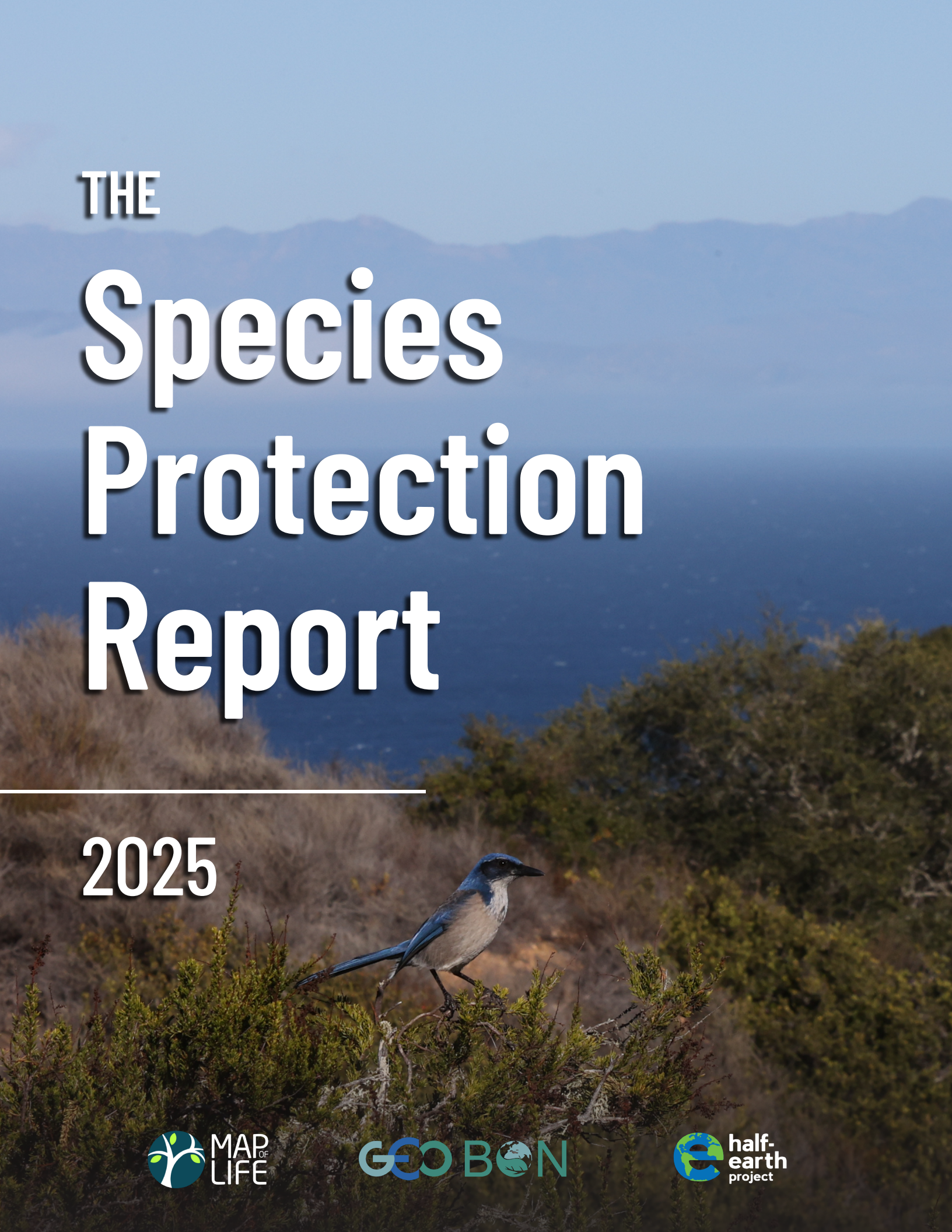


THE Species Protection Report

2025

MAP OF LIFE

GEO BON

half-earth project

TABLE OF CONTENTS

Executive Summary	*3*
Section 1: Introduction	*4*
The Species Protection Index	
The SPI Calculation	
Interpreting the SPI	
World Database of Protected Areas	
Section 2: Global Overview	*14*
Terrestrial Vertebrates	
Trees	
Marine Fish and Mammals	
Vertebrate Species	
Section 3: Terrestrial Vertebrate SPI	*24*
Subregional SPI	
National SPI	
National SPI Annual Change	
Species Protection Successes and Gaps	
Section 3: Tree SPI	*36*
Subregional SPI	
National SPI	
Section 4: Marine SPI	*42*
Subregional SPI	
EEZ SPI	
EEZ SPI Annual Change	
Species Protection Successes and Gaps	
Section 5: Case Studies	*54*
Land and Marine Conservation in Oman	
Conserving Marine Ecosystems in Southern and Eastern Africa	
Photo Credit and References	*60*
Appendix	*62*

© 2025. Map of Life. Licensed under CC BY-NC-ND 4.0. https://creativecommons.org/licenses/by-nc-nd/4.0/

EXECUTIVE SUMMARY

As threats to biodiversity and its many benefits to people accelerate, understanding progress in the effective safeguarding of our planet's species is ever more important. With nations worldwide committed to protecting more land, freshwater, and sea to deliver biodiversity outcomes, a globally standardized measurement and recognition of successes and key opportunities is paramount. The Species Protection Index (SPI), developed by Map of Life under the auspices of the GEO Biodiversity Observation Network, addresses this need by quantifying how adequately networks of conservation areas support species.[1] As the only formally adopted indicator of the Kunming-Montreal Global Biodiversity Framework that directly and quantitatively addresses the importance of protected areas for species conservation, the SPI monitors how protected area creation results in progress toward the goals of '30 by 30' or 'Half-Earth'.

This report, produced by the Half-Earth Project (the principal focus of the E.O. Wilson Biodiversity Foundation), uses the SPI to assess the state of global species protection in 2025. As a species-level metric, the regional SPI values presented here are based on individual Species Protection Scores calculated for ~34,000 terrestrial vertebrate species, ~13,000 marine mammal and fish species, and ~45,000 tree species. Since the 2024 report, more than 70 countries and 30 marine Exclusive Economic Zones have achieved increases greater than 1 point in their terrestrial vertebrate and marine SPI, respectively. This is both due to improved reporting of existing protected areas and other effective area-based conservation measures to the World Database of Protected Areas (WDPA) and new protected area establishment. Accordingly, the global terrestrial vertebrate SPI has risen by 3.1 points to 50.9 out of 100; global marine SPI has risen by 2.3 points to 62.1; and global tree SPI, calculated for the first time this year, reached 58.3 points. 15.1% of land area and 8.4% of ocean area is under some form of formal protection, as recorded in the WDPA.

About one-quarter of terrestrial vertebrates and one-third of marine vertebrates have a Species Protection Score of 90 or greater out of 100, meaning that global conservation area networks have nearly or sufficiently met their habitat protection targets. One-fifth of terrestrial vertebrates and one-twelfth of marine vertebrates have extremely poor to no protection over their habitats, indicated by protection scores of less than 10.

While progress has been made, much effort remains necessary to sufficiently protect and preserve the world's biodiversity and to measure and confirm progress toward globally shared goals.



SECTION 1

INTRODUCTION

Black Wood Turtle
Rhinoclemmys funerea
65 *SPS*

THE SPECIES PROTECTION INDEX

A Tool for Effective Biodiversity Protection

Species are the key drivers of the diverse ecological functions that sustain our planet. Representing this ecological diversity within systems of protected and conserved areas is therefore a central goal for effective conservation.

The Species Protection Index (SPI), first developed by Map of Life in 2014, supports action toward this goal by evaluating how well protected areas cover the habitats species need for survival.[1] The SPI measures how well species ranges are represented within networks of protected areas, thereby assessing these areas' coverage of important locations for biodiversity and ecological representativeness. More than just a monitoring tool, the SPI is designed to actively assist conservation decision making by identifying gaps in biodiversity protection.

The SPI is updated annually in the terrestrial and marine realms for all countries and all exclusive economic zones (EEZs – the marine area generally extending 200 nautical miles from shore over which a nation has jurisdiction) plus international waters, respectively. Its calculation follows a standardized workflow based on the best-available species distribution information from Map of Life combined with data on conservation activities from the World Database on Protected Areas (WDPA). We report the 2025 SPI based on ~34,000 species of terrestrial vertebrates (nearly 100% of described species), ~13,000 species of marine mammals and fish (about 72% of described species), and, included in the calculations for the first time, ~45,000 species of trees (around two-thirds of described species).

The SPI is developed and maintained by Map of Life in partnership with the Group on Earth Observations Biodiversity Observation Network (GEOBON) and with support from the Half-Earth Project and the E.O. Wilson Biodiversity Foundation.



A Component Indicator for the Global Biodiversity Framework

In 2022, the SPI was formally adopted as a component indicator for Target 3 of the Kunming-Montreal Global Biodiversity Framework (GBF).

Target 3 calls for the effective conservation and management of 30% of land and sea areas by 2030. The SPI assesses whether that 30% actually includes the habitats that species need most.

The SPI is rigorously derived from species-by-species assessment and serves as the only formal indicator for Target 3 that spatially, comprehensively, and quantitatively addresses the Target 3 components of ecological representation and biodiversity importance. This means that the SPI doesn't reward the establishment of protected areas in biodiversity-poor locations – only those protected areas that actually include valuable species habitat. A country's SPI score will be particularly affected by the inclusion of habitat for species that are endemic, have restricted range size, or have no existing formal protection over their habitat.



Box 1. The Species Protection Index addresses three key aspects of Target 3 of the Global Biodiversity Framework.

Ecologically Representative	Areas of Particular Importance to Biodiversity	Effectively Conserved and Managed
The SPI assesses if and how effectively existing conservation areas incorporate species ranges, thus capturing an essential component of both ecosystems and ecological processes.	The SPI is the only indicator for the target adopted at the headline or component level that directly and quantitatively addresses the importance protected areas play for conserving species. It is also the only species-level indicator, meaning that aggregated metrics are derived from individual species' assessments. A low SPI can therefore be traced to the exact species and places lacking protection coverage.	Given its explicit nature and disaggregation to the level of single species and places, the SPI informs the specific biodiversity aspects that make a conservation areas high-value and supports their targeted monitoring and management.

THE SPI CALCULATION

INPUT DATA

Best-available geographic data for species, environmental layers, and the World Database of Protected Areas.

The SPI calculation uses species expert range maps and habitat preferences along with global environmental layers and the annual January update of the WDPA.

DETAILED DISTRIBUTIONS

Top-notch statistical models create high-resolution maps of species habitat-suitable ranges.[2]

We integrate species data, environmental layers, and occurrence points within these models. The habitat-suitable range maps determine the total size of a species' habitat.

SPECIES PROTECTION SCORES

The ratio of the percent of habitat protected to the protection target gives the Species Protection Score.

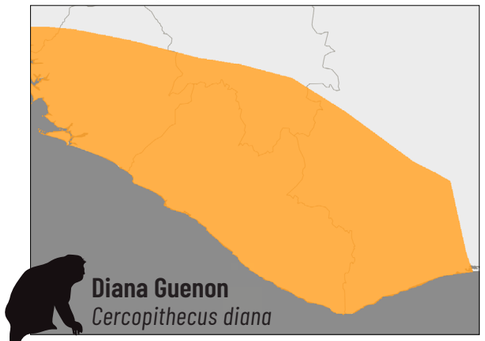
Based on the size of its habitat-suitable range, we assign each species a protection target, or the total percentage of its habitat that should be protected. We calculate the SPS as the ratio of the actual percentage of habitat protected to the target.

SPECIES PROTECTION INDEX

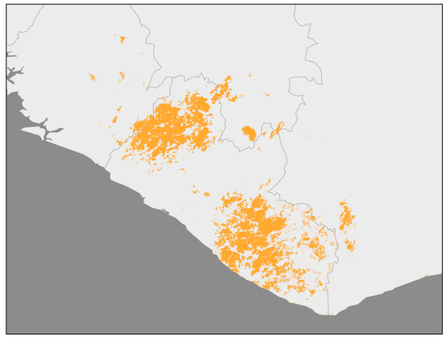
Stewardship-weighted average of all Species Protection Scores within a region gives the SPI.

We calculate National SPI by averaging the SPS of all species in a country, weighted by how much of a species' range falls within the country, or the country's 'stewardship' of that species. Endemic species therefore have the highest weight in the SPI.

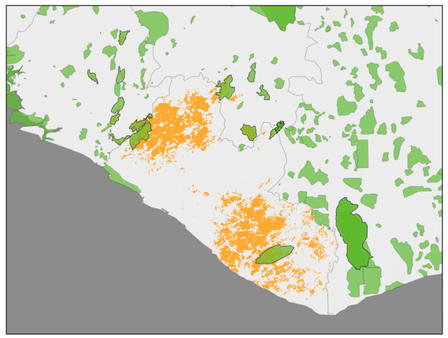
Expert Range Map

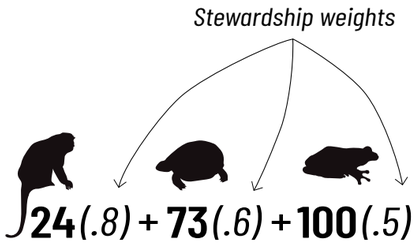


Habitat-Suitable Range Map



Area Protected





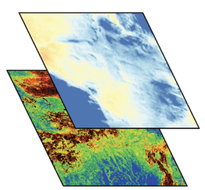
Species Data

Expert Range Maps
Polygonal representations of species distributions from expert sources.

Habitat Preferences
Tree cover, elevation, and landcover species preferences from expert sources.

Environmental Data

Global environmental layers derived from remote sensing data for elevation, tree cover, and landcover classes.



Protected Areas

We apply a simple filtering scheme on the WDPA to remove proposed protected areas and UNESCO-MAB Biosphere Reserves. To avoid double counting overlapping parks, we rasterize the polygon layer to create a flat map of protected areas.



These habitat-suitable ranges provide a more accurate picture of the habitats a species is likely to use within the boundaries of their range.

Habitat-suitable range size determines the protection target. Small range species have higher protection targets (up to 100%) than large range species.

Percent of species' habitat protected

Calculating the overlap of the green and orange areas in the map above.

$$\frac{\text{Area Protected}}{\text{Total Habitat Area}} = \frac{4{,}700\ \text{km}^2}{26{,}400\ \text{km}^2} = 18\%\ \text{Protected}$$

Species Protection Score

The ratio of the real percent protected to the target protection level.

$$\frac{\text{Percent Protected}}{\text{Protection Target}} = \frac{18\%}{74\%} = 24\ \text{Species Protection Score}$$

In this example, since the species with the lowest SPS has the highest stewardship and the higher-SPS species have lower stewardship, the overall SPI is lower than the simple average of scores.

INTERPRETING THE SPI

Species Protection Scores

The National SPI tells you how close a country is to reaching the protection coverage targets of all its species. For an individual species, the SPS tells you how close we are to reaching its individual protection target.

Box 2 illustrates an example of a small-range frog and a large-ranging bird that shows important implications about how protected area placement determines species protection scores. The leaf-dwelling shrub frog will only achieve an SPS of 100 if its entire range is protected, while the Yucatan poorwill will achieve an SPS of 100 if just 31% of its range is protected. A large ranging species may not necessarily need targeted land protection efforts to safeguard enough of its habitat, whereas species with a restricted habitat or several isolated habitat patches often require very targeted efforts to conserve those specific habitats.

Box 2. A comparison of the species protection score calculation between two species: the leaf dwelling shrub frog (*Pseudophilautus folicola*) and the Yucatan poorwill (*Nyctiphrynus yucatanicus*).



Leaf-dwelling shrub frog

Pseudophilautus folicola

Total Habitat Area:
6,900 km²

Protection Target:
6,900 km² (100%)

Area Protected:
790 km² (11%)

Protection Score: 11

The leaf-dwelling shrub frog is endemic to Sri Lanka with a total habitat area less than 7,000 km². As we do for all terrestrial vertebrate species with range sizes less than 10,000 km², we set the protection target for the leaf-dwelling shrub frog at 100%. This means we think this species needs protection over its entire range to ensure its successful conservation. Even though the total area is relatively small, it can be difficult for countries to capture a species' whole range in their protected area network, so achieving an SPS of 100 can be difficult for small-range endemic species. This frog has 11% of its range protected, so its SPS is 11.



