ICRI2010 – MONACO – Jan. 2010 – Fisheries session

REEF SHARKS: WHY SHOULD THEY BE PROTECTED?

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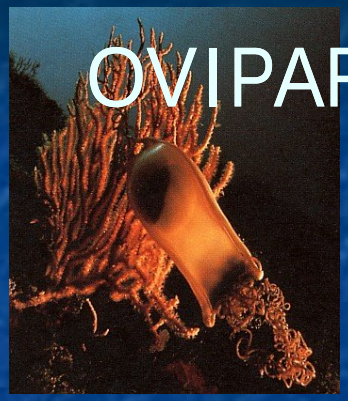
Plan de l'exposé

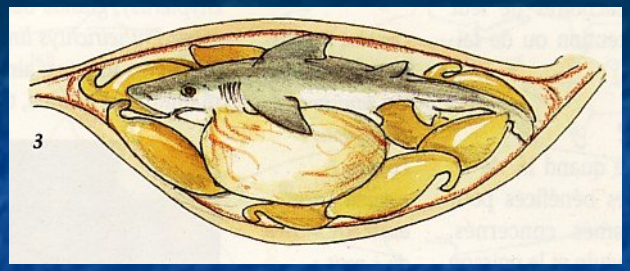
- Why sharks are so vulnerable ?
- What is their role in the reef ecosystem ?
- Quick overview on current status and protection

Reproduction – varied but not efficient



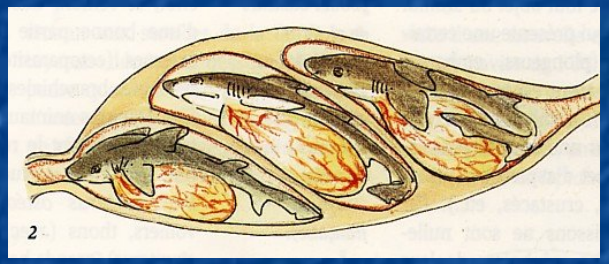
OVIPAROUS

Ex. Leopard shark, etc.



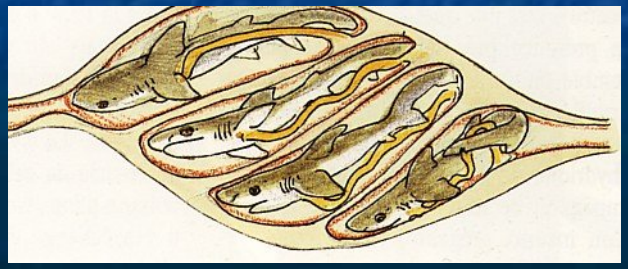
Oophagy, cannibalism

OVOVIVIPAROUS



Ex. Whale shark, Tiger shark etc.

VIVIPAROUS



Ex. Grey reefer, lemon shark, etc.

Exemple of the Tiger Shark

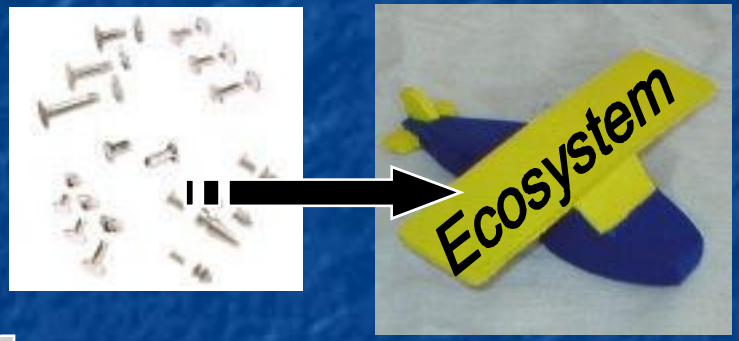
Tiger shark *Galeocerdo cuvieri*

- Max. size 7,4 m
- Max. age >30 years
- Marurity: around 10 years (3 m)
- Pregnancy: 13 to 16 months
- Phase 1: eggs in the internal cavity (50 embryos)
- Phase 2: development during 9 months
- Cannibalism, natural death= 10 juv.

