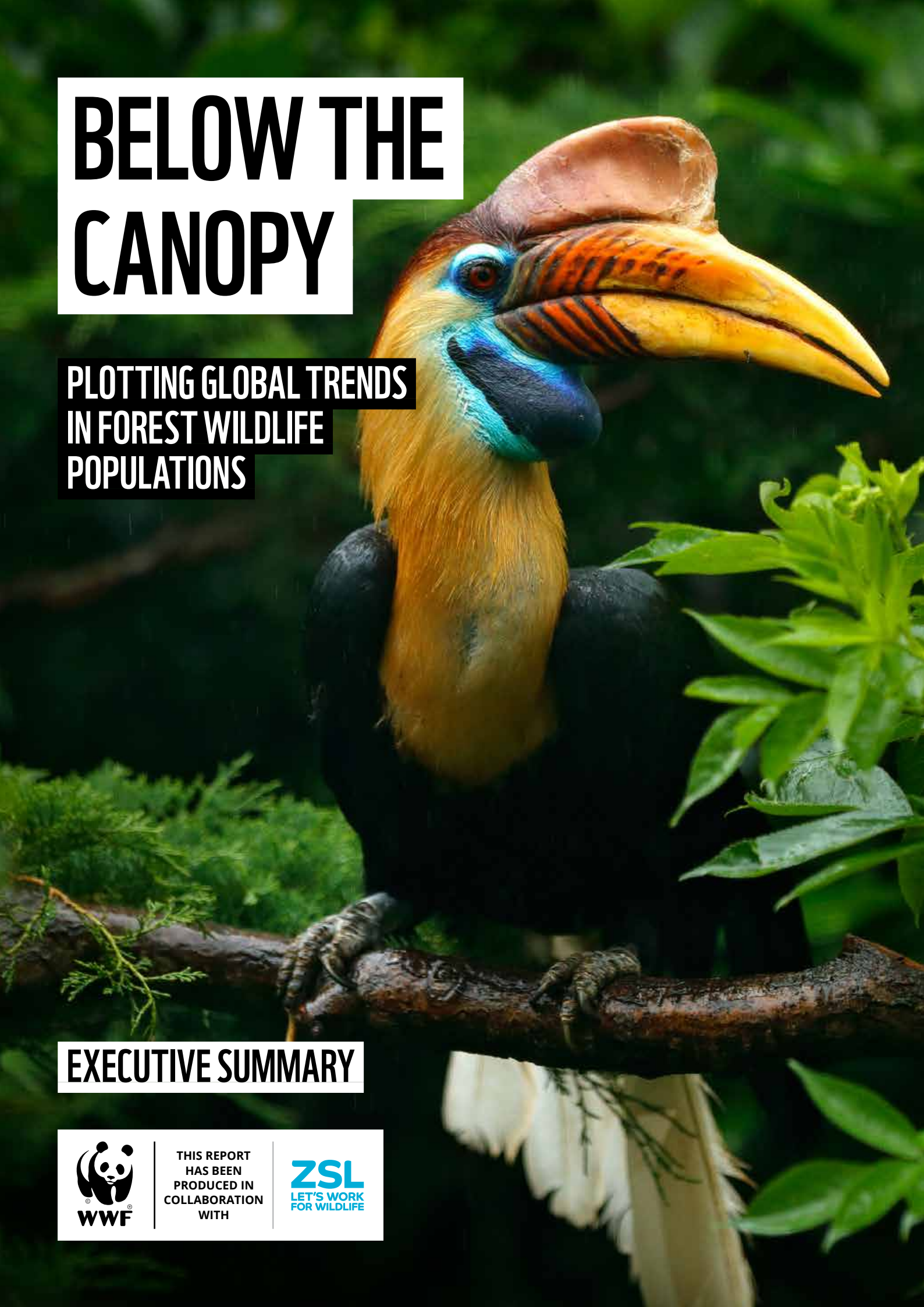

BELOW THE CANOPY

PLOTTING GLOBAL TRENDS IN FOREST WILDLIFE POPULATIONS

EXECUTIVE SUMMARY

WWF

THIS REPORT HAS BEEN PRODUCED IN COLLABORATION WITH

ZSL
LET'S WORK FOR WILDLIFE

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KEY FINDINGS

FOREST VERTEBRATE POPULATIONS MORE THAN HALVED BETWEEN 1970 AND 2014, ON AVERAGE.