Yucatan poorwill

Nyctiphrynus yucatanicus

Total Habitat Area:
135,000 km²

Protection Target:
41,900 km² (31%)

Area Protected:
33,200 km² (25%)

Protection Score: 79

The Yucatan poorwill's habitat, which ranges across the Yucatan Peninsula, is more than twenty times the size of the leaf-dwelling shrub frog's range. Accordingly, it has a smaller protection target at just 31%. For the purposes of the SPI, that 31% can be anywhere over its range. So far, a quarter of this species' range is protected, resulting in an SPS of 79. This means the Yucatan poorwill is about 80% of the way toward achieving its protection goals.

National SPI

We cannot assume that two countries with the same SPI have deployed equal conservation efforts. As we saw, achieving high SPS for a range restricted, endemic species is more challenging than achieving the same for a large-ranging species. Similarly, achieving a high overall SPI for a country with 1,000 species will generally be more challenging than a country with 100 species. These differences are often called uneven conservation burdens between the two countries.

In addition to uneven biodiversity, highly biodiverse countries in the tropics and subtropics also tend to have greater levels of natural resource extraction combined with fewer financial resources to implement effective conservation.

Let's look at an example of two countries with a similar percent of area protected but very different SPIs.

Box 3. A comparison of the Species Protection Index calculation for two different countries with a similar percent of total land area protected: the Netherlands and Sri Lanka.



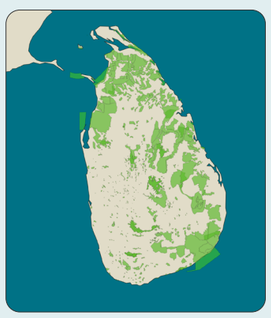
Netherlands

Area Protected
34%

Number of Species
316

Endemic Species
0

Species Protection Index: 99



Sri Lanka

Area Protected
30%

Number of Species
704

Endemic Species
263

Species Protection Index: 38

The Netherlands and Sri Lanka both have about a third of their land area protected, but while the Netherlands has achieved a near-perfect SPI, Sri Lanka has an SPI of just 38 – about 13 points below the global average.

This discrepancy does not necessarily mean that the Netherlands is more efficiently protecting its species than Sri Lanka. Both countries may be effectively placing protected areas, but a key difference is that Sri Lanka has much higher biodiversity – more than twice as many terrestrial vertebrate species and 263 endemic species compared to zero endemic species in the Netherlands. This means that Sri Lanka has a doubly higher conservation burden than the Netherlands: more species to protect and greater stewardship over those species.

We can see that both countries are making good progress in biodiversity protection, but from the start, the Netherlands had a shorter way to go than did Sri Lanka.

WORLD DATABASE ON PROTECTED AREAS

Protected Planet (protectedplanet.net) is the global authoritative source of data on protected and conserved areas. Managed by the UN Environment Programme World Conservation Monitoring Centre (UNEP-WCMC) as a joint product of UNEP and the IUCN, Protected Planet includes the World Database on Protected Areas (WDPA) and associated data and indicators. In managing Protected Planet, UNEP-WCMC facilitates reporting by national governments and other data providers.

By compiling these data for use by the public, Protected Planet supports a wide range of actors in monitoring conservation trends and effectiveness, and in making decisions that positively impact ecosystem and biodiversity conservation. The WDPA is a key dataset allowing the development and maintenance of a number of conservation indices, including the SPI. In addition, Protected Planet provides the foundation for monitoring and reporting for Target 3 of the GBF.

Regular reporting to Protected Planet is crucial for ensuring the quality and completeness of the databases and the indices that are derived from them.

Data reported to Protected Planet can include:

- Newly established protected or conserved areas
- Previously established protected or conserved areas that had not yet been reported
- Updating of geometries of existing areas in the databases
- Updating of descriptive data for areas in the databases
- Addition/updating of data on the effectiveness of protected and conserved areas
- Removal of areas that have been delisted

New data are released on the Protected Planet platform on a monthly basis. The nature of the Protected Planet update cycle and data management processes have implications for analyses utilizing the data:

- Delisted protected and conserved areas are removed from the WDPA and will not be revealed in temporal analyses.
- The "Status Year" attribute reflects the year of establishment of the protected or conserved area designation currently in place. Because protected and conserved areas are sometimes delisted and replaced by new designations (e.g., a Nature Reserve might be delisted to enable the establishment of a National Park), the "Status Year" may not reflect the earliest year in which a geographical space was occupied by a protected or conserved area.
- There is often a lag time in reporting newly established areas to the databases.

Work is underway to enhance the data delivered through Protected Planet, including to reduce the reporting lag time and make data on delisted areas accessible. For more information about data reporting to Protected Planet, visit wcmc.io/WDPA_Manual. Government bodies wishing to update their data in Protected Planet are invited to contact protectedareas@unep-wcmc.org.



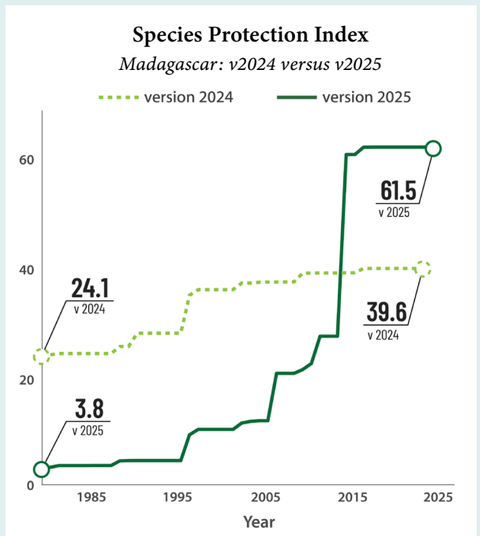
Interpreting Changes in the SPI

We re-run the SPI annually using the January version of the WDPA. Each annual version of the SPI is calculated from 1980 to the present year using the "Status Year" attribute in the database. Some areas do not have a "Status Year" value; in these cases, we use the first year of the analyses, 1980, as the default status year.

The interpretation of temporal changes in the SPI must be understood in the context of the data reporting process. Changes in the SPI between this report and last year's report are influenced by changes in reporting to the WDPA: countries may have removed parks, reported existing or new parks, updated the statuses of existing parks, or updated the geometries of existing parks, all of which may affect species' protection scores and therefore the SPI. Within the full temporal analyses of the 2025 version of the SPI, we can get an idea of how the protected area networks of a country have changed over time, with the understanding that due to the nature of WDPA updates, exact dates reflecting the initial existence of some form of protection in an area may differ.



Box 4. A comparison of the 2025 and 2024 versions of the SPI for Madagascar.



In the 2024 version of the SPI, Madagascar had a higher percent of area protected and SPI in 1980 than in the 2025 version, but the 2025 version has much greater values in the final year of analysis compared to the 2024 version.

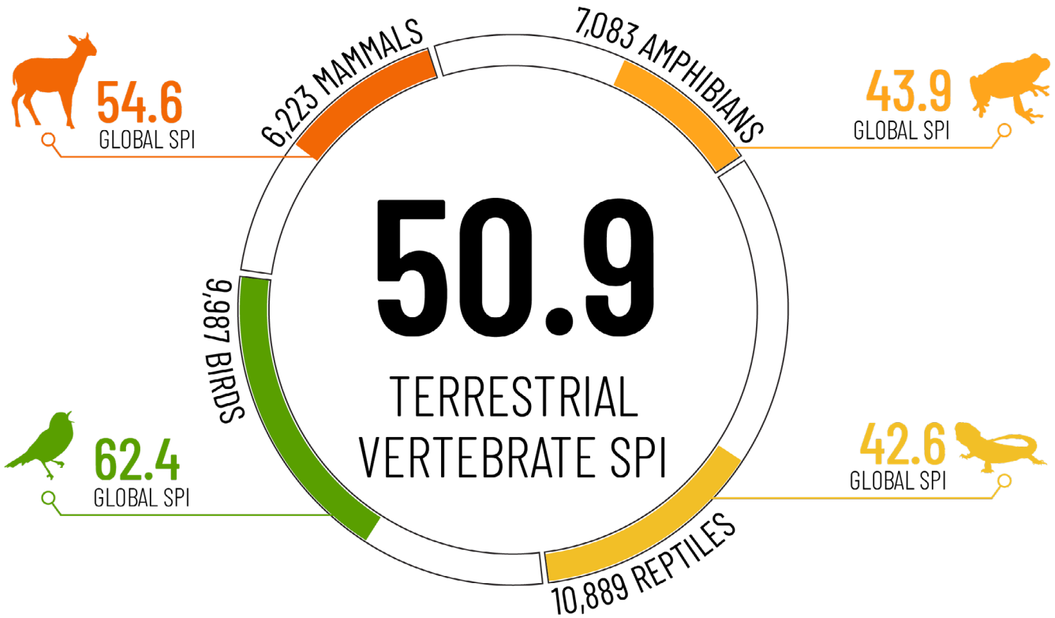
Several changes have happened, which can be confirmed through the monthly WDPA update reports: in December of 2024, Madagascar's Ministry of Environment, with support from the Regional Centre for Mapping of Resources for Development, updated several protected areas to provide the status year, which was previously missing in the database, and added several existing areas to the database. So, since last year's SPI report, Madagascar has gained about 6% of protected area and a resulting 21-point increase in SPI thanks in part to enhanced reporting efforts and in part thanks to new protected area designations.

SECTION 2

GLOBAL OVERVIEW

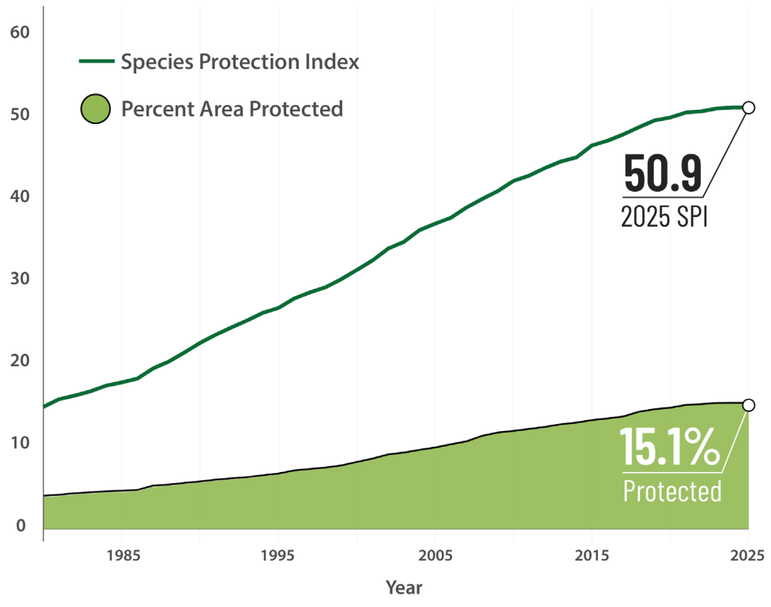
Long-tailed Salamander
Eurycea longicauda
72 *SPS*

KEY GLOBAL TAKEAWAYS: TERRESTRIAL VERTEBRATES



Global terrestrial vertebrate SPI has increased by **3.1 points** in the last year.

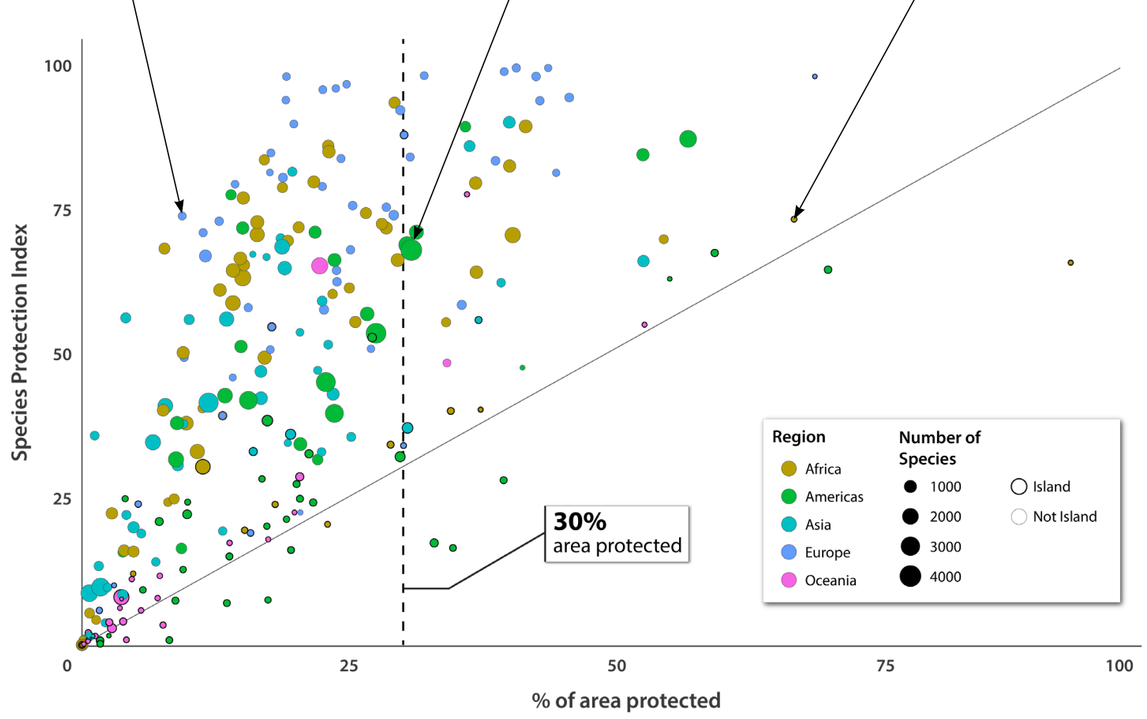
In the past year, more than 70 countries added or upgraded their conservation areas and/or updated their reporting of existing areas. This has translated to a substantial increase in the global SPI, an improvement felt across all four taxonomic groups.



Belarus has achieved an SPI of 74 with just 9% of its land area under protection. Its conservation burden is relatively low, with just over 300 species and no endemic species included in the SPI analysis.

Brazil has the highest number of terrestrial vertebrates in the world with over 4000 species. For terrestrial vertebrates, it has achieved an SPI of 68 with 31% of land area protected.

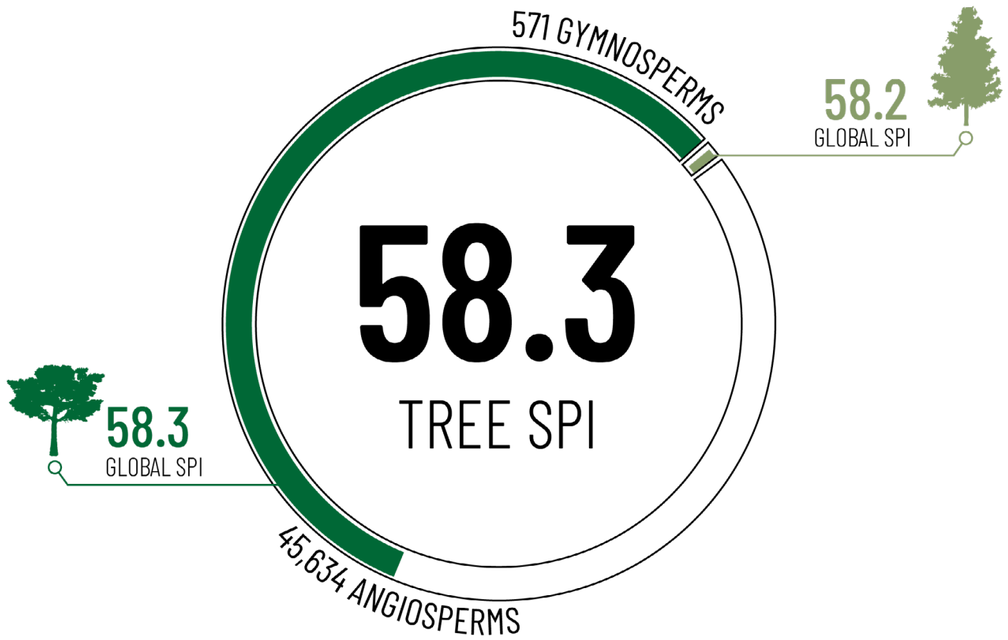
The small island of Réunion has less than 100 native terrestrial vertebrates, many of them endemic. It has achieved an SPI of 74 with a relatively high 66% of area protected.