Ecosystem: 20 years for replacing a Tiger shark

Resilience of ecosystems: old theories

Theory of the « rivets »



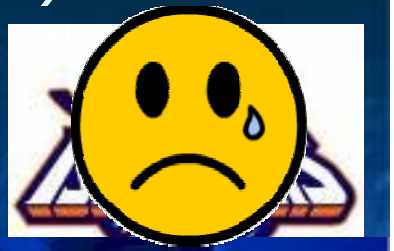
Theory of the « driver and passengers »

Hybrid theory

SHARKS: driver or passenger ?

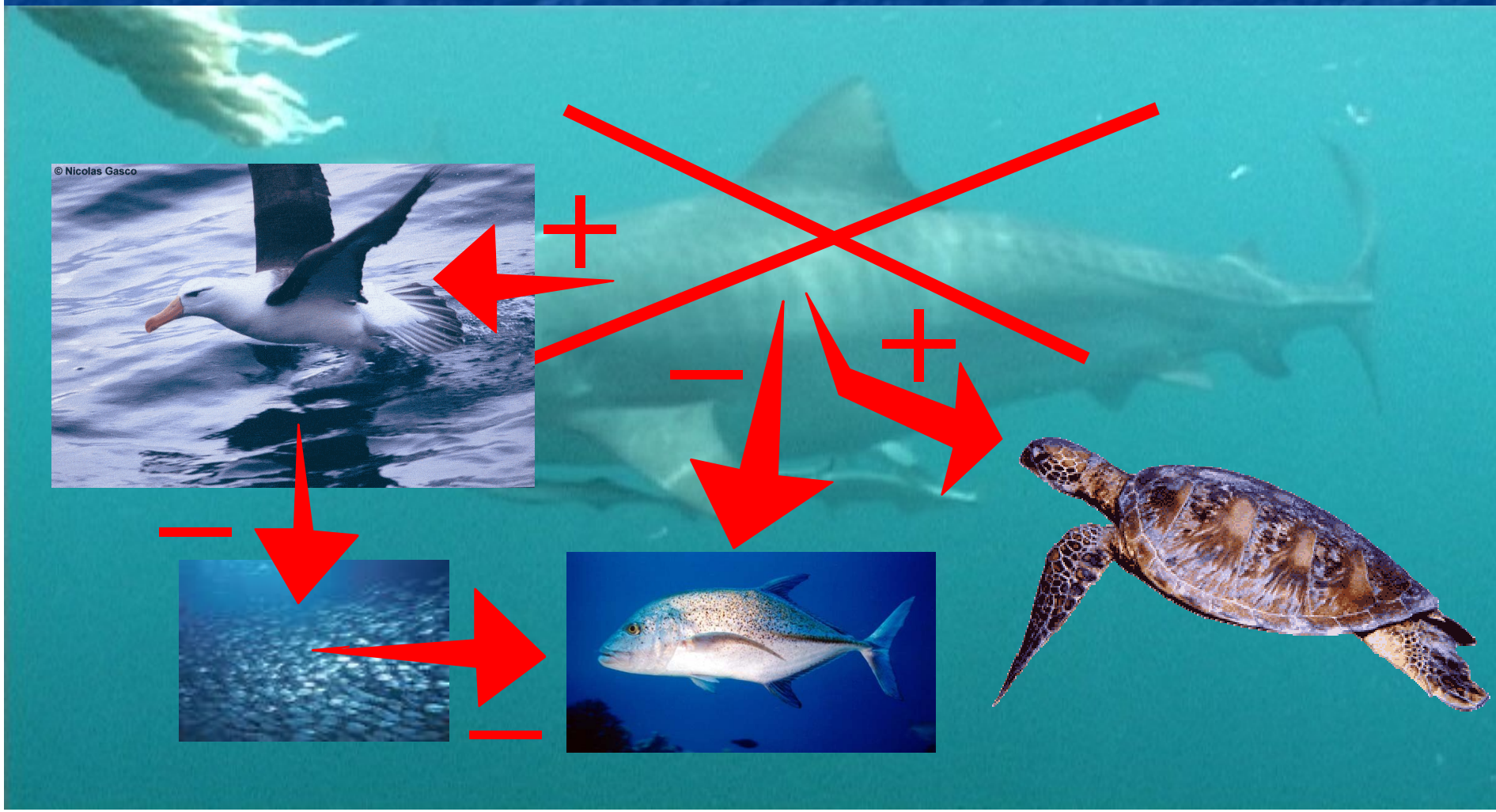
DIRECT « CASCADING » EFFECTS (1)

Scientific publication : Myers et al. (2007). Cascading effects of the Loss of Apex Predatory Sharks from a Coastal Ocean. *Science* 315: 1846.

