

Biodiversity
and
tourism:
opportunities
and
challenges.



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President of the HSPN BoD
Vice President of the FEE BoD

Convention on Biological Diversity

"Biological diversity" is the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems.



Species extinction



1796

www.nhm.ac.uk

Species extinction



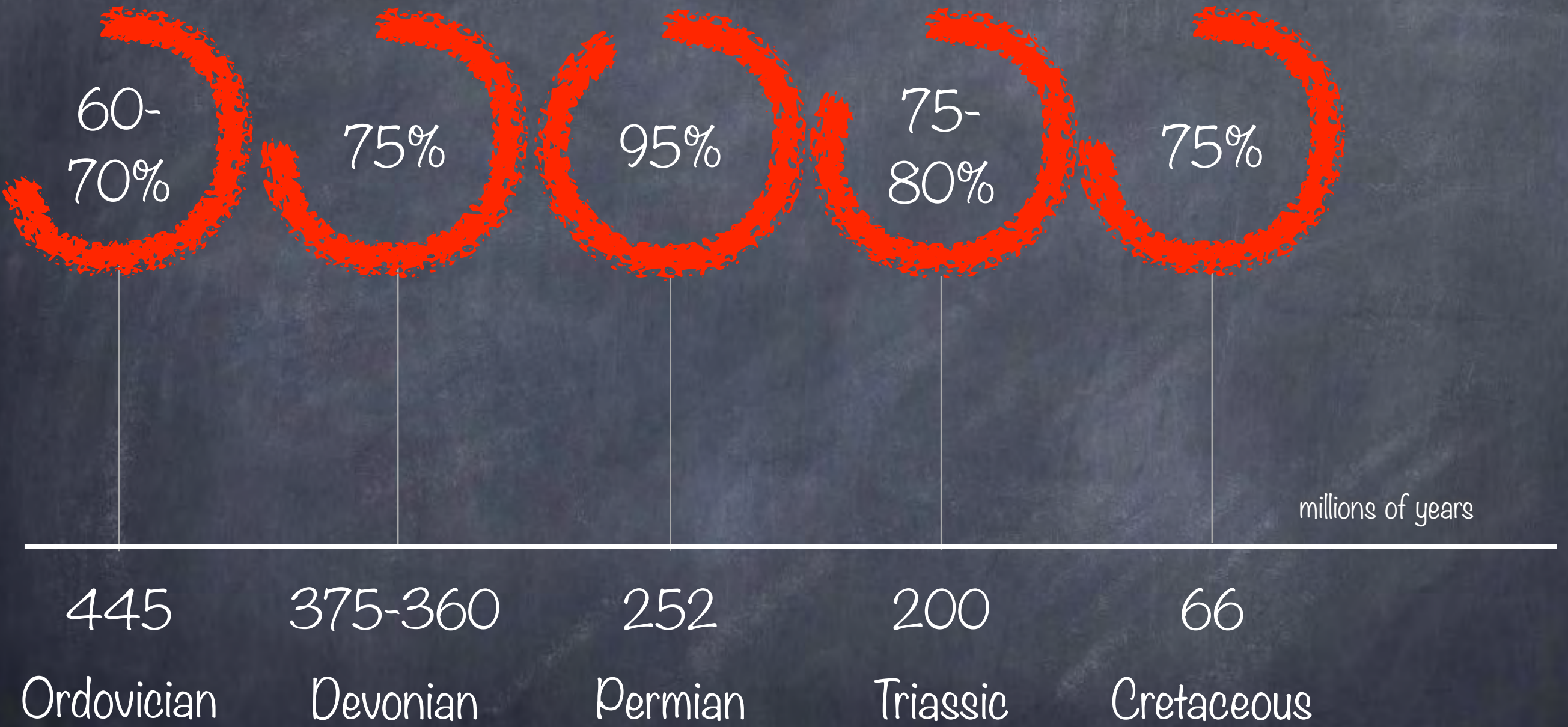
www.nhm.ac.uk

Georges, Baron Cuvier
1769-1832

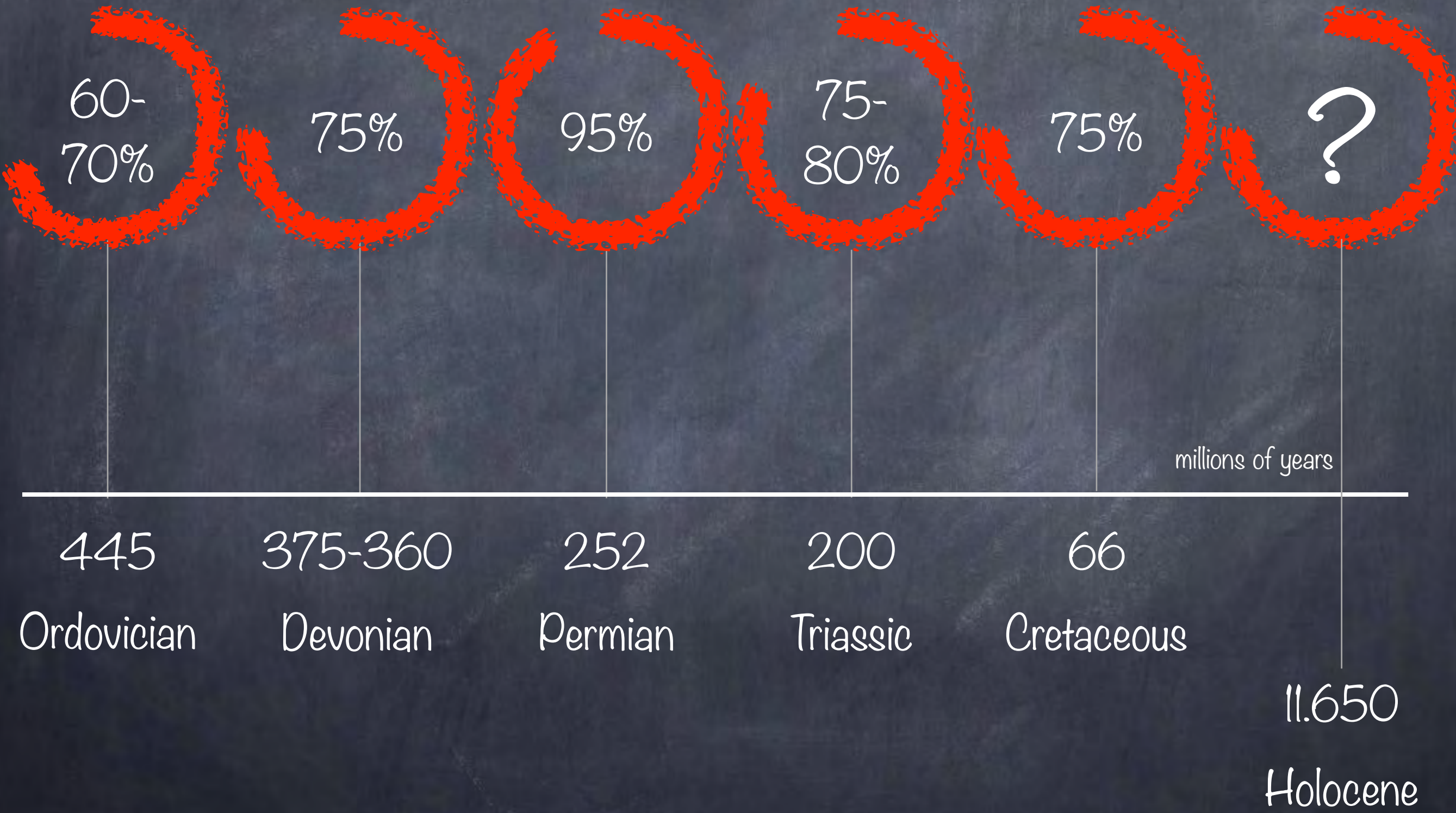


Only 2% of all species that ever lived are still alive today

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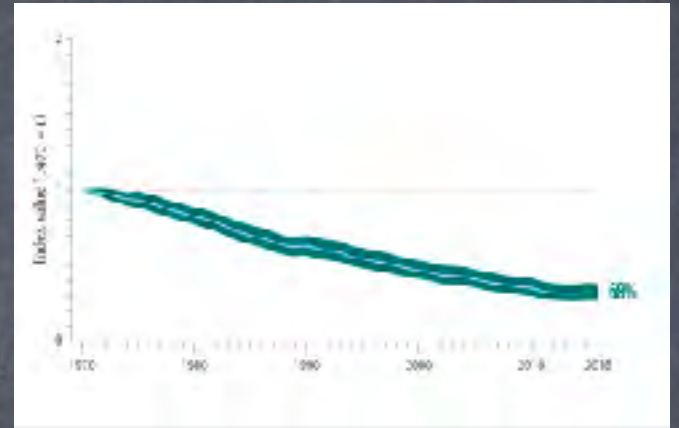
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How do we measure loss?

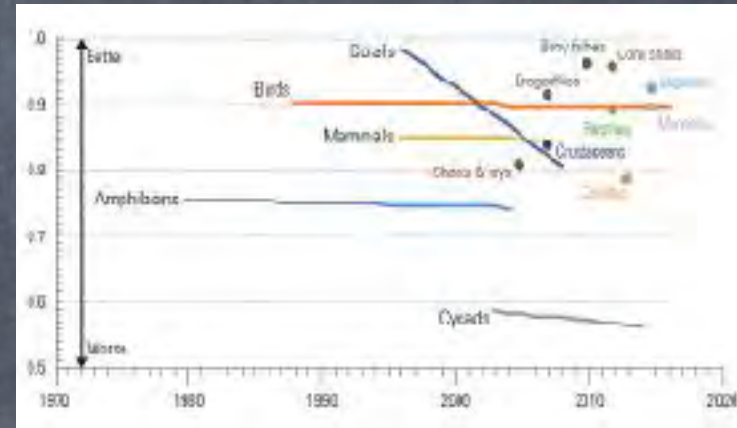
1. Living Planet Index

