



World Heritage

A unique contribution
to biodiversity conservation

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Australian Government



SHORT SUMMARY

The UNESCO World Heritage Convention is unique among international agreements as it deals with both natural and cultural heritage. By conferring one of the highest levels of protection recognized by 195 countries, it ensures a truly global commitment to safeguarding exceptional places.

UNESCO natural World Heritage sites are critical for the conservation of ecosystem integrity and biodiversity. While they make up less than 1% of the Earth's surface, they harbor more than 1/5 of mapped global species richness. This includes over 75,000 species of plants, and over 30,000 species of mammals, birds, fishes, reptiles and amphibians. Cultural World Heritage sites in particular can be an important ally in biodiversity conservation since around 20% of them are located in Key Biodiversity Areas (KBAs).

UNESCO World Heritage sites also represent a safe haven for some of the most threatened species on Earth. They are estimated to protect over 20,000 globally threatened species, and are home to some of the last individuals of many iconic species. Today, up to 1/3 of remaining elephants, tigers and pandas can be found in these sites, as well as at least 1 in 10 great apes, giraffes, lions and rhinos.

However, even these highly protected sites are today threatened by global climate change and human pressures, including agricultural expansion, infrastructure development, poaching, overexploitation of resources and the proliferation of invasive species. Every 1°C increase in temperature could double the number of species exposed to dangerous climate conditions.

Ensuring effective and sustained protection of UNESCO World Heritage sites and surrounding landscapes is crucial for maximizing their value as a solution to tackle the current biodiversity and climate crisis. One way of achieving this is by supporting countries to integrate World Heritage into their National Biodiversity Strategies and Action Plans (NBSAPs), as they are key to implementing the Kunming-Montreal Global Biodiversity Framework (GBF).

UNESCO World Heritage sites harbor more than **1/5 of mapped global species richness**



“UNESCO World Heritage sites are some of the most biodiverse places on Earth, and it’s our collective duty to protect them.”

Audrey Azoulay,
UNESCO Director-General

WHY BIODIVERSITY MATTERS

Biodiversity is the living fabric of our planet – the ecosystems, the species and the genetic diversity of all living organisms upon which life on Earth depends.

Biodiversity is essential for human survival.

Biodiversity is the basis of agricultural and food systems. Biodiversity provides our food and medicine, contributes resources we need for our clothing, housing and fuel, and supports our physical and mental wellbeing.



Marshes in southern Iraq, known as the **Ahwar**, shaped the religious, political, economic, and cultural life of the great Mesopotamian cities dating over 5,000 years. Fed by the Tigris and Euphrates rivers, the region has been pivotal to agricultural innovation and agrobiodiversity.

Biodiversity supports vital ecosystem functions and services.

Biodiversity helps to keep our air, water, and soil clean, generate oxygen, regulate the climate, ensure seed dispersal and pollination, and cool our cities.



The urban setting of the **Singapore Botanic Gardens** has become almost inseparable from this cultural landscape through the pioneering effort of Singapore to become 'a city in a garden' where people and biodiversity thrive together.

Biodiversity protection prevents pandemics.

Measures that reduce unsustainable exploitation of high biodiversity regions help prevent disease transmission between wildlife, livestock and people.



Protection of the World Heritage forests in the Congo Basin is critical in keeping zoonotic diseases in check. Combatting poaching and the bushmeat trade can prevent the spread of diseases like Ebola to human populations.

Biodiversity underpins economic prosperity.

Over half of the world's economy (GDP) is dependent on nature and its services. The collapse of key ecosystem services would cost 2.3 percent of global GDP (\$2.7 trillion) annually by 2030¹.



Visible from space, Australia's **Great Barrier Reef** is the world's largest coral reef system. In addition to its spiritual significance and traditional use, the reef is valued at \$56 billion as an economic, social and iconic asset².

Biodiversity helps tackle climate change.

Ecosystems such as forests, grasslands and wetlands, serve as natural carbon sinks, absorbing large amounts of greenhouse gas emissions. Through nature-based solutions, biodiversity can also help reduce the negative effects of climate change, including flooding and storm surges.



Forests in Brazil's **Central Amazon Conservation Complex**, which contains some of the planet's highest biodiversity, stock and absorb large quantities of carbon from the atmosphere through their living biomass.

Biodiversity and cultural diversity are interdependent and mutually reinforcing.

Biodiversity has nourished knowledge systems, inspired human creativity, and influenced linguistic diversity, as well as cultural heritage and practice. Nature is central to many of the world's religions, and more than 230 animal species feature as national symbols of over 140 countries³.



The **Laponian Area** is embedded in the mountainous landscape of northern Sweden where the Saami peoples, indigenous to the Arctic circle, maintain the traditions of reindeer herding guided by seasons and their knowledge of the arctic environment.

1- Johnson, J.A., Ruta, G., Baldos, U., et al. (2021). The Economic Case for Nature: A Global Earth-Economy Model to Assess Development Policy Pathways. World Bank, Washington, DC. Available at <http://hdl.handle.net/10986/35882>.
2- Deloitte Access Economics (2017). At what price? The economic, social and icon value of the Great Barrier Reef. Available at <http://hdl.handle.net/11017/3205>.
3- Hammerschlag, N. and Gallagher, A.J. (2017). Extinction Risk and Conservation of the Earth's National Animal Symbols. *BioScience*, 67(8), p. 744–749. DOI: 10.1093/biosci/bix054.

THE 1972 UNESCO WORLD HERITAGE CONVENTION: PRESERVING NATURE'S FINEST TREASURES AND OUR CULTURAL GEMS

The World Heritage Convention⁴ is one of the eight key international biodiversity-related conventions, and it is unique because it deals with both natural and cultural heritage.

Highest level of international protection for the world's priceless heritage places, including some of the largest and most intact protected areas.

Natural World Heritage sites encompass most major ecosystems spanning over **3,500,000 km²** (larger than the size of India).

MOUNTAINS

Mountains support outstanding cultural and biological diversity, featuring prominently on the UNESCO World Heritage List. **Mount Emei** in China has diverse flora but is also sacred as an important Buddhist pilgrimage site.

CULTURAL LANDSCAPES

More than 120 UNESCO World Heritage sites are cultural landscapes which embody a long and intimate relationship between people, culture and their natural environment, often reflecting techniques of land-use that enhance biological diversity.

CITIES

Some 300 sites in over 100 countries are recognized as World Heritage cities, many of them helping to preserve nature in cities by maintaining historic urban landscapes and green space, important for human wellbeing and creativity.

DRY AND SUB-HUMID LANDS

UNESCO World Heritage sites support key ecosystem services such as water provision and soil nutrient cycling, including in large savanna regions of the world such as the Brazilian **Cerrado**.

INLAND WATERS

Almost 100 World Heritage wetlands overlap wholly or partially with over 150 Ramsar sites, which are aimed at enhancing the conservation and wise use of wetlands and their resources.

MARINE AND COASTAL ECOSYSTEMS

Marine and coastal ecosystems in UNESCO World Heritage sites cover over 2 million km² (twice the size of South Africa) and play a crucial role in climate regulation storing 15% of the world's blue carbon assets in seagrasses, tidal marshes and mangroves⁶.

