



Mitigating shark bycatch

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of Tropical Tuna Purse Seine Fisheries

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Food and Agriculture
Organization of the
United Nations



Key Shark Species Caught by Purse Seiners

Over 90% of shark bycatch by purse seiners
is composed of **Silky Sharks**
(mostly small individuals)



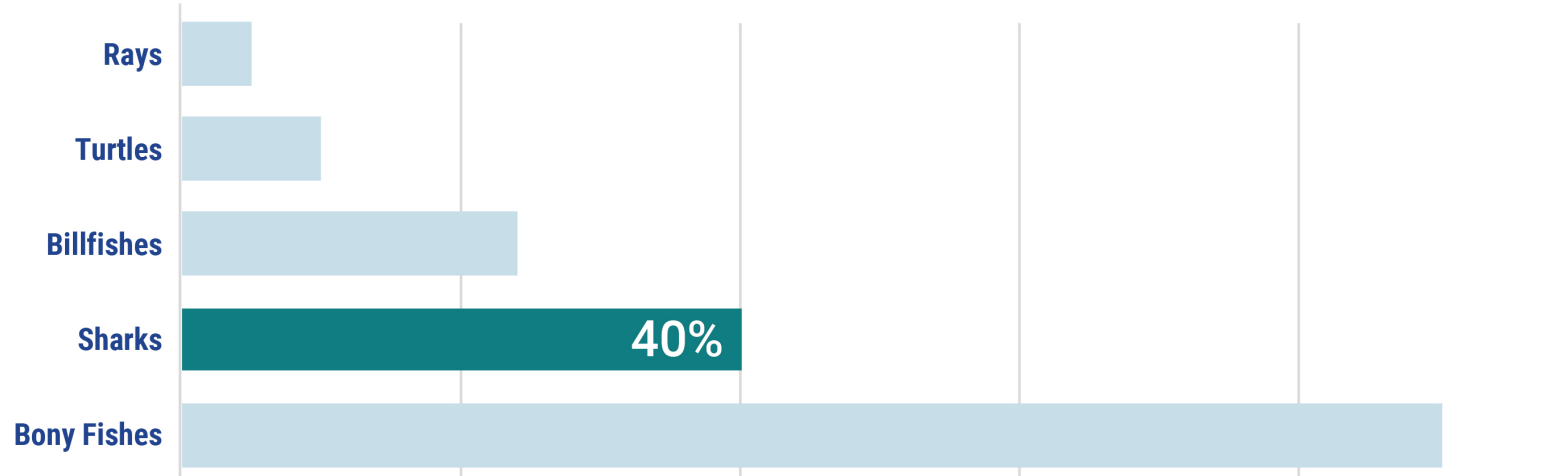
Key Shark Species Caught by Purse Seiners

- Second main shark species caught at FADs is **Oceanic White Tip Sharks**
- Commonly **perceived as rare**
- There is a wide consensus that **populations are decreasing**