Zoological Society of London, WWF
(<https://livingplanetindex.org>)



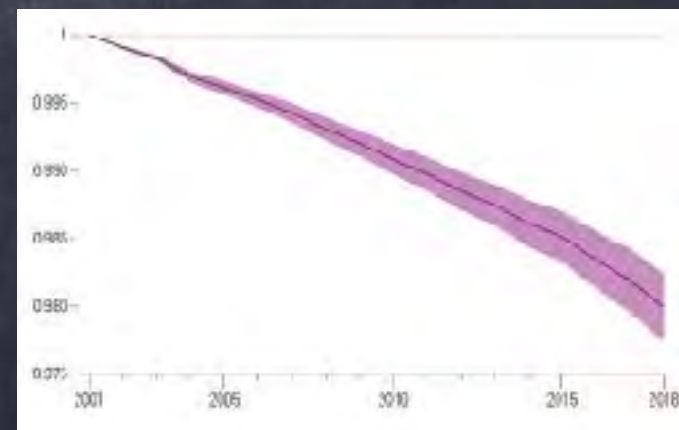
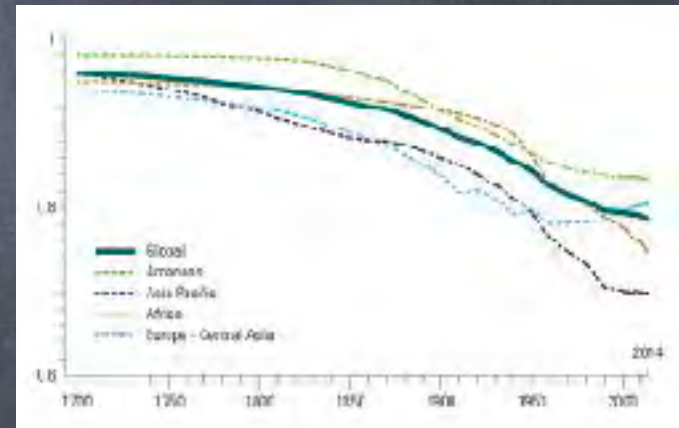
2. Red List Index

IUCN (<https://iucnredlist.org>)



3. Biodiversity Intactness Index

4. Species Habitat Index



Extinct in the last 100 years:

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more than 540 vertebrate species!

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Discovered in 1964

Range < 4 km².

1985: ~1,500 adult individuals

1989: EXTINCT



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Extinction rate: 117 times greater than background!

millions of local populations !

In a sample of 117 large mammals,
most have lost more than 80% of their range
within the last century