Just 20% of all countries have **at least 30%** of their land area protected, and islands are falling behind in SPI.

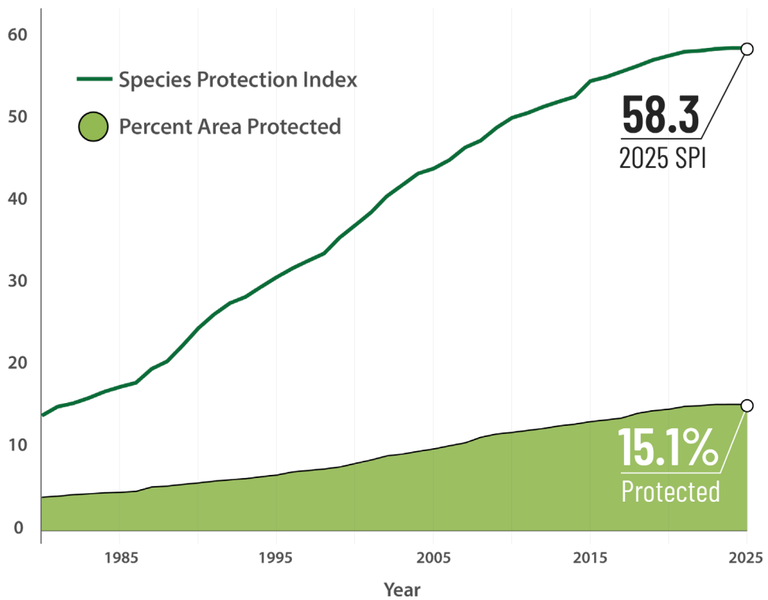
About one-fifth of all countries have at least 30% of their area protected, but the SPIs differ greatly. Island nations saturate the low-SPI section, and all of the countries with a percent protected to SPI ratio below the 1:1 line are islands. Islands tend to have several small range endemic species, which represent a greater conservation burden to those countries. Countries with a high number of species tend to sit in the middle – this is also unsurprising as high biodiversity equals a greater conservation burden.

KEY GLOBAL TAKEAWAYS: TREES



Global tree SPI has risen by **44 points** since 1980.

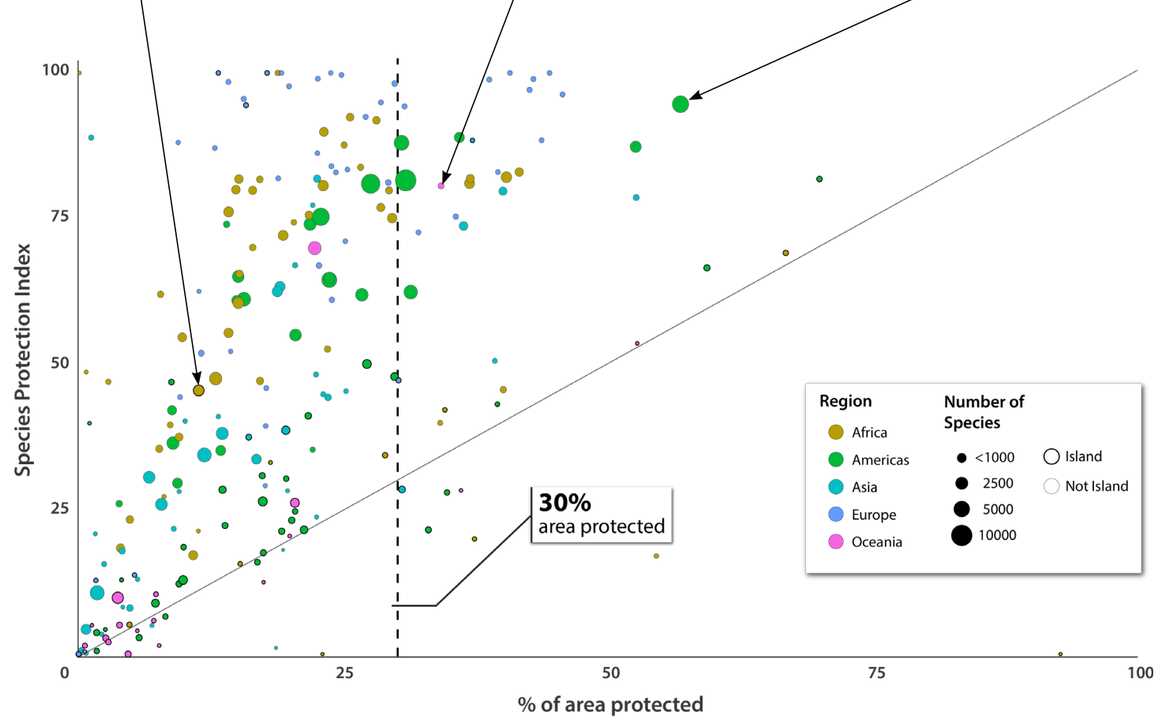
Tree SPI has risen faster than terrestrial vertebrate SPI, with an SPI 7.4 points higher than the terrestrial vertebrates. But, this pattern is not observed equally across all subregions or countries, with many factors potentially contributing to different successes in protecting the two groups.



With nearly 3,000 tree species included in the analysis, Madagascar has achieved a tree SPI of 47 with 13% of its land under protection, while its terrestrial vertebrate SPI stands 15 points higher at 62.

New Zealand has the highest tree SPI in Oceania at 81, which is considerably higher than its terrestrial vertebrate SPI of 49. Most of its 258 tree species are endemic.

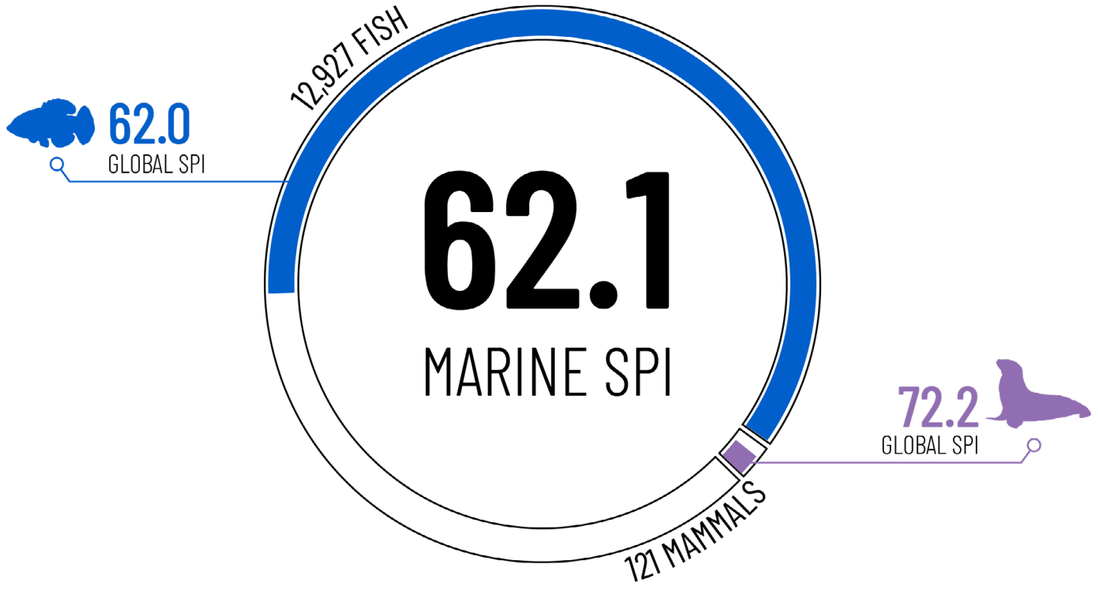
Venezuela boasts the highest tree SPI in its subregion, achieving an SPI of 95 with 57% of its land area protected. It is also the fourth most tree species-rich country according to the data included in the analysis, with nearly 6000 species.



Trees appear to be better protected than terrestrial vertebrates, but this pattern differs around the world.

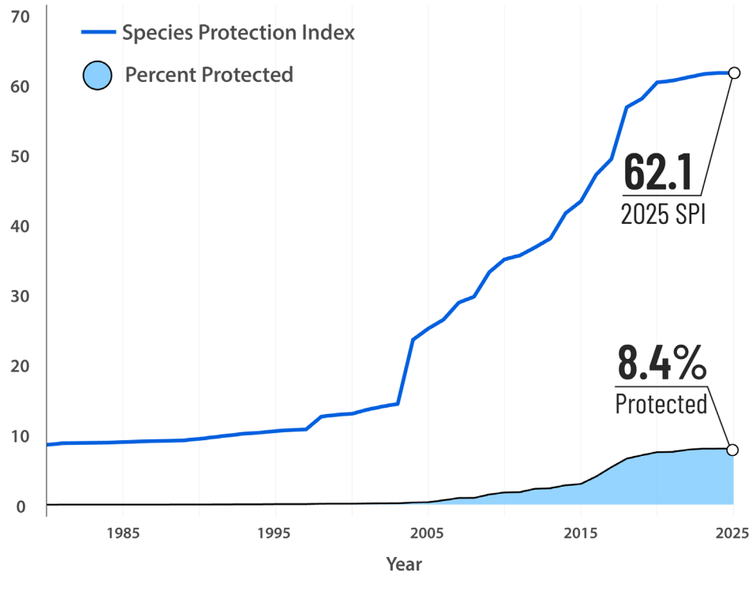
Similar to the terrestrial vertebrate SPI, the high-SPI section of the tree SPI graph above is saturated with European and African countries; however, we see that American countries sit higher in the tree SPI graph, reflecting the higher average tree SPI in the Latin America and the Caribbean subregion compared to its terrestrial vertebrate SPI.

KEY GLOBAL TAKEAWAYS: MARINE



Global marine SPI has increased by **2.3 points** in the last year.

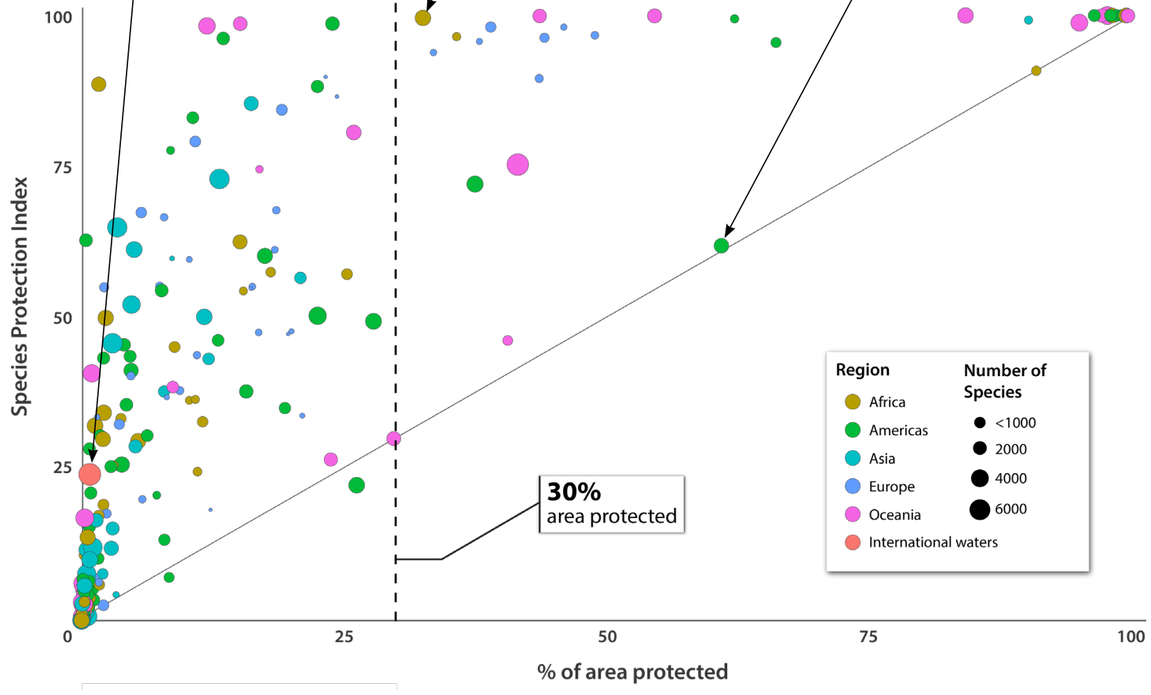
In the past year, the SPI of more than 30 EEZs increased by at least 1 point. Several islands achieved near-complete protection of their EEZs, and the SPI of international waters increased by 5 points. 8.4% of the world's oceans are currently protected.



International waters, which harbor nearly 7,000 fish and marine mammals, have just 0.7% of their area under protection and an SPI of 24.

The Seychelles have achieved a near-perfect SPI with just 32% of their EEZ protected and nearly 3,000 marine mammal and fish species.

The Hawaiian Islands have 61% of their EEZ protected but an SPI of just 62. With hundreds of endemic reef fishes, the marine conservation burden for Hawaii is very high, contributing to this low percent protected to SPI ratio.

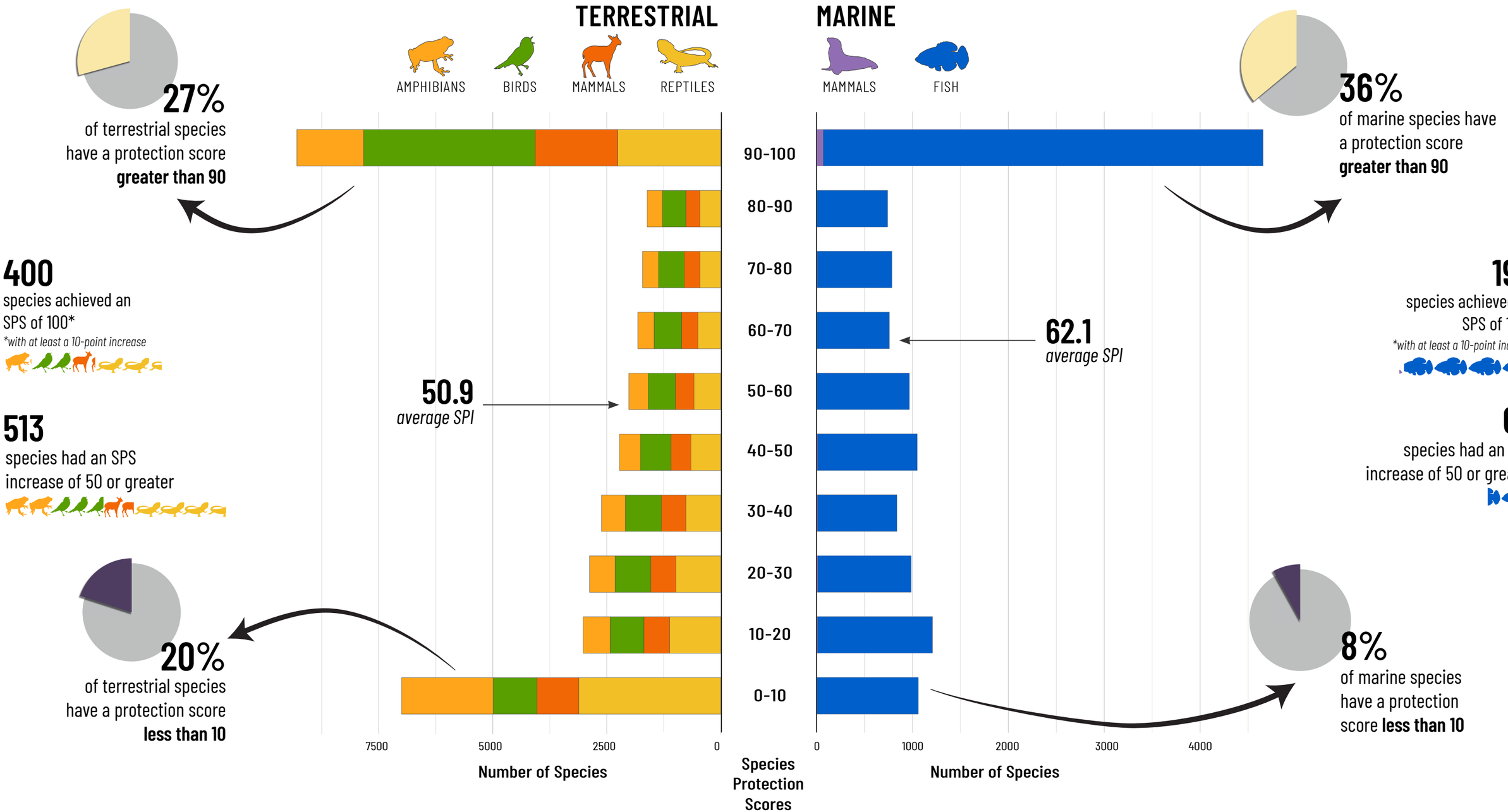


Less than 20% of all EEZs have at least 30% of their waters protected, but several EEZs have achieved near-perfect SPIs.