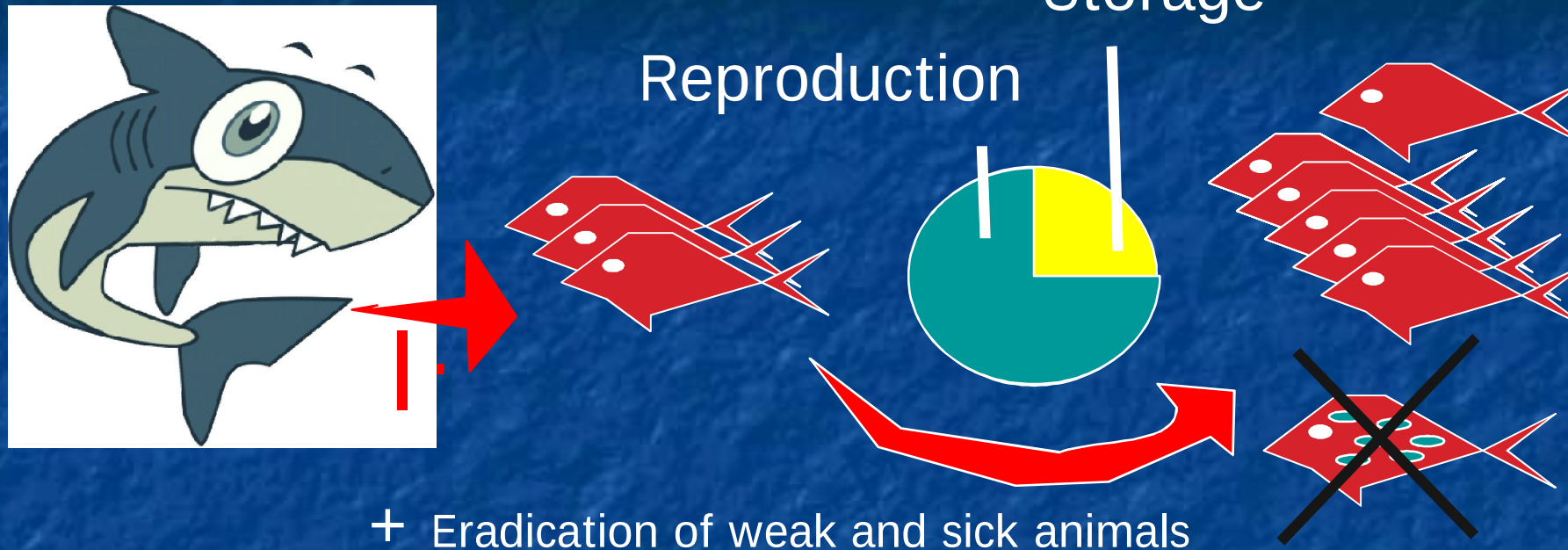


INDIRECT « CASCADING » EFFECTS (2)

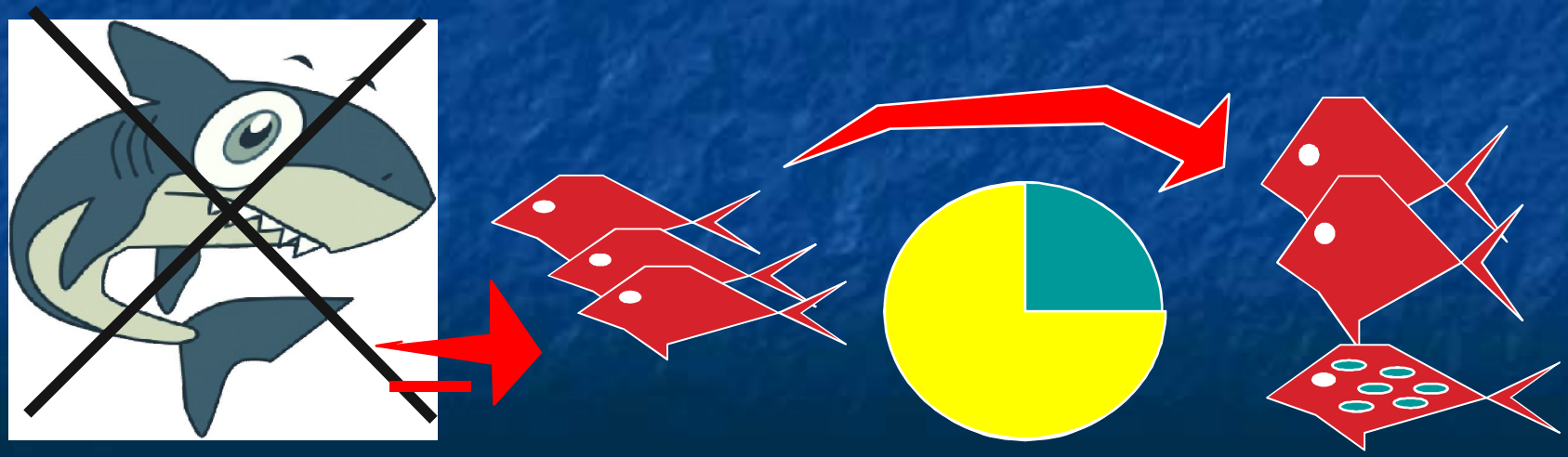
Scientific publication : Stevens, J. D. et al. 2000. The effects of fishing on sharks, rays, and chimaeras (chondrichthyans), and the implications for marine ecosystems. ICES Journal of Marine Science, 57(3), pp.476-494.