Panthera leo

1900: ~200.000

Today: ~ 20.000

Range reduced by 95%



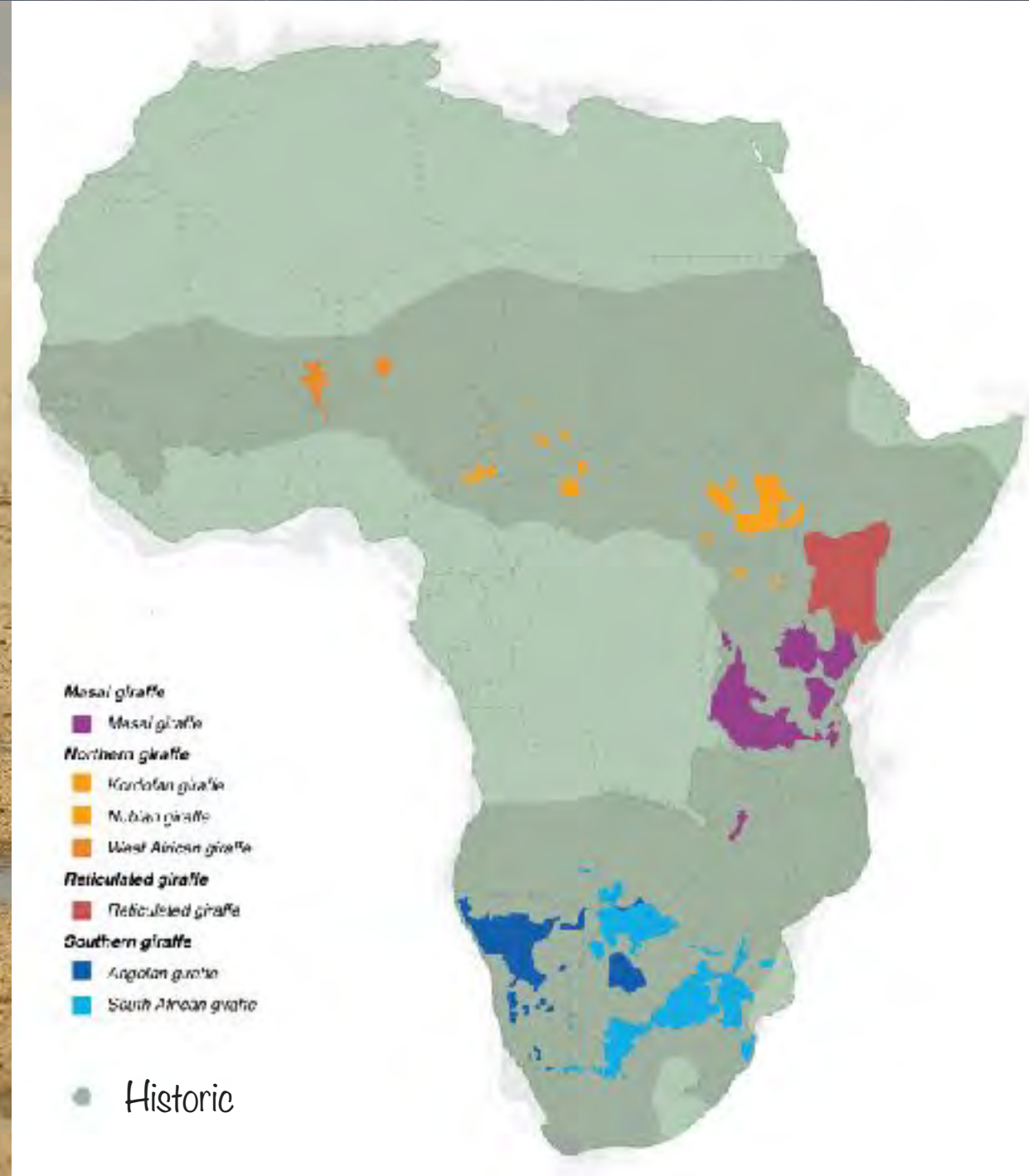
Populations greater than 1.000 individuals now exist in only 6 countries

Giraffa spp.

1990: ~200.000

Today ~ 115.000

Range reduced by > 90%

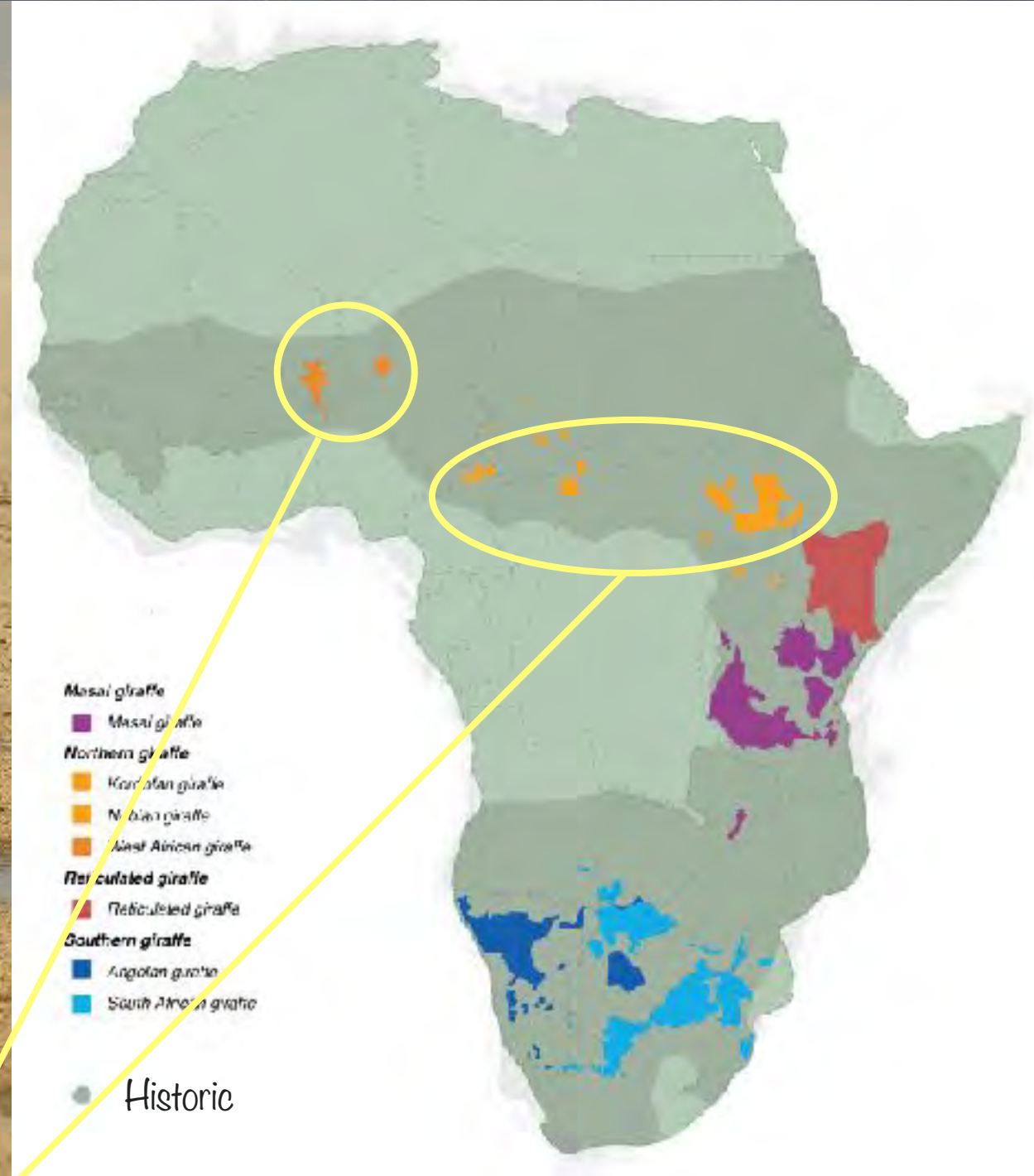


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CE

Changes in land uses, habitat degradation and loss

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Changes in land uses, habitat degradation and loss



