with it, giving rise to an enormous diversity of 11,000 species. People love dinosaurs and people love birds. What could be more interesting?



OUT ON TOP WE HEAR FROM THE BIRDLIFE PARTNER IN POLAND ON THEIR 30th ANNIVERSARY

ELL US HOW IT ALL BEGAN...

The nineties not only brought the 'wind of change' and democracy to Poland, but also the creation of OTOP. The idea came up in 1990, just after a workshop organised in the UK by the RSPB (BirdLife in the UK). A small group of enthusiasts returned to our country with a vision for a new, strong organisation working for bird protection and, thanks to their commitment, a year later OTOP was formed. The beginning was challenging, with just three employees working from a rented room in Gdańsk. But with time, our organisation has developed into one of the most prominent NGOs in Poland.

WHAT HAVE BEEN YOUR BIGGEST SUCCESSES?

One of our priorities from the very beginning was an Important Bird & Biodiversity Area (IBA) Programme. OTOP prepared three inventories of IBAs in Poland – in 1993, 2004 and 2010 – and it paid off: most of the 175 IBAs are now protected as EU Natura 2000 sites.

The apple of OTOP's eye is its reserves – Beka, Karsiborska Kępa and sites in the Biebrza Valley. Their management, including grazing with horses, help us to create habitats for birds. Sometimes we had to fight for the protection of the most valuable places in Poland, such as Rospuda Valley and







OTOP

NAME: Ogólnopolskie Towarzystwo Ochrony Ptaków (Polish Society for the Protection of Birds)

STAFF: 30 people in 6 offices

NETWORK: 15 regional groups, 900 members, plus 800 volunteers

NUMBER OF IBAs: 175

NUMBER OF GLOBALLY THREATENED BIRDS: 11 NUMBER OF RESERVES:



Bialowieza Forest. Our successful campaign to save Rospuda has become a shining example of how NGOs can effectively protect nature, and our staff member, Gosia Górska, received the Goldman Prize in 2010 for her work on this.

WHICH BIRD SPECIES HAVE YOU FOCUSED ON?

Our priority species has always been Aquatic Warbler Acrocephalus paludicola (Vulnerable) – one of the rarest and most threatened passerines in Europe. Conservation projects at major Aquatic Warbler sites in Biebrza and the Lublin Region have helped the population to increase and subsequently expand to new areas. The European Commission granted two LIFE projects for the conservation of Aquatic Warblers, which were awarded the Best LIFE Projects of 2013 and 2015.

It's not only about Aquatic Warbler, though. OTOP has worked with other species that are threatened in Poland, such as European Roller *Coracias garrulus*, Mew Gull *Larus Canus* and Dunlin *Calidris alpina*. We not only protect, but also monitor. OTOP is now the key contractor of the Programme of Bird Monitoring in Poland, which helps to track trends for 170 breeding bird species. At the same time, we are managing the country's biggest citizen science database, **Ornitho.pl**, which now holds 5.5 million bird records!



SO PUBLIC ENGAGEMENT IS ALSO A LARGE PART OF YOUR WORK?

Without people, OTOP would not achieve a single goal. The engagement of our network of members and volunteers allows us to spread our efforts across the whole country.

Education and awareness-raising are an important part of each of our projects – however, two of our initiatives need special attention. Spring Alive, co-ordinated internationally by OTOP since its inception in 2006, is an educational project aiming to help children, their families and teachers to understand the need for international conservation of migratory species and to take action to conserve birds and nature. Currently it operates in 30 countries across Europe, Asia and Africa, and thanks to BirdLife Partners, it managed to engage over 117,000 children last year.

OTOP Junior is an umbrella concept for a wide range of activities aimed at pupils and their

"OTOP is a strong and truly effective national organisation. Poland's national poet once said: 'Nature, you are like the nation's health; only those who have lost you can learn how much you're prized.' Today, that nature is treasured by OTOP so that future generations will see and cherish it."

ZBIG KARPOWICZ, FORMER SENIOR PARTNER DEVELOPMENT OFFICER, RSPB, WAS "AT THE GENESIS OF THIS ADVENTURE 30 YEARS AGO"

ABOVE LEFT One of OTOP's nature reserves, where grazing with Polish *konik* (a horse breed well adapted to living in wet environments) helps to shape habitat for birds © Tomasz Wilk (OTOP)

ABOVE RIGHT Two EU LIFE projects dedicated to Aquatic Warbler conservation helped to rebuild the population of the species in recent years © Cezary Korkosz

teachers, for which we've developed a diverse range of educational offerings. More than 1,700 educators work with these materials.

ANY WORDS FOR THE BIRDLIFE PARTNERSHIP?

OTOP has always worked according to the BirdLife mission, focusing on sites, species and communities. We cannot forget about the substantial and timely support from abroad, predominantly through the BirdLife Partnership. DOF (BirdLife in Denmark) and RSPB helped OTOP during the very first years of operation to transform from a 'hatchling' to maturity. RSPB and the BirdLife Secretariat have continued to support us in many different ways since.

WHAT'S NEXT?

Obviously during the last 30 years we have had some tough moments, including lack of financial stability, political reluctance and internal, management-related problems. But we have managed to get through all of this. Now we can honestly say that OTOP is seen in Poland as a key environmental NGO, with our expertise and professional team acting as benchmarks for the whole country. 2021 is a significant year, bringing in a new management team and a five-year strategy. So rest assured that this is not our last word: we still want to grow and develop.

DEEP DEEP VE

Could you conduct your research from the bottom of a subterranean lake? This is the reality for scientists who wish to find out all they can about the remarkable cavedwelling wildlife of Bosnia & Herzegovina – before it's too late



ale and slender with fine, fringed gills, you could be forgiven for thinking that the Olm *Proteus anguinus* came from another world entirely. And in a way, you'd be

right. This rare freshwater salamander is eyeless, devoid of pigment and possesses only the smallest, most delicate of limbs. To us humans, it can seem like there is something missing. But in reality, it is perfectly adapted for life in subterranean caves beneath the Dinarides mountains in the Balkans, Europe, where it is endemic. With a heightened sense of smell and hearing, the ability to resist long-term starvation and even a newly discovered sensory organ that detects the electric fields of other animals, it has everything it needs to survive in this secluded environment.

Like its occupants, the limestone caves of the Dinarides are truly exceptional. In some places, vast stalactites and stalagmites create stunning, cathedral-like formations, while other areas preserve fossils from former millennia. This is the location where naturalists discovered cavedwelling animals for the first time, creating a whole new branch of biology. Jessica Law

ABOVE The Olm is nicknamed the 'human fish' due to its fleshy skin colour. Another 'human fish', Dušan Jelić discovered 200 Olms on one cave dive © Vedran Jalžić The Olm and its fellow cave-dwellers may be perfectly suited to life underground here, but the humans that wish to study them are not. To discover more about the unique wildlife that inhabits these limestone caverns, modern researchers need to be cavers, divers and fishers all at once. But why go to all this trouble?

The reason is an urgent one: we need to discover all we can about this remarkable ecosystem before it is lost forever. The Balkans' last remaining wild waterways are threatened by proposals for dams, hydropower projects and many other modifications.

"Building dams is disastrous for the very sensitive organisms that inhabit places with such specific conditions," says Marijana Demajo, BPSSS (BirdLife Serbia), Balkans Small Grants Co+ordinator for Critical Ecosystem Partnership Fund (CEPF) Mediterranean*. "Underground life depends on the water level; it's fed from the surface watercourses."