Less than one-fifth of all EEZs have at least 30% of their area protected. Nearly all EEZs have a percent protected to SPI ratio above the 1:1 line, but dozens of EEZs remain virtually unprotected, with nearly one hundred EEZs having less than 1% of their area under protection. Oceania performs much better in marine SPI than terrestrial, with several EEZs having near perfect scores.

KEY GLOBAL TAKEAWAYS: VERTEBRATE SPECIES

Since the SPI is based on species-level calculations, we can investigate not only regional and national aggregates but also the distribution of species scores. Terrestrial and marine vertebrate species show a striking contrast: whereas the score distribution of terrestrial species peaks at both 90-100 and 0-10, marine species peak only at 90-100. The taxonomic breakdowns within also reveal differing patterns for different species groups.



SECTION 3

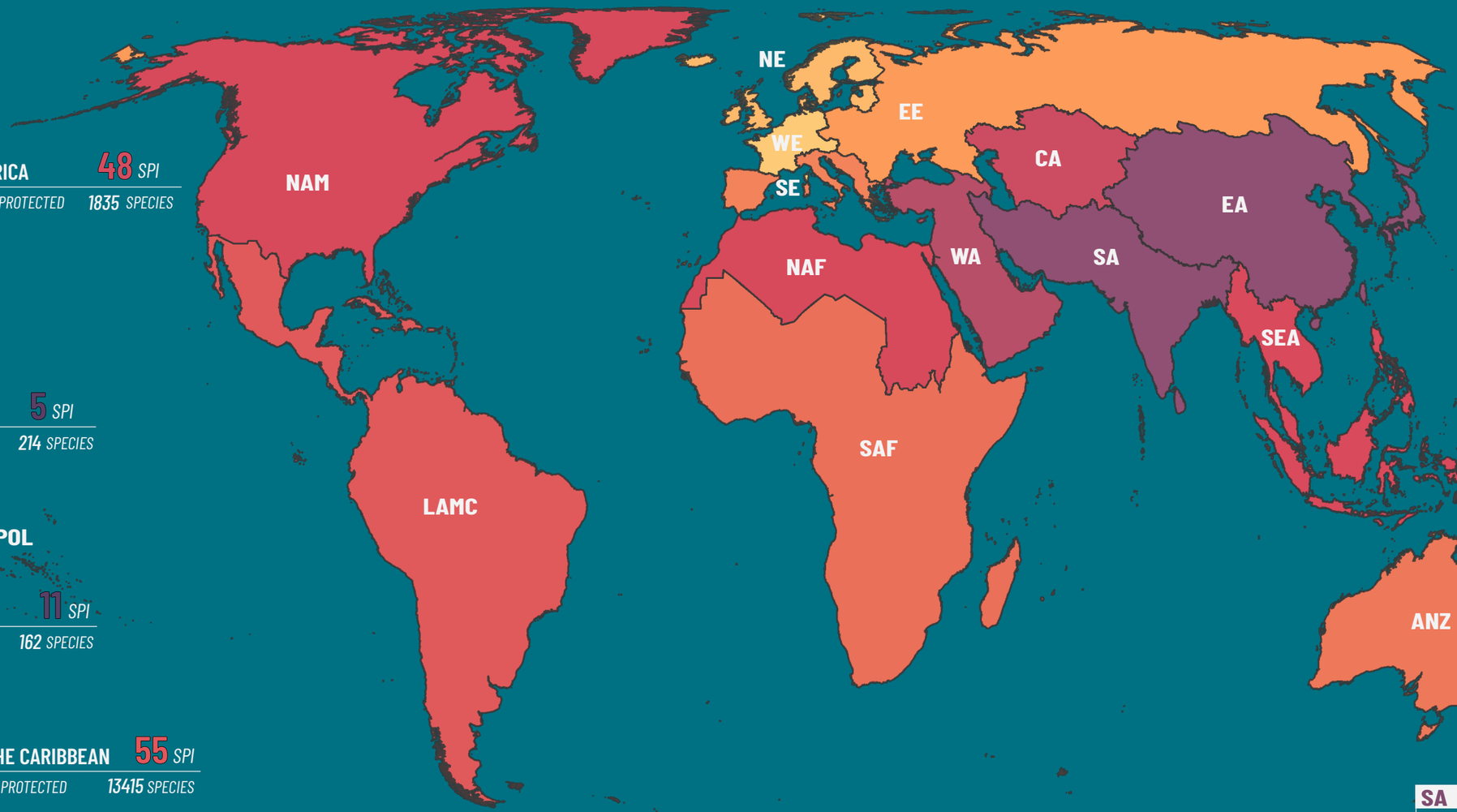
TERRESTRIAL VERTEBRATE SPI

Yucatán Wren
Campylorhynchus yucatanicus
6 *SPS*

TERRESTRIAL VERTEBRATE SPI: SUBREGIONAL

This map shows 2025 terrestrial vertebrate SPI at the subregional level. Western Europe has the highest overall SPI at 91, followed by Northern Europe and Eastern Europe. Southern Europe, Australia & New Zealand, Sub-Saharan Africa, and Latin America & the Caribbean all have overall SPIs greater than 50.

0 — 2025 SPI — 100



NE NORTHERN EUROPE 86 SPI
16 COUNTRIES 21% PROTECTED 433 SPECIES

EE EASTERN EUROPE 75 SPI
10 COUNTRIES 13% PROTECTED 1115 SPECIES

WE WESTERN EUROPE 92 SPI
9 COUNTRIES 33% PROTECTED 557 SPECIES

SE SOUTHERN EUROPE 68 SPI
16 COUNTRIES 27% PROTECTED 862 SPECIES

WA WESTERN ASIA 36 SPI
18 COUNTRIES 12% PROTECTED 1302 SPECIES

CA CENTRAL ASIA 44 SPI
5 COUNTRIES 10% PROTECTED 838 SPECIES

NAM NORTHERN AMERICA 48 SPI
5 COUNTRIES 16% PROTECTED 1835 SPECIES

EA EASTERN ASIA 22 SPI
7 COUNTRIES 5% PROTECTED 3248 SPECIES

SEA SOUTHEASTERN ASIA 49 SPI
11 COUNTRIES 14% PROTECTED 6601 SPECIES

MIC MICRONESIA 5 SPI
8 COUNTRIES 2% PROTECTED 214 SPECIES

POL POLYNESIA 11 SPI
10 COUNTRIES 4% PROTECTED 162 SPECIES

MEL MELANESIA 9 SPI
5 COUNTRIES 4% PROTECTED 2046 SPECIES

LAMC LATIN AMERICA & THE CARIBBEAN 55 SPI
52 COUNTRIES 25% PROTECTED 13415 SPECIES

SA SOUTHERN ASIA 22 SPI
9 COUNTRIES 6% PROTECTED 3377 SPECIES

NAF NORTHERN AFRICA 49 SPI
7 COUNTRIES 21% PROTECTED 1386 SPECIES

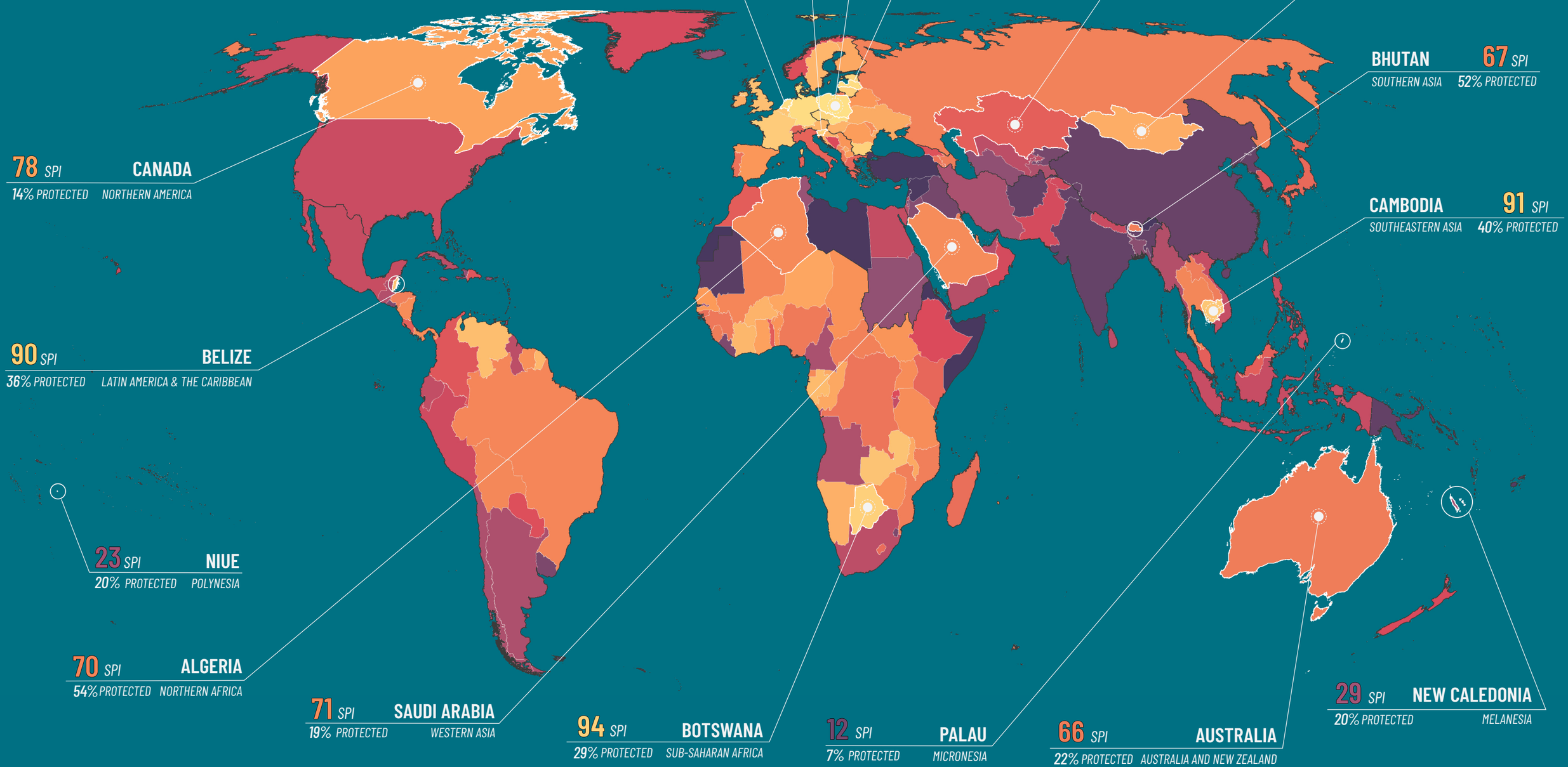
SAF SUB-SAHARAN AFRICA 62 SPI
53 COUNTRIES 18% PROTECTED 6914 SPECIES

ANZ AUSTRALIA & NEW ZEALAND 64 SPI
6 COUNTRIES 23% PROTECTED 2469 SPECIES

TERRESTRIAL VERTEBRATE SPI: NATIONAL

This map displays national 2025 terrestrial vertebrate SPI. For each subregion, we've highlighted a country with one of the highest SPIs in the subregion. Compared to the 2024 SPI report, two new countries have claimed the highest SPI spot in their subregion: Latvia in Northern Europe and Saudi Arabia in Western Asia.

0 — 2025 SPI — 100



78 SPI — **CANADA**
14% PROTECTED — NORTHERN AMERICA

90 SPI — **BELIZE**
36% PROTECTED — LATIN AMERICA & THE CARIBBEAN

23 SPI — **NIUE**
20% PROTECTED — POLYNESIA

70 SPI — **ALGERIA**
54% PROTECTED — NORTHERN AFRICA

71 SPI — **SAUDI ARABIA**
19% PROTECTED — WESTERN ASIA

99 SPI — **NETHERLANDS**
32% PROTECTED — WESTERN EUROPE

94 SPI — **SLOVENIA**
43% PROTECTED — SOUTHERN EUROPE

100 SPI — **POLAND**
41% PROTECTED — EASTERN EUROPE

99 SPI — **LATVIA**
19% PROTECTED — NORTHERN EUROPE

56 SPI — **KAZAKHSTAN**
10% PROTECTED — CENTRAL ASIA

82 SPI — **MONGOLIA**
20% PROTECTED — EASTERN ASIA

67 SPI — **BHUTAN**
52% PROTECTED — SOUTHERN ASIA

91 SPI — **CAMBODIA**
40% PROTECTED — SOUTHEASTERN ASIA

94 SPI — **BOTSWANA**
29% PROTECTED — SUB-SAHARAN AFRICA

12 SPI — **PALAU**
7% PROTECTED — MICRONESIA

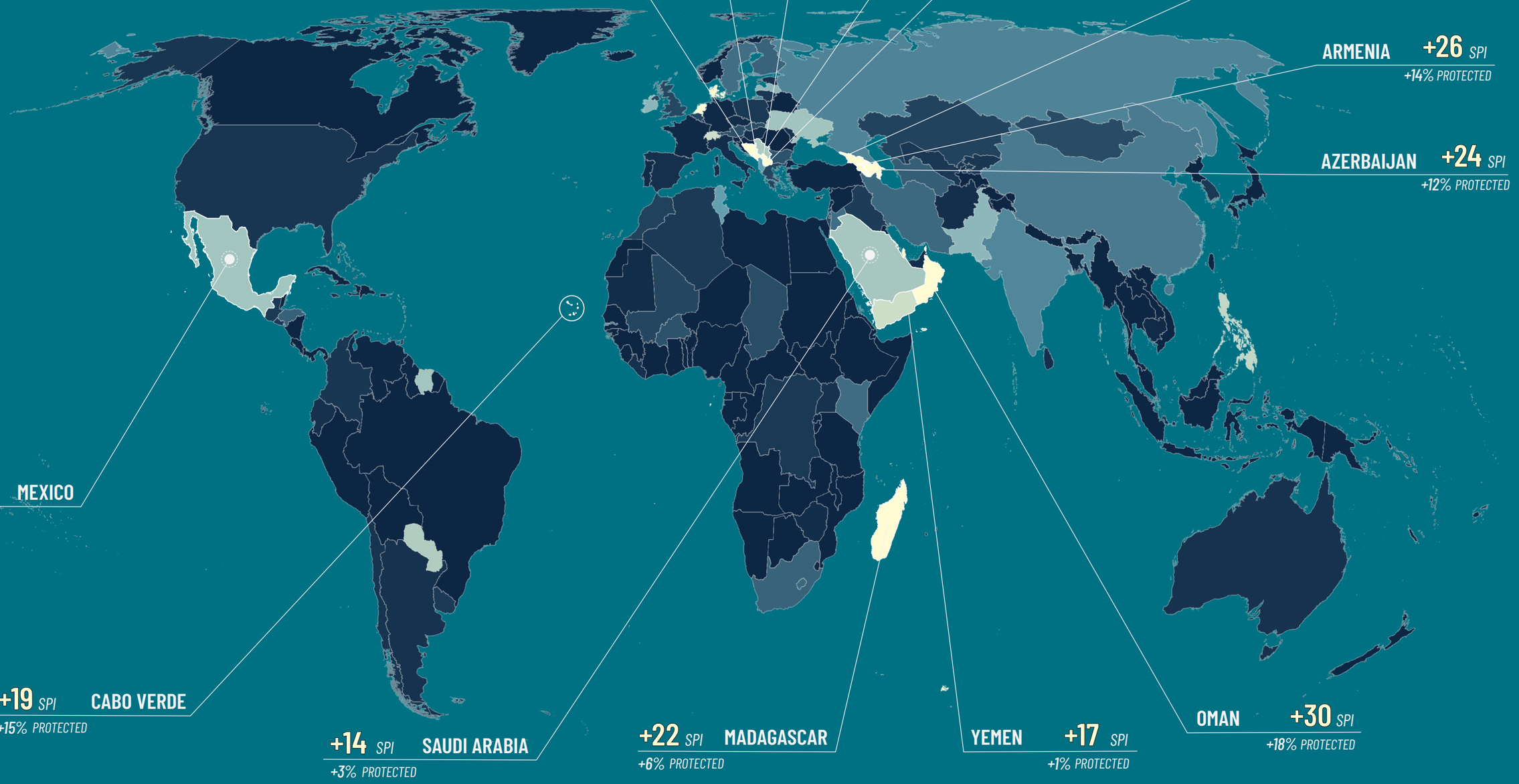
66 SPI — **AUSTRALIA**
22% PROTECTED — AUSTRALIA AND NEW ZEALAND

29 SPI — **NEW CALEDONIA**
20% PROTECTED — MELANESIA

TERRESTRIAL VERTEBRATE SPI: CHANGE

Since the 2024 SPI report, global terrestrial vertebrate SPI has increased by 3.1 points. This map displays global, country-level change in SPI and highlights some of the countries with the largest terrestrial SPI increases between the 2024 SPI and the new 2025 SPI.