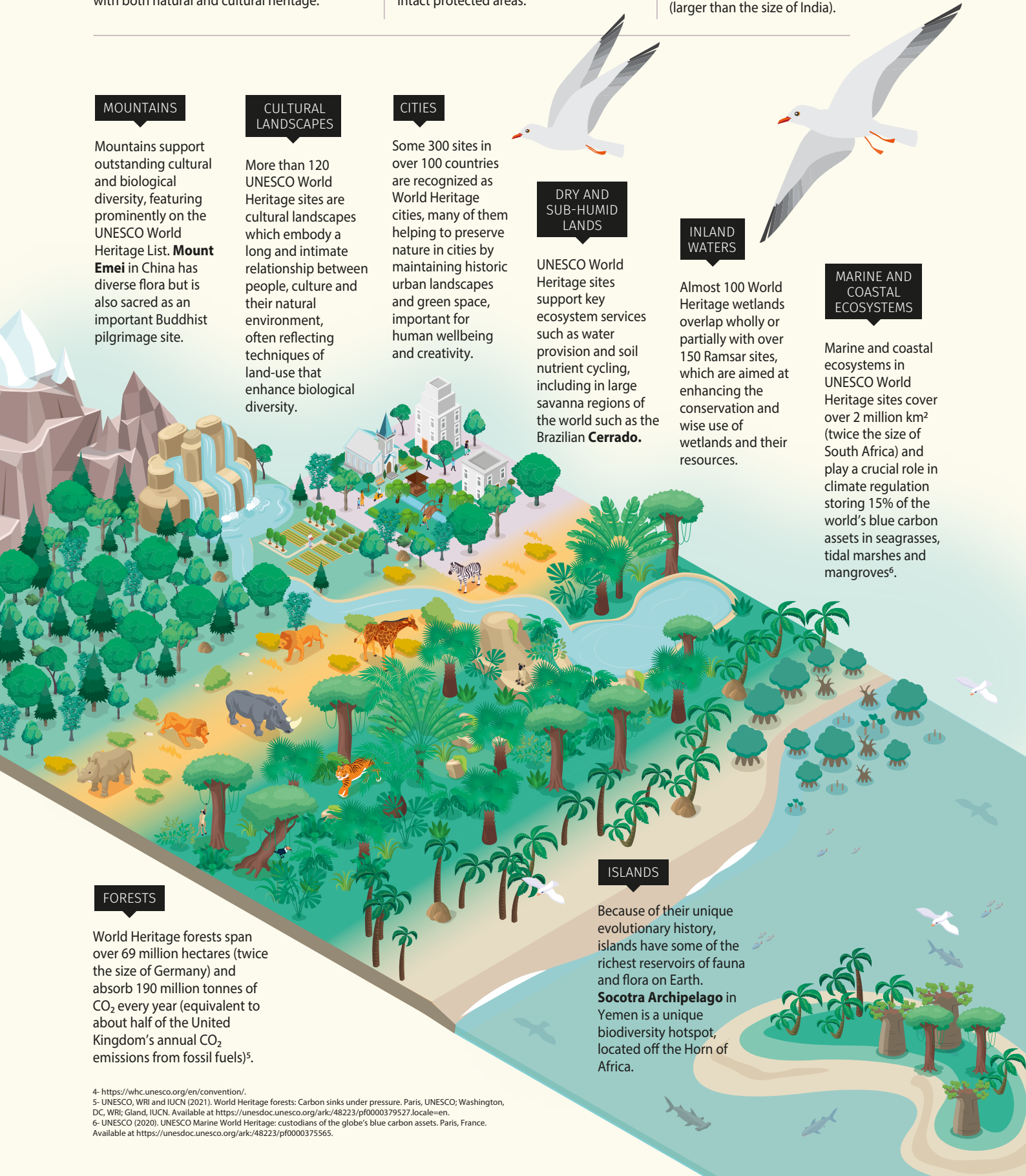
FORESTS

World Heritage forests span over 69 million hectares (twice the size of Germany) and absorb 190 million tonnes of CO₂ every year (equivalent to about half of the United Kingdom's annual CO₂ emissions from fossil fuels)⁵.

ISLANDS

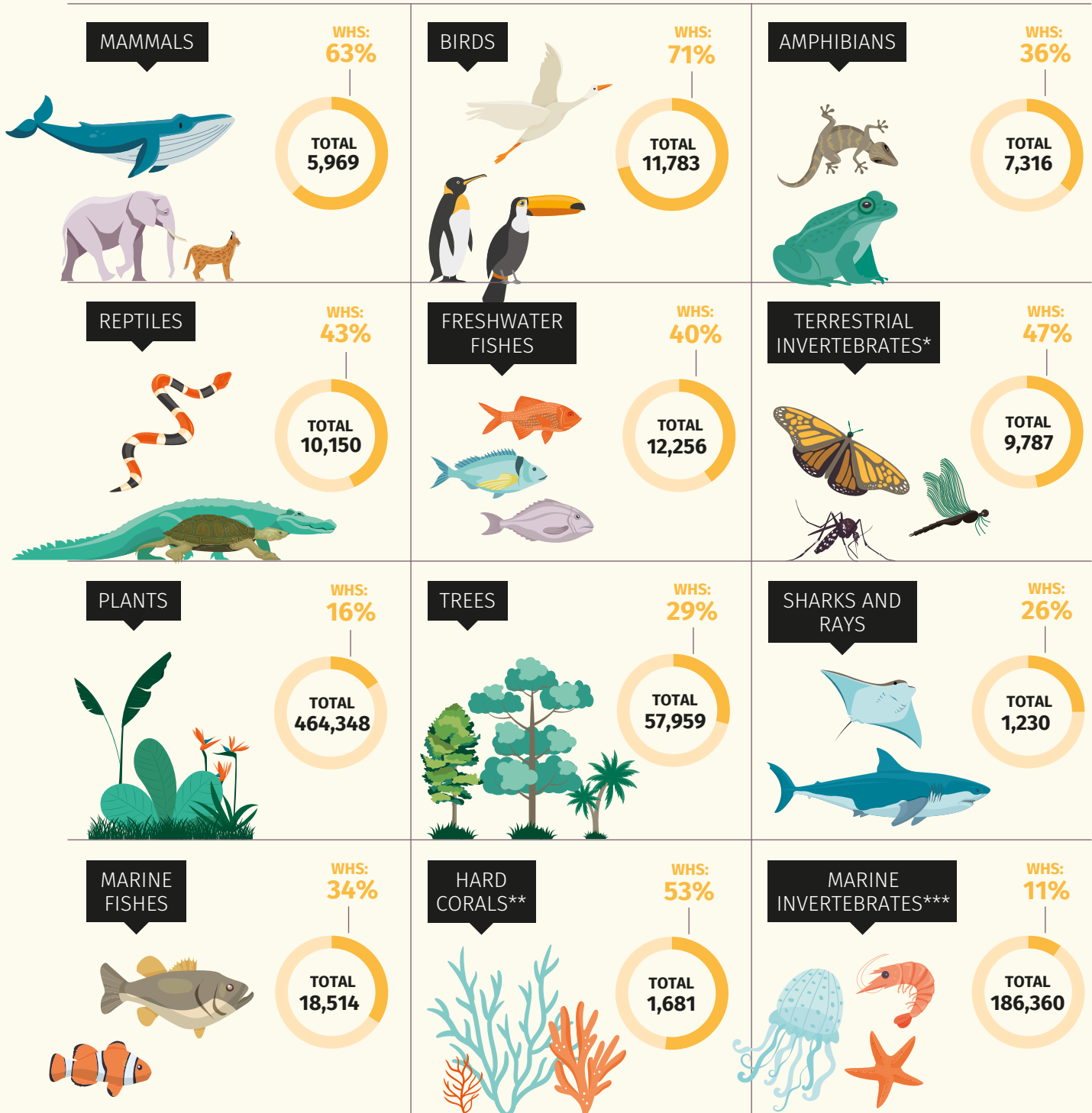
Because of their unique evolutionary history, islands have some of the richest reservoirs of fauna and flora on Earth. **Socotra Archipelago** in Yemen is a unique biodiversity hotspot, located off the Horn of Africa.

4- <https://whc.unesco.org/en/convention/>.
 5- UNESCO, WRI and IUCN (2021). World Heritage forests: Carbon sinks under pressure. Paris, UNESCO; Washington, DC, WRI; Gland, IUCN. Available at <https://unesdoc.unesco.org/ark:/48223/pf0000379527.locale=en>.
 6- UNESCO (2020). UNESCO Marine World Heritage: custodians of the globe's blue carbon assets. Paris, France. Available at <https://unesdoc.unesco.org/ark:/48223/pf0000375565>.



UNESCO WORLD HERITAGE SITES COVER LESS THAN 1% OF EARTH'S SURFACE, YET HARBOR MORE THAN 1/5 OF MAPPED GLOBAL SPECIES RICHNESS

Total number of assessed species and percentage of species in UNESCO World Heritage sites (WHS)



*Including insects and freshwater molluscs, shrimps and crabs

** Including both zooxanthellate and azooxanthellate corals of the order Scleractinia

***Including jellyfish, sea stars, molluscs, sponges, shrimps, crabs, lobsters

Note: Analysis done by overlapping UNESCO natural and mixed World Heritage site boundaries with species distribution and/or occurrence maps from IUCN Red List of Threatened Species for mammals, amphibians, reptiles, freshwater fishes and terrestrial invertebrates; BirdLife International for birds; Botanical Information and Ecology Network (BIEN) for plants^{9,10}; Botanic Gardens Conservation International (BGCI) for trees^{11,12}; Ocean Biodiversity Information System (OBIS)¹³ and the World Register of Marine Species (WoRMS)¹⁴ for marine species. Estimates should be taken with caution given uncertainties in species distribution maps and insufficient coverage of some major groups of organisms that have not been comprehensively assessed globally such as fishes, invertebrates and plants. Grouping of species was done based on a simplified classification system.

7- IUCN (2022). The IUCN Red List of Threatened Species. Version 2022-1 (spatial data). Available at <https://www.iucnredlist.org>. [Accessed November 2022].