For example, when the Trebišnjica River was enclosed in artificial concrete channels in Bosnia & Herzegovina, it cut off the natural flood water that usually reached sink holes at the edges of the Popovo Polje plains. As a result, large colonies of exclusively cave-dwelling tube worms were



LEFT Arappovac Spring on the lower course of the River Neretva © Jasminko Mulaomerović / CKS

BELOW LEFT The team from Hrvatsko društvo za biološka istraživanja (HDBI, Croatian Biological Research Society) preparing to search for subterranean species © HDBI / CBRS



completely killed off within the sink holes.

Fortunately, the more we know about an ecosystem, the more information we have to make positive change to policy. And so CEPF brought together experts from the Subterranean Biology Lab at the University of Ljubljana, Slovenia, and the Center for Karst and Speleology, based in Bosnia & Herzegovina. Together they formed the SubBio Code project. Their mission: to develop new tools to identify and catalogue the rich underground biodiversity of the Dinarides region in Bosnia & Herzegovina.

"This a landscape full of life, not some lifeless place. The discovery of new species is important in order to demonstrate the true value of karst [limestone] landscapes, and to show that they are not just geomorphological formations, but a living system," asserts Demayo. "And let us not forget the importance of educating the local community."

This March, researchers braved freezing snow and flooded caverns (and multiple COVID tests) as they ventured back out into the field to survey this little-known network of caves. Over just a few days, they advanced the knowledge of the habitat and its wildlife further than ever before.



RARE CAVE-DWELLING FISH

In 2020, another exciting new project by the Croatian Biological Research Society set out to investigate the Southern Dalmatian Minnow Delminichths ghetaldii – a rare freshwater fish found only in southern Bosnia & Herzegovina and Croatia. Although the species is already known to use caves, this project could confirm its status as Europe's first exclusively cavedwelling fish. During September and November, researchers surveyed 19 caves through fishing and cave diving, and consulted experts from Croatia and France to set up eDNA

methods. They are also laying the foundations for a conservation plan for the species, and forming a network of experts and decisionmakers through which to share knowledge.

"We're working on a rare fish, so it's really amazing when you actually find it – especially in large numbers, or in places where you don't expect it to be present," says project co-ordinator Matej Vucić. "It's a really good feeling to know there is still hope to save something you're working on – but only if everyone acts quickly and seriously." Olm Proteus anguinus Gregor Aljančič / CEPF

One day, researchers were sampling springs for shrimp-like amphipod crustaceans when they met local people who, surprisingly, knew about the shrimps' existence and had given them the name *šmugarica*. Later the same day, they dispelled a false rumour about the cave Ratkovića Pečina, which was thought to stretch far back into the hills but turned out to be of normal dimensions.

Towards the end of their visit, a local caver showed them a cavern full of bats whose guano provides nutrients for a thriving ecosystem of invertebrates. The team used their abseiling and rock-climbing experience to survey the area vertically and visit three caves in the side of Korita hill.

Rock climbing is just one of the practical skills that team members have acquired as part of the project's mission to train and educate scientists, students, volunteers and the local community in the research and conservation of these caves. As well as netting creatures directly from the water, the team also uses an exciting new technique using eDNA (a shortening of 'environmental DNA'), developed by a previous CEPF-funded project as a way to detect the presence of Olms without capturing and disturbing them. This DNA is the genetic material that gets released by animals as they go about their lives – in the form of skin, mucous, faeces and many other kinds of fragments. Scientists are able to detect this eDNA in the water and identify which species it belongs to, helping them to map its distribution and make conservation plans.

As fascinating as this is, no part of their research is as nail-biting as underground diving. Croatian biologist and cave-diver Dušan Jelić, who discovered the largest known population of Olms in his native country, explains what it's like to put on full scuba gear and venture beneath the surface of the water to observe first-hand the creatures that



New to science: 6. Bythiospeum dervovici, 7. Belgrandiella bajraktarevici, 8. Belgrandiella kurtovici, and 10. Islamia buturovici

A TALE OF FIVE SNAILS

The Center for Karst and Speleology discovered five species of snail never before seen in Bosnia & Herzegovina, as part of a project to survey the country's freshwater snail populations and the water quality of its limestone rivers and springs. In an exciting turn of events, four of the snails [see picture caption] were completely new to science. One of the snail species was discovered during a field trip as part of a student workshop, showing that training new researchers can sometimes pay off instantly!

More worryingly, the team also found species of invasive freshwater molluscs, including the limpet *Ferrissia californica*, which had come all the way from North America. The next step will be to define the conservation status of the native snails on the IUCN Red List of Threatened Species.

inhabit the gloomy depths:

"It is an amazing experience to see something that only a few people in the world have seen before you – or occasionally, to be the first person ever to see it. Sometimes it can be scary, just to be underwater, in a small space, isolated from the rest of the world ... but mostly it is a wonderful feeling."

It is a rare privilege to venture into the realm of the Olm, however fleetingly. And though these creatures are perfectly at home in the dark, by shining a light on them we can secure lasting safety for the unique and beautiful world that lies beneath our feet.

CRITICAL ECOSYSTEM

* BirdLife and Partners in France (LPO), Slovenia (DOPPS) and Serbia (BPSSS) are entrusted by the Critical Ecosystem Partnership Fund (CEPF) as the Regional Implementation Team for the Mediterranean Biodiversity Hotspot:

www.birdlife.org/cepf-med



HERE BE WHALES!

Massive but mysterious: for decades, little was known about the Sei Whale. But thanks to ground-breaking research, the Falkland Islands (Malvinas) have now been declared a Key Biodiversity Area – vital habitat for the species

ou'd think a Sei Whale Balaenoptera borealis would be hard to miss. But despite reaching 15 m long and 20 tons in weight, they can slip through the water leaving barely a ripple, and their lives remain a mystery to scientists and seafarers alike. So how has such a colossal mammal swum under the radar for so long?

Inevitably, much of the blame can be laid on humans. Around 200,000 Sei Whales were slaughtered in the mid-20th century in the southern hemisphere alone, driving the species to the brink of extinction. Today the Sei Whale is still globally Endangered, and much of what we know about it comes from data collected during the whaling period.

The gentle giant also moves in mysterious ways. In most parts of the world it inhabits deep, offshore areas, making it hard to track its global migration routes or behaviour. So imagine the delight of researchers from Falklands Conservation (BirdLife Partner) when they realised that the species was visiting the islands' pristine coastal waters every summer and autumn, to feast on clouds of tiny crustaceans that swarmed in the area. This virtually unique situation gave them the chance to observe and study the species like never before.

Part of this research involved photographing the fins and flanks of the whales to keep track of the unique combination of nicks and scars that characterised each individual. The team



has catalogued about 500 different Sei Whales to date, gaining fascinating glimpses into their individual lives.

One whale, nicknamed 'Wonky' due to an unusually bent dorsal fin, was found to have travelled from Rio de Janeiro in Brazil to the Falkland Islands (Malvinas), a straight-line journey of over 3,300 km in six months. This is one of the first insights into the migration destinations of this species. Another whale was sighted in 2019 and 2020, the second time accompanied by a young calf. This mother will star in a 'name the whale' Facebook competition run by Falklands Conservation to raise awareness of the vital site.

The recognition doesn't end there, though. Thanks to years of research, the islands have now been confirmed as a KBA, making them a globally important hotspot for recovering Sei Whale populations. In a poetic twist, the area borders a former whaling station now owned by Falklands Conservation.

Dr Caroline Weir, Sei Whale project lead for Falklands Conservation, says: "We are incredibly proud of achieving this Key Biodiversity Area for Endangered Sei Whales, which is the culmination of five years of pioneering and challenging field research. It has really highlighted the importance of the Falkland Islands for this poorly-known species. It's a privilege to work in an area where whale populations appear to be thriving, and fantastic to now see that work translating into global recognition and contributing to the future conservation of these amazing animals."