Using the Living Planet Index methodology, an index for wildlife that lives only in forests was created. It showed that monitored populations of these vertebrate species declined by 53% on average over the period. This decline has serious consequences for forest integrity and climate change because of the roles that wildlife play in forest regeneration and carbon storage.

DEFORESTATION IS A MAJOR DRIVER OF THIS LOSS BUT ALONE IT DOES NOT EXPLAIN THIS LEVEL OF DECLINE.

Even though habitat degradation or change accounted for 60% of the threats to forest specialists, changes in tree cover did not always reflect changes in populations of forest animals. Forest animals face multiple threats in addition to habitat loss and degradation, such as overexploitation, invasive species, climate change and disease. Tackling deforestation and increasing forest cover are essential but on their own insufficient to restore forest biodiversity. In order to reverse the decline of forest biodiversity it is crucial to address the multiple pressures on forest species.

IN 2020 WE HAVE AN OPPORTUNITY TO ADDRESS THIS DECLINE AS PART OF THE NEW DEAL FOR NATURE AND PEOPLE.

Forests are home to well over half the world's land-based species and are one of our most important carbon sinks. If we are to reverse the decline in biodiversity worldwide and avoid dangerous climate change then we need to safeguard the species that live in forests and keep them healthy.

A DIRECT MEASURE OF FOREST BIODIVERSITY SHOULD BE INCLUDED ALONGSIDE FOREST COVER IN THE POST-2020 BIODIVERSITY FRAMEWORK AND THE FOREST SPECIALIST INDEX IS RECOMMENDED TO FILL THIS GAP.

This report shows that tree cover does not provide a good indication of the status of biodiversity below the canopy. A post-2020 global biodiversity framework and all future global forest assessments should consider forest quality as well as quantity and including a direct measures of forest biodiversity alongside forest cover change would enable it to do that. The Forest Specialist Index developed in this research offers a tool to do so by tracking the status of the world's forest specialist vertebrate populations.

SUCCESS STORIES SHOW THAT WITH THE RIGHT CONSERVATION STRATEGIES, FOREST VERTEBRATE POPULATIONS CAN RECOVER.

Despite this global decline there are signs of hope, places where forest specialist populations have rebounded. This requires taking a multi-pronged approach to tackle the multiple pressures on forest animals including enabling natural regeneration of forests, working with communities to address overexploitation of wildlife, and tackling invasive species. to address the multiple pressures on forest species.

GAPS IN MONITORING IN SOME OF THE MOST BIODIVERSE FORESTS OF THE WORLD REMAIN, AND NEED TO BE FILLED.

Our index includes data from all corners of the world, covering 268 species and 455 populations. However, we need to do far more repeated, on-the-ground monitoring in important biodiversity hotspots like the Amazon or we risk being blinded to the loss of wildlife in years to come. In order to fill this gap and inform conservation strategies in these regions, greater investment must be made towards long-term, systematic forest biodiversity monitoring.