8- BirdLife International and Handbook of the Birds of the World (2021). Bird species distribution maps of the world. Version 2021.1. Available at <https://datazone.birdlife.org/species/requeststdis>. [Accessed September 2022].

9- Maitner, B. S., Boyle, B., Casler, N., et al. (2018). The BIEN R package: A tool to access the Botanical Information and Ecology Network (BIEN) database. *Methods in Ecology and Evolution*, 9(2), p. 373-379. DOI: 10.1111/2041-210X.12861.

10- BIEN (2023). Botanical Information and Ecology Network 4.1 database. Available at <https://bien.nceas.ucsb.edu/bien/>. [Accessed February 2023].

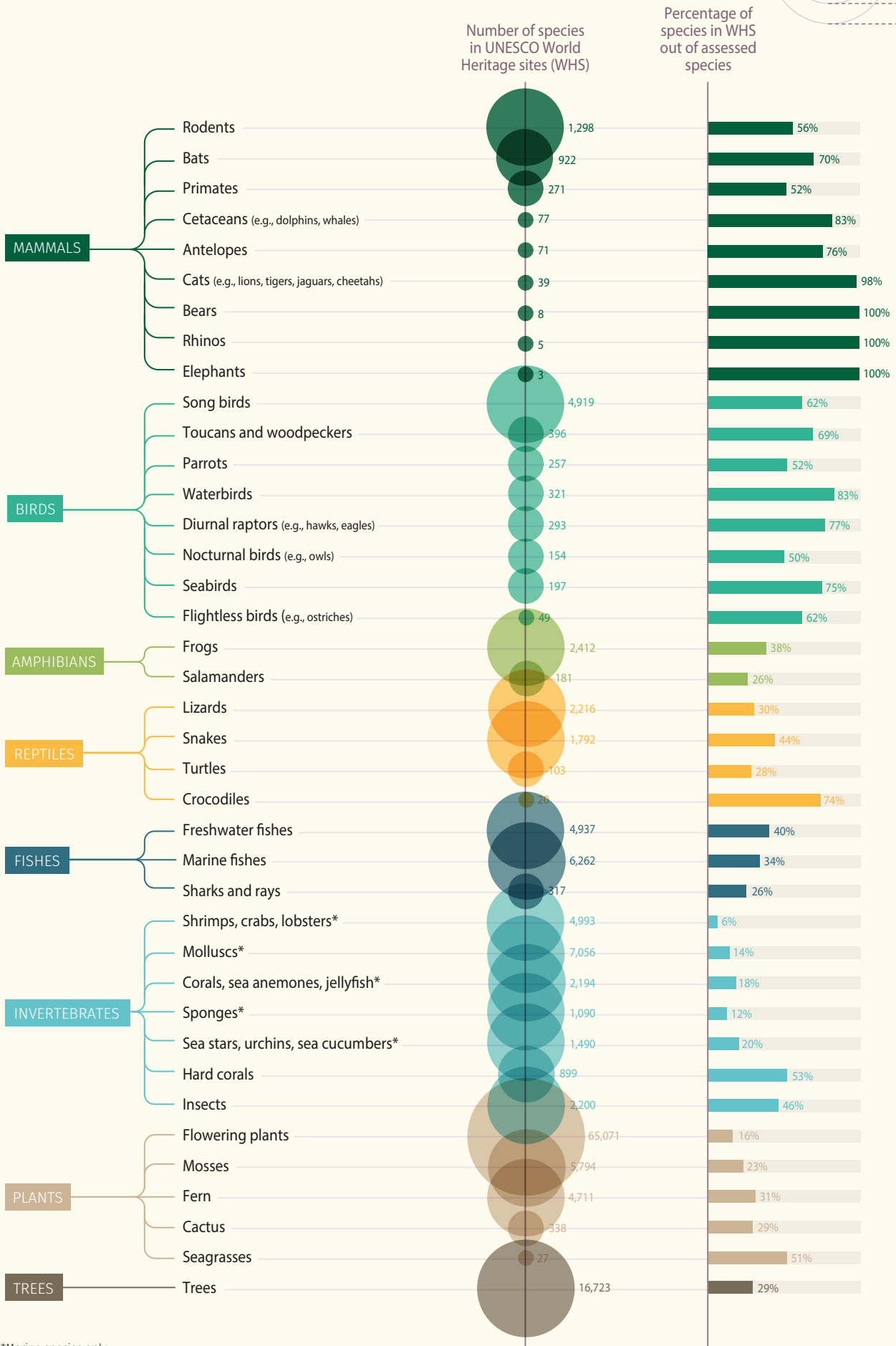
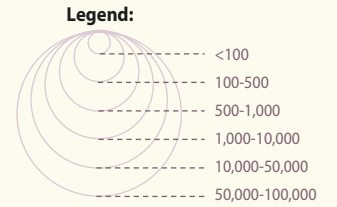
11- BGCI (2023). Botanic Gardens Conservation International. GlobalTreeSearch. Richmond, U.K. Available at https://tools.bgci.org/global_tree_search.php. DOI: 10.13140/RG.2.2.34206.61761. [Accessed April 2023].

12- BGCI (2023). Global Tree Assessment data. Botanic Gardens Conservation International. Richmond, U.K. [Accessed April 2023].

13- Ocean Biodiversity Information System (OBIS) (2023). Intergovernmental Oceanographic Commission of UNESCO. Available at: <https://obis.org/>. [Accessed 12 May 2023].

14- World Register of Marine Species (WoRMS) (2023). WoRMS Editorial Board. Available at <https://www.marinespecies.org/>. DOI:10.14284/170. [Accessed 16 May 2023].

AN OUTSTANDING SPECIES RICHNESS



*Marine species only

A SNAPSHOT OF BIODIVERSITY IN UNESCO WORLD HERITAGE SITES

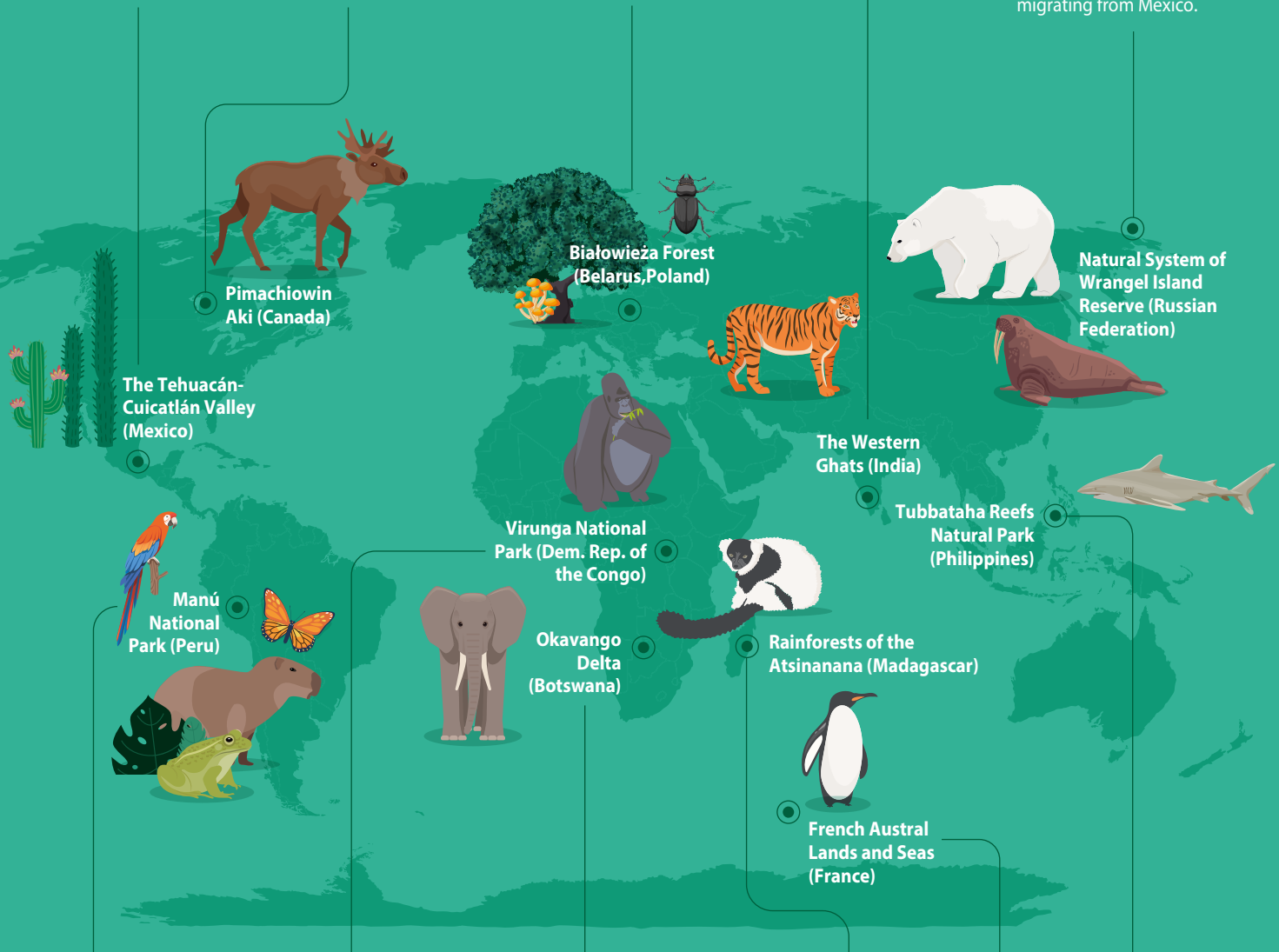
The valley is the semi-arid zone with the richest biodiversity in North America, hosting the world's densest forests of columnar cacti, which is highly threatened worldwide.