> Sei Whale in the new KBA © Caroline Weir / Falklands Conservation

Biodiversity loss and climate change: two inextricably linked existential threats. Since 2015, we've had the universal climate goal of '1.5 degrees or under'. Now: introducing a Global Goal for Nature, what 'nature-positive' means and how it will be measured

NATURE-

POSITIVE

BY 2030



MELANIE HEATH Director of Science, Policy & Information, BirdLife International The dangerous and worsening decline of biodiversity is well-documented – we know we are destroying natural systems faster than they can replenish themselves. Yet, we completely depend on nature for human health, well-being and prosperity. The recent 'Dasgupta

Review' on the global economics of biodiversity – commissioned by the UK Treasury – provides further evidence that we have collectively failed the natural world, with demands far outstripping its capacity to supply us with goods and services. The prosperity and health of current and future generations is at risk. With more than half of global gross domestic product (GDP) shown to be moderately or highly dependent on nature, biodiversity loss is among the top five risks to the global economy. COVID is almost 'small change' in comparison...

It is clear that our planet is in the red and we have to reset the global compass to protect and conserve the nature we have today, and to halt and reverse nature loss to avoid dangerous consequences for the stability of our planet.

The world faces three interconnected crises: biodiversity loss, climate change and human development inequities. But while the Paris Agreement can be summed up by the actionable goal of carbon-neutrality to keep global heating under 1.5 degrees, no equivalent succinct goal drives ambitions and action for nature, the various dimensions of biodiversity and the agreements in place to protect it.

For years we have been at the forefront working at the nexus of fighting climate change and the loss of biodiversity, knowing how the two crises are inextricably linked. We will not solve either without addressing both together (as the recent joint IPBES and IPCC report stated so clearly). Nature-positive and carbon-neutral go hand-in-hand.

Through our 1Planet1Right campaign

THE MOMENTUM BEHIND THE 'NATURE-POSITIVE' CONCEPT HAS BEEN GROWING SINCE ITS INCEPTION we're also calling on the United Nations to recognise the universal right to a healthy environment, and to put in place legislation and actions to achieve this, to help ensure that this coming decade is the one in which we transform our relationship with nature, for the sake of all people and the planet.

A GLOBAL GOAL FOR NATURE

At the start of the UN General Assembly and Biodiversity Summit last year, a wide-ranging group of global nature and development NGOs and business organisations called for a clear and overarching Global Goal for Nature. One that can integrate with other global goals to create an "equitable, nature-positive and carbon-neutral future". The goal can fit into a sentence: nature-positive by 2030 and living in harmony with nature by 2050.

BirdLife, as a co-founder of this group, made the case to set out the scientific and policy justification for the new Global Goal. Drawing on 78 published academic papers, a persuasive 20-page paper has been written – co-authored by a dozen conservation and business organisations – that highlights the unprecedented consensus behind the goal.

As any management consultant will tell you, all goals must be measurable. The paper also points to the approach



Global Goal for Nature: Nature Positive by 2030



'Net Positive by 2030' means conditions are improved from the 2020 baseline so that, through our combined actions, humanity succeeds in bending the curve of biodiversity loss from its current negative trajectory to a positive one.

needed to measure the reverse of nature loss, recommending a focus on abundance, diversity and resilience of species and of ecosystems at a global level. It also advises utilising a mitigation and conservation hierarchy approach that avoids areas that are significant for biodiversity, limits other losses to nature and compensates for unavoidable losses through ecological restoration.

MOMENTUM IS BUILDING

The momentum behind the 'naturepositive' concept has been growing since its inception - both in the NGO and business sectors - and now unites several related initiatives. There is strong interest from some governments too; in September 2020, the heads of over 80 countries signed a Leaders' Pledge for Nature, committing to reverse biodiversity loss by 2030. Specifically, there is significant political support for conserving and protecting at least 30% of the world's land and ocean by 2030 ('30x30') as evidenced by the 53 countries who support the High Ambition Coalition, which was formally launched at the One Planet Summit for Biodiversity in January 2021. This was again echoed in the recent communique from this June's G7 meeting, which released a '2030 Nature Compact' stating: "Our world must not only become net zero, but also nature positive."

The World Economic Forum supports the nature-positive goal, as do coalitions of leading businesses. All of these players understand that a society that is naturepositive by 2030 is imperative to our survival and that – despite fears to the contrary – we *can* do this with a thriving economy.

THE RACE IS ON

It's nothing we haven't said before, but now it's all united under one global vision: we need to halt the loss of species, safeguard intact natural systems, effectively conserve Key Biodiversity Areas and other important sites for biodiversity, restore human-impacted landscapes, freshwater systems and seascapes, and reduce the consumption and production drivers of biodiversity loss.

It will require action from all parts of society to protect ecosystems, and halt then reverse nature loss through restoration. Tackling the erosion of the natural world requires action not just to protect species and their habitats, but also stopping excessive and destructive business and development practices, addressing both direct and indirect drivers of nature loss.

You may be thinking 'didn't the world set global targets in 2010 for the UN

THE GOAL: NATURE

By 2030, we must have more nature through improvements in the health, abundance, diversity and resilience of species, populations and ecosystems. We need all future development and infrastructure to be planned and implemented through a nature-positive lens.

By 2050, we must be living in harmony with nature. Actions for nature cannot be achieved without addressing both the climate emergency and social justice.

An equitable, carbon neutral, nature-positive world must be everyone's goal, starting today.

Decade on Biodiversity?' There has been much concern over the world's failure to meet these Aichi Targets to save nature, and BirdLife has been at the forefront of understanding why. Our latest report *Birds & Biodiversity Targets* uses our extensive research and expertise to outline the exact shortfalls of the targets. Crucially, it also provides a road map and a message of hope to the world, using bird conservation successes to show that solutions do exist for the problems facing the biosphere, and that nature can recover swiftly when these are enacted.

The UN biodiversity meeting, CBD COP 15, is scheduled to take place in October 2021 in Kunming, China. This year's goal is to adopt a post-2020 Global Biodiversity Framework, as a crucial stepping-stone towards the 2050 vision of "living in harmony with nature". As a supporter of the Global Goal for Nature, BirdLife calls on governments to negotiate using an ambitious 'nature-positive by 2030' lens.

The addition of a clear nature-positive global goal for nature that can be combined with climate and human development goals would give humanity a guiding 'North Star/Southern Cross' for development pathways across the world to bring about an equitable, carbonneutral future where biodiversity thrives. That sounds nature-positive to me.



EVE IN THE SKY, FEET ON THE GROUND

How the change in colour of a pixel on a screen can set off a series of events that leads to the empowerment of local communities to protect their globally important forest

Danielle Shaw



or people across Asia and the Western Pacific, the destruction and disappearance of lush tropical forests is no secret or surprise. Zooming in on

Indonesia, Malaysia, Papua New Guinea and the Philippines reveals a grand total of 154 million hectares of Key Biodiversity Areas (KBAs), home to a unique array of plants and animals. A walk under the canopy could bring you face to face with a



Helmeted Hornbill *Rhinoplax vigil* or Philippine Eagle *Pithecophaga jefferyi* (both Critically Endangered), a privilege that will not be afforded to future generations if farm and plantation expansion and illegal logging continues.

The desire of local communities to protect their precious landscapes is strong, but efforts are stacked against the odds due to unsustainable forest management and weak governance. BirdLife's Asia-Pacific Forest Governance Project, funded by the European Union, is equipping local communities with the skills and knowledge to protect and manage their own forests. This includes work on the ground (such as capacitybuilding workshops on governance, monitoring and GPS training), but it is supporting from high above the forest canopy too.