+14 *SPI* **MEXICO**
+5% PROTECTED

+19 *SPI* **CABO VERDE**
+15% PROTECTED

+14 *SPI* **SAUDI ARABIA**
+3% PROTECTED

+22 *SPI* **MADAGASCAR**
+6% PROTECTED

+27 *SPI* **BOSNIA**
+5% PROTECTED

+24 *SPI* **MONTENEGRO**
+11% PROTECTED

KOSOVO **+63** *SPI*
+19% PROTECTED

SERBIA **+15** *SPI*
+3% PROTECTED

NORTH MACEDONIA **+24** *SPI*
+14% PROTECTED

GEORGIA **+24** *SPI*
+12% PROTECTED

ARMENIA **+26** *SPI*
+14% PROTECTED

AZERBAIJAN **+24** *SPI*
+12% PROTECTED

YEMEN **+17** *SPI*
+1% PROTECTED

OMAN **+30** *SPI*
+18% PROTECTED

TERRESTRIAL VERTEBRATE SPECIES PROTECTION SUCCESSES

Within the latest version of the SPI, several terrestrial vertebrate species have seen substantial increases in their species protection scores, thanks to a combination of newly designated protected areas and improved reporting to the WDPA. Let's look at a few examples.

Böhme's Bright-eyed Frog

Boophis boehmei



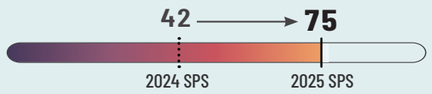
EN

Total Habitat Area:
6,850 km²

Protection Target:
6,850 km² (100%)

Area Protected:
5,150 km² (75%)

Protection Score:



Böhme's bright-eyed frog is one of the many endangered endemic species of Madagascar.[3] It lives across forest habitats in the eastern side of the country. Thanks to efforts by Madagascar's Ministry of Environment and the Regional Centre for Mapping of Resources for Development, the statuses of several protected areas across this species range have been updated to "Designated" in the WDPA, thus increasing this species' SPS by more than 30 points. However, this species is still threatened by land development and agriculture and requires additional protection of its dwindling habitat to ensure its survival.

Located in:
Madagascar



Egyptian Spiny-Tailed Lizard

Uromastyx aegyptia



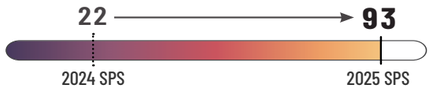
VU

Total Habitat Area:
3,205,000 km²

Protection Target:
480,000 km² (15%)

Area Protected:
449,000 km² (14%)

Protection Score:



The Egyptian spiny-tailed lizard is found across the Arabian Peninsula and into northeastern Egypt. Adapted to desert and shrubland environments, this vulnerable lizard is threatened by habitat loss and degradation as well as increasing human harvesting pressures for the international pet and medicinal trades.[4,5] Several newly established and newly reported protected areas across its range, notably in Oman and Saudi Arabia, have substantially increased its protection score. However, this network of protected areas must be able to effectively address both habitat threats and illegal harvesting in order to adequately protect this species.

Located in:
Oman, Yemen, Saudia Arabia, Qatar, Iran, Jordan, Egypt, Iraq, Kuwait, UAE, Syria



The keel-billed motmot is a vibrant but uncommon vulnerable bird found in scattered populations across southern Mexico and Central America.[6] Forest clearing for housing development and agriculture is the main threat facing this bird. Several protected areas have already been established across its range, and the recent Reserva comunal Tres Pico, covering a large portion of its possible extant range in Mexico, has helped this species achieve a 100 SPS in the past year. It is crucial that suitable habitat for this species is preserved, and strengthened management of old and new protected areas is needed to protect these habitats from further clearing and degradation.

Located in:
Mexico, Belize, Guatemala, Honduras, Nicaragua, Costa Rica



Keel-billed Motmot

Electron carinatum

Total Habitat Area:
47,400 km²

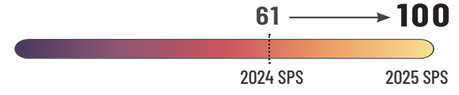
Protection Target:
28,000 km² (59%)

Area Protected:
28,300 km² (60%)



VU

Protection Score:



The eastern tur is a goat-like species that lives across the Caucasus Mountains in Georgia, Russia, and Azerbaijan. Poaching is the biggest threat to this species, which has legal protection in Georgia but is hunted by permit in Azerbaijan and Russia. Competition with grazing livestock and habitat degradation also threaten the Eastern Tur,[7,8] and avalanches pose a significant non-human threat as well. It is classified as near-threatened.[9] Within the last year, significant updates to the WDPA for Georgia and Azerbaijan, facilitated in large part by the Emerald Network, have helped increase this species' protection score; however, important populations, particularly in Dagestan, remain unprotected.

Located in:
Georgia, Russia, Azerbaijan



Eastern Tur

Capra cylindricornis

Total Habitat Area:
31,600 km²

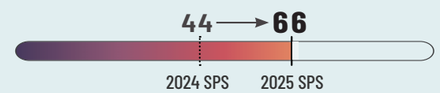
Protection Target:
18,900 km² (60%)

Area Protected:
14,500 km² (46%)



NT

Protection Score:



TERRESTRIAL VERTEBRATE SPECIES PROTECTION GAPS

SPI successes have not happened evenly around the world, and there remain many species with little to no protection over their habitats and many gaps in country reporting to the WDPA. Let's look at a few examples of species whose protection scores are still lagging behind.

Oaxacan Mushroomtongue Salamander

Bolitoglossa macrinii



EN

Total Range Area:
3,250 km²

Protection Target:
3,250 km² (100%)

Area Protected:
18 km² (<1%)

As its name suggests, the Oaxacan Mushroomtongue Salamander is endemic to Oaxaca, Mexico in the Sierra Madre del Sur (though its tongue doesn't really resemble a mushroom). It is found in a handful of locations in mixed pine/oak forests and coffee plantations and is threatened by habitat conversion. Though this species is protected under Mexican law, there are practically no protected areas over its habitat, and it is classified as endangered.[10] Establishment of new protected areas with effective maintenance, particularly in the salamander's pine/oak forest habitat, may be crucial for conserving this species.

Protection Score:

1

2025 SPS

Located in:
Mexico



Patagonian Mara

Dolichotis patagonum



NT

Total Range Area:
647,000 km²

Protection Target:
97,000 km² (15%)

Area Protected:
32,300 km² (5%)

The Patagonian Mara is a large, near-threatened[9] rodent found across the lowland forests, scrublands, and grasslands of Argentina.[12,13] Despite its large range, it is not locally abundant and has suffered localized extinctions in the past several decades.[14] Major threats against this species include habitat destruction for agriculture and hunting for skins, alongside competition with introduced herbivores.[12] Though there are several protected areas across its habitat, the total coverage and protection score are still insufficient. Additional protected area designations that prevent habitat conversion and poaching are needed to conserve this species.

Protection Score:

33

2025 SPS

Located in:
Argentina



The Natal Midlands Dwarf Chameleon is and endangered species endemic to South Africa, occurring in scattered populations across KwaZulu-Natal Province.[15,16,17] While the species is hanging on in peri-urban areas with sufficient vegetation, most of its habitat has been transformed for agriculture, housing development, and plantations. Ongoing habitat loss along with emerging threats from climate change and the pet trade have pushed this species to endangered status.[18,19,20] Very limited protection exists across its remaining habitat, and short of reaching the 100% protection target, any new protected areas that prevent habitat loss and restore previous habitat may help this species persist.



Located in:
South Africa

Natal Midlands Dwarf Chameleon

Bradypodion thamnobates

Total Range Area:
5,680 km²

Protection Target:
5,680 km² (100%)

Area Protected:
230 km² (4%)



EN

Protection Score:

4

2025 SPS

The Growling Imperial Pigeon is a near-threatened species endemic to the islands of the Bismarck Archipelago of Papua New Guinea, where it lives in old growth forests.[21] Like other forest-dependent species on these islands, this species is threatened by habitat degradation, logging, and conversion of forests to oil palm plantations, although its level of tolerance to degraded forest habitat is not well studied.[22] Protected areas are very scarce over this pigeon's range, and conservation may be challenging given other land use demands.



Located in:
Papau New Guinea

Growling Imperial Pigeon

Ducula finschii

Total Range Area:
33,200 km²

Protection Target:
22,500 km² (68%)

Area Protected:
2,300 km² (7%)



NT

Protection Score:

1

2025 SPS

SECTION 3

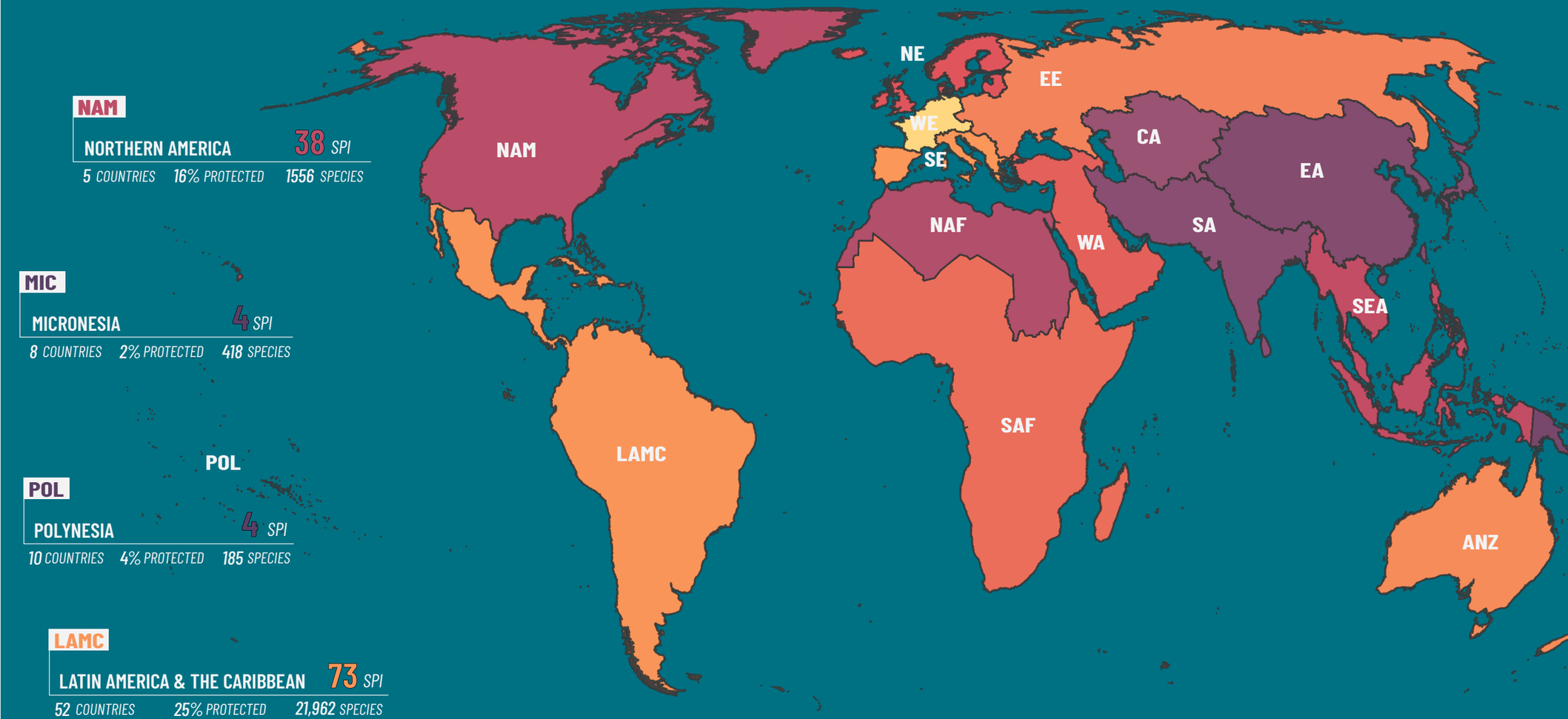
TREE SPI

Olive Mallee
Eucalyptus olivina
74 *SPS*

TREE SPI: SUBREGIONAL

This map shows 2025 tree SPI at the subregional level. Latin America and the Caribbean, Melanesia, and Western Asia all have a tree SPI at least 10 points greater than their terrestrial vertebrate SPI, while Northern America, Northern Africa, Central Asia, and Northern Europe all have a tree SPI more than 10 points less than their terrestrial vertebrate SPI.