The site holds a diverse range of landscapes, including rivers, lakes, wetlands, and boreal forest under indigenous stewardship supporting an outstanding community of caribous and wolves.

This transboundary site contains invaluable old-growth forests (>200 years old) providing an important habitat for organisms such as mushrooms, moss, lichen and insects.

The landscape supports the largest population of Asian elephants (up to 10,000)¹⁵ and tigers (up to 900)¹⁶.

The island boasts the world's largest population of Pacific walrus and the highest density of ancestral polar bear dens. It is also a major feeding ground for the grey whale migrating from Mexico.



The park is one of the most species-rich sites in the world with over 200 species of mammals, 800 species of birds, and a vast number of species of fishes, reptiles, amphibians and invertebrates including over 1,200 species of butterflies.

The park is the only protected area on Earth home to three species of great apes: the mountain gorilla, the eastern lowland gorilla, and the eastern chimpanzee.

The area is the largest stronghold on Earth of savanna elephants with over 70,000 individuals¹⁷.

The forests contain globally outstanding biodiversity with an exceptional proportion of endemic plant and animal species. Approximately 80% of the site's species are found nowhere else.

The park waters support the highest known population densities for white tip reef sharks.

This vast area (~670,000 km²) supports one of the highest concentrations of birds (>50 million), including the largest king penguin and yellow-nosed albatross population in the world.

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Source: United Nations / Geospatial Information Section of the United Nations.

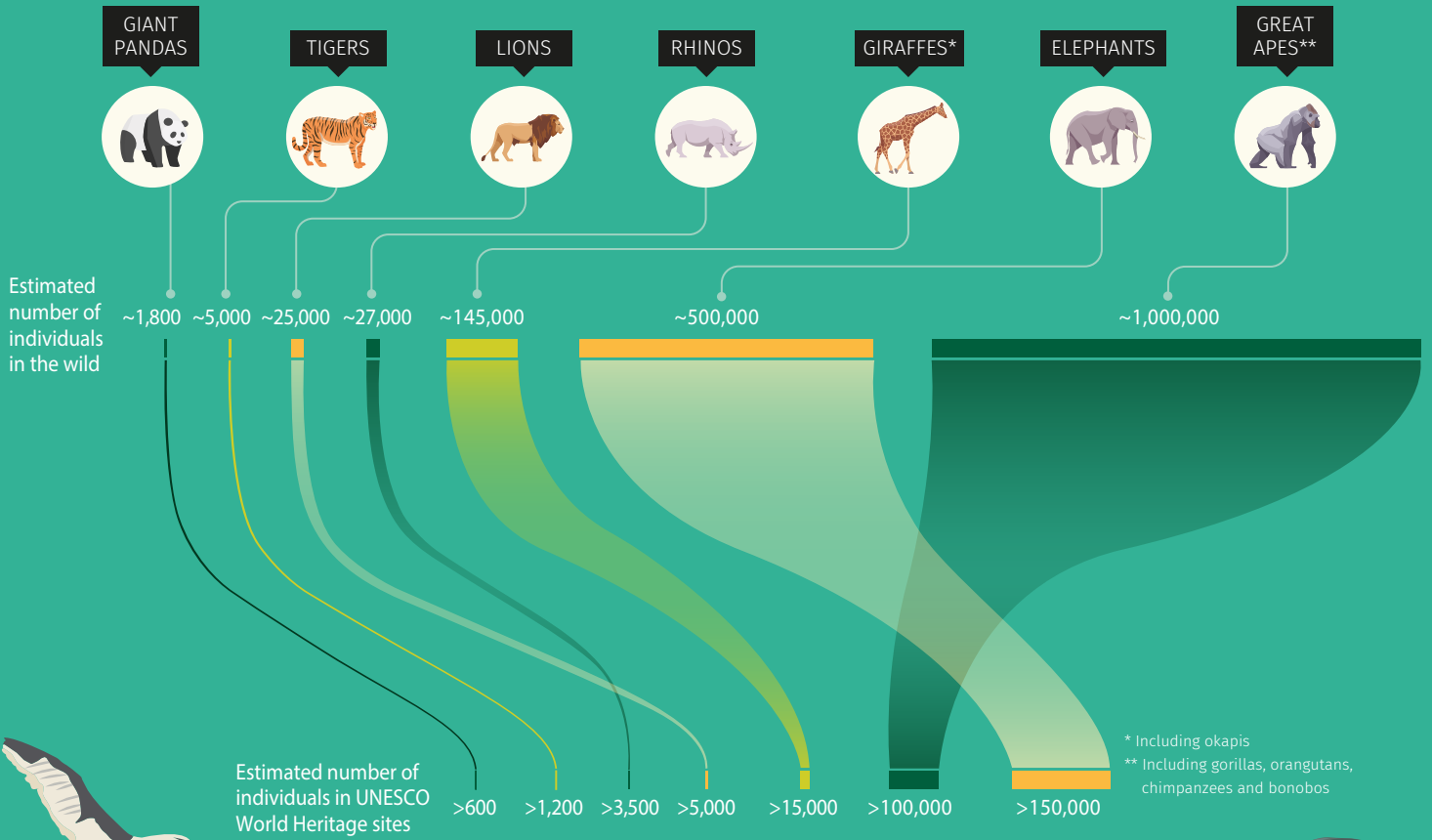
15- MoEFCC (2017). All India Synchronized Elephant Population Estimation. Report, Ministry of Environment, Forest and Climate Change.

16- Qureshi, Q., Jhala, Y.V., Yadav, S.P. and Mallick, A. (2023). Status of Tigers in India – 2022. National Tiger Conservation Authority and Wildlife Institute of India, Dehradun. TR. No./2023/03.

17- Chase, M., Schlossberg, S., Sutcliffe, R., and Seonyatseng, E. (2018). Dry Season Aerial Survey of Elephants and Wildlife in Northern Botswana July–October 2018. Government of Botswana. December 2018.

A HAVEN FOR ICONIC FAUNA AND FLORA

UNESCO World Heritage sites support up to 1/3 of the last remaining elephants, tigers and pandas, and at least 1 in 10 great apes, giraffes, lions and rhinos.



Note: Estimates based on data collected from IUCN Species Survival Commission (SSC) Groups¹⁸ and UNESCO State of Conservation Information System (SOC)¹⁹. Results should be taken with caution given existing uncertainties.

* Including okapis
 ** Including gorillas, orangutans, chimpanzees and bonobos

50% UNESCO World Heritage sites are home to approximately **50% of the global breeding albatross population**, the world's most threatened family of birds²⁰.

40% UNESCO World Heritage sites are home to approximately **40% of the global breeding king penguin population**, the largest species of penguin outside of Antarctica standing up to 1m

More than 1/3 of the world's marine mammal species can be found in **Islands and Protected Areas of the Gulf of California (Mexico)**.

15% UNESCO World Heritage sites support **at least 15% of the global dugong population**, referred to as "sea cows"²².

Komodo National Park (Indonesia) is home to the last remaining population of Komodo dragons, the largest and heaviest lizard on the planet (reaching up to 3m in length and 70 kg).

The world's only sea-going lizard, marine iguanas, can only be found on the **Galápagos Islands (Ecuador)**.