With a bird's-eye view, satellites allow local users to monitor and analyse forest cover. Using Google Earth, the project's new Forest Loss Dashboard provides the information needed to help prevent and reverse deforestation, by combining state-ofthe-art remote sensing technology with the invaluable knowledge of local people. The data go all the way back to 2000, painting a picture of how forest coverage has changed in recent decades. At the macro scale, the Dashboard shows forest loss per country and region. Looking closer – down to a 30 x 30 metre pixel – the micro scale highlights





forest loss in KBAs, in places that would likely be missed through on-the-ground monitoring. It's an early warning system that allows project partners to decide how to react and identifies where conservation efforts should be prioritised.

GROUND-TRUTHING

Looking into the past enhances our understanding of important trends, but the Dashboard also provides insight into what is happening right now. When a pixel in the image changes, this could mean that trees are being felled, so a user in the area is alerted and can investigate. The information provided from the Dashboard relies on corroboration from 'ground-truthers' – satellites may capture the colour and consistency of a canopy, but only people on the ground can confirm what is going on at the roots. Is the darker pixel because of a wind-fallen stand of ancient trees or illegal logging? With an eye in the sky and feet on the ground, forest defenders can react in real time.

Burung Indonesia (BirdLife Partner) is working within the Mbeliling landscape, a biodiversity-rich expanse of nearly 94,000 hectares on the island of Flores. Here, around the Poco Golo Kempo village,



THE FOREST LOSS DASHBOARD SHOWS:

1. MOST IMPACTED AREAS The Dashboard has highlighted the regions in the four project countries that have suffered the greatest forest loss in the past 20 years, notably the Sundaic lowlands of Sumatra, Borneo (including Sarawak and Sabah, Malaysia and Kalimantan, Indonesia) and peninsular Malaysia, which have lost between 22-32% since 2000.

2. OPPORTUNITIES FOR RESTORATION

Java (Indonesia) and the Philippines were identified as regions where extensive forest loss occurred prior to 2000, but where there may be an opportunity for restoration. Haribon (BirdLife in the Philippines) is capitalising on this with its 'Rainforestation' programme of replanting native tree species in Irid Angelo, Siburan and Hilong-hilong.

3. WHERE TO PROTECT

Papua New Guinea and Papua province in Indonesia are shown to have suffered very little loss of forest up to 2019. Here, a conservation priority is to put safeguards in place to prevent future large-scale forest clearance and conversion to plantations.

the Forest Loss Dashboard has been instrumental in enhancing Burung's ability to carry out ecosystem monitoring on the ground.

"Sometimes, when trying to carry out conservation and monitoring tasks in the field, it can be challenging to identify the full extent and overall geography of a KBA or conservation site," says Tiburtius Hani, Project Co-ordinator, Burung Indonesia. Visuals generated by the Dashboard provide a detailed overview of historical forest loss and rates of subsequent forest conversion at the site. These data alerted the team on the best places to focus their efforts, and field staff and local community groups set out to conduct surveys and ecosystem monitoring. Information collected from the field visits "provided us with the data and real-world observations we needed to compile accurate conservation recommendations for the village government, regarding their future development plans," says Hani.

This example highlights how technology can support, but not replace, the expertise and presence of local conservationists. The importance of 'ground-truthing' by local actors is necessary to confirm or correct the large-scale datasets. In this TOP LEFT Members of Golo Kondeng village, Indonesia, monitoring the forest's condition © Burung Indonesia

ABOVE LEFT & HEADER The Dashboard highlighting forest loss pixels (orange, red) in West Maggarai, Flores, Indonesia. Image © Ecychan / Getty



case, the verified data could be used in a dialogue with the village government to ensure development took conservation into account. With continued updates and refinement, it is hoped that the Forest Loss Dashboard will support actions such as these well into the future.

"On-the-ground monitoring of this kind is undoubtedly a very important part of the mix for forest loss monitoring and conservation interventions," says Poshendra Satyal, Global Forest Policy Co-ordinator, BirdLife International. "But the Forest Loss Dashboard plays another key role for wider forest governance priorities."

LOCAL, BETTER GOVERNANCE

In Malaysia, 98% of forests are owned by the government – giving them vast power to determine the fate of landscapes. The data and trends made available by the Dashboard will allow Malaysian Nature Society (MNS, BirdLife Partner) to provide concrete evidence to policymakers on the need for greater protection and conservation efforts in biodiversity hotspots and threatened sites. It is hoped that these recommendations will result in sustainable practices and sound forest governance throughout Malaysia, ensuring their diverse habitats are protected well into the future. Balu Perumal, Head of Conservation at MNS, says:

ABOVE LEFT The reason for forest loss in Todo Repok KBA, West Maggarai, Indonesia, appears to be new plantations. Groundtruthing will confirm

ABOVE RIGHT Mama-Mama Penjaga Mbeliling – a group of Indonesian women checking the condition of their forest's trees, water and wildlife © Muhammad Meisa / Burung Indonesia

BELOW Mbeliling landscape is the richest area for restricted-range birds in Flores, Indonesia © Muhammad Meisa / Burung Indonesia "The Dashboard fulfils an additional role for MNS, in so far as it offers us greater insights into the wider network of the 55 Important Bird & Biodiversity Areas in Malaysia. These datasets, maps and trends on forest loss provide us with evidence-based understanding of the sites that enable us to better plan our policy and advocacy work at local and regional governmental level."

With an eye in the sky, the Dashboard turns the hypothetical into reality by providing hard-hitting truths: not simply trends and data on forest loss, but a detailed satellite image to bring home the reality of rare species having their homes torn away. Perhaps its biggest strength, though, is the power and credibility these data give local actors on the ground. It bolsters their advocacy and awareness-raising work, including as an early warning to urge policymakers to act now to save forests.



*The project Strengthening non-state actor involvement in forest governance in Indonesia, Malaysia, the Philippines, and Papua New Guinea is funded by the European Union. Find out more: **birdlife.org/forest-governance**



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STARTLING SITUATION

Over a million caged in Indonesian homes, yet likely *none* left in the wild: this is the extraordinary story of the Javan Pied Starling and what it represents for the Asian songbird crisis – including a recent exposé from India. Thankfully, plans for breeding and reintroduction raise hopes



t's the story of the Critically Endangered Javan Pied Starling *Gracupica jalla* – its troubled present but also its surprisingly hopeful future – in a single photograph. Crammed into five small cages, 42 individuals are shown for sale in an Indonesian village. Representatives of the relentless pet trade that has devastated populations of many Indonesian bird species, the imprisoned assemblage greatly exceeds any surviving wild contingent. The Javan Pied Starling no longer flies free – but a new initiative from BirdLife International and other organisations seeks to change all that.

With no recent records of unequivocally wild starlings, this Indonesian endemic may already be extinct in the wild. In captivity, however, it is anything but. During 2019, researchers revealed the scale of the 'Asian songbird crisis', estimating that **James Lowen**

ABOVE Fifty to one hundred years ago, Javan Pied Starling *Gracupica jalla* was one of the commonest birds in Java's farmlands © B Emmanuel & K Yordan 36 million Javanese households owned 66-84 million caged birds – more birds, shockingly, than remained in Java's dwindling forests. A startling 1.14 million were Javan Pied Starlings.

AN UNPRECEDENTED CASE

"The situation is extraordinary – unique in bird conservation," judges Dr Nigel Collar, BirdLife International Leventis Fellow in Conservation Biology. "Here is a bird that is likely extinct in the wild but which you can find quite easily in bird shops and homes. There is no other case like this."