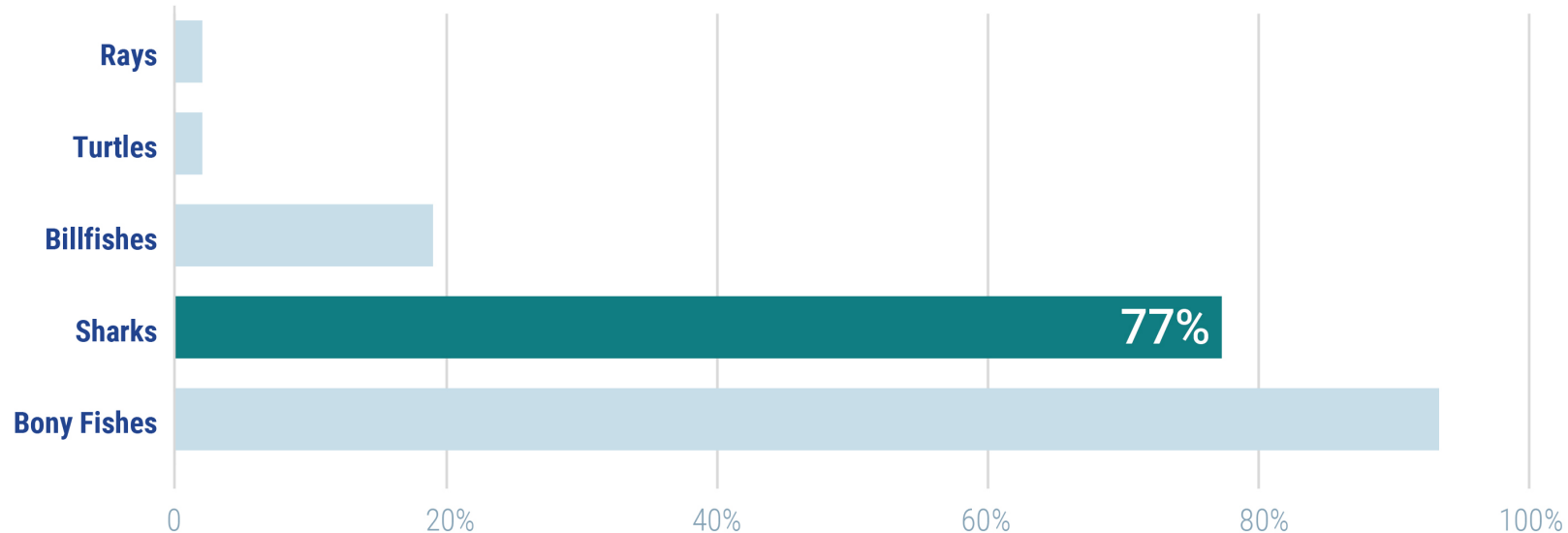


Most Floating Objects Have Sharks

Atlantic Ocean



Indian Ocean



Source:
French Observers Data
IRD MARBEC Ob7
2013-2017

Mitigation

Not a single easy method to solve the issue

BUT

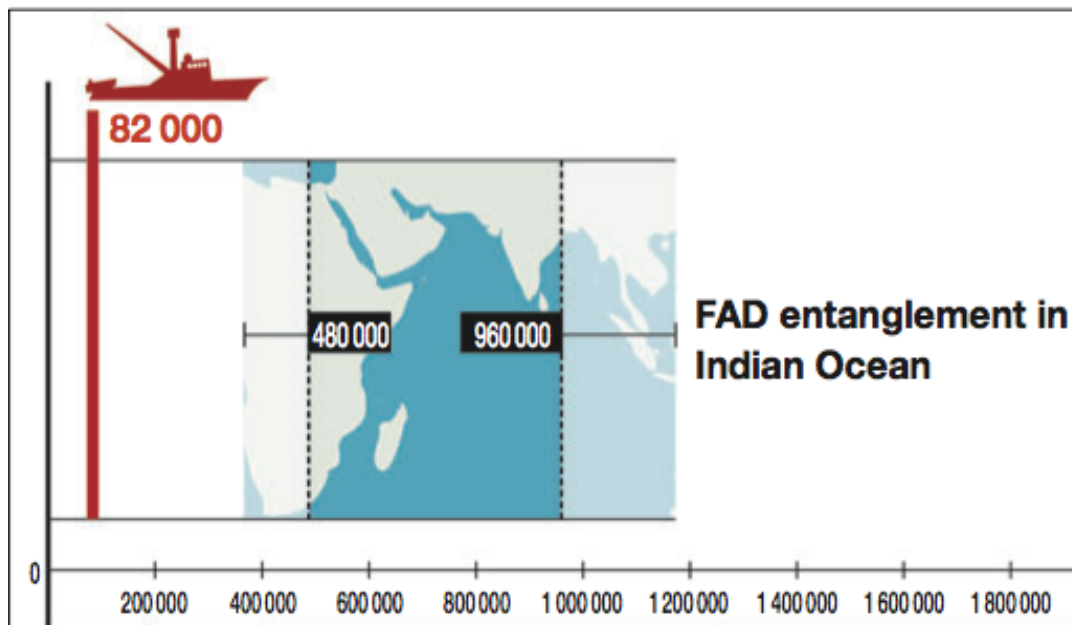
4 successful methods to reduce impacts of FADs and FAD fishing on sharks



Entanglement Issues

Scientists, managers, fishers:

Problem of entanglement of sharks in nets of FADs was evidenced and quantified in the Indian Ocean