Drivers for natural selection (3)



+ Eradication of weak and sick animals



OVERFISHING

> 50,000,000 OF SHARKS PER YEAR

Scientific publication: J.K. BAUM et al., 2003. Collapse and Conservation of Shark Populations in the Northwest Atlantic. Science. Vol. 299, pp. 389-392.

Since 1986, decreasing stocks:

Hammerhead = 89%

White= 79%

Tiger = 65%

Blue= 60%

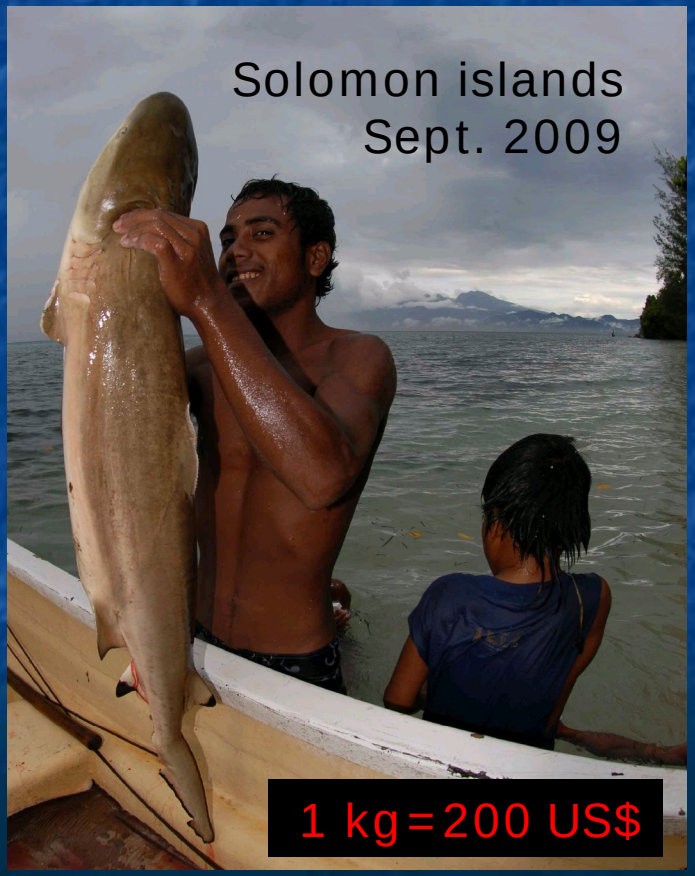
Mako = 49%

Since 1992, decreasing stocks:

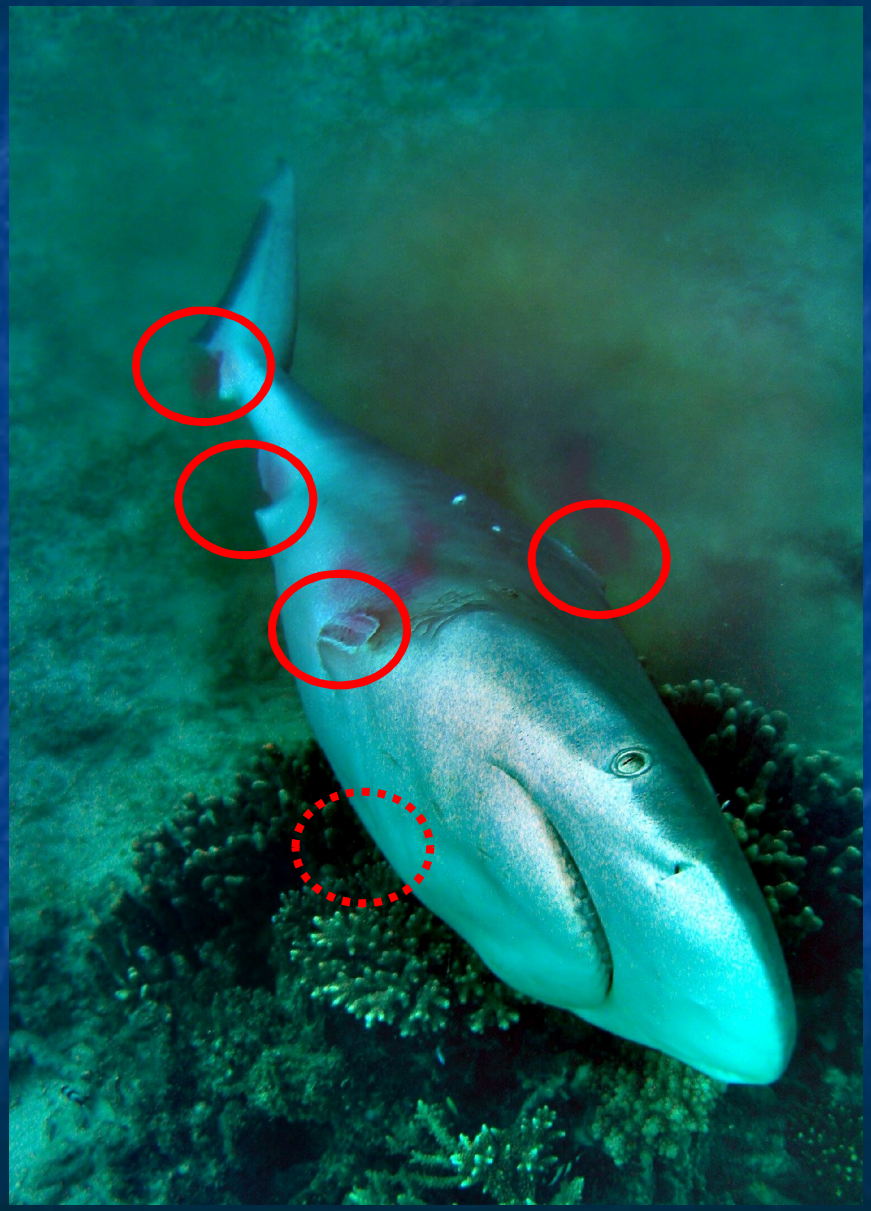
Coastal sharks (*Carcharhinus sp.*) = from 49 to 83 %

Increasing demand for shark fins

Development of a specific fishing for sharks, including coastal reef sharks



« Shark Finning »: inacceptable technic



Removing of anal, pectoral, dorsal and caudal fins

Live sharks thrown back at sea

Waste: <5% of the total weight

Reason : economic approach (room available in fishing boats)

Insufficient international regulation

National decision: banning of « finning » by USA, Canada, Australia, New Zealand

Convention for International Trade of Endangered Species

Annex II of CITES

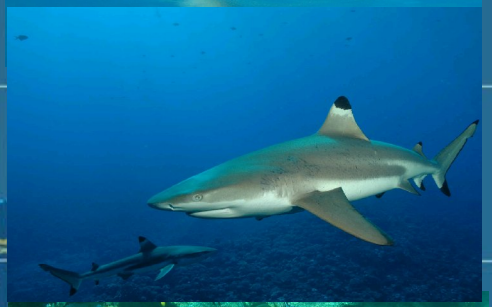
Alarming situation in the Pacific

Urban concentrations:
Area <50 km
Level of decrease:
99 %
Area <400 km
Level of decrease:
60 % à 85 %