This year marks the 200th anniversary of the formal scientific description of Javan Pied Starling. For much of the intervening period, however, it was considered a subspecies of Asian Pied Starling *Gracupica contra* – and thus not subject to IUCN Red List assessment. In 2016, Collar and Lynx



42 Javan Pied Starlings (along with Black-winged Mynas) for sale in Marangan village, Indonesia in 2017 © Nigel Collar



Edicions' Josep del Hoyo applied new taxonomic criteria that endorsed the original status of a full species.

With some ornithologists fearing that the Javan Pied Starling's wild populations had already disappeared, it was catapulted onto conservationists' radar. BirdLife declared the species Critically Endangered as part of a major 'uplisting' of Asian songbirds. "The impacts of wild harvest [of songbirds] are now glaringly visible," says David Jeggo, Chair, IUCN Species Survival Commission Asian Songbird Trade Specialist Group (ASTSG). The race was on to save this orange-faced, piebald songbird.

Rapidly understanding the starling became paramount. Research by Collar and ornithological consultant Bas van Balen, published earlier this year in *Ardea*, laid bare the starling's terrifying vanishing act, which had unfurled entirely unnoticed. "Fifty to hundred years ago," van Balen explains, "the Javan Pied Starling was one of the commonest birds in Java's farmlands. Now, no wild birds are known to survive – just occasional escapees."

The magnitude of the population collapse is shocking. Early last century, the Javan Pied Starling was reportedly "among the most conspicuous residents of Java's cultivated land ... impossible to overlook." It thrived on the expanding swathes of agricultural land that followed the tide of deforestation, probing soil and pasture for earthdwelling invertebrates such as earthworms. It was



THE IMPORTANCE OF SONGBIRDS IN INDONESIAN CULTURE

"Maintaining birds is part of Javanese culture." This matter-of-fact opening to a paper about keeping caged birds by Indonesian social anthropologists Khoirul Mafaja and Fadly Husain demonstrates the cultural challenge facing conservationists seeking to address the Asian songbird crisis. Keeping pet birds such as Javan Pied Starling is a long-established Indonesian hobby with profound roots – like owning cats and dogs in the west. Recently, bird-keeping has also become big business. One manifestation of this commercial dimension, affecting many passerines – albeit not Javan Pied Starling – is songbird competitions (known as *kicau mania*) which are now commonplace, with massive cash prizes financing supply chains connecting forest poachers, traders, vendors and owners. [See more: *BirdLife* Jul-Sep 2020 issue, p28-36].

also habitual in urban areas, being judged one of Jakarta's commonest birds during the 1930s – and one sufficiently audacious to enter kitchens for food scraps.

As late as the 1960s, this attractive starling remained widespread across much of Java, but its decline, Collar says, "was probably slow enough to go unnoticed". By 1990, starlings were dribbling away on Bali and, by 1994, had vanished from Sumatra (to which they may have spread naturally following agricultural expansion rather than escaping from captivity). "Shortly before the start of this century," Collar concludes, "the species abruptly and entirely vanished" from its entire range. He suspects that the few records since 2000 likely relate exclusively to caged birds.

WORMING OUT THREATS

Trapping for the pet trade has been a principal cause of the Javan Pied Starling's collapse. By 1953, it had reportedly become one of Java's most popular caged birds. Although islanders' thirst for songbirds [see box] has severely reduced populations of many Indonesian species, "no traded species is known to have experienced so acute a decline," Collar explains. The birds' fearlessness and conspicuous nests, rendering the trappers' job straightforward, must have played a big part in this unprecedented population collapse.

But was there something else going on? Unlike almost all the 44 species that the ASTSG considers



JAVAN PIED STARLING Gracupica jalla

RED LIST STATUS: Critically Endangered

POPULATION: Caged: 1.14 million Wild: c.0 (a few escapees)

RANGE: Endemic to Indonesia, it was known from Java and Bali, and also from Lampung province in east Sumatra

FAST FACT: Their bills are specialised for 'prying', a foraging technique that allows them to skilfully extract earthworms and other soft-bodied invertebrates from ploughed fields



heavily impacted by songbird trade, the Javan Pied Starling's preference for open-country habitats means that it did not suffer from deforestation. Instead, the starling has suffered another problem: the application of agricultural chemicals has widely eradicated its prey. From 1979-1998, Indonesia's pesticide use increased ten-fold. By 2017, over 80% of shallot farmers at a former Javan Pied Starling stronghold reported the complete loss of earthworm biomass from their soils. "Pesticides are believed to have greatly depleted the starling's topsoil food resource," asserts Simon Bruslund (Marlow Birdpark and ASTSG member).

THE LUXURY OF NUMBERS

Saving a species that is likely extinct in the wild will be even more complicated than the already lofty ambitions of BirdLife and Burung Indonesia (BirdLife Partner) to curb illegal, unregulated and unsustainable trade in birds. In March, van Balen and Collar's findings galvanised an emergency ASTSG meeting, which broadly agreed to capitalise on the unprecedented bonanza of a million captive Javan Pied Starlings by assembling a population for conservation breeding and eventual reintroduction. From the very jaws of defeat, there now appears a tangible – and rather inspirational – prospect of snatching victory.

The conservation breeding project is being led by Prigen Conservation Breeding Ark, whose curator of birds, Jochen Menner, hopes that "many wellrespected institutions will join efforts to create a

"HERE IS A BIRD THAT IS LIKELY EXTINCT IN THE WILD BUT WHICH YOU CAN FIND EASILY IN BIRD SHOPS AND HOMES. THERE IS NO OTHER CASE LIKE THIS."

ABOVE In 2019, 36 million Javanese households owned 66-84 million caged birds. 1.14 million were Javan Pied Starlings, popular for their vocal abilities © Ding Li Yong large, viable ex-situ starling population." Bruslund observes that most participants will be Indonesian zoos. To date, feedback has been encouraging, with a reported very high willingness to co-operate. Menner is buoyed by having "the luxury of numbers" of captive starlings – not usually the case when working with Critically Endangered species. He believes it imperative that the first controlled semi-wild releases commence very soon.

The approach is not without problems. Menner cautions that captive populations contain "mutant plumages and possibly even hybrids, so acquiring genetically pure birds will be an issue." Moreover, there is little point in releasing captive birds into the wild should agricultural chemicals deprive them of a food supply or should they become swiftly targeted by trappers.

SAFE HAVENS?

Accordingly, the ASTSG aspires to create what Anuj Jain (BirdLife Asia's Bird Trade Co-ordinator and ASTSG Community Engagement Vice-Chair) calls 'safe havens' – sites where released birds will encounter neither chemical-driven constraints on their food supply nor trapping. One likely release site is the 280,000-hectare UNESCO Ciletuh– Pelabuhan Ratu Geopark in West Java.

"Safe havens will only work if communities are fully engaged and supportive," Jain argues, citing experience from developing Village Management Resource Agreements in Indonesia, "where communities manage forest resources, watersheds or key species sustainably in return for help enhancing livelihoods." Jain is also keen to explore using the Javan Pied Starling as a flagship for pesticide-free agriculture: "Maybe one day we will have 'Javanese Starling rice,' free from pesticides, where communities are incentivised and Javan Pied Starlings roam free."





UNCOVERED: THE INDIAN TRADE HUB

Elsewhere in Asia, BirdLife and the Bombay Natural History Society (BNHS; BirdLife in India) are grappling with a rather different bird trade crisis through a project funded under BirdLife's Preventing Extinctions Programme. The problem encompasses both domestic consumption and international trade. "In northeast India, open sale of wild birds for food is rampant," Jain says. A photograph of serried ranks of dead native birds including barbets, malkohas and doves demonstrates his concern. Meanwhile, illegal domestic trade is impacting species such as the Common Hill Myna *Gracula religiosa*, which are in demand as pets.