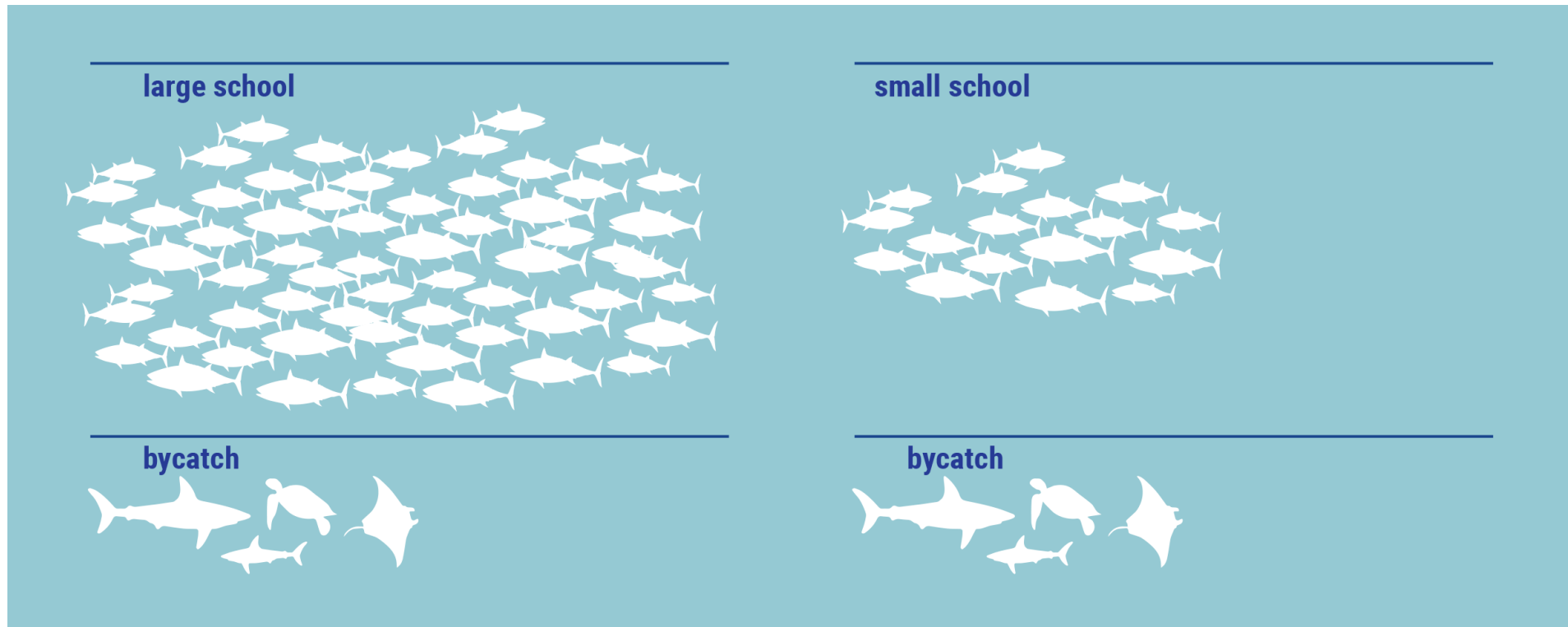
Ban the use of netting to build FADs (See *ISSF guide for Non Entangling FADs*)



Target Large Schools

Avoiding sets on schools of tuna less than 10 tons would reduce the amount of bycatch of silky sharks by **21-41%** depending on the ocean.