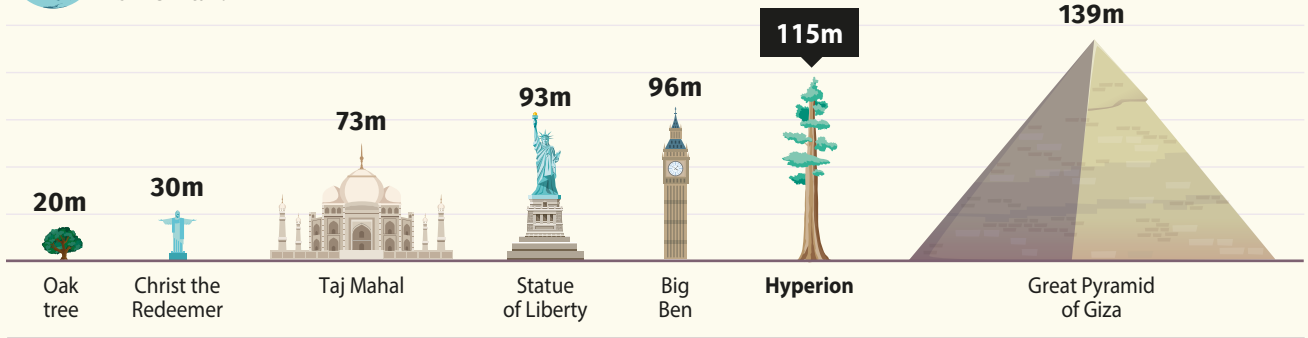
Aldabra Atoll (Seychelles) retains around **100,000** giant tortoises, the world's largest population of this reptile.

UNESCO World Heritage sites cover **15% of all coral reefs by surface area**²³.

18- IUCN (2023). IUCN Species Survival Commission (SSC) Groups. Available at <https://www.iucn.org/our-union/commissions/group/1445>. [Accessed May 2023].
 19- <https://whc.unesco.org/en/soc/>.
 20- BirdLife International (2023). Data Zone. Available at <http://datazone.birdlife.org/>. [Accessed May 2023].
 21- IUCN (2023). IUCN Species Survival Commission (SSC) Penguin Specialist Group. Available at <https://www.penguinsg.org/>. [Accessed May 2023].
 22- CMS/Dugong (2023). Memorandum of Understanding on the Conservation and Management of Dugongs (Dugong dugon) and their Habitats throughout their Range. Available at <https://www.cms.int/dugong/>.
 23- GCRMN/ICRI (2021). Status of coral reefs of the world: 2020 report. Global Coral Reef Monitoring Network (GCRMN)/International Coral Reef Initiative (ICRI). Available at <https://gcrmn.net/2020-report/>.



Redwood National and State Parks (United States of America) is home to the tallest tree on Earth: Hyperion, a coastal redwood that is 115m tall.



Shark Bay (Australia) is home to the largest seagrass plant on Earth stretching over 180km and covering an area of 200km².



Tropical Rainforest Heritage of Sumatra (Indonesia) contains populations of the world's largest (*Rafflesia arnoldi*) and tallest flowers (*Amorphophallus titanum*).



Los Alerces National Park (Argentina) is home to "Abuelo", one of the oldest trees on Earth approximately 2,600 years old.



Cape Floral Region Protected Areas (South Africa), Three Parallel Rivers of Yunnan Protected Areas (China) and Talamanca Range-La Amistad Reserves / La Amistad National Park (Costa Rica, Panama) have the highest concentration of plant life on the planet with more than 5,000 different species each.



TESTIMONIES OF BIOLOGICAL EVOLUTION

Fossils are testimonies of the record of life on Earth, and together with the diversity of our present-day species and ecosystems provide important evidence of biological evolution over time.

For example, the unique biodiversity of the **Galápagos Islands (Ecuador)** inspired Darwin's theory of evolution following his visit in 1835.

Chengjiang Fossil Site (China)

is an exceptional document of the time on Earth when almost all of today's major animal groups emerged



530 MILLION YEARS

Some of the oldest and most complete records of dinosaur remains were found in

Ischigualasto / Talampaya Natural Parks (Argentina), a scientific treasure of global importance



240 MILLION YEARS

The fossils of **Wadi Al-Hitan (Whale Valley)** in the Western Desert of Egypt display dramatic evidence of

one of the iconic stories of evolution: the transition of whales from land to a marine existence



50 MILLION YEARS

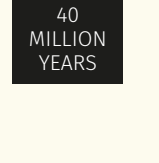
3 MILLION YEARS



Miguasha National Park (Canada) is considered to be the world's most outstanding illustration of the 'Age of Fishes'



Messel Pit Fossil Site (Germany) provides unique information about the early stages of the evolution of mammals and includes exceptionally well-preserved mammal fossils



40 MILLION YEARS



Lake Malawi National Park (Malawi) is home to hundreds of cichlid fish species, nearly all of which are endemic to Lake Malawi, making the site among the world's most important places for the study of evolution

VITAL STEPPING STONES FOR MIGRATORY SPECIES



UNESCO World Heritage sites are important breeding, feeding, and resting sites for migratory species, which in some cases was among the primary reason for World Heritage Listing.

These sites are critical stop-over areas in some of the most important flyways for birds or located along 'swimways' which support migration of aquatic wildlife such as salmon, sharks, sea turtles, and whales.



1/3 of species

protected under the Convention on the Conservation of Migratory Species of Wild Animals (CMS) **can be found in UNESCO World Heritage sites²⁴.**

● **MONARCH BUTTERFLY MIGRATION**

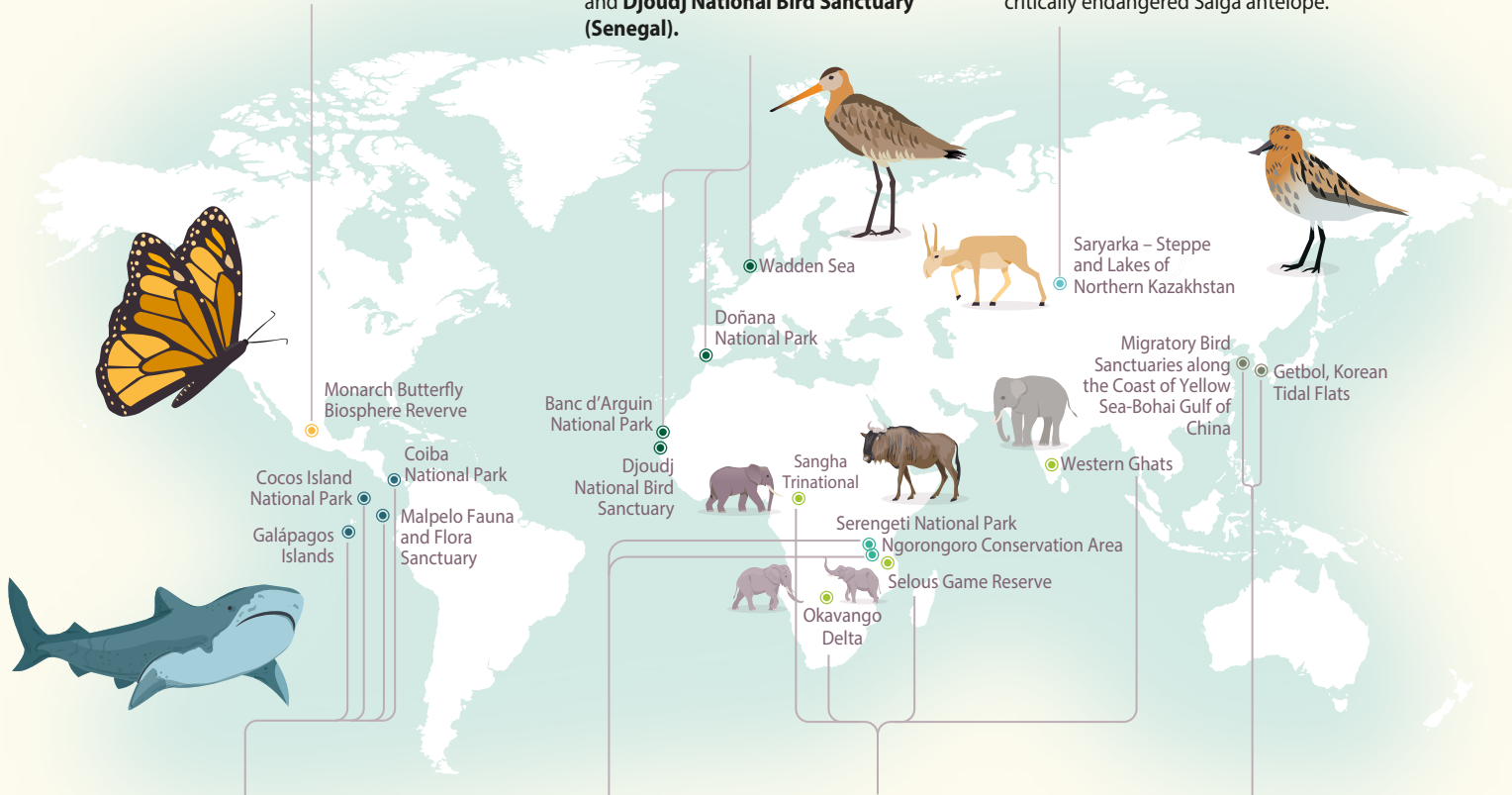
The annual migration of the Eastern monarch butterfly is the longest migration trajectory of any insect. Up to a billion monarch butterflies return annually from breeding areas as far away as Canada to the overwintering sites in the **Monarch Butterfly Biosphere Reserve (Mexico)**, colouring its trees deep orange.