"India has slowly emerged as a hub for crossborder trade in non-native species including some banned under CITES [Convention on International Trade in Endangered Species of Wild Fauna & Flora]," Jain says. Traffickers smuggle birds across the lengthy, "porous" Bangladesh and Myanmar borders to sate rising domestic demand. In one recent example (of fifty-plus cases in the past five years), Indian officials arrested two men after seizing 22 parrots from South America and New Guinea, including Hyacinth Macaw Anodorhynchus hyacinthinus and Pesquet's Parrot Psittrichas



WHAT SPECIES ARE INVOLVED IN INDIA'S CAGED BIRD TRADE?

Recent extensive surveys of markets across north India, from Gujarat in the west to Assam in the east, uncovered 85 bird species for sale. Of the 42 non-native species recorded, two thirds were CITES-listed, including nine specified under Appendix I (for which international trade is prohibited, except for non-commercial purposes such as scientific research). Parrots were particularly prominent, including Grey Parrot *Psittacus erithacus* (Endangered) – discovered on 11 occasions – and Salmon-crested Cockatoo Cacatua moluccensis (Vulnerable). Exotic passerines encountered included Javan Sparrow Lonchura oryzivora (Endangered). Meanwhile, 43 indigenous species were found in markets. In one survey (Patna, Bihar) the 28 native species discovered included Swamp Francolin Francolinus gularis (Vulnerable), Ferruginous Duck Aythya nyroca and Alexandrine Parakeet Palaeornis eupatria (both Near Threatened).

fulgidus (both Vulnerable to extinction).

"India's exotic bird trade has grown swiftly in recent years due to rising incomes and strengthening demand for exotic pets from the citizens of wealthier cities," Jain explains. He considers the burgeoning demand is being driven by fundamental societal influences – "exotic pets are becoming a status symbol" – and poor implementation of CITES.

Responding to the risk of imported wildlife spreading COVID-19, the Indian government held a nine-month amnesty for pet owners to declare possession of exotic species. This disconcerted conservationists: might the amnesty offer a window of opportunity for clandestine imports? By 15 March, nearly 32,000 people had registered. Following the scheme's closure, CITES enforcement is being stepped up, with BNHS helping by developing a policy brief for decision-makers and – before the pandemic halted efforts – training over 100 frontline government staff earlier this year.

BirdLife and BNHS are apprehensive that some proposed rules relating to captive-bred exotic birds will make it harder for tribal trappers to make ends meet by selling largely domesticated birds such as lovebirds and budgerigars. This, Jain fears, will prompt them to "return attention to trapping and selling wild native birds." With the unseen tragedy of the Javan Pied Starling fresh in our mind, this is worrisome indeed.

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THANKS TO FUNDERS

The March Conservation Fund and Vogelbescherming Nederland (BirdLife Partner) support BirdLife's and Burung Indonesia's (BirdLife Partner) songbird trade work. BirdLife Species Champion Per Undeland supports work on the India bird trade project.

MAKING A DIFFERENCE

YOUR IMPACT...

Thank you for supporting our appeal last summer to fight the illegal bird trade in Asia. Here's how your donations have helped so far



...ON HELPING HORNBILLS Immediate increase in local action and support of Malaysian expeditions

xpeditions by Malaysian Nature Society (BirdLife in Malaysia) took place to Bukit Tiban, Bungo Range and Usun Apau forests in Malaysian Borneo, where several of the eight species of hornbills found in the state of Sarawak were

detected

Locals were interviewed to understand the status of and their perceptions towards hornbills in the area. Places such as Bukit Tiban are facing increasing pressure and encroachment by oil palm plantations in the landscape, whereas places like Bungo Range continue to face significant hunting pressure.

We are also able to support the Malaysian Nature Society to identify the important hornbill landscapes in Sarawak in Malaysian Borneo. These are the last strongholds that must be protected if we are able to see a future for hornbills in Sarawak.



...FOR PARROTS AND SONGBIRDS Endangered White Cockatoos

and Javan Pied Starlings found to be target species

ield surveys of the White Cockatoo (Endangered) were completed in North Maluku, Indonesia. While hunting of wild White Cockatoos has slowed down in villages we work in, it remains a threat in some satellite islands, where we fear a collapse of White Cockatoo populations.

We have started working with Burung Indonesia (BirdLife Partner) to map out the communities and stakeholders most dependent on songbird trade across key Javanese cities, a vital step in understanding the scale of the problem.

As reported on p50, a recent paper by BirdLife and collaborators showed how the once-common Javan Pied Starling has completely disappeared from the wild, while more than a million of them live in captivity in peoples' homes as pet caged birds – an unprecedented situation but one that does hold out some hope for the species' survival.



...ON EXPANDING GLOBAL RESEARCH

With action underway in Asia, we are now researching the global picture

> hile we know about and are taking action on the critical status of some Asian species threatened by trade, we are

also well aware that trends and impacts of bird trade in many other parts of the world remain unknown.

A new project, supported by the Cambridge Conservation Initiative, aims to undertake, publish and promote the conclusions of a global wild bird trade overview, whether international or domestic, legal or illegal, applying the results to guide conservation policy and practice. The project is led by BirdLife, working in partnership with TRAFFIC, IUCN, UNEP-WCMC, and the University of Cambridge, with the Cambridge Infectious Diseases interdisciplinary research centre providing expertise on the subject of transmission risks of zoonotic diseases (those that have jumped from a nonhuman animal to humans) through trade.

Alongside all of you who generously donated to our Illegal Bird Trade appeal, we are grateful to the following donors for their support: National Geographic Society, Foundation Segré, Ernest Kleinwort Charitable Trust, March Conservation Fund, Vogelbescherming Nederland, BirdLife Tokyo and Osaka Gala, and BirdLife Species Champion Peter Smith.

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Help us stop the illegal bird trade by donating today, and we can DOUBLE YOUR DONATION thanks to our generous match donors*

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* We will match all donations up to the first £28,000

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ON THE UPTURN

Spotted by BirdLife in Thailand: an exciting new project that aims to turn around the declines of one of the world's rarest – and most intriguing – shorebirds

t's the legs that first catch the eye. They're yellower than the name Spotted Greenshank *Tringa guttifer* might imply and an ideal length for loping through invertebrate-rich shallows in the upper Gulf of Thailand, on the East Asian-Australasian Flyway. Then its distinctively unusual upturned bill comes into view. BirdLife is now seeking to improve the future of this intriguing wader, through a Preventing Extinctions project supported by optics manufacturer Zeiss.

Spotted Greenshank is a worthy focus as it numbers "among the world's most threatened shorebirds," says Ding Li Yong, BirdLife's Flyways Co-ordinator for Asia. Classified as Endangered, perhaps fewer than 1,500 remain. Worse, its population decline is ongoing, driven principally by habitat loss and degradation at unprotected sites. Such threats are especially worrisome given that Spotted Greenshank's tightly confined distribution offers little safety net: it breeds solely in a small area neighbouring Russia's remote coast where, fascinatingly, it builds its own nests (a unique behaviour among shorebirds) in larch trees.

