



Second Meeting of the Signatories to the Memorandum of Understanding on the Conservation of Migratory Sharks
Costa Rica
15–19 February 2016

The Conservation of Migratory Sharks and Rays
Sarah Fowler, Principal Scientist, SOSF



Costa Rica – guardian of natural capital

A world pioneer for forest ecology, management and protection
Globally applauded for contributions to shark conservation



Forests secure water supplies and other vital goods and services
Old growth trees retain carbon and nutrients
The reintroduction of large herbivores contributed to the regeneration of dry tropical forest in Guanacaste
Large herbivores are vital for forest regeneration in many parts of the world



Sharks MOS2



Eliminating the largest animals in any ecosystem can have complex, sometimes counter-intuitive effects.
It may result in unpredictable ecosystem cascades and a damaged environment.



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Sharks exert top-down control upon smaller predators; regulate marine ecosystem structure and function; and prevent undesirable environmental changes:

- algal overgrowth of coral reefs
- declines in important food fisheries.

Photo by Mohamed Samir | © Save Our Seas Foundation. Copyright



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The largest predatory sharks hold the bulk of the nutrients present in some marine ecosystems.
Removing these animals from the sea transfers these nutrients to land.
The environmental consequences may be similar to clearing old growth forests.

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Carefully managed sharks and rays can support sustainable fisheries. These provide:

- income and food security for coastal communities,
- valuable products for export, and
- highly profitable ecotourism operations



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Ecotourism operations may be more valuable (\$/animal) than fisheries.



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Marine ecotourism

- 100 locations worldwide
- 400 shark ecotourism operations
- 590,000 shark watchers
- > \$314 million per annum
- Support 10,000 direct jobs
- Bahamas: shark tourism > \$100 million
- Palau: shark tourism \$2.7 million
- Moorea, French Polynesia \$5 million
- Fiji: >\$42 million (one site \$5 million)



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If trends continue, in 20 years' time:

>1,000,000 shark watchers,
\$ 780 million in tourism revenue



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Shark and ray populations provide important indicators of ecosystem health

They are iconic flagships for sustainable environments.

They provide important elements of **natural capital** – the vital goods and services upon which we all depend.



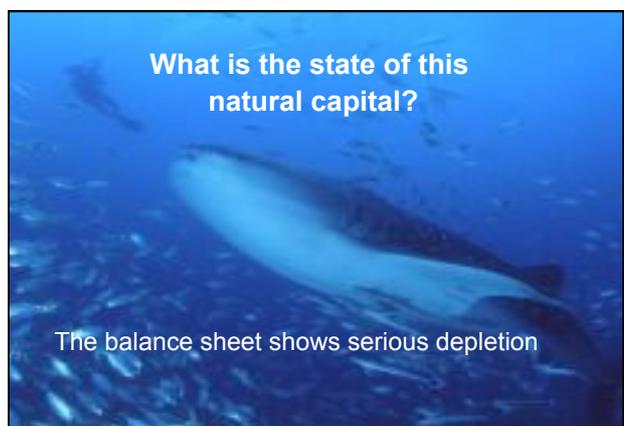
© Michael Spaul | White Shark | not copyright

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What is the state of this natural capital?

The balance sheet shows serious depletion

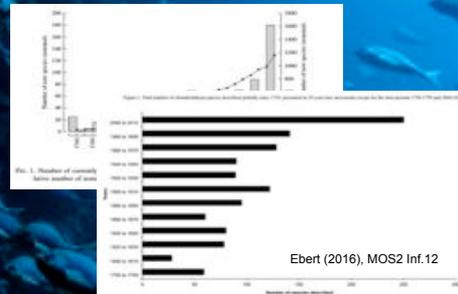


The status of migratory sharks & rays

- Thirteen Red List workshops;
- Intensive correspondence;
- 302 experts from 64 countries;
- 1,041 species assessed using IUCN Red List Criteria and Categories.
- Shark Specialist Group regional reports;
- Summary paper in *eLIFE* (Dulvy *et al.* 2014, MOS2 Inf.7)

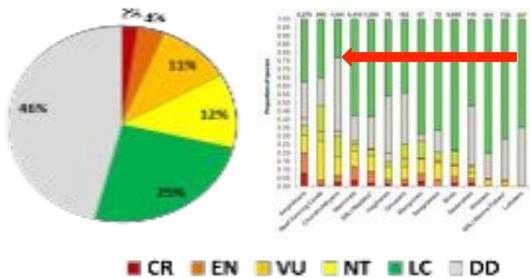


Chondrichthyan fish biodiversity



Global Red List Results

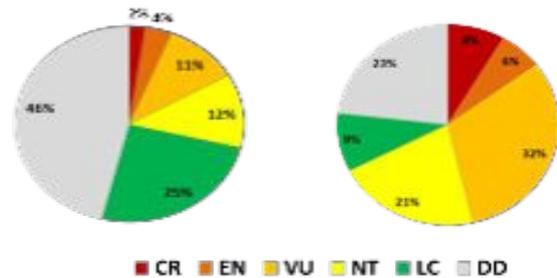
All species (sharks, skates, rays, chimaeras)



Global Red List Results

All species (<1,000)