0 — 2025 SPI — 100



NE NORTHERN EUROPE — 53 SPI
16 COUNTRIES | 21% PROTECTED | 171 SPECIES

EE EASTERN EUROPE — 68 SPI
10 COUNTRIES | 13% PROTECTED | 318 SPECIES

WE WESTERN EUROPE — 97 SPI
9 COUNTRIES | 33% PROTECTED | 235 SPECIES

SE SOUTHERN EUROPE — 75 SPI
16 COUNTRIES | 27% PROTECTED | 327 SPECIES

WA WESTERN ASIA — 57 SPI
18 COUNTRIES | 12% PROTECTED | 394 SPECIES

CA CENTRAL ASIA — 26 SPI
5 COUNTRIES | 10% PROTECTED | 97 SPECIES

EA EASTERN ASIA — 18 SPI
7 COUNTRIES | 5% PROTECTED | 4430 SPECIES

SEA SOUTHEASTERN ASIA — 41 SPI
11 COUNTRIES | 14% PROTECTED | 7872 SPECIES

NAM NORTHERN AMERICA — 38 SPI
5 COUNTRIES | 16% PROTECTED | 1556 SPECIES

MIC MICRONESIA — 4 SPI
8 COUNTRIES | 2% PROTECTED | 418 SPECIES

POL POLYNESIA — 4 SPI
10 COUNTRIES | 4% PROTECTED | 185 SPECIES

MEL MELANESIA — 15 SPI
5 COUNTRIES | 4% PROTECTED | 3452 SPECIES

LAMC LATIN AMERICA & THE CARIBBEAN — 73 SPI
52 COUNTRIES | 25% PROTECTED | 21,962 SPECIES

NAF NORTHERN AFRICA — 34 SPI
7 COUNTRIES | 21% PROTECTED | 302 SPECIES

SAF SUB-SAHARAN AFRICA — 61 SPI
53 COUNTRIES | 18% PROTECTED | 8212 SPECIES

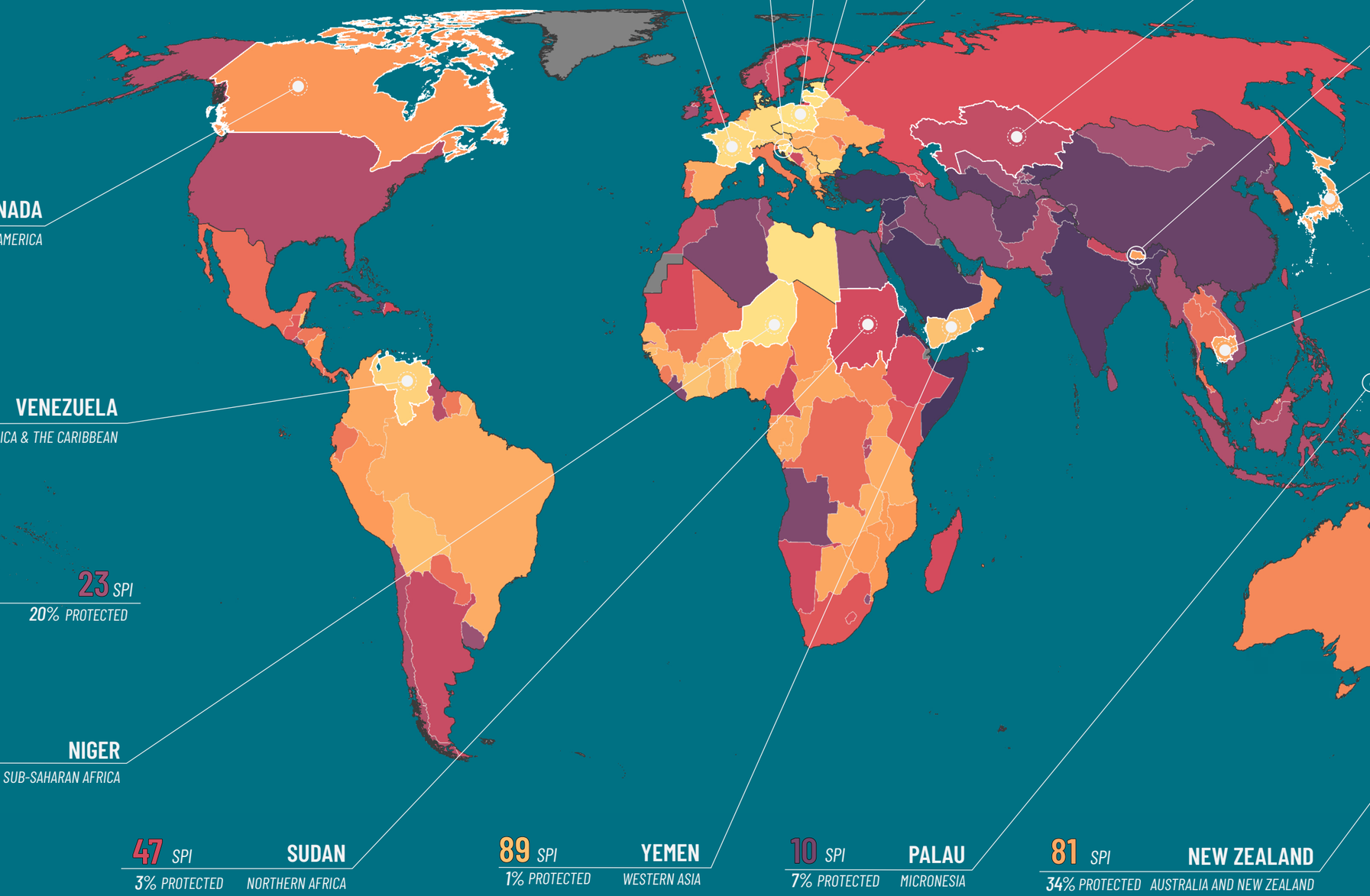
ANZ AUSTRALIA & NEW ZEALAND — 71 SPI
6 COUNTRIES | 23% PROTECTED | 3374 SPECIES

SA SOUTHERN ASIA — 20 SPI
9 COUNTRIES | 6% PROTECTED | 1888 SPECIES

TREE SPI: NATIONAL

This map displays national 2025 tree SPI. For each subregion, we've highlighted the country with one of the highest SPIs in the subregion. Some are the same as the terrestrial vertebrate SPI highlights, like Cambodia, Bhutan, and New Caledonia, but most subregions have a different country boasting the highest tree SPI and highest terrestrial vertebrate SPI.





74 SPI — **CANADA**
14% PROTECTED — NORTHERN AMERICA

99 SPI — **SLOVENIA**
43% PROTECTED — SOUTHERN EUROPE

98 SPI — **FRANCE**
30% PROTECTED — WESTERN EUROPE

POLAND **100** SPI
EASTERN EUROPE — 41% PROTECTED

LATVIA **100** SPI
NORTHERN EUROPE — 19% PROTECTED

LITHUANIA **100** SPI
NORTHERN EUROPE — 19% PROTECTED

KAZAKHSTAN **40** SPI
CENTRAL ASIA — 10% PROTECTED

BHUTAN **76** SPI
SOUTHERN ASIA — 52% PROTECTED

JAPAN **82** SPI
EASTERN ASIA — 22% PROTECTED

CAMBODIA **80** SPI
SOUTHEASTERN ASIA — 40% PROTECTED

95 SPI — **VENEZUELA**
57% PROTECTED — LATIN AMERICA & THE CARIBBEAN

SAMOA **23** SPI
POLYNESIA — 20% PROTECTED

100 SPI — **NIGER**
19% PROTECTED — SUB-SAHARAN AFRICA

47 SPI — **SUDAN**
3% PROTECTED — NORTHERN AFRICA

89 SPI — **YEMEN**
1% PROTECTED — WESTERN ASIA

10 SPI — **PALAU**
7% PROTECTED — MICRONESIA

81 SPI — **NEW ZEALAND**
34% PROTECTED — AUSTRALIA AND NEW ZEALAND

26 SPI — **NEW CALEDONIA**
20% PROTECTED — MELANESIA

Hooded Butterflyfish
Chaetodon larvatus
39 *SPS*

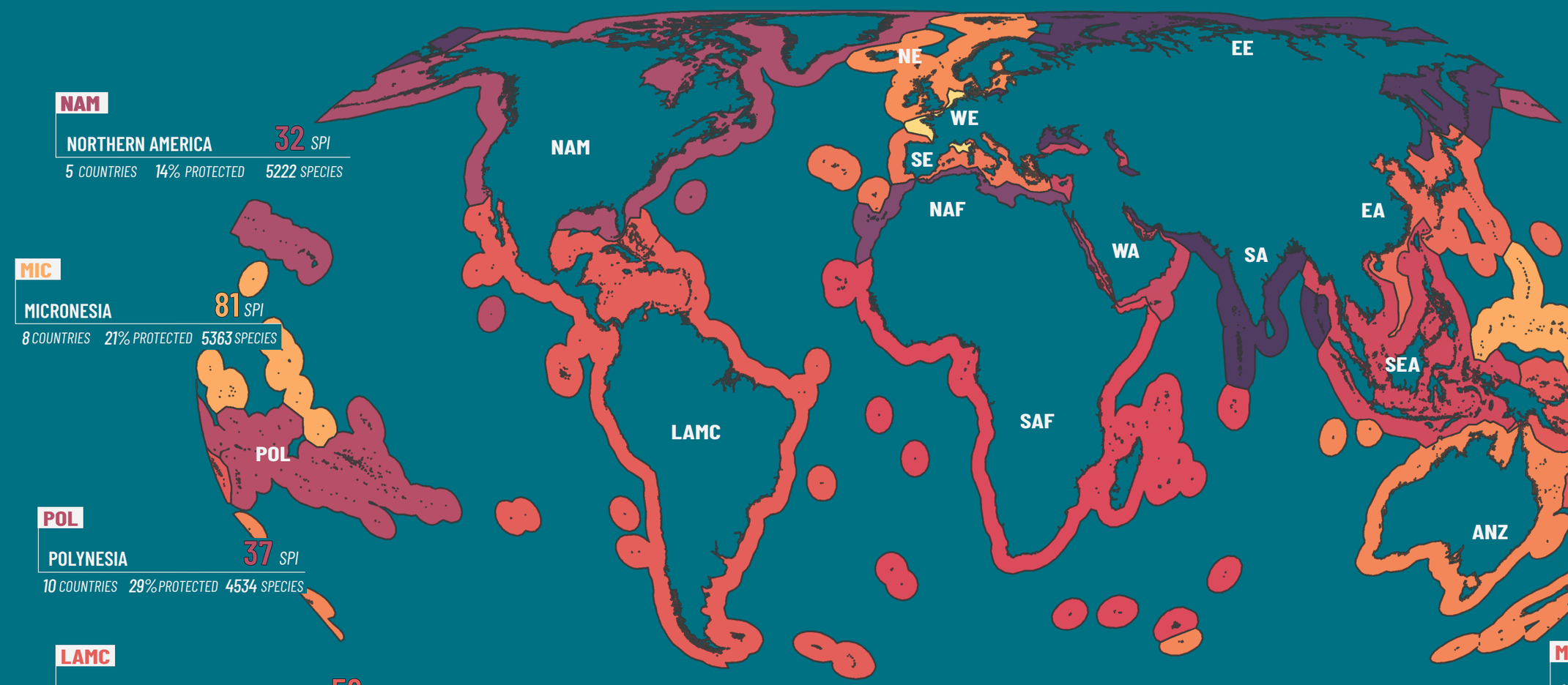
SECTION 4

MARINE SPI

MARINE SPI: SUBREGIONAL

This map shows 2025 marine SPI at the subregional level. Western Europe has the highest overall SPI at 98, followed by Micronesia with an SPI of 81. International waters, not shown on the map, have 0.7% protection coverage and an SPI of 24.

0 — 2025 SPI — 100



NE NORTHERN EUROPE 72 SPI
16 COUNTRIES 11% PROTECTED 767 SPECIES

EE EASTERN EUROPE 5 SPI
10 COUNTRIES 3% PROTECTED 1120 SPECIES

WE WESTERN EUROPE 98 SPI
9 COUNTRIES 39% PROTECTED 1006 SPECIES

SE SOUTHERN EUROPE 64 SPI
16 COUNTRIES 10% PROTECTED 1651 SPECIES

WA WESTERN ASIA 42 SPI
18 COUNTRIES 6% PROTECTED 3284 SPECIES

EA EASTERN ASIA 61 SPI
7 COUNTRIES 10% PROTECTED 5776 SPECIES

NAM NORTHERN AMERICA 32 SPI
5 COUNTRIES 14% PROTECTED 5222 SPECIES

SEA SOUTHEASTERN ASIA 46 SPI
11 COUNTRIES 33% PROTECTED 5679 SPECIES

MIC MICRONESIA 81 SPI
8 COUNTRIES 21% PROTECTED 5363 SPECIES

POL POLYNESIA 37 SPI
10 COUNTRIES 29% PROTECTED 4534 SPECIES

LAMC LATIN AMERICA & THE CARIBBEAN 56 SPI
52 COUNTRIES 26% PROTECTED 5143 SPECIES

MEL MELANESIA 55 SPI
5 COUNTRIES 16% PROTECTED 5184 SPECIES

NAF NORTHERN AFRICA 17 SPI
7 COUNTRIES 2% PROTECTED 3280 SPECIES

SAF SUB-SAHARAN AFRICA 50 SPI
53 COUNTRIES 26% PROTECTED 4664 SPECIES

ANZ AUSTRALIA & NEW ZEALAND 69 SPI
6 COUNTRIES 43% PROTECTED 6743 SPECIES

SA SOUTHERN ASIA 2 SPI
9 COUNTRIES 0.3% PROTECTED 4199 SPECIES

MARINE SPI: EEZ

This map displays 2025 marine SPI at the level of Exclusive Economic Zones. For each subregion, we've highlighted the EEZ with one of the highest SPIs in the subregion.

0 — 2025 SPI — 100

98 SPI **FRANCE**
39% PROTECTED WESTERN EUROPE

96 SPI **UNITED KINGDOM**
44% PROTECTED NORTHERN EUROPE

OMAN **85** SPI
WESTERN ASIA 16% PROTECTED

POLAND **87** SPI
EASTERN EUROPE 24% PROTECTED

BANGLADESH **38** SPI
SOUTHERN ASIA 8% PROTECTED

85 SPI **SPAIN**
19% PROTECTED SOUTHERN EUROPE

JAPAN **73** SPI
EASTERN ASIA 13% PROTECTED

PHILIPPINES **65** SPI
SOUTHEASTERN ASIA 3% PROTECTED

PALAU **100** SPI
MICRONESIA 98% PROTECTED

100 SPI **COOK ISLANDS**
100% PROTECTED POLYNESIA

NEW CALEDONIA **99** SPI
MELANESIA 95% PROTECTED

46 SPI **CANADA**
13% PROTECTED NORTHERN AMERICA

COCOS ISLAND **100** SPI
AUSTRALIA AND NEW ZEALAND 100% PROTECTED

100 SPI **BONAIRE, ST EUSTATIUS, & SABA**
99% PROTECTED LATIN AMERICA & THE CARIBBEAN

63 SPI **SUDAN**
15% PROTECTED NORTHERN AFRICA

SEYCHELLES **100** SPI
SUB-SAHARAN AFRICA 33% PROTECTED

MARINE SPI: CHANGE

Since the 2024 SPI report, global marine SPI has increased by 2.3 points. This map displays global, EEZ-level change in SPI and highlights some of the countries with the largest marine SPI increases between the 2024 SPI and the new 2025 SPI.

0 POINT INCREASE 20+



+6 SPI CAPE VERDE
+0.1% PROTECTED

UNITED KINGDOM +16 SPI
10% PROTECTED

YEMEN +8 SPI
+0.4% PROTECTED

OMAN +80 SPI
+16% PROTECTED

BANGLADESH +16 SPI
+2% PROTECTED

+33 SPI MEXICO
+17% PROTECTED

+16 SPI BELIZE
+11% PROTECTED

+12 SPI ANTIGUA AND BARBUDA
+0.3% PROTECTED

+100 SPI SAINT HELENA
+100% PROTECTED

+7 SPI MADAGASCAR
+0.3% PROTECTED

+100 SPI CHRISTMAS ISLAND
+84% PROTECTED

MACQUARIE ISLAND +21 SPI
+66% PROTECTED

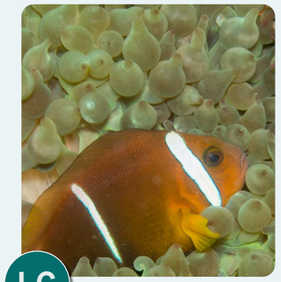
COCOS (KEELING) ISLAND +99 SPI
+99% PROTECTED

MARINE SPECIES PROTECTION SUCCESSES

Within the latest version of the SPI, several marine vertebrate species around the world have seen substantial increases in their species protection scores, thanks to a combination of newly designated protected areas and improved reporting to the WDPA. Let's look at a few examples.