After using a small number of staging posts on their migration southwards, all the world's Spotted Greenshanks winter exclusively in Bangladesh and Southeast Asia. But even here the room for conservation manoeuvre is limited: "In winter, most of the known population appears largely concentrated in Thailand and Malaysia," Yong

James Lowen

ABOVE Spotted Greenshank *Tringa* guttifer in non-breeding plumage in Thailand © aDam Wildlife explains. Specifically, "the varied wetlands of the inner Gulf of Thailand form the world's most important wintering area," says Thattaya Bidayabha (Bird Conservation Society of Thailand (BCST); BirdLife Partner). These may hold one-third of all Spotted Greenshanks, with two vital sites – Pak Thale Nature Reserve salt pans and Laem Phak Bia mudflats – hosting upwards of 100 individuals.

This pair of locations provides the fulcrum of a new BCST-led project, supported by BirdLife Asia. Building on five years of shorebird conservation efforts, including establishing a private nature reserve, BCST's Khwankhao Sinhaseni explains that the organisation envisions "significantly strengthening local interest and engagement in Spotted Greenshank conservation in particular, plus shorebird conservation more widely." This matters, Bidayabha adds, because "much of its habitat here remains unprotected."

A key, if challenging, aim involves forming new local conservation groups at one or more coastal wetlands. "They can be our guards," Sinhaseni says, "to protect greenshanks and address threats they face," such as illegal hunting using mist-nets. BCST will complement this by raising community awareness of the importance of 'working wetlands', such as salt pans, that benefit people and shorebirds alike. Plans include educational camps for children, a national shorebird photography competition and developing community-based enterprises such as selling salt-based spa products.

PREVENTING EXTINCTIONS





"We want local communities to be more aware of migratory shorebirds that connect us to other parts of Asia and need better protection," Sinhaseni says. Overall, she concludes, BCST aspires to "build long-term collaborations, even extending beyond the project's lifetime."

DISCOVERIES AWAIT

BCST also aims to address knowledge gaps in greenshank distribution and ecology that impede its conservation in Southeast Asia. Even despite BCST's recent extensive surveys, Bidayabha explains, "we know that wintering sites remain to be discovered along the Gulf of Thailand," so a key objective involves tracking them all down.

Doing so will inform "a model for habitat management that helps greenshanks and other globally threatened waterbirds," Sinhaseni explains. Beneficiaries will include the handful of Spoonbilled Sandpipers *Calidris pygmaea* (Critically Endangered) that winter here, plus large congregations of Great Knot *Calidris tenuirostris* (Endangered) and Painted Stork *Mycteria leucocephala* (Near Threatened), and smaller numbers of Far Eastern Curlew *Numenius madgascariensis* (Endangered), Chinese Egret *Egretta eulophotes* (Vulnerable) and Asian Dowitcher *Limnodromus semipalmatus* (Near Threatened).

Meanwhile, by "strengthening the conservation of Southeast Asia's coastal wetlands," Yong says,



project activities will also help deliver monitoring, conservation, capacity-building and outreach priorities in BirdLife's East Asian-Australasian Flyway Conservation Strategy.

Such a raft of anticipated benefits understandably caught the attention of Zeiss, which has previously supported BirdLife work on Northern Bald Ibis *Geronticus eremita* (Endangered) in Morocco. "We are delighted to become a BirdLife Species Champion for Spotted Greenshank," says Petra Kregelius-Schmidt, Zeiss. "Spotted Greenshank is another great example of a threatened migratory bird that needs urgent help, so we are pleased to support BirdLife's vital research and conservation action to help protect it on its wintering grounds."

On the muddy fringes of the Gulf of Thailand then, a classic BirdLife project is unfurling: one that focuses on a globally threatened bird, is led by a BirdLife Partner, supported by a committed Species Champion, underpinned by exciting field research, and is fully engaged with local communities as part of site-based conservation. The Spotted Greenshank's fortunes, like its beak, are on the upturn. LEFT Spotted: nesting behaviour photographed in 2019 in Russia © Philipp Maleko

BELOW LEFT The working salt pans at BCST's Pak Thale Nature Reserve are a vital wintering refuge © Ayuwat Jearwattanakanok

BELOW RIGHT BCST conducting surveys at Pak Thale © BCST



SPOTTED GREENSHANK Tringa guttifer

RED LIST STATUS: Endangered

POPULATION: 1,500-2,000; decreasing rapidly

RANGE: Breeds in eastern Russia and winters in Southeast Asia and Bangladesh

THREATS: Coastal development, habitat degradation, hunting and pollution

SIZE: 29-32 cm, mediumsized sandpiper

FAST FACT:

Also known as Nordmann's Greenshank after the 19th-century Finnish biologist and parasitologist, this elegant shorebird builds its own nests in larch trees with the lichen-covered twigs of the Russian taiga



If you're interested in becoming a BirdLife Species Champion, please contact: jim.lawrence@birdlife.org LEGACY

SECURING A FUTURE

What will you be remembered for?

hether it's an increasing concern for the planet, an accompanying awareness of the importance of nature in supporting our children's future, or purely a love of birds and birdwatching, more people are looking at leaving a legacy to environmental conservation.

By supporting BirdLife, you are already making efforts to protect the future of life on Earth. As a reader of this magazine you probably love birds, and as such are worried about their prospects. Globally, many bird species continue to decline and face a greater threat of being lost, with dire consequences for entire ecosystems. At least 40% of bird species worldwide have declining populations, with over 200 species categorised as Critically Endangered, meaning they face an extremely high risk of extinction. Like you, we at BirdLife want to stop this. We are widely recognised as the world leader in bird conservation and our actions provide practical and sustainable solutions that significantly benefit nature and people.

It is because of BirdLife's proven history of providing effective conservation that Hans Swegen chose to leave a legacy to BirdLife – one of the most powerful ways you can join us in our mission to protect birds and their habitats.

Hans wanted to see for himself the positive effects his donation could have for conservation, so he donated a sum of money to help BirdLife purchase and protect forest land – the now-called Swegen Forest of the Tekoha Guasu in Paraguay [see box] and Bosque Swegen in the Dominican Republic. After building a fruitful relationship with BirdLife and seeing the impressive results of his donation, Hans decided to leave a further gift in his will – an amazing way to leave a mark on a cause he cared about. Any gift left to BirdLife in your will, no matter how large or small, will support our work where it is most needed.

"WITH A GIFT IN YOUR WILL TO BIRDLIFE, YOU CAN LEAVE A LEGACY THAT HELPS TO SECURE THE FUTURE OF BIRDS AND THEIR HABITATS ACROSS THE WORLD. WE WILL USE YOUR GIFT WHERE IT IS MOST URGENTLY NEEDED."

RICHARD GRIMMETT, DIRECTOR OF CONSERVATION, BIRDLIFE INTERNATIONAL

A LEGACY TO SAVE THE ALBATROSS

BirdLife works in over 120 countries worldwide, and it was because of the intrepid travels of the late Lady Jean Gilbert and her husband, the late Lord John Gilbert, that they made the decision to leave a gift to BirdLife in their will. Both passionate supporters of conservation, they were especially committed to the protection of endangered species, having seen first-hand the threats in Antarctica.

The plight of the albatross was of particular concern and they decided that they should leave a major legacy to BirdLife and its work to save the albatross. The friends and family of Lady Gilbert, who died in 2019, know they would be proud that this legacy will make a significant difference to the future of the albatross and other marine life.

Here at BirdLife we understand that writing your will is an important thing to do to ensure that the people and causes close to your heart are provided for after you are gone. Leaving a gift in your will is something that does not have to cost you anything now but will protect what you care about in the future. What will you be remembered for?