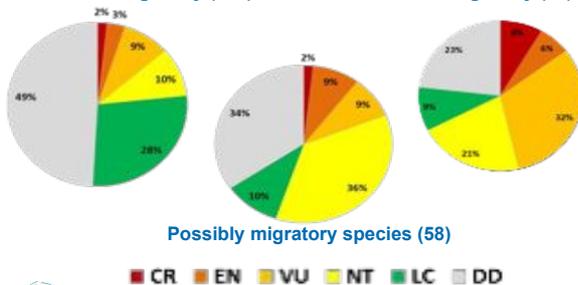
Migratory species (95)



Global Red List Results

Non-migratory (940)

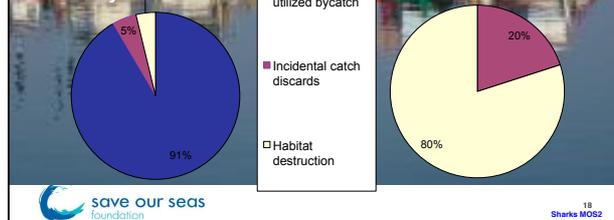
Migratory (95)



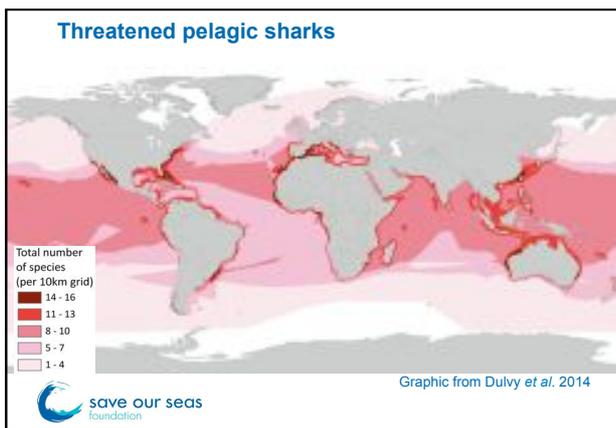
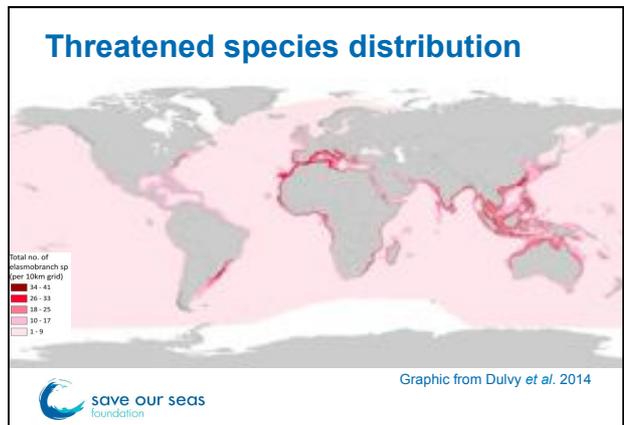
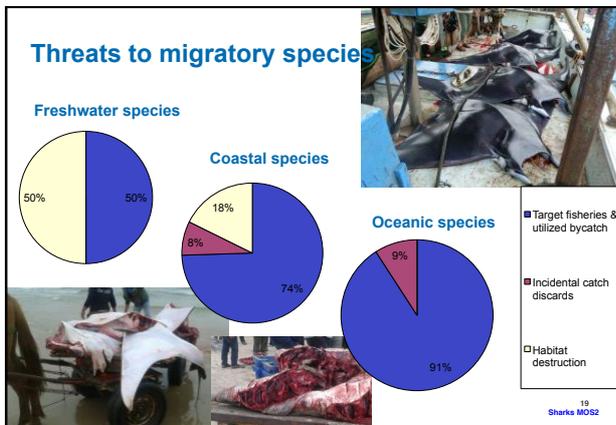
Threats to migratory species

Primary threats

Secondary threats



18
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Global Red List Results

Large-bodied, shallow-water, benthic and pelagic species are at greatest risk

Most threatened Orders:

- mackerel sharks (67% of Lamniformes),
- angel sharks (55% of *Squatina* spp.), and
- skates and rays (20% of Rajiformes)

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Global Red List Results

Most threatened families:

- sawfishes,
- angel sharks, wedgefishes, numb-fishes, stingrays, guitarfishes and
- thresher sharks

Most threatened by habitat:

- 25% of shallow benthic spp; and
- >50% of pelagic high seas species are threatened.

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Sharks MOU Annex I (7 species)

- 5% of all threatened migratory species
- 0% of all Critically Endangered migratory sharks
- 0% of all Endangered migratory sharks
- 0% of the seven most threatened families

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CMS Appendices (29 species)

- 45% of all threatened migratory species
- 63% of all Critically Endangered migratory sharks and rays
- 50% of all Endangered migratory species
- 40% of all Vulnerable migratory species
- Two of the seven most threatened families (sawfish, thresher sharks)



CMS Sharks MOU & Social Capital

The MOU is not legally binding, but hugely important in generating **social capital**

Signatories, wildlife and fisheries managers, NGO partners and observers meet through CMS to work together and achieve common aims

Trust and cooperation is built between delegates collaborating for a common good – rebuilding natural capital for the benefit of all.



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Broader conservation strategies

Parties' implementation of listings in CMS and CITES Appendices have an important role

Regional fisheries bodies (management and advisory) are key partners

More could be achieved through Regional Seas Programmes

These and other needs will be addressed in the Global ten-year Strategy being launched today



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Acknowledgements

IUCN Shark Specialist Group and Red List Programme;
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Thank you