Backdrop



Extremadura, Spain

Local products



Alpine pastures, Mt. Menoikio, Greece



Traditional milking of sheep, alpine pastures of Mt. Lakmos, Greece



Traditional fish farming, Mesologi Lagoon, Greece

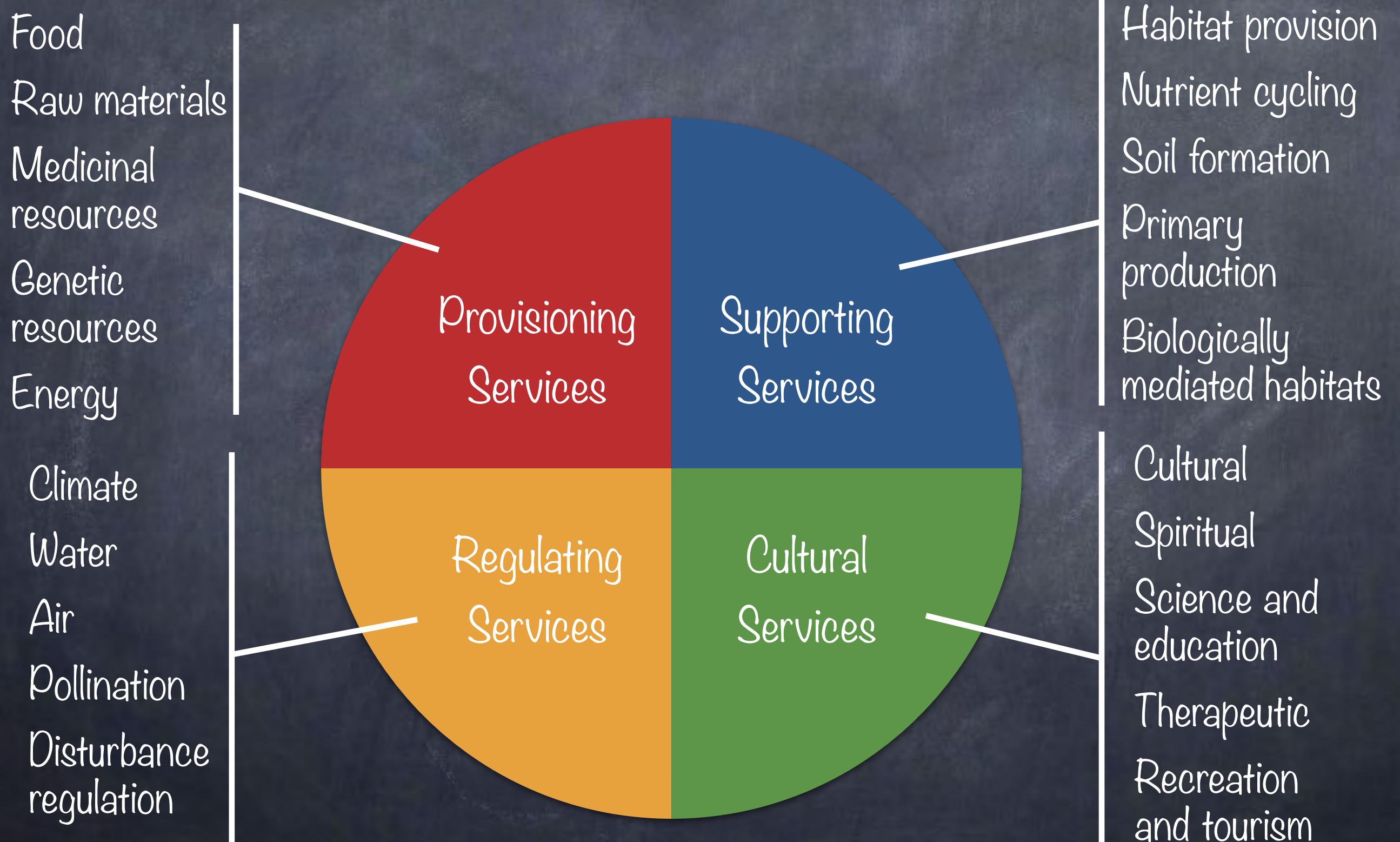


Bottarga (cured fish roe)