THE 2020 OPPORTUNITY

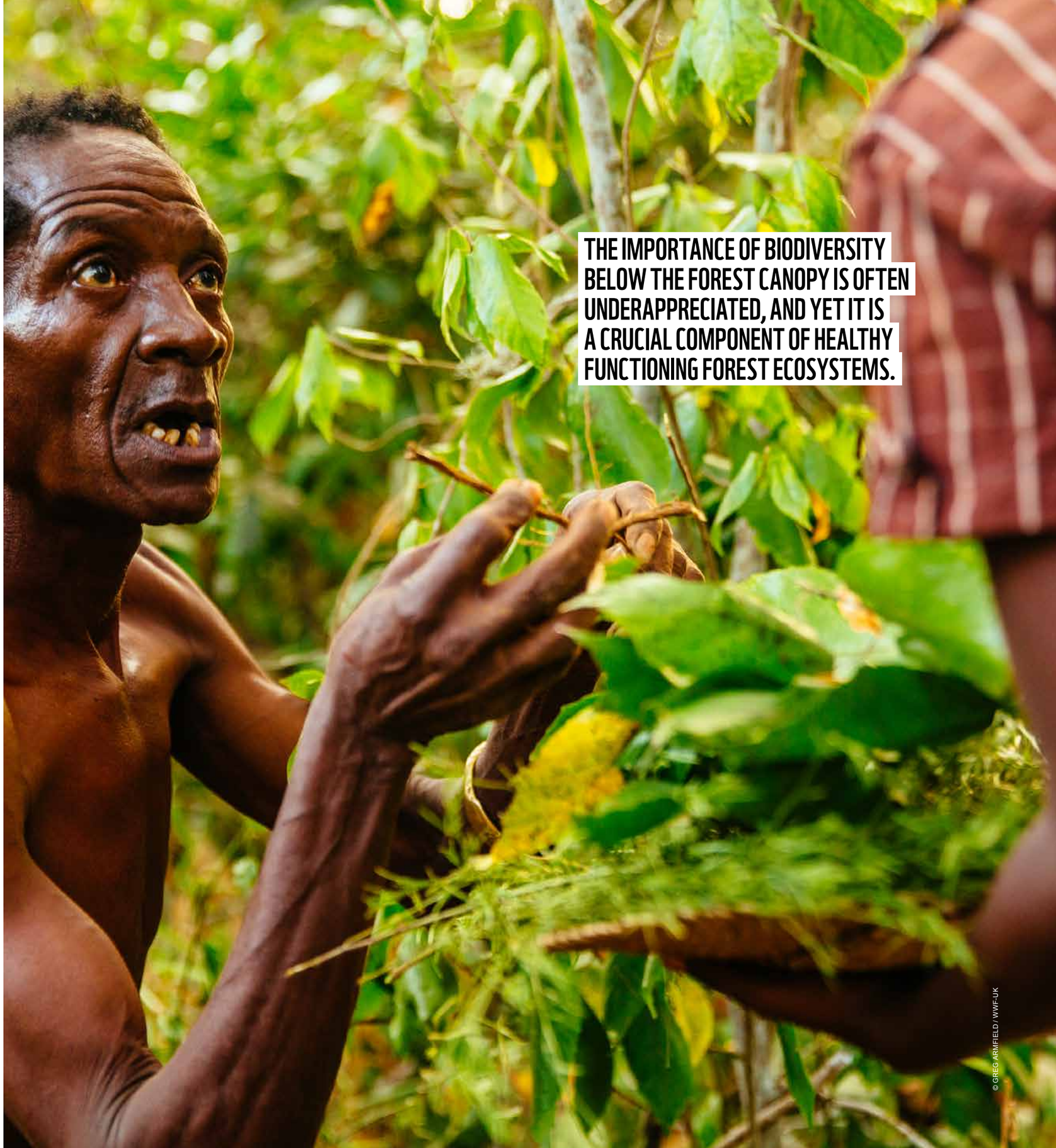
The year 2020 is a milestone year for taking action to protect and restore the health of our planet. As the Paris Agreement on climate change meets its first milestone for delivery and upgrading of national commitments, and several Sustainable Development Goals (SDGs) reach deadlines, and it is expected that governments will agree on a new global biodiversity framework through the UN biodiversity conference. Ambitious action taken towards all these agendas could combine to be a “New Deal for Nature and People.”

Forests need to be front and centre of this New Deal for Nature and People because of their importance for biodiversity conservation, climate change mitigation and the provision of ecosystem services, such as water and air purification, nutrient cycling, soil erosion control, and supplies of food, wood and other products. Despite this importance, forest loss and degradation continues apace, driven primarily by clearance for commodity production, unsustainable logging, shifting agriculture and wildfires. This heavily compromises our ability to prevent the world entering dangerous levels of climate change and breaching other planetary boundaries.

This report highlights the status of forest biodiversity worldwide and provides evidence to inform the discussions and negotiations around the development of the New Deal and the synergies between the new framework on biodiversity, the Paris Agreement and the SDGs.

FOREST WILDLIFE MATTERS IN THE FIGHT AGAINST CLIMATE CHANGE

The importance of biodiversity below the forest canopy is often underappreciated, and yet it is a crucial component of healthy functioning forest ecosystems. A growing body of scientific evidence shows how forest animals are essential components of natural, healthy forests and maintaining the services they provide to people. They perform pollination, seed dispersal, herbivory and other crucial roles that affect natural regeneration and, importantly, carbon storage. Notably, in the vast forests of South America and Africa, the carbon locked in forests would decline if large birds and primates, in particular, were lost. These animals ensure that the seeds of the most carbon-dense trees are dispersed and without them the less carbon-dense trees would dominate. When animals are lost from forests these vital functions are lost with them, with severe implications for forest health, the climate, and more than a billion humans who depend on forests for their livelihoods.