● **EAST ATLANTIC FLYWAY**

The East Atlantic Flyway is a key migration route used by about 90 million birds annually. UNESCO World Heritage sites are key stop-over sites along the flyway, connecting the **Wadden Sea (Germany, Netherlands, Denmark)**, **Doñana National Park (Spain)**, **Banc d'Arguin National Park (Mauritania)** and **Djoudj National Bird Sanctuary (Senegal)**.

● **WEST ASIAN-EAST AFRICAN AND CENTRAL ASIAN FLYWAYS**

Saryarka – Steppe and Lakes of Northern Kazakhstan (Kazakhstan) is at the cross roads of important flyways of migrating birds from Siberia to South Asia (Central Asian Flyway) and Africa (West Asian-East African Flyway). It is also home to the migratory and critically endangered Saiga antelope.



● **EASTERN TROPICAL PACIFIC MARINE SWIMWAY**

Cocos Island National Park (Costa Rica), **Galápagos Islands (Ecuador)**, **Coiba National Park (Panama)** and **Malpelo Fauna and Flora Sanctuary (Colombia)** constitute a unique interconnected 'swimway' in the eastern tropical Pacific Ocean where endangered marine species such as sharks, sea turtles, and whales migrate between the sites.

● **THE GREAT MIGRATION**

The Great Migration of wildebeest across the plains of East Africa is one of our planet's last intact animal migrations. Every year, over a million animals cross the **Serengeti National Park** and the **Ngorongoro Conservation Area (United Republic of Tanzania)** in what is known as 'one of the greatest wildlife spectacles on Earth'.

● **ELEPHANT MIGRATION**

The **Okavango Delta (Botswana)**, **Sangha Trinational (Cameroon, Central African Republic, Congo)**, **Selous Game Reserve (United Republic of Tanzania)** and **Western Ghats (India)** are central nodes of elephant migration routes.

● **EAST ASIAN-AUSTRALASIAN FLYWAY**

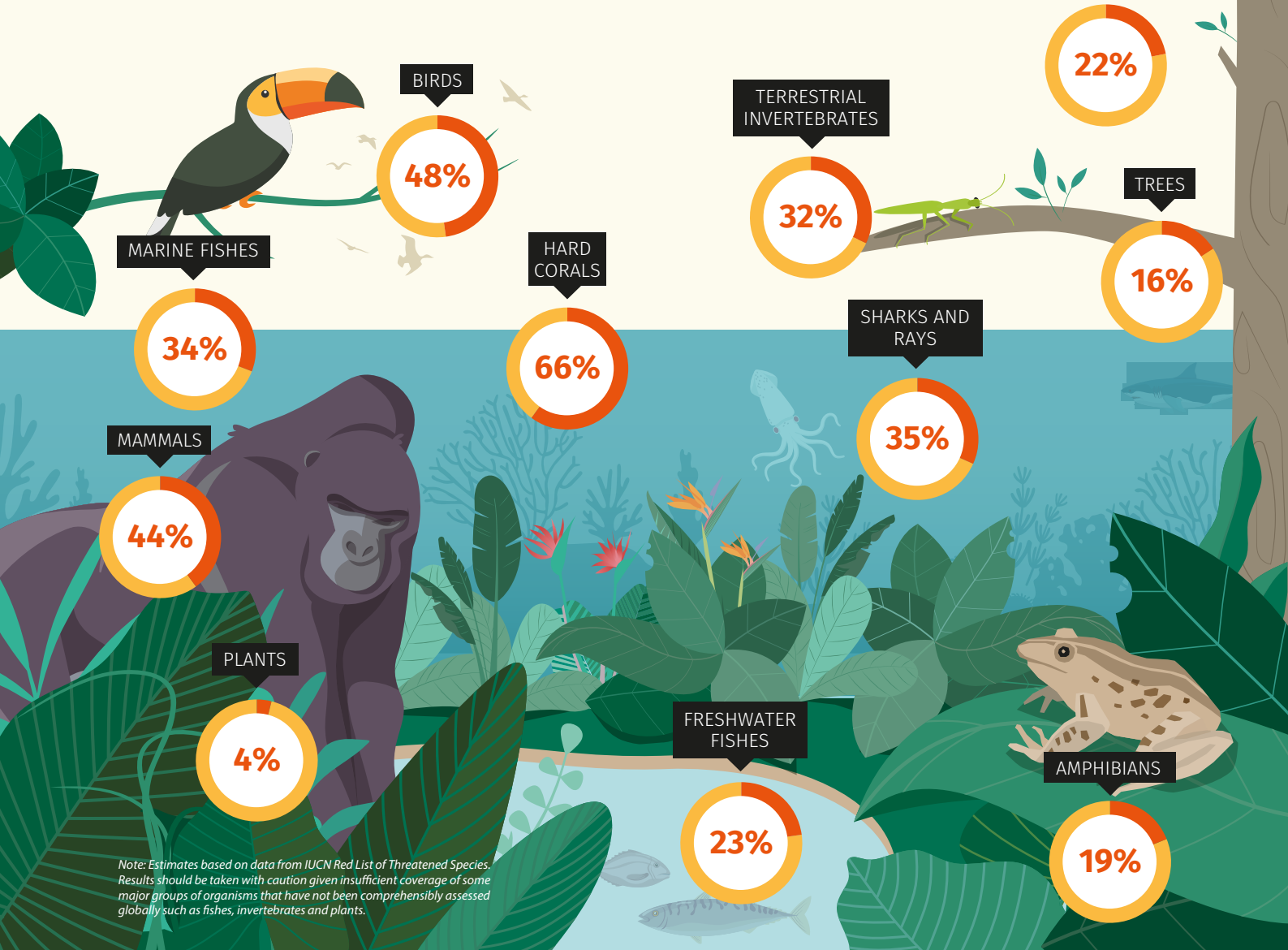
The **Migratory Bird Sanctuaries along the Coast of Yellow Sea-Bohai Gulf of China (China)** and **Getbol, Korean Tidal Flats (Republic of Korea)** are central to the East Asian Australasian Flyway, which is the most threatened flyway in the world.

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Source: United Nations / Geospatial Information Section of the United Nations.

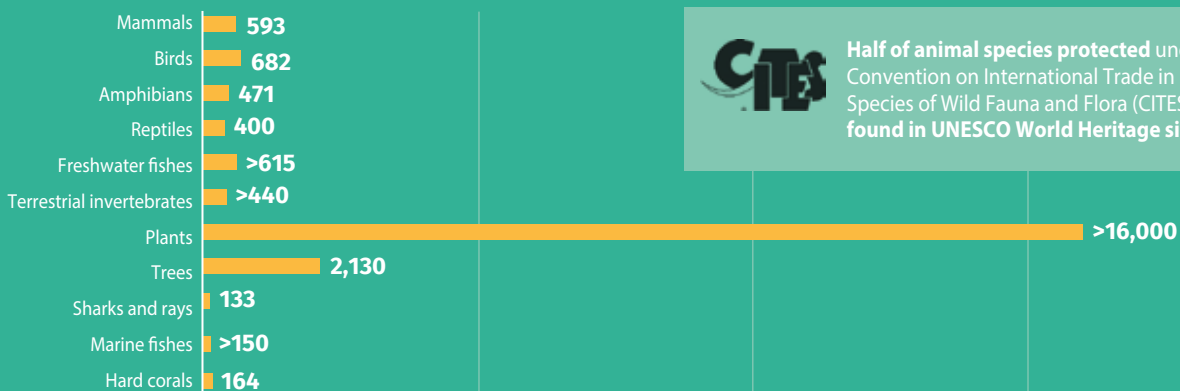
UNESCO WORLD HERITAGE SITES ARE CRITICAL PLACES TO PROTECT GLOBALLY THREATENED SPECIES