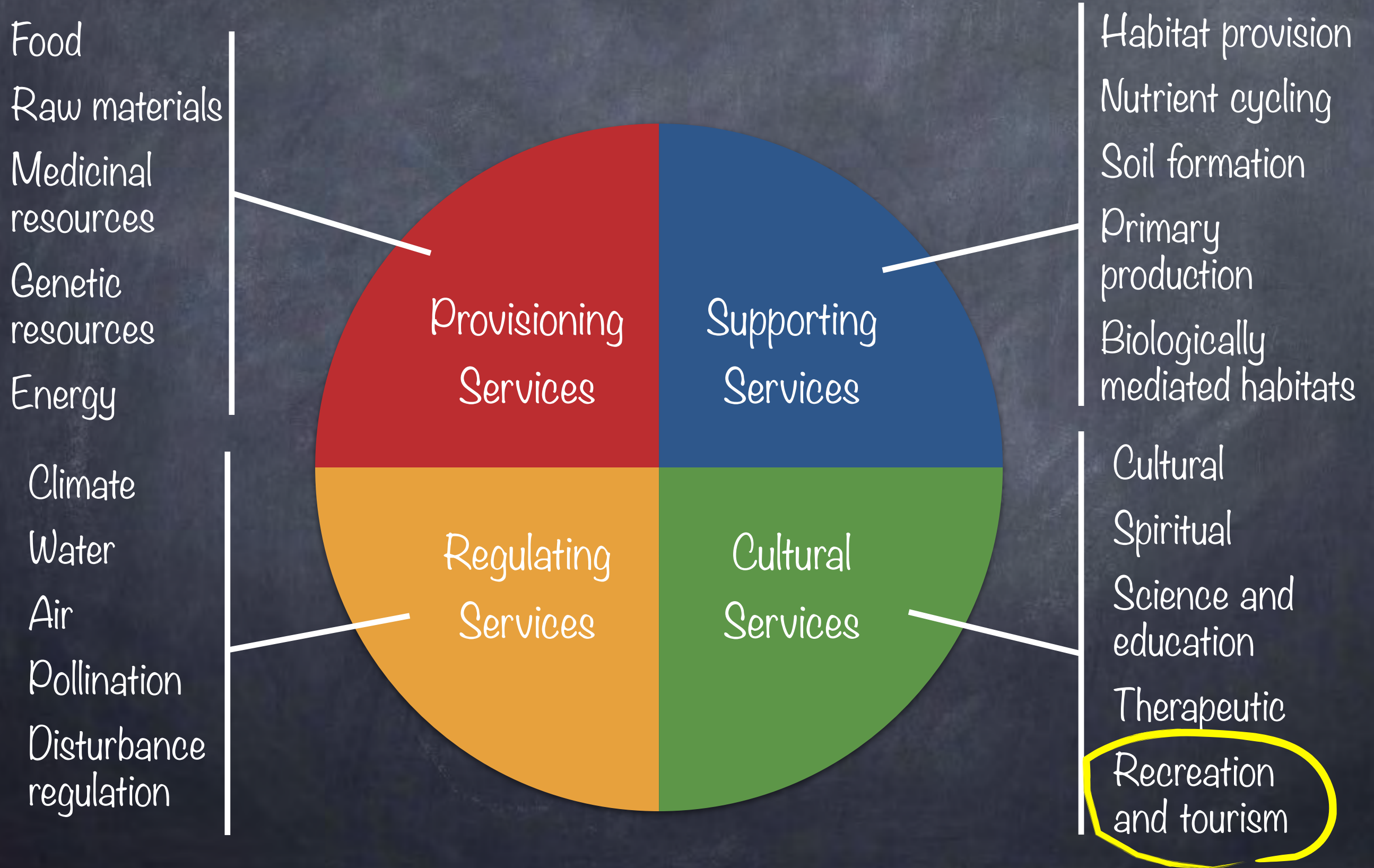


Traditional fish farming, Mesolagi Lagoon, Greece

Ecosystem services



Ecosystem services



Ecosystem services



Playa Santa Maria, Mexico



Etosha NP, Namibia



Kuusamo, Finland



Hokkaido, Japan



Simien Mountains, Ethiopia



Crete, Greece



Sea of Cortez, Mexico

More than 7% of global tourism relates directly to wildlife!



Sea of Cortez, Mexico

20-60% of all international tourists have an interest in some form of wildlife watching



Phillip Island, Australia

www.mtguidemelbourne.com

Opportunities



Chitwan NP, Nepal

Direct and total economic contribution of wildlife tourism (2018)

Continent	DIRECT				TOTAL	
	Expenditure (US\$ bn)	GDP (US\$ bn)	Share of Travel and Tourism	Employment (Million)	GDP (US\$ bn)	Employment (Million)
N. America	25.4	13.5	2%	0.2	37.6	0.5
Europe	28.5	13.3	11.6%	0.2	35.44	0.6
Africa	48.8	29.3	36.3%	3.6	70.6	8.8
Asia-Pacific	118.2	53.3	5.8%	4.5	71.2	10.4
Latin America	19.9	10.7	8.6%	0.5	28.9	1.4
Total	241.0	120.1		9.1	343.6	21.8
Share of T & T	4.2%	4.4%		7.4%	3.9%	6.8%

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Tourism is exclusively concentrated on wildlife and the wilderness experience



Okavango Delta, Botswana

Botswana (2019): Tourism total contribution to GDP: 13.1% - 2.6 bn \$US;
direct contribution to employment: 2% (8.9% total) www.knoema.com

70% of total tourism expenditure is due to nature-based tourism.



Kaokoveld, Namibia

Namibia (2019): Tourism total contribution to GDP: 10.9% - 1.5 bn \$US;
direct contribution to employment: 3.5% (15.5% total) www.knoema.com



Over 40% of visitors engage in nature related activities.

Monteverde, Costa Rica

www.shoreexcursionsgroup.com

Costa Rica (2019): Tourism total contribution to GDP: 13.5% - 3.1 bn \$US;
direct contribution to employment: 5.4% (13.2% total) www.knoema.com

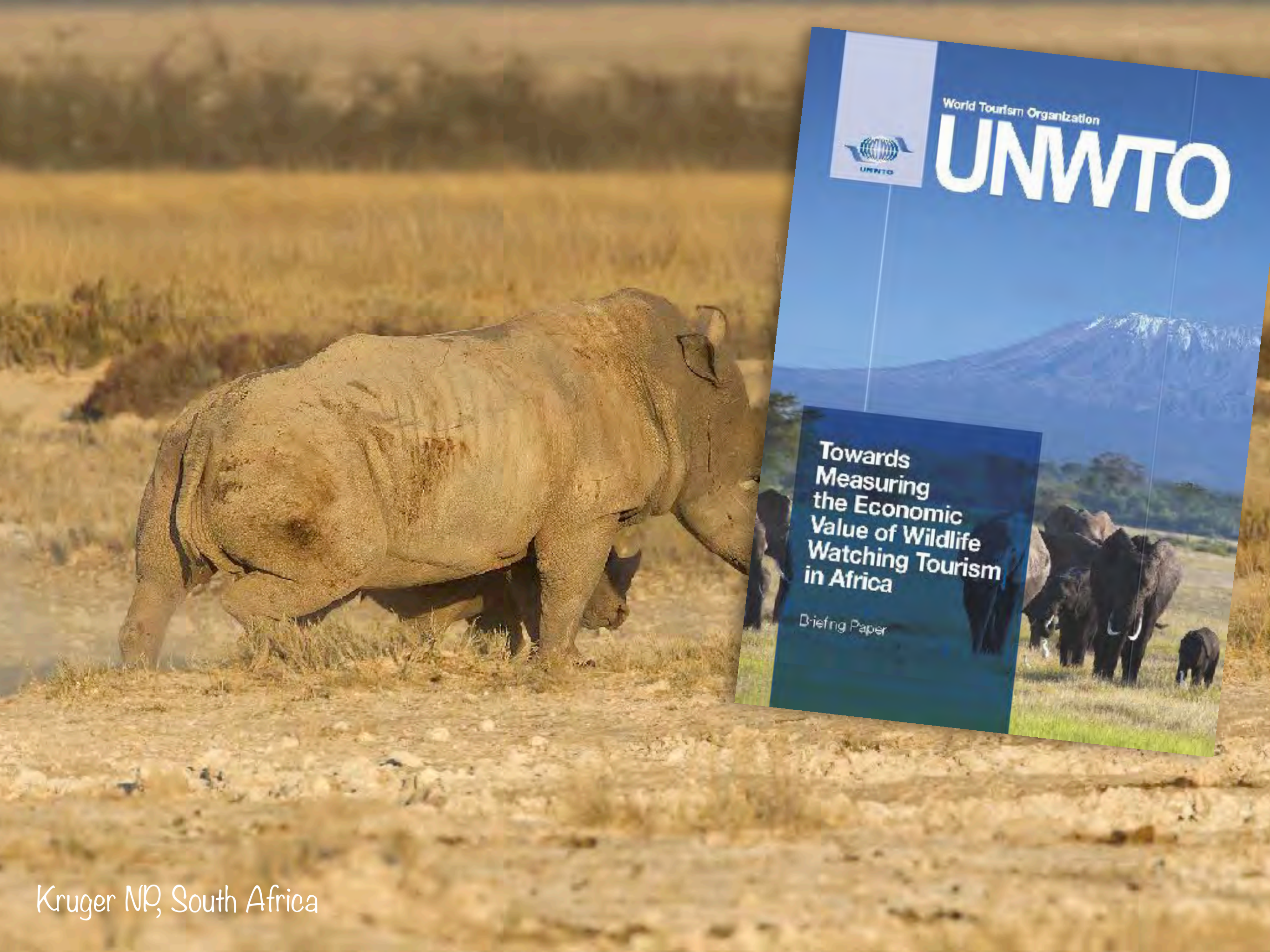
Government aims to make wildlife tourism a major growth industry