Oman Anemonefish

Amphiprion omanensis



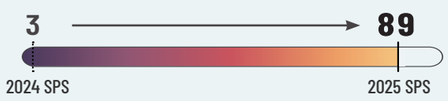
LC

Total Range Area:
41,500 km²

Protection Target:
41,500 km² (100%)

Area Protected:
37,000 km² (89%)

Protection Score:



The Oman anemonefish is found in the coral reefs off the coast of Oman and the Socotra Archipelago, where it lives commensally with sea anemones like other members of its genus.[23] Though the species is currently considered least concern,[24] Oman's coral reefs continue to face threats from coastal pollution and climate change. The Oman anemonefish's protection score has skyrocketed thanks to the recent establishment and reporting of two large marine protected areas – the Arabian Sea Reserve and the Marine Mammals Reserve. The latter was originally established to conserve an important subpopulation of the humpback whale, but increased protection and management of the area will likely benefit many other species residing within.

Located in:
Arabian Sea (Oman, Yemen)



Grey Seal

Halichoerus grypus



LC

Total Range Area:
2,388,000 km²

Protection Target:
362,000 km² (15%)

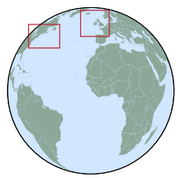
Area Protected:
362,000 km² (15%)

Protection Score:



The grey seal ranges throughout the sub-arctic North Atlantic continental shelves with three distinct geographic subpopulations inhabiting the Northwest Atlantic, Northeast Atlantic, and Baltic Sea.[25,26] Though grey seal populations have had a tumultuous past and are still threatened by fishing gear and pollution, these days the species is considered least concern.[27] This species is one of the few marine mammals that has reached its protection target in the past year, in part thanks to the establishment (and formal reporting) of several new marine protected areas in northern and western Europe, particularly within the United Kingdom exclusive economic zone.

Located in:
Coastal North Atlantic (Western and Northern Europe, Iceland, and Eastern North America)



The short-beaked garfish is an epipelagic species found in the waters of the Atlantic Ocean off the coast of western Europe and throughout the Mediterranean Sea, where it is fairly common and also harvested in commercial fisheries.[28] This species is one of the many that have fully met their protection targets in the past year thanks to improved reporting to the WDPA and the establishment of several new marine protected areas over their range, particularly in the United Kingdom exclusive economic zone and in areas across the Mediterranean. Though not endangered itself,[29] many other species with varying threat statuses have also benefitted from these areas, but more conservation efforts remain to be done.



Located in:
Mediterranean, North Atlantic (Western Europe)

Short-beaked Garfish

Belone svetovidovi

Total Range Area:
7,264,000 km²

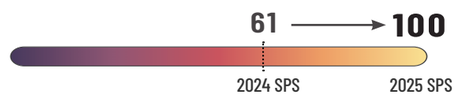
Protection Target:
1,017,000 km² (14%)

Area Protected:
1,129,700 km² (16%)



LC

Protection Score:



The slantband wrasse is a little-studied species known only from a few individuals found in the shallow waters off the coast of Oman and Socotra Island, where it probably inhabits coral reefs.[30] Lack of information about this species' populations have hindered threat status assessment, thus the species being listed as data deficient.[31] However, thanks in large part to the new marine protected areas declared in Oman's exclusive economic zone, the majority of this species' predicted habitat is now under protected status. As many species go extinct before they have even been sufficiently studied, conserving critical habitats can help prevent the loss of yet-to-be-studied species.



Located in:
Arabian Sea (Oman)

Slantband Wrasse

Thalassoma loxum

Total Range Area:
36,800 km²

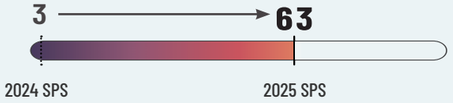
Protection Target:
36,800 km² (100%)

Area Protected:
23,100 km² (63%)



DD

Protection Score:



MARINE SPECIES PROTECTION GAPS

SPI successes have not happened evenly around the world, and there remain many species with little to no protection over their habitats and many gaps in country reporting to the WDPA. Let's look at a few examples of species whose protection scores are still lagging behind.

Burmeister's Porpoise

Phocoena spinipinnis



NT

Total Range Area:
880,700 km²

Protection Target:
326,000 km² (37%)

Area Protected:
21,500 km² (2%)

Protection Score:

7

2025 SPS

Burmeister's porpoise is found in the nearshore waters of South America from Peru to southern Brazil, where it occurs at low densities.[32] This species is not well studied, but due to its restricted range, apparent low abundance, and a lack of clarity on the isolation of different subpopulations, Burmeister's porpoise is considered near threatened.[33] Several intensive fisheries exist across its range, and in these areas this species is often victim to bycatch. It is also intentionally harvested in some parts of its range, particularly in Peruvian waters.[34,35] The coastal waters of South America are in general not well protected, thus this species is one of many with very low protection scores.

Located in:
Atlantic and Pacific Oceans (coastal South America)



Atlantic Humpback Dolphin

Sousa teuszii



CR

Total Range Area:
418,000 km²

Protection Target:
25,080 km² (56%)

Area Protected:
22,300 km² (5%)

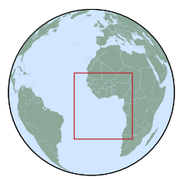
Protection Score:

10

2025 SPS

The Atlantic humpback dolphin is found in small, fragmented populations in the nearshore shallow waters of western Africa,[36,37,38] where it is threatened on multiple fronts, namely bycatch in fisheries[39] and pollution and habitat degradation from coastal development.[40,41] Though there remains a lack of research on this species in some parts of its range, all known populations appear to be in continuing decline, thus the critically endangered status of this species.[42] There are few marine protected areas across its range, and the Atlantic humpback dolphin is in dire need of further targeted conservation efforts.

Located in:
Atlantic Ocean (coastal Western Africa)



The Milne Bay epaulette shark is endemic to the shallow coastal waters of eastern Papua New Guinea, where it is found inhabiting coral reefs, seagrass beds, and rocky outcrops.[43,44] This vulnerable species[45] is harvested by artisanal fishing and is further threatened by habitat loss and degradation, particularly throughout its coral reefs habitats. Conversion of forest to palm oil plantations on nearby coasts, along with other development, are one main causes of habitat degradation, and climate change is another emerging threat. Few marine protected areas exist over its range, but like many coastal species, marine protected areas may not be sufficient to conserve habitat while nearby land development continues to pollute and degrade marine habitat.

Located in:
Solomon Sea (Eastern Papua New Guinea)



Milne Bay Epaulette Shark

Hemiscyllium michaeli

Total Range Area:
334,000 km²

Protection Target:
207,000 km² (62%)

Area Protected:
6,100 km² (2%)



VU

Protection Score:

3

2025 SPS

The West African seahorse is found in the Atlantic Ocean off the coast of West Africa in shallow, silty or sandy waters and among seagrass and macroalgae beds.[46,47,48] Like many of the coastal and nearshore species highlighted in this report, the seahorse is threatened by habitat degradation and pollution from coastal development.[49] In addition, this species is vulnerable to bycatch in large fisheries and is intentionally harvested in artisanal fisheries.[50] All these threats have pushed the West African seahorse into the vulnerable category.[41] Only a few protected areas exist over its range, and far more are needed to reach its protection target.

Located in:
Atlantic Ocean (coastal Western Africa)



West African Seahorse

Hippocampus algiricus

Total Range Area:
270,000 km²

Protection Target:
183,600 km² (68%)

Area Protected:
28,700 km² (11%)



VU

Protection Score:

16

2025 SPS

SECTION 5

CASE STUDIES

Chinese Red Pika
Ochotona erythrotis
0 *SPS*

LAND AND MARINE CONSERVATION IN OMAN

The Oman Environment Authority

The Oman Environment Authority (OEA) leads the development of plans and programs to protect the environment and preserve its natural resources in the Sultanate of Oman. The OEA contributes to the development of the horizons of scientific research in the environmental fields and the collection and application of scientific data for environmental research and management. The OEA is also responsible for spreading awareness and establishing guidelines and requirements among all groups of society for preserving the environment and its resources.

سلطنة عمان
SULTANATE OF OMAN
هيئة البيئة
ENVIRONMENT AUTHORITY

Oman Vision 2040

Oman Vision 2040 is a development program launched by the national government in 2020. One of the twelve national priorities within the program is the environment and natural resources. This pillar of Oman Vision 2040 aims to achieve

> **“Effective, balanced, and resilient ecosystems to protect the environment and ensure sustainability of natural resources to support the national economy.**

This includes the key target of establishing thirty new reserves by 2040. The Sultanate of Oman uses the SPI to align conservation actions with the Sustainable Development Goals and Oman Vision 2040.

One of the Key Performance Indicators for this pillar is the Environmental Performance Index (EPI), an aggregate indicator for tracking states' environmental performance maintained by the Yale Center for Environmental Law and Policy. The SPI is one of the component indicators within the EPI. By 2030, the Vision aims to achieve an EPI of 65.46 or higher (or be within the top 40 countries) and by 2040, an EPI of 74.69 or higher (or be within the top 20 countries).



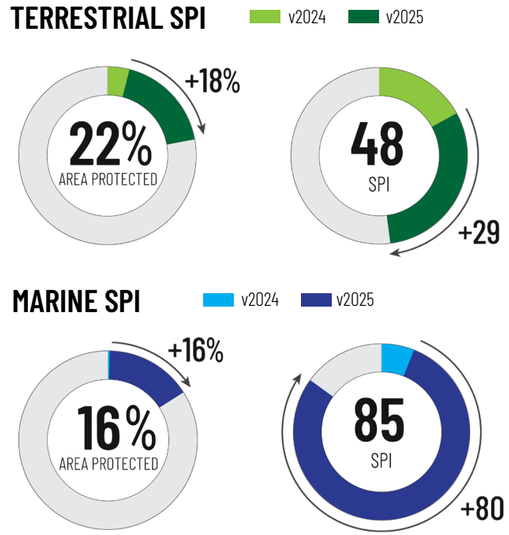
The Al Buraimi Oasis Nature Reserve. © OEA



A lizard in the Western Mountain Nature Reserve. © OEA

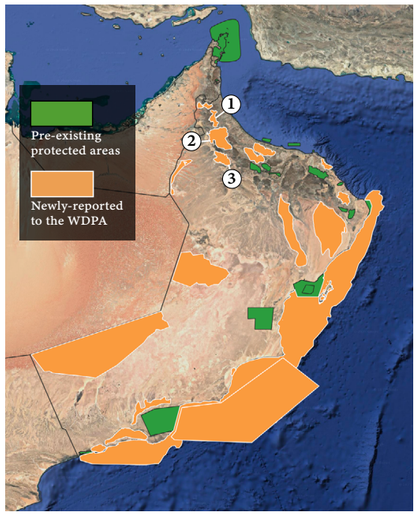
Protected Area Establishment and WDPA Reporting

In the past year, the OEA has assisted in both establishing new protected areas and reporting Oman's protected area data to the WDPA. These efforts, represented by two large pushes to report Oman's data in the March and July 2024 updates of the WDPA, have significantly improved both the terrestrial and marine SPI of the country: with an additional 18% of land area added to protected area networks, Oman's terrestrial SPI has increased by 29 points, and with an additional nearly 16% of marine area coming under legal protection, Oman's marine SPI has shot up by 79 points.





An Arabian tahr living in Al-Dhahirah Nature Reserve. This species is globally endangered, but new reserves over its habitat have increased its SPS by 14 points to 31. © OEA



1 Western Mountain Nature Reserve

This reserve, covering nearly 500 km² of the Hajar Mountains, encompasses the internationally-recognized ancient Semail Ophiolite geologic formations. The diverse montane habitats within support a rich biodiversity, such as the Arabian tahr, Arabian gazelle, red and mountain foxes, and the black hedgehog alongside several migratory birds, like the sand partridge and the lappet-faced vulture, and two reptiles species endemic to the mountain range: Jayakar's lizard and the Oman Saw-scaled Viper.

2 Al Buraimi Oasis Nature Reserve

Located in the mountains of northern Oman, this reserve provides critical habitat for more than 80 recorded plant species and dozens of vertebrates, including the globally threatened Egyptian vulture and Arabian ibex.

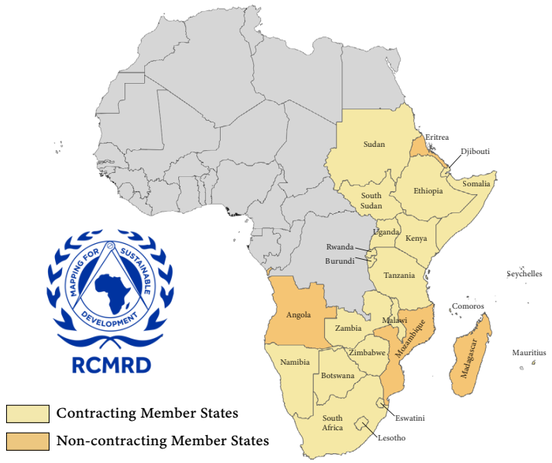
3 Al-Dhahirah Nature Reserve

This reserve, established by royal decree in 2024, harbors more than 70 recorded plant species and several endangered animals, including the Arabian tahr, Arabian gazelle, and caracal.

CONSERVING MARINE ECOSYSTEMS IN SOUTHERN AND EASTERN AFRICA

The Regional Centre for Mapping of Resources for Development (RCMRD)

The RCMRD is an inter-governmental organization established in Nairobi, Kenya in 1975 under the auspices of the United Nations Economic Commission for Africa and the then Organization of African Unity, now African Union. Its 20 member states are Botswana, Burundi, Comoros, Eswatini, Ethiopia, Kenya, Lesotho, Malawi, Mauritius, Namibia, Rwanda, Seychelles, Somalia, South Africa, Sudan, Tanzania, Uganda, Zambia, South Sudan and Zimbabwe. RCMRD's vision is "to be a premier centre of excellence in the provision of geo-information and allied technologies for sustainable development in the member States and other stakeholders." Its mission is "to strengthen the member States and our stakeholders' capacity through generation, application and dissemination of geo-information and allied technologies for sustainable development."



Marine Ecosystem Management Data and Information Needs Workshop

Dar es Salaam, Tanzania, November 26-27 2024

This recent workshop, hosted by the Regional Centre of Excellence (RCoE) for Biodiversity, Forests, and Seascape Ecosystem Management, an initiative spearheaded by the RCMRD, brought together policymakers, researchers, and seascape conservation experts from East and Southern Africa to explore data-driven strategies for sustainable marine ecosystem management. The objectives of the workshop included:



Attendees listen to a presentation at the RCoE Marine Workshop 2024. © RCMRD

- Strengthening the relationships between the RCoE and member countries, particularly institutions that manage marine seascape data on protected and conserved areas.
- Demonstrating the importance of data, information, and knowledge products in decisions related to the effectiveness and governance of marine protected and conserved areas.
- Demonstrating the information management process of the RCoE to encourage member country active engagement.
- Discussing the role RCoE can play in supporting member country monitoring and reporting on Seascape-related targets in the GBF.
- Conducting a marine seascape stakeholder analysis map to help RCoE better understand and meet the interests and needs of users and potential users in member countries.



Attendees listen to a presentation at the RCoE Marine Workshop 2024. © RCMRD

The SPI as a Management Tool

Map of Life partnered with RCoE to provide marine SPI data for this critical workshop. Workshop participants were able to explore lists of marine mammal and fish species for each focal country, analyze the range maps of these species, and demonstrate how the SPI can measure the progress of marine protected areas toward achieving biodiversity conservation targets in the GBF.

Key Workshop Takeaways

The workshop concluded with the signing of a data-sharing agreement, which will help promote collaboration and transparency across member states of the RCMRD to conserve marine ecosystems and species. The workshop attendees also established a set of key goals for future RCoE and RCMRD initiatives:

- Engage communities in marine ecosystem management by developing participatory programs that incorporate indigenous knowledge and traditional practices into conservation strategies.
- Conduct civil education campaigns through targeted outreach to raise awareness about marine conservation's economic and ecological benefits.