Percentage of globally threatened species in UNESCO World Heritage sites



PROTECTING MORE THAN 20,000 THREATENED SPECIES

Estimated number of threatened species in UNESCO World Heritage sites

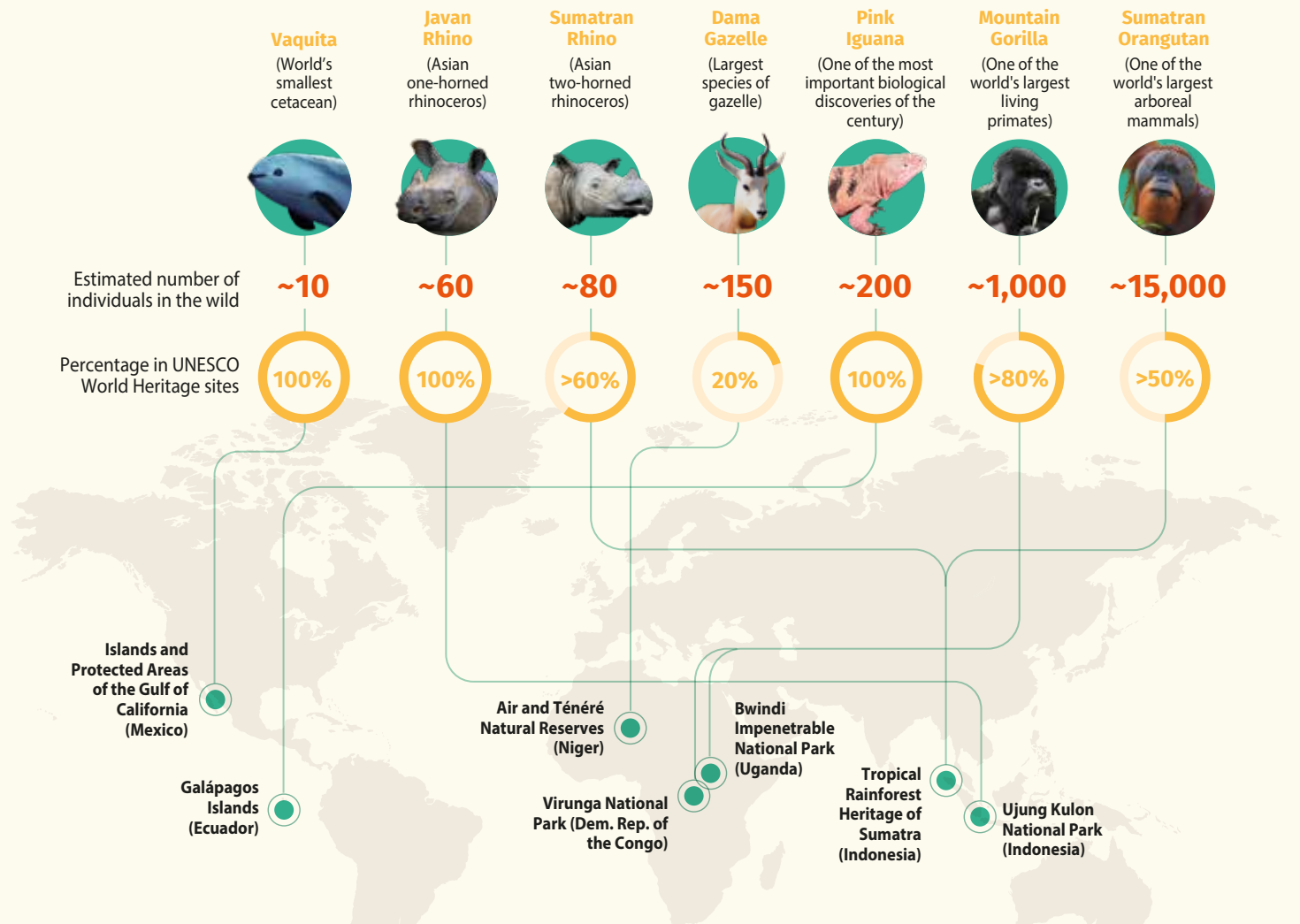


Half of animal species protected under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) can be found in UNESCO World Heritage sites²⁵.

Note: Analysis based on data from IUCN Red List of Threatened Species. Estimates for plants were calculated by applying the percentage of threatened plant species in UNESCO natural and mixed World Heritage sites to the number of plant species identified in these sites from the BIEN database. Results might be underestimated and should be taken with caution given uncertainties in species distribution maps and insufficient coverage of some major groups of organisms that have not been comprehensively assessed globally such as fishes, invertebrates and plants.

25- Analysis based on data from UNEP Species+. Available at: <https://www.speciesplus.net/>.

SAFEGUARDING SOME OF THE MOST THREATENED SPECIES ON EARTH

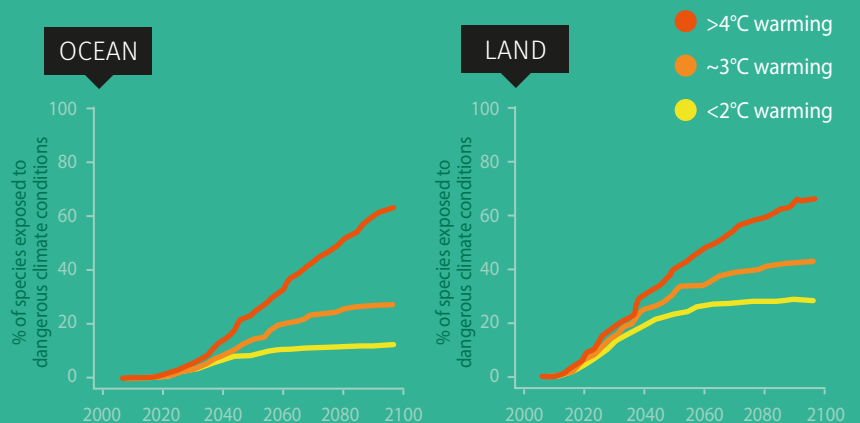


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EVERY 1°C TEMPERATURE INCREASE COULD DOUBLE THE NUMBER OF SPECIES EXPOSED TO DANGEROUS CLIMATE CONDITIONS

- Climate change impacts are projected to increase, potentially outpacing human pressures, such as agricultural expansion, infrastructure development, poaching, overexploitation of resources and proliferation of invasive species as the main threat to biodiversity in UNESCO World Heritage sites.
- Every 1°C temperature increase could double the number of species exposed to potentially dangerous climate conditions²⁶.
- Abrupt biodiversity loss due to climate change could be widespread in tropical oceans by 2030s and tropical lands by 2050s. Loss of the arctic biodiversity may be even more rapid, as the Arctic is warming more than two times faster than the global average²⁷.



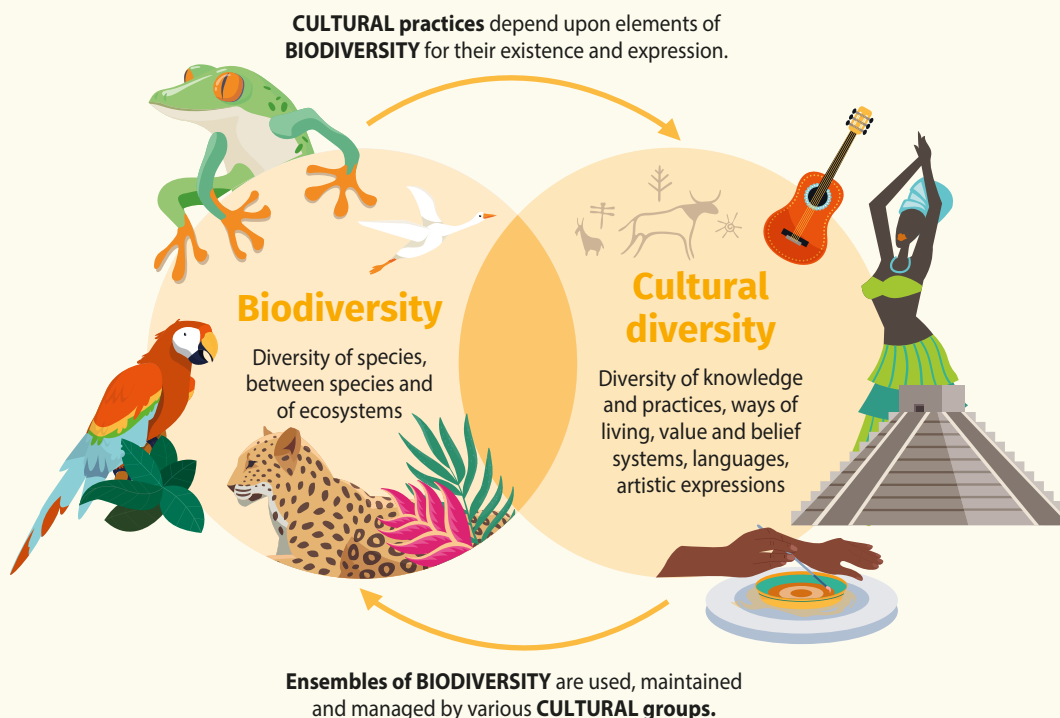
26- Trisos, C.H., Merow, C. and Pigot, A.L. (2020). The projected timing of abrupt ecological disruption from climate change. Nature, 580, p. 496-501. DOI: 10.1038/s41586-020-2189-9.
 27- IPCC (2023). AR6 Synthesis Report: Climate Change 2023. Available at: <https://www.ipcc.ch/report/sixth-assessment-report-cycle/>

CULTURE AND PEOPLE: PILLARS FOR BIODIVERSITY CONSERVATION

UNESCO World Heritage sites make a **significant contribution to sustainable development** and can enhance protection of cultural and biological diversity, as well as ecosystem services, including in cultural sites.