Perinet, Madagascar

Madagascar (2019): Tourism total contribution to GDP: 16.1% - 2.4 bn \$US;
direct contribution to employment: 4% (13.5% total) www.knoema.com



Kruger NP, South Africa



World Tourism Organization

UNWTO

Towards Measuring the Economic Value of Wildlife Watching Tourism in Africa

Briefing Paper

Kruger NP, South Africa

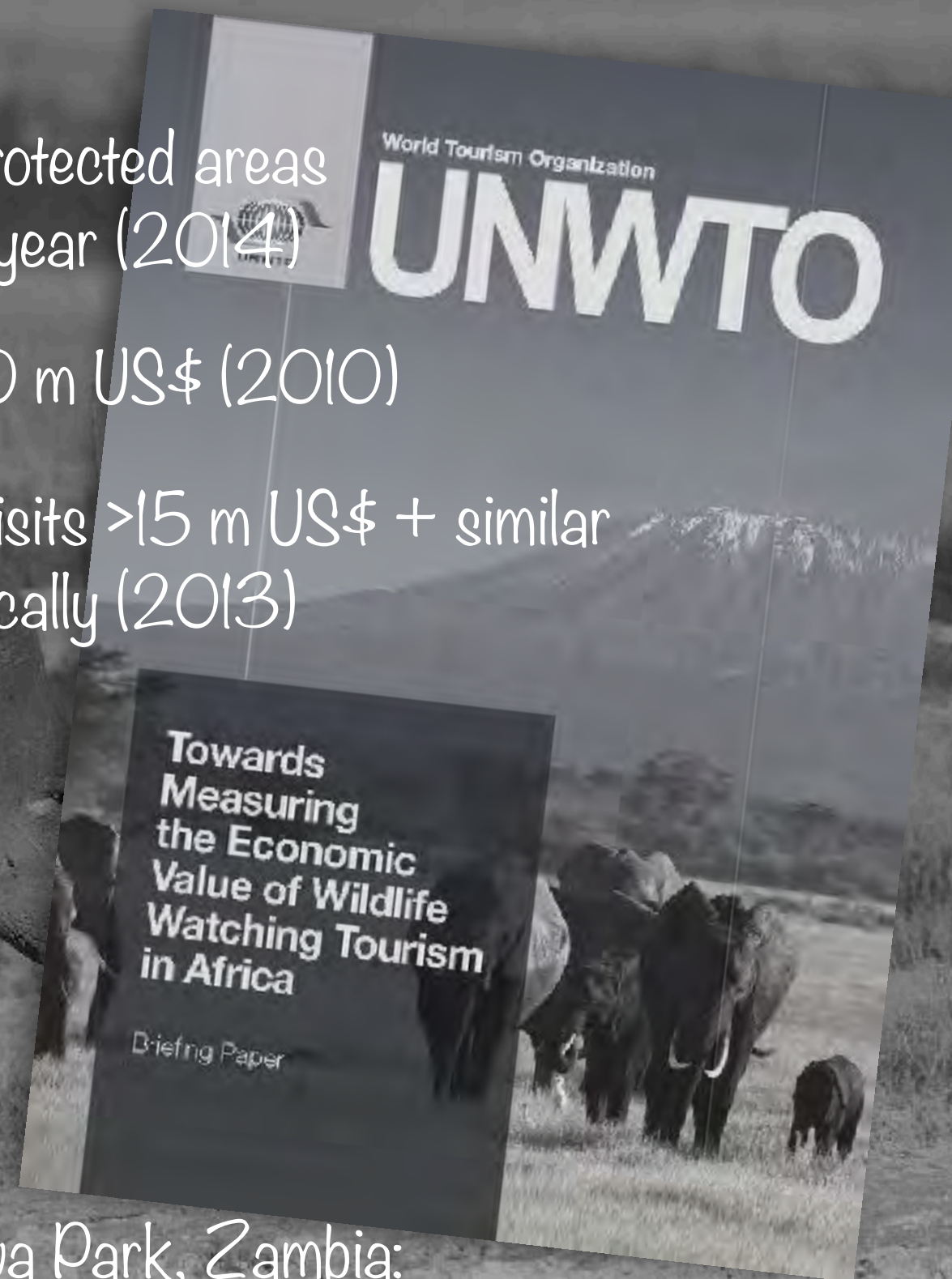
Entrance, gate and park fees from all types of protected areas in 14 sub-Saharan countries: ~ 142 m US\$ per year (2014)

Avitourism in South Africa: annual income 12-30 m US\$ (2010)

Bwindi NP, Uganda: annual income from Gorilla visits >15 m US\$ + similar amount on accommodation and other services locally (2013)

Kichwa Tembo Camp, Masai Mara, Kenya: maximum 80 guests, generating annual income of 8-10 m US\$; approximately 1.5 m US\$ paid directly to local communities in addition to employment opportunities for 200 staff (2013)

Total economic effect of tourism in South Luangwa Park, Zambia: 34.8 m US\$; this includes 1,760 jobs and 7.4 m US\$ local wages (2021)





Great Barrier Reef, Australia

www.reefencounter.com

In 2020: 2.2 m international and 25.3 m domestic overnight visitors.
Employment: ~ 70,000. Contribution to Australian economy: 5.4 bn A\$ yearly



Tourism visits in 2020-2021: 1,134,500 visitor days.
Down by 52% % from the pre-COVID average of 2011-2019.



Nesting Loggerhead Turtle, Gulf of Kyparissia, Greece

18 turtle nesting locations in Africa, Asia, Latin America.

Some 175,000 people taking sea turtle tours annually to more than 90 sites in more than 40 countries.

Where major attraction (9):

average total annual revenue 1.7 m US\$ (40,000 - 6.7 m US\$);

30 - 1,280 direct job positions.

Where one of many attractions (4):

average total annual revenue

41,000 US\$ (3,000 - 106,000 US\$).