A representative from a member country gives a talk at the RCoE Marine Workshop 2024. © RCMRD

- Harmonize regional policies by aligning cross-border agreements to marine conservation efforts, such as standardizing MPA regulations.
- Integrate conservation goals by aligning national policies with international frameworks, such as the GBF.
- Expand the use of GIS, remote sensing, and drones for ecosystem monitoring and enforcement of regulations. This can be boosted by collaborating with private entities to provide funding and technical expertise for technology adoption.
- Continue partnerships between MOL and RCMRD, including increasing species data coverage in the RCoE geoportal

ACKNOWLEDGEMENTS

This report was produced by the Half-Earth Project, a collaborative initiative led by the E.O. Wilson Biodiversity Foundation in partnership with Map of Life at the Yale Center for Biodiversity and Global Change, Vizzuality, and Esri. Funding for the report and for metric development and calculations was provided by the E.O. Wilson Biodiversity Foundation, Google, NASA, and other partners. Thank you to Heather Bingham of the World Conservation Monitoring Center for providing text edits to the World Database on Protected Areas section.

© 2025. Map of Life. Licensed under CC BY-NC-ND 4.0. https://creativecommons.org/licenses/by-nc-nd/4.0/

PHOTO CREDITS

Cover Photo © Tz-Hsuan Tseng
Pages 4-5 © Ivan Kuzmin via AdobeStock
Page 6 © Tz-Hsuan Tseng
Page 7 © Jeremy Cohen
Page 10 (Leaf Dwelling Shrub Frog) © geoffrey-delahaye via iNaturalist
(Yucatan Poorwill) © Juan Bou Riquer via iNaturalist
Page 12 © Jeremy Cohen
Page 13 © Craig via AdobeStock
Pages 14-15 © Mike Wilhelm via AdobeStock
Pages 24-25 © Luis Trinchan via AdobeStock
Page 32 (Böhme's Bright-Eyed Frog) © John Sullivan via iNaturalist
(Egyptian Spiny-Tailed Lizard) © cog2022 via iNaturalist
Page 33 (Keel-Billed Motmot) © Dan Vickers via iNaturalist
(Eastern Tur) © Simon Tonge via iNaturalist
Page 34 (Oaxcan Mushroomtongue Salamander) © Sean Michael Rovito via iNaturalist
(Patagonian Mara) © marcos2005 via iNaturalist
Page 35 (Natal Midland Dwarf Chameleon) © Gus Benson via iNaturalist
(Growling Imperial Pigeon) © Nik Borrow via iNaturalist
Page 36-37 © Dean Nicolle via iNaturalist
Page 42-43 © mirecca via AdobeStock
Page 50 (Oman Anemonefish) © cmarmotte via iNaturalist
(Grey Seal) © Martha de Jong-Lantink via iNaturalist
Page 51 (Short-Beaked Garfish) © Jofre via iNaturalist
(Slantband Wrasse) © Randall, J.E. via iNaturalist
Page 52 (Burmeister's Porpoise) © Daniel Stange via iNaturalist
(Atlantic Humpback Dolphin) © Xavier Rufray via iNaturalist
Page 53 (Milne Bay Epaulette Shark) © Erik Schlogl via iNaturalist
(West African Seahorse) © Luis P. B. via iNaturalist
Pages 54-55 © Tz-Hsuan Tseng
Pages 56-57 © Oman Environment Authority
Pages 58-59 © Regional Center for Mapping of Resources for Development

REFERENCES

1. Jetz W, McGowan J, Rinnan DS, Possingham HP, Visconti P, O'Donnell B, et al. Include biodiversity representation indicators in area-based conservation targets. *Nature Ecology & Evolution.* 2022;6(2):123-6.
2. Powers RP, Jetz W. Global habitat loss and extinction risk of terrestrial vertebrates under future land-use-change scenarios. *Nature Climate Change.* 2019;9(4):323-9.
3. IUCN SSC Amphibian Specialist Group. 2015. *Boophis boehmei* (errata version published in 2016). *The IUCN Red List of Threatened Species* 2015. Accessed on 15 August 2025.
4. Wilms, T., et al. 2012. *Uromastyx aegyptia* (errata version published in 2017). *The IUCN Red List of Threatened Species* 2012. Accessed on 15 August 2025.
5. Knapp, A. 2004. An assessment of the international trade in Spiny-tailed Lizards *Uromastyx* with a focus on the role of the European Union. TRAFFIC Europe. European Commission., Brussels.
6. BirdLife International. 2020. *Electron carinatum. The IUCN Red List of Threatened Species* 2020. Accessed on 15 August 2025.
7. NACRES. 2006. Tur in Georgia: Status Report and Conservation Action Plan. NACRES, Tbilisi.
8. Weinberg, P.I., et al. 1997a. The Commonwealth of Independent States (former USSR). In: D.M. Shackleton (ed.), *Wild Sheep and Goats and their Relatives. Status Survey and Action Plan for Caprinae*, pp. 172-193. IUCN, Gland, Switzerland and Cambridge, UK.
9. Lortkipanidze, B. & Weinberg, P. 2020. *Capra cylindricornis. The IUCN Red List of Threatened Species* 2020. Accessed on 15 August 2025.
10. IUCN SSC Amphibian Specialist Group. 2019. *Bolitoglossa macrinii. The IUCN Red List of Threatened Species* 2019. Accessed on 15 August 2025.
11. Roach, N. 2016. *Dolichotis patagonum. The IUCN Red List of Threatened Species* 2016. Accessed on 15 August 2025.
12. Lacher, T.E., Jr. 2016. Family Caviidae. In: Wilson, D.E., Lacher, T.E., Jr and Mittermeier, R.A. (eds), *Handbook of Mammals of the World. Vol. 6. Lagomorphs and Rodents: Part 1.*, Lynx Editions, Barcelona.
13. Campos, C. M., et al. 2001. *Dolichotis patagonum. Mammalian Species* 652: 1-5.
14. Cabrera, A. 1953. Los roedores argentinos de la familia Caviidae. Publicaciones de la Escuela Veterinaria, Universidad de Buenos Aires 6: 1-93.
15. Tolley, K.A. 2022. *Bradypodion thamnobates.* The IUCN Red List of Threatened Species 2022. Accessed on 15 August 2025.
16. Tilbury, C.R. 2018. *Chameleons of Africa-An Atlas Including the Chameleons of Europe, the Middle East and Asia.* Edition Chimaira, Frankfurt am Main.
17. Tolley, K.A. and Burger, M. 2007. *Chameleons of Southern Africa.* Struik, Cape Town.
18. Rouget, M., et al. 2004. Mapping the potential ranges of major plant invaders in South Africa, Lesotho and Swaziland using climatic suitability. *Diversity and Distributions* 10: 475-484.
19. Schoeman, F., et al. 2013. South African National Land-Cover Change Map. *South African Journal of Geomatics* 2(2): 94-105.
20. Skowno, A.L., et al. 2019. Chapter 7: Ecosystem Assessments. In: Skowno A.L., Raimondo D.C., Poole C.J., Fizzotti B. (ed.), *National Biodiversity Assessment 2018 Technical Report Volume 1: Terrestrial Realm.* South African National Biodiversity Institute, Pretoria.
21. BirdLife International. 2018. *Ducula finschii. The IUCN Red List of Threatened Species* 2018. Accessed on 15 August 2025.
22. Buchanan, G.M., et al. 2008. Using remote sensing to inform conservation status assessment: estimates of recent deforestation rates on New Britain and the impacts on endemic birds. *Biological Conservation* 141(1): 56-66.
23. Lieske, E. and Myers, R. 2004. *Coral Reef Guide – Red Sea.* Harper-Collins, London, U.K.
24. Myers, R., Allen, G. & Rocha, L.A. 2017. *Amphiprion omanensis. The IUCN Red List of Threatened Species* 2017. Accessed on 15 August 2025.
25. Hall, A. 2002. Gray seal *Halichoerus grypus.* In: W. F. Perrin, B. Wursig, J. and G. M. Thewissen (eds), *Encyclopedia of Marine Mammals*, pp. 522-524. Academic Press, San Diego, California, USA.
26. Bonner, W.N. 1981. Grey seal *Halichoerus grypus* Fabricius, 1791. In: S. H. Ridgway and R. Harrison (eds), *Handbook of marine mammals, Vol. 2: Seals*, pp. 111-144. Academic Press.
27. Bowen, D. 2016. *Halichoerus grypus. The IUCN Red List of Threatened Species* 2016. Accessed on 15 August 2025.
28. Dorman, J.A. 1984. *Belone svetovidovi* (Atheriniformes, Belonidae) - A species of garfish new to ireland, with records of other unusual fish from Courtmacsherry Bay. *Irish Naturalist* 21(8): 356-357.
29. Collette, B. 2015. *Belone svetovidovi* (Europe assessment). *The IUCN Red List of Threatened Species* 2015. Accessed on 15 August 2025.
30. Randall, J.E. and Mee, J.K.L. 1994. A new labrid fish of the genus Thalassoma from Oman. *Fauna of Saudi Arabia* 14: 302-308.
31. Pollard, D. & Cabanban, A. 2010. *Thalassoma loxum. The IUCN Red List of Threatened Species* 2010. Accessed on 15 August 2025.
32. Brownell Jr., R. L. and Clapham, P. J. 1999. Burmeister's porpoise *Phocoena spinipinnis* Burmeister, 1865. In: S. H. Ridgway and R. Harrison (eds), *Handbook of marine mammals, Vol. 6: The second book of dolphins and the porpoises,* pp. 393-410. Academic Press.
33. Félix, F., et al. 2018. *Phocoena spinipinnis. The IUCN Red List of Threatened Species* 2018. Accessed on 15 August 2025.
34. Alfaro-Shigueto, J., et al. 2010. Where small can have a large impact: Structure and characterization of small-scale fisheries in Peru. *Fisheries Research* 106(1): 8-17.
35. Mangel, J.C., et al. 2013. Using pingers to reduce bycatch of small cetaceans in Peru's small-scale driftnet fishery. *Oryx* 47(4): 595-606.
36. Jefferson, T. A., et al. 1997. Dolphins and porpoises of West Africa: a review of records (Cetacea: Delphinidae, Phocoenidae). *Mammalia* 61: 87-108.
37. Van Waerebeek, K., et al. 2004. Distribution, status, and biology of the Atlantic humpback dolphin, *Sousa teuszii* (Kukenthal, 1892). *Aquatic Mammals* 30(1): 56-83.
38. Weir, C.R., and Collins, T. 2015. A Review of the Geographical Distribution and Habitat of the Atlantic Humpback Dolphin (*Sousa teuszii*). *Advances in Marine Biology* 72: 79-117.
39. Collins, T., et al. 2010. The Atlantic humpback dolphin (*Sousa teuszii*) in Gabon and Congo: cause for optimism or concern? . Paper SC/62/SM9 presented to the IWC Scientific Committee, June 2010 (unpublished).
40. Perrin, W. F., Van Waerebeek, K. 2007. The small-cetacean fauna of the west coast of Africa and Macaronesia: diversity and distribution. In Western African talks on cetaceans and their habitats, UNEP/CMS-WATCH-Inf. 6. *Convention on the conservation of migratory species of wild animals*, Adeje, Tenerife.
41. Weir, C. R., et al. 2011. West Africa's Atlantic humpback dolphin (*Sousa teuszii*): endemic, enigmatic and soon endangered? *African Zoology* 46: 1-17.
42. Collins, T., Braulik, G.T. & Perrin, W. 2017. *Sousa teuszii* (errata version published in 2018). *The IUCN Red List of Threatened Species* 2017. Accessed on 15 August 2025.
43. Allen, G.R., et al. 2016. Review of the bamboo shark genus *Hemiscyllium* (Orectolobiformes: Hemiscyllidae). *Journal of the Ocean Science Foundation* 23: 51-97.
44. Dudgeon, C.L., et al. 2020. Walking, swimming or hitching a ride? Phylogenetics and biogeography of the walking shark genus *Hemiscyllium. Marine and Freshwater Research.*
45. VanderWright, W.J., et al. 2021. *Hemiscyllium michaeli* (amended version of 2020 assessment). *The IUCN Red List of Threatened Species* 2021. Accessed on 15 August 2025.
46. Mamonekene, V., et al. 2006. Fish Diversity at Rabi and Gamba Ogooue-Maritime Province, Gabon. *Bulletin of the Biological Society of Washington* 12: 285-296.
47. Lourie, S.A., et al. 2004. *A Guide to the Identification of Seahorses.* Project Seahorse and TRAFFIC North America, University of British Columbia and World Wildlife Fund, Washington D.C.
48. Lourie, S.A. 2016. *Seahorses: A Life-Size Guide to Every Species.* The University of Chicago Press, Chicago, Illinois, USA, 160 pp.
49. Portmann, J. E. 1989. State of the marine environment: West and Central African Region. UNEP Regional Seas Reports and Studies No. 108. UNEP.
50. Cisneros-Montemayor, A. M., et al. 2016. An assessment of West African seahorses in fisheries catch and trade. *Journal of Fish Biology* 88(2): 751-759.
51. Pollom, R. 2017. *Hippocampus algiricus. The IUCN Red List of Threatened Species* 2017. Accessed on 15 August 2025.

APPENDIX

Data Sources

Species Range Maps

Species Group	Source
Amphibians	IUCN (2016). The IUCN Red List of Threatened Species. International Union for Conservation of Nature. Accessed on January 2017. Downloaded at www.iucnredlist.org
Birds	Jetz, W., et al. (2012). The global diversity of birds in space and time. *Nature*, (491);444-448. doi.org/10.1038/nature11631
Mammals	Mammal Diversity Database. (2020). Mammal Diversity Database (Version 1.2) [Data set]. Zenodo. doi.org/10.5281/zenodo.4139818. Map of Life. (2021). Mammal range maps harmonised to the Mammals Diversity Database [Data set]. Map of Life. doi.org/10.48600/MOL-48VZ-P413
Marine Fishes	Kaschner, K., et al. (2019). AquaMaps Native: Predicted range maps for aquatic species. Retrieved from https://www.aquamaps.org.
Marine Mammals	Kaschner, K., et al. (2019). AquaMaps Native: Predicted range maps for aquatic species. Retrieved from https://www.aquamaps.org.
Reptiles	Roll, U. and Meiri, S. (2022). GARD 1.7 - updated global distributions for all terrestrial reptiles [Dataset]. Dryad. doi.org/10.5061/dryad.9cnp5hqmb
Trees	Guo, WY., et al. (2023) Climate change and land use threaten global hotspots of phylogenetic endemism for trees. *Nat Commun* 14, 6950. doi.org/10.1038/s41467-023-42671-y
All Groups	Misc. literature and expert sources

Species Habitat Preferences

IUCN Red List of Threatened Species. 2025. Version 2025-2. www.iucnredlist.org. Downloaded on 2025-04-22.
Misc. literature and expert sources

Environmental Layers

Dataset	Source
Elevation	Amatulli, G., et al. (2018) A suite of global, cross-scale topographic variables for environmental and biodiversity modeling. *Scientific Data* (5);180040. doi:10.1038/sdata.2018.40. Available at www.earthenv.org/topography.
Land Cover	ESA. Land Cover CCI Product User Guide Version 2. Tech. Rep. (2017). Version 2022. Available at: maps.elie.ucl.ac.be/CCI/viewer/download/ESACCI-LC-Ph2-PUGv2_2.0.pdf
Tree Cover	Hansen, M. C., et al. (2013) High-Resolution Global Maps of 21st-Century Forest Cover Change. Science 342 (15 November): 850-53. Version 2023. Data available online from: glad.earthengine.app/view/global-forest-change.

Region Layers

Dataset	Source
Country Boundaries	Database of Global Administrative Boundaries (GADM) version 4.1. Available online at gadm.org/data.htm.
Exclusive Economic Zones	Flanders Marine Institute (2019). Maritime Boundaries Geodatabase, version 11. Available online at www.marineregions.org/. https://doi.org/10.14284/382
Protected Areas	UNEP-WCMC and IUCN (2025), Protected Planet: The World Database on Protected Areas (WDPA) and World Database on Other Effective Area-based Conservation Measures (WD-OECM) [Online], January 2025, Cambridge, UK: UNEP-WCMC and IUCN. Available at: www.protectedplanet.net.