More than 100 UNESCO World Heritage sites are part of UNESCO Biosphere Reserves which encompass wider landscapes, aimed at promoting nature conservation, sustainable use of biodiversity and local economic development²⁸.

Areas of high cultural diversity are often areas of high biological diversity. About 1/5 of cultural World Heritage sites (>160 sites) are found in Key Biodiversity Areas (KBAs)²⁹ of which:



Source: Joint UNESCO - Secretariat of the Convention on Biological Diversity (SCBD) Programme on links between biological and cultural diversity³⁰.

UNESCO World Heritage sites support stewardship by indigenous peoples and local communities for conservation of biological and cultural diversity.



The management of **Blue and John Crow Mountains (Jamaica)** recognises the complex interplay between the natural and cultural values associated with this outstanding Caribbean biodiversity gem. The site once offered refuge to Maroons (former enslaved peoples) and therefore preserves their cultural legacy such as religious rites, traditional medicine and dances.



The Okavango Delta (Botswana) has been inhabited for centuries by small numbers of indigenous peoples and later immigrants, with different groups adapting their cultural identity and lifestyle around the exploitation of resources (e.g. fishing or hunting). Management effort is needed to ensure continued access to and benefits from their culture including local and traditional knowledge.



Aasivissuit - Nipisat. Inuit Hunting Ground between Ice and Sea (Denmark) is a cultural landscape that contains evidence of 4,200 years of human history in West Greenland. It demonstrates the historical and present-day migrations and seasonal patterns of the Inuit hunting and fishing practices, dependent on natural processes and resources of the unique and fragile Arctic environment.



In the **Wet Tropics of Queensland (Australia)**, a cooperative management framework between indigenous peoples and the local government has been established, thereby providing public acknowledgement of the communities' rights to own and sustainably manage their land.



East Rennell (Solomon Islands) was the first natural site inscribed on the UNESCO World Heritage List with customary ownership and management. Approximately 1,200 people of Polynesian origin reside in four villages within the boundaries of the property, living mainly by subsistence gardening, hunting and fishing.

28- <https://en.unesco.org/biosphere>.

29- Bertzky, B., Foster, M., Langhammer, P. et al. (2020). Cultural World Heritage sites and Key Biodiversity Areas: a remarkable overlap. World Heritage and Biodiversity. World Heritage n°96 - December 2020. Available at <https://whc.unesco.org/en/review/96/>.

30- <https://www.cbd.int/lbcd/about>.

HOW TO LEVERAGE WORLD HERITAGE TO ENHANCE BIODIVERSITY CONSERVATION

National Biodiversity Strategies and Action Plans (NBSAPs)³¹ are the principal instruments to operationalize the Kunming–Montreal Global Biodiversity Framework (GBF)³². Integrating World Heritage in NBSAPs is crucial to catalyze action to enhance biodiversity conservation.

The following guidance³³ is aimed at assisting countries to update their NBSAPs in view of considering the contribution of the World Heritage Convention to biodiversity conservation. To be fit for this purpose, NBSAPs should:

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- 1 **Consult and involve** the country focal points of the World Heritage Convention for both natural and cultural heritage, site managers, IUCN, and the UNESCO World Heritage Centre in the process to review and implement the NBSAP.
 - 2 **Review** the status of implementation of the World Heritage Convention within the country:
 - (a) The status of World Heritage Listing in the country: details of all designated UNESCO World Heritage sites (natural, cultural and mixed)³⁴ and all tentative list sites³⁵, specify clearly their biodiversity conservation values at subnational, national, regional and international levels, and the effectiveness of their management to conserve those values³⁶. Consult site status in the UNESCO State of Conservation Information System (SOC)³⁷ and global assessments such as the IUCN World Heritage Outlook³⁸.
 - (b) The coverage of the national tentative list in terms of global conservation priorities in the country. Consult the gap studies for potential biodiversity sites that have been prepared by IUCN³⁹.
 - (c) The overlaps between both tentative list sites and designated UNESCO World Heritage sites and national, regional, and international designations for nature conservation, such as UNESCO Biosphere Reserves, Ramsar sites, Key Biodiversity Areas (KBAs), IUCN Red List, among others.
 - (d) The linkages between biological and cultural diversity, and opportunities and challenges to promote them in UNESCO World Heritage sites (natural, cultural and mixed).
 - (e) Documentation of the specific contributions of all UNESCO World Heritage sites (natural, cultural and mixed) in the country related to the Kunming–Montreal Global Biodiversity Framework (GBF).
 - 3 **Identify and implement priority actions** based on the *Operational Guidelines for the Implementation of the World Heritage Convention*⁴⁰ and other documentation produced by the World Heritage Committee⁴¹, including Committee decisions on listed UNESCO World Heritage sites, and priorities set out in the periodic reporting process.
 - 4 **Include** measures to ensure that the biodiversity values as well as ecosystem functions and services of all designated UNESCO World Heritage sites, sites on tentative lists, as well as sites that would justify addition to the tentative list, are conserved. Complete biodiversity inventories where relevant. Also consider measures that need to be taken outside the boundaries of the site, including actions related to institutional and legal conditions; connectivity conservation; access, rights and benefits; and the provision of adequate financial, technical and human capacity.
 - 5 **Include** measures to address challenges and opportunities for biodiversity conservation in UNESCO World Heritage sites in the country that relate to matters covered by other agreements and designations for both biological and cultural diversity, such as for migratory species (CMS), trade in endangered species (CITES), Intangible Cultural Heritage (UNESCO), and climate change (Nationally Determined Contributions, or NDCs, under the Paris Agreement).
 - 6 **Share** the completed NBSAP with World Heritage actors, including the UNESCO World Heritage Centre.

31- <https://www.cbd.int/nbsap/>.

32- The Kunming–Montreal Global Biodiversity Framework (GBF) was adopted at the 2022 United Nations Biodiversity Conference (COP15). It consists of four goals and 23 action-oriented targets for 2030 to halt and reverse biodiversity loss (<https://www.cbd.int/gbf/>).

33- Based on UNEP (2016). Strengthening the national biodiversity strategies and action plans: revision and implementation. Available at <https://www.unep.org/resources/report/strengthening-national-biodiversity-strategies-and-action-plans-revision-and-implementation>.

34- <https://whc.unesco.org/en/list/>.

35- The tentative list is an inventory of sites which each country intends to consider for nomination (<https://whc.unesco.org/en/tentativelists/>).

36- <https://whc.unesco.org/en/resourcemanuals/>.

37- <https://whc.unesco.org/en/soc/>.

38- <https://worldheritageoutlook.iucn.org/>.

39- <https://iucn.org/our-work/topic/world-heritage/our-work/advisor-world-heritage/nominations>.

40- <https://whc.unesco.org/en/guidelines/>.

41- The World Heritage Committee is one of the governing bodies of the Convention. It consists of representatives from 21 States Parties, and it decides whether a site is inscribed on the UNESCO World Heritage List, examines reports on the state of conservation of inscribed properties and asks States Parties to take action whenever sites face threats.



World Heritage

A unique contribution to biodiversity conservation

World Heritage: A unique contribution to biodiversity conservation

provides a global overview of the status and trends of species in UNESCO World Heritage sites, as well as key information to facilitate dialogue between policymakers and World Heritage actors in the development of effective actions aimed at safeguarding these unique places for future generations.

Despite covering less than 1% of the Earth's surface, UNESCO World Heritage sites harbor more than 1/5 of mapped global species richness and are estimated to protect over 20,000 threatened species. However, biodiversity in these sites is threatened by human pressures and climate change. Every 1°C increase in temperature could double the number of species exposed to dangerous climate conditions.