FOREST SPECIALIST INDEX: FILLING A GAP IN MONITORING OF FOREST BIODIVERSITY GLOBALLY

Remarkably little is known about the state of forest biodiversity globally. In the absence of a direct global measure of forest biodiversity, forest area has often been used as a proxy indicator. However, until now, the suitability of forest cover as a proxy for forest biodiversity had never been assessed.

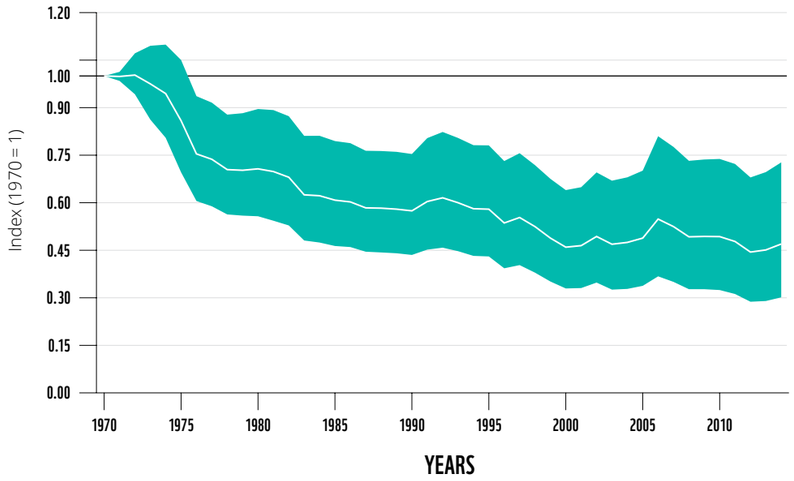
This report presents the Forest Specialist Index (Fig A), developed following the Living Planet Index methodology, as a way of improving our ability to assess the global state of forest biodiversity. The focus on specialist species, which depend entirely on forests, means this indicator provides a good representation of forest ecosystem health.

We found that, on average, monitored populations of forest specialists more than halved between 1970 and 2014.

These trends vary by region and taxa. The overall decline is driven mostly by declines in tropical species which made up 75% of the data, while species in temperate areas tended to have more positive trends over time, albeit starting from a reduce baseline due to historical losses. For mammals, amphibians and reptiles, more species had negative trends than positive trends, whereas the opposite was true for bird species. Overall, these findings tell us that many forest species are in serious trouble.

FIG A.

FOREST SPECIALIST INDEX FOR 268 FOREST SPECIALIST SPECIES (455 POPULATIONS) FROM 1970 TO 2014.



Note: Solid line shows the weighted index values and shaded region shows the 95% confidence for the index

THE NEED FOR TARGETS AND INDICATORS THAT LOOK BELOW THE CANOPY

To understand what is driving these trends in forest biodiversity, we explored the drivers of changes in forest vertebrate populations (including generalist and specialist species). These investigations showed that forest vertebrate populations are responding to multiple pressures, including habitat loss and degradation, overexploitation, climate change and invasive species. They also showed that, globally, forest animals are not responding to tree cover change in a consistent manner.

This important finding demonstrates that changes in tree cover do not always reflect changes in the populations of animals below the canopy, and that forest area is therefore a poor proxy for assessing global forest biodiversity. A focus on forest area alone neglects the many important factors that determine whether standing forests retain their wildlife or whether newly planted or regenerated forests become rich in biodiversity – restoring trees is important, but alone it is not enough. It is therefore essential that the monitoring of forest biodiversity is improved. The Forest Specialist Index provides a solution to these challenges in the form of a direct measure of the state of forest vertebrate populations.

MAINTAINING FOREST BIODIVERSITY REQUIRES ADDRESSING MULTIPLE THREATS

What is clear is that new commitments and action pledged in 2020 should not only halt and reverse tree cover loss but also tackle the multiple other threats to forest biodiversity, such as overexploitation, climate change and invasive species. To support this, greater investment should be made towards on-the-ground monitoring of forest wildlife. Only then can we identify and address the many threats facing forest biodiversity below the canopy.