HANS SWEGEN'S LEGACY GOES FAR BEYOND THE LAND PROTECTED THROUGH HIS PURCHASE



With support from Hans Swegen and other donors, Guyra Paraguay (BirdLife Partner) has secured ownership of 6,900 hectares of pristine Atlantic Forest and Pampas habitat, transformed into the "Guyra Reta Reserve Complex" for conservation in perpetuity. The Reserve acts as a core conservation area for protecting biodiversity, as well as a base for a wide range of initiatives. Over the past five years, Guyra has developed a sustainable yerba mate initiative based at the Reserve, together with members of the local community, which have achieved Fair Trade and USDA Organic certification. By selling the crop to a premium sustainable market, the programme provides a more forest-friendly economic option to the region [find out more on p26]. This support created the foundation for a greener future for San Rafael's people, as well as nature.

My husband, Hans, was fascinated by wildlife from an early age, and as a young adult he became passionate about conservation. This led in later years to a desire to take action against the destruction of the forests that are so vital to the life of the planet. He began to research the possibility of buying threatened areas of forest land. Thanks to BirdLife, his efforts culminated in the purchase of precious areas of forest. The achievement of these long-pursued goals made him very happy. Shortly before his death in 2017 he mentioned that he would make a further donation to BirdLife International, this being his legacy to the organisation which helped him play his part in protecting wildlife and the environment.

JACKY SWEGEN

© Chaykovsky Igor/Sł

MORE INFORMATION

There are many ways you can choose to leave a legacy to BirdLife. For more information on how, please contact me on the details below, or fill in the information slip on this page and return it to us, and we will get back to you. Download: www.birdlife.org/legacies Email: legacies@birdlife.org Call: +44 (0)1223 747524 By post: Fundraising at BirdLife International, The David Attenborough Building, Pembroke Street, Cambridge, CB2 3QZ, UK

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Please fill out the details you would like us to use to contact you, then use the Freepost envelope provided with this magazine or post to us at the address above. Thank you for being a part of the BirdLife family.

Sarah Proud

HOT OFF THE PRESS

The latest scientific breakthroughs from BirdLife's quarterly peer-reviewed journal



FOLLOW THE LATEST ADVANCES IN **OUR RESEARCH ON TWITTER: @BCI JOURNAL**

HIGHLIGHTS

AFTER THE STORM: CAN WEST INDIAN WOODPECKERS **RECOVER?**

urricanes have occurred throughout the earth's history, and wildlife especially on islands – has evolved to be able to recover from them. So why are they a conservation issue?

Unfortunately, extreme weather events are increasing in severity and intensity due to climate change, and this trend is set to accelerate. That's why scientists set out to measure the resilience of the rare West Indian Woodpecker subspecies Melanerpes superciliaris nyeanus on San Salvador in the Bahamas. Researchers tracked population cycles over two decades, finding that population densities dropped by 60-65% following hurricanes, but usually returned to normal within 2-3 years.

However, for a species with such low numbers - around 240 individuals - having insufficient time to rebound between hurricanes could prove disastrous. This is especially worrying when the surviving birds are made even more vulnerable by human-driven habitat loss. Researchers are therefore calling for increased protection of the forest in the north of the island, to ensure a safe haven for the species.



RATS OR TOURISTS? THE TRUE THREATS TO MICRONESIAN SCRUBFOWL

any island birds evolved without natural predators, leaving them defenceless against invasive rats. It has long been assumed that rats are a major threat to Micronesian Scrubfowl *Megapodius laperouse* (Endangered). But if we want the full story, we may need to consider another creature that swarms on tropical islands: the tourist.

Researchers compared five tourist-visited islands with five tourist-free islands in Palau, and found that tourists seem more likely to have a negative impact on the scrubfowl than rats do. This may be because the scrubfowl buries its eggs up to a metre underground, out of sight of hungry rodents – whereas tourists may disturb the bird and disrupt its movements. Tourists probably also bring additional rats on their boats, threatening other bird species with more exposed nests.



Inaccessible Island © Ron Van Oers

INSET Its endemic rail © Brian Gratwicke/Flickr

ACCESSING THE WORLD'S SMALLEST FLIGHTLESS BIRD

f you're studying the world's smallest flightless bird in a place called Inaccessible Island, you know it's going to be a challenge. The Inaccessible Rail *Laterallus rogersi* is part of a group of birds that are notoriously hard to survey due to their secretive behaviour and preference for dense vegetation. The rugged terrain of Inaccessible Island – part of the Tristan da Cunha archipelago in the South Atlantic – makes conventional survey methods challenging, and information about this bird is therefore scarce.

Fortunately, the species is very vocal, meaning researchers were able to play recordings of the bird's call and measure the number of responses. Using this method, the team estimated that 10,300 rails lived on the island, and that the species' current conservation status of Vulnerable is accurate. The risk of invasive rats or mice arriving from neighbouring Tristan da Cunha Island is the biggest threat.



• Modelling the potential non-breeding distribution of **Spoonbilled Sandpiper** *Calidris pygmaea*

• Expert knowledge assessment of threats and conservation strategies for breeding Hen Harrier and Shorteared Owl across Europe

• First systematic sampling approach to estimating the global population size of the Critically Endangered **Blue-throated Macaw** *Ara glaucogularis*

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1 PLANET 1 RIGHT



BIRDLIFE MUSIC VIDEO!

To save the world, it's clear we must mobilise today's youth. That's why we're so excited to

share this toe-tapping tune written for us by Timothy Arinaitwe, a Ugandan living in Nairobi. "Artists have a major role to play in championing positive change," he says.



OBITUARY

REMEMBERING ELSA PERETTI (1940-2021)

The legacy of Elsa Peretti, perhaps more familiar in the world of gorgeous jewellery design, is at least as profound in the world of conservation.

At BirdLife, we were immensely grateful for her passionate interest in, and concern for,

the plight of migratory birds, and particularly the shocking impact of illegal hunting and trapping in the Mediterranean.

Elsa Peretti's generous support to BirdLife to fight that scourge shows that change is possible – and we will continue to honour her memory by strengthening our resolve and determination to stop the illegal killing of birds wherever it is taking place.

ASK AN E X P E R T

Q HOW MANY BIRD SPECIES ARE AT RISK OF GLOBAL EXTINCTION?

A Today 1,481 bird species of 11,000 (13.5%; more than one in eight) are globally threatened with extinction because of their small and/or declining populations and/or ranges. Of these, 223 are **Critically Endangered** (facing an extremely high risk of extinction in the near future), 460 are Endangered and 798 are Vulnerable. Threatened birds occur the world over, but are concentrated in the tropics and especially in forests. IAN BURFIELD Global Science Co-ordinator (Species)



Q CELEBRITIES: WHO IS SNEAKILY A GREAT BIRD CONSERVATION ADVOCATE?

A On World Swift Day, we hoped Taylor Swift might not-so-sneakily get involved... Leonardo DiCaprio recently tweeted his support for our work to save Atewa Forest. Of course, the great author and poet Margaret Atwood is an advocate: and Cosmo Sheldrake recently fundraised for us. But if you hear of other bird-loving celebrities, do put us in touch! **EDITOR**

BIRDLIFE SOCIAL MEDIA HIGHLIGHTS

🞯 INSTAGRAM



Followers loved this Laughing Gull taking an opportunistic piggy-back ride!

TWITTER



Launched on Oceans Day to celebrate the second World Albatross Day, we co-hosted a great competition with @AlbyTaskForce: the #AlbatrossWorldCup!

FACEBOOK



Securing a swift return: how a simple brick can help migratory birds

Paula Brown, Alabama, USA: We have lots of swifts here. I have an unused chimney on my house where many build their nests. I chose to leave it open just for them. They are amazing birds.

Thank you Paula for your comment and for taking their needs into account. Both Common and Chimney Swifts are sitefaithful birds that may return to find the access to their nest holes blocked.

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