Supporting local communities



Omo Valley, Ethiopia

Increased employment opportunities,
promoting gender equality



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promoting gender equality

Supply of goods and services
by locals or by enterprises
employing locals



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Preservation of traditional culture
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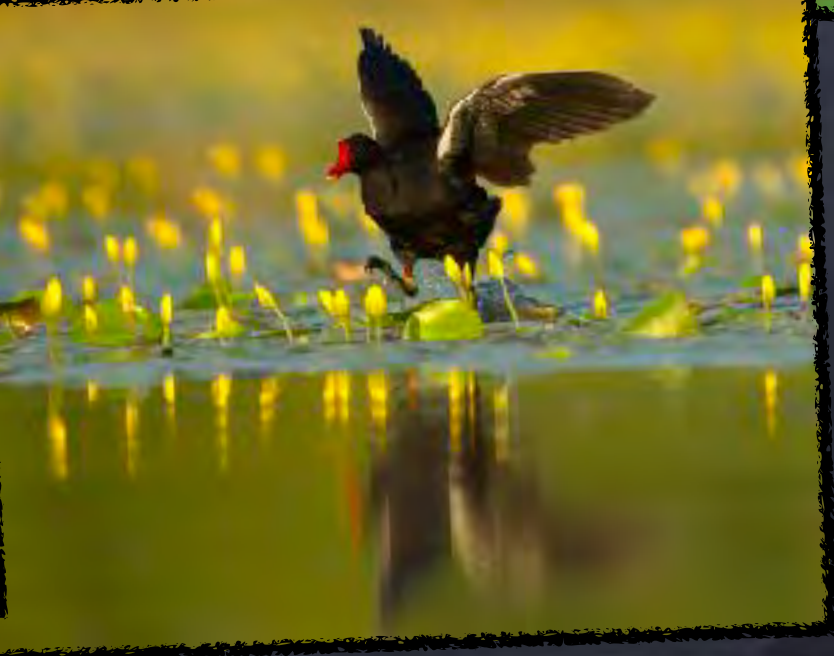
Preservation of traditional culture
and practices

Stimulated investment in infrastructure
and social services





The case of lake Kerkini



Wildlife photographers, Lake Kerkini



1996: 5 hotels, 281 beds; < 1,000 visitors



1996: 5 hotels, 281 beds; < 1,000 visitors
2016: 30 hotels, 1,200 beds; ~220 related enterprises (restaurants, cafes, boat trips, outdoor activities, etc.); > 20,000 visitors (peak around 40,000 in 2008).

Supporting conservation



Bialowieża Forest, Poland



80% (US\$ 52 million) of South African National Parks annual budget comes from tourism, supporting 19 Parks

Income from visitors accounts for the management of up to 40% of protected areas in Bolivia

The Uganda Wildlife Authority generates 88% of its revenue from tourist entrance fees; 50% of its budget is from gorilla-based tourism

50% of the conservation budget for the Tubbataha Reefs Natural Park in the Philippines depends on tourism

50% (US\$ 30 million) of Kenya Wildlife Service's annual budget comes from tourism, supporting management in 39 Parks and Reserves

Challenges



South Luangwa NP, Zambia

Behavioural effects of disturbance



Kalahari Transfrontier Park, Botswana

Behavioural effects of disturbance



Physiological effects of disturbance



Volcanoes NP, Rwanda

www.issuu.com

Damage to sensitive habitats



Mallorca, Spain



Schinias NP, Attica, Greece

Removal of *Posidonia* banquettes, which are “unwanted” by visitors, has detrimental effects on beach stability, dune formation and coastal biodiversity



Namaqualand, South Africa

In 2017, visitation to US NPs surpassed a record 300 million people



www.e369yale.edu

Yellowstone NP: from 2 m visitors in 1980 to more than 4 m in 2016
Grand Canyon: from 2.3 m visitors in 1980 to more than 6 m in 2017.



Galapagos Islands, Ecuador

www.metrojourneys.com

Reduce visitation (restrict numbers and/or sites)

Modify visitation (increasing distances, trained guides, hides)

Redirect visitation (alternative attractions, less sensitive sites and/or species)

Prevent visitation

Local people-wildlife conflict



Erindi Game Park, Namibia



Etosha NP, Namibia

Local people-wildlife conflict



“Fences and fines” vs benefit sharing



Omo Valley, Ethiopia

“Fences and fines” vs benefit sharing



Omo Valley, Ethiopia

On Mt Kilimanjaro: guides ~ \$1,830/year, porters \$842, cooks \$771; rural wage ~ \$1.5/day

Spenceley A: Tourism product development: Interventions and best practices in sub-Saharan Africa: Part I. Technical report WB (2010)