THE TREND CAN BE REVERSED: THERE ARE BEACONS OF HOPE WHERE FOREST WILDLIFE HAS RECOVERED

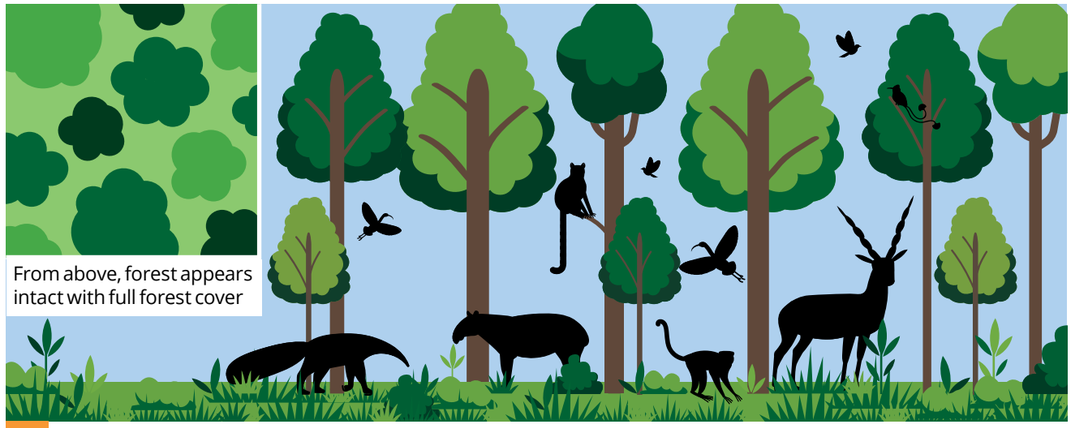
While the findings of the Forest Specialist Index paint a gloomy picture of the state of forest biodiversity, conservation success stories show us that forest-dwelling animals can recover with the right interventions. From monkeys in Costa Rica to gorillas in central Africa we find that, by releasing forest animals from the direct pressures they face, their populations can thrive. We must learn from these successes and seize 2020 as a pivotal moment to start reversing the decline in forest species, protecting the long-term health and integrity of our forests for nature and people.

53%

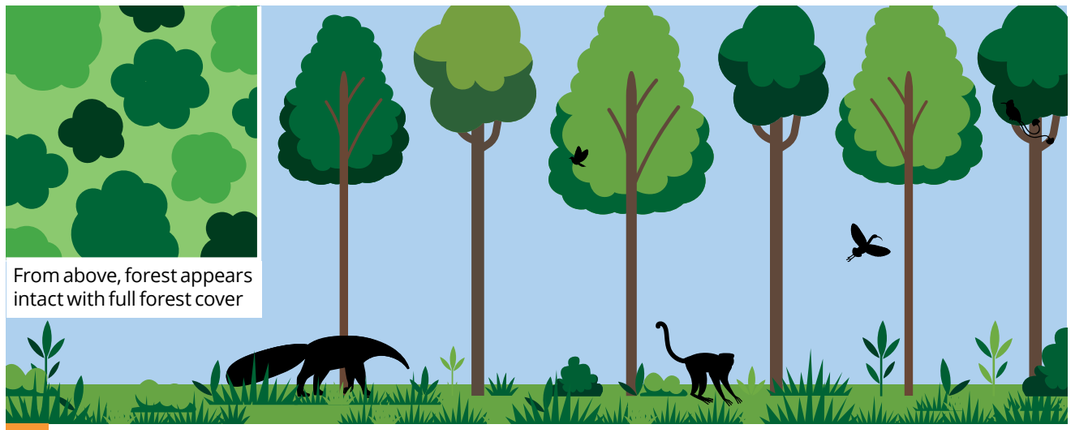
DECLINE IN SIZE OF FOREST WILDLIFE POPULATIONS SINCE 1970

THE IMPORTANCE OF LOOKING BELOW THE CANOPY

From above, both forests appear intact with full forest cover. By looking below the canopy, changes in the forest fauna community can be identified; in the longterm, loss of large-bodied vertebrates can lead to a reduction in carbon-dense trees.



A Intact forest fauna community: large-bodied vertebrates still present



B Fauna community degraded, large-bodied vertebrates lost; large seeds of carbon-dense trees stop being dispersed

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