11th International CoralReef SYMPOSIUM 2008
FORT LAUDERDALE • FLORIDA • USA

Figures ICRS2008

Annual decrease of stocks: 17 % and 7 %



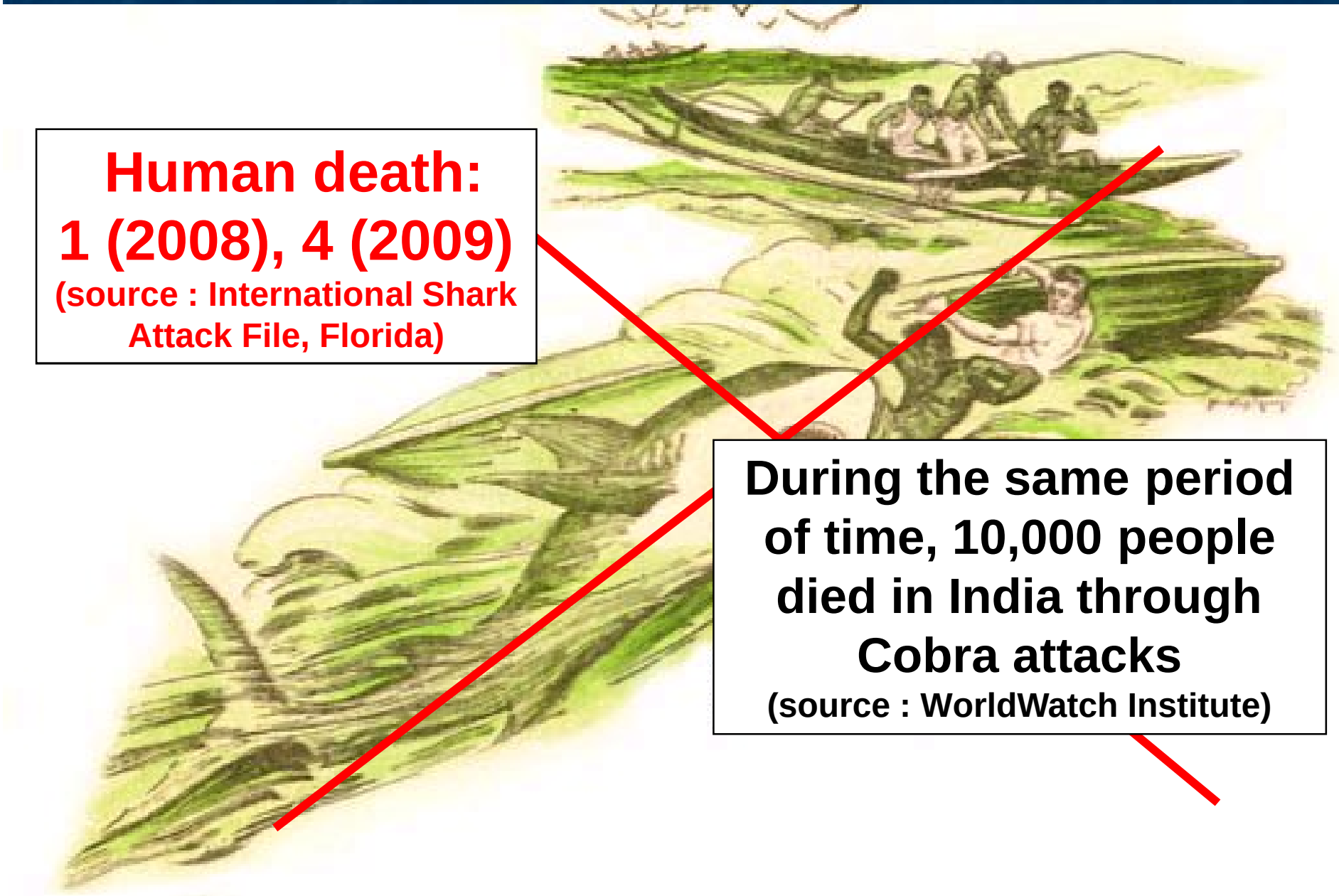
SHARKS: a valuable and bankable asset

CULTURAL: TOTEM ANIMALS

Eco-tourism

Moorea: based on presence in diving sites, the annual **economical value** for a lemon shark varies from **30 to 60,000 US$**

Real danger: key figures...



Human death:
1 (2008), 4 (2009)
(source : International Shark Attack File, Florida)

During the same period of time, 10,000 people died in India through Cobra attacks
(source : WorldWatch Institute)

Man, the ultimate predator