Species vs habitat conservation



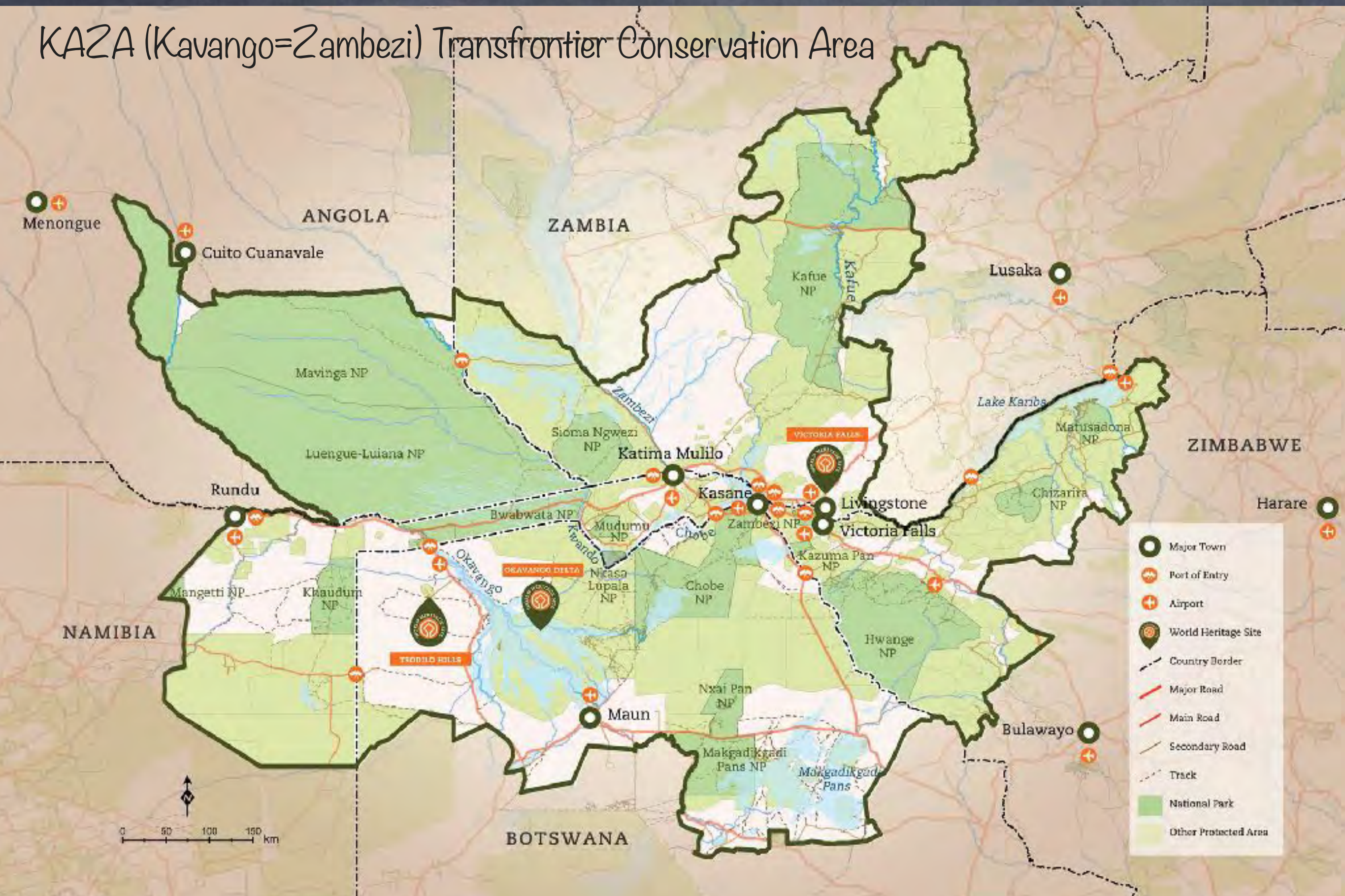
Chobe NP, Botswana



Chobe NP, Botswana

New model of protected area management

KAZA (Kavango=Zambezi) Transfrontier Conservation Area



Trade and exploitation of species



Animal entertainment, Thailand

www.mirror.co.uk

A Guide to Ethical Souvenir Shopping (www.impacttravelalliance.org)



COVID-19 NOTICE

Social distancing in practice



1.5m



Observe a minimum 1.5m
distance from person
to person at all times.
If you are unwell, do not enter.

Impact on conservation funding



The Aegean Sea, Greece

Reduced tourism decreased payments to Namibian Communal Conservancies by 3.5-4.5 m US\$ in 2020, jeopardising the future of the conservation partnerships



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Madagascar National Parks had a financial loss of 2.5 m US\$ in 2020, as tourism was down 100% since parks closed in March

Impact on wildlife



Birecik, Euphrates valley, Turkey

The Uganda Wildlife Authority recorded more than double the number of poaching incidents between February and May 2020 (367 incidents) than in 2019, including giraffes, lions and gorillas



Maron D F: 'Pandemic-induced poaching surges in Uganda'. National Geographic. July 2020:

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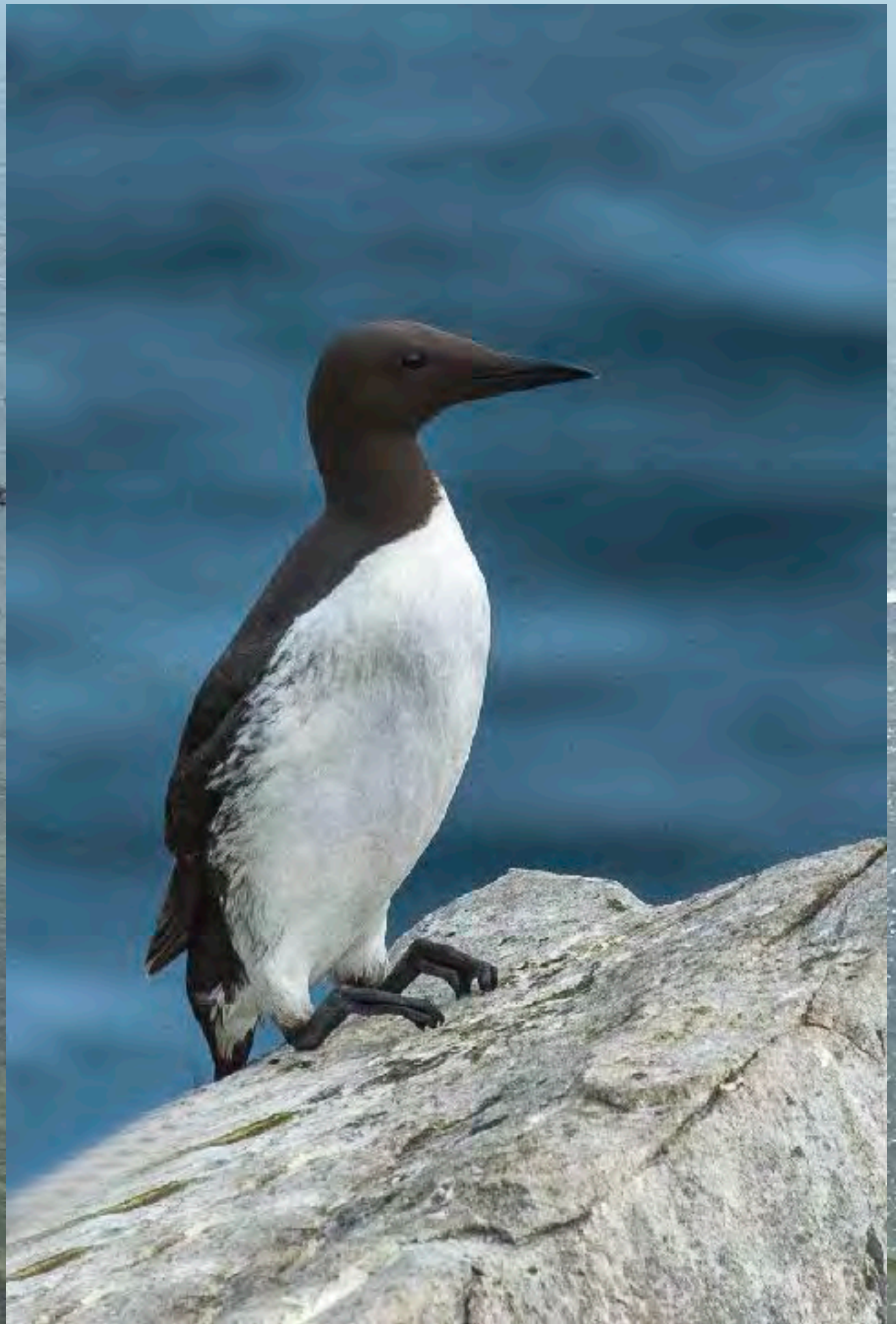
Increased poaching in Botswana, with at least six rhinos killed in the first months of 2020



Stora Karlsö island, Sweden



Stora Karlsö island, Sweden



Making tourism sustainable for biodiversity

Long-term survival of populations and habitats

Minimal impact on behaviour of watched and associated species

Improvement to livelihoods of local people

Increased awareness of and support for conservation activities amongst all stakeholders

Plans for sustainable management of wildlife watching tourism, conservation, and community development based on set limits of acceptable change and adaptive management

Ability to manage access to wildlife watching resources and to limit future development

Supportive legal and planning frameworks combined with commitment from national and local government

Thank you for your attention