Dagorn et al. 2012



Fish-and-Release Success

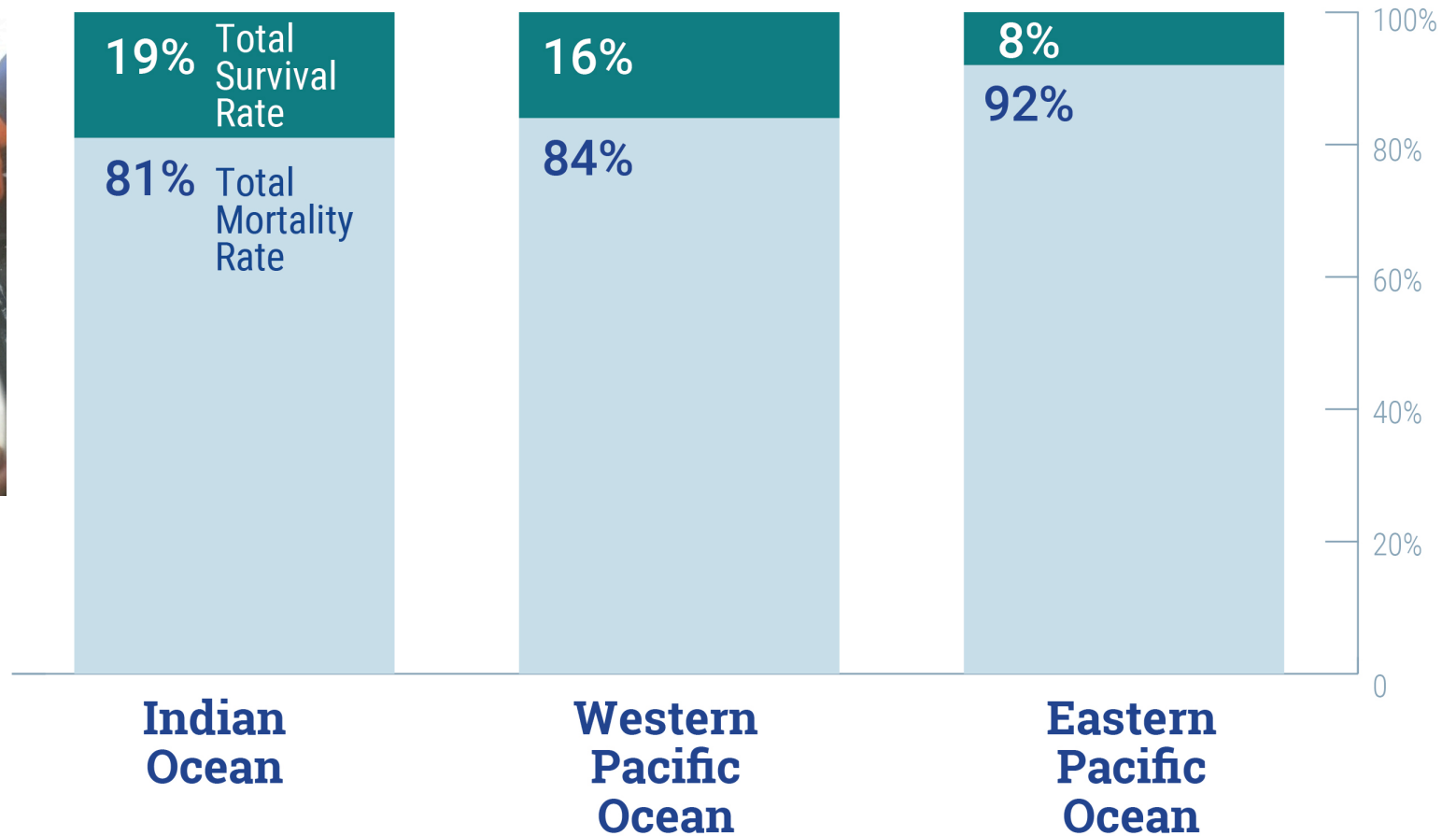
15–35% of sharks present in the net can be caught and released
(depending on shark fishing experience) with **97% survival rate**



Post-Release Survival of Silky Sharks released from the deck



Studies in three oceans, onboard different purse seiners, have shown that about **50% of sharks released can survive**



Poisson et al. 2014
ISSF, EU MADE, Orthongel CAT Requins

Hutchinson et al. 2015, ISSF

Eddy et al. 2015, ISSF

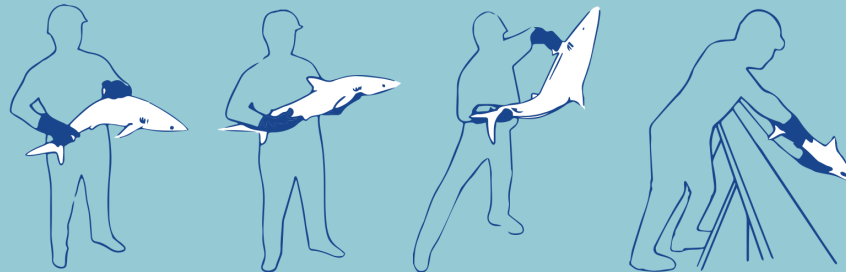
Protecting Sharks

4. Release from deck after incidental catch

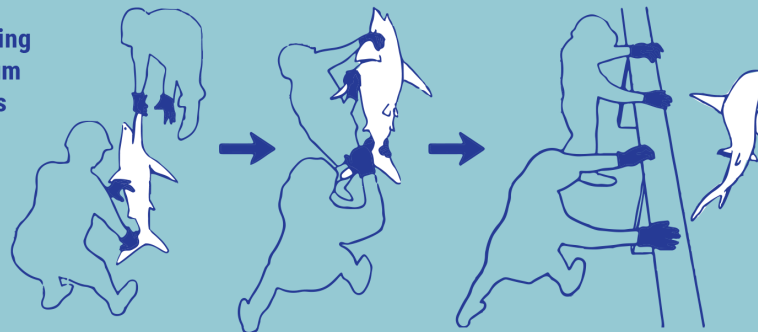
Implement best practices to
maximize shark survival after release

Can save
15-20%
of sharks
caught

Handling
small sharks



Handling
medium
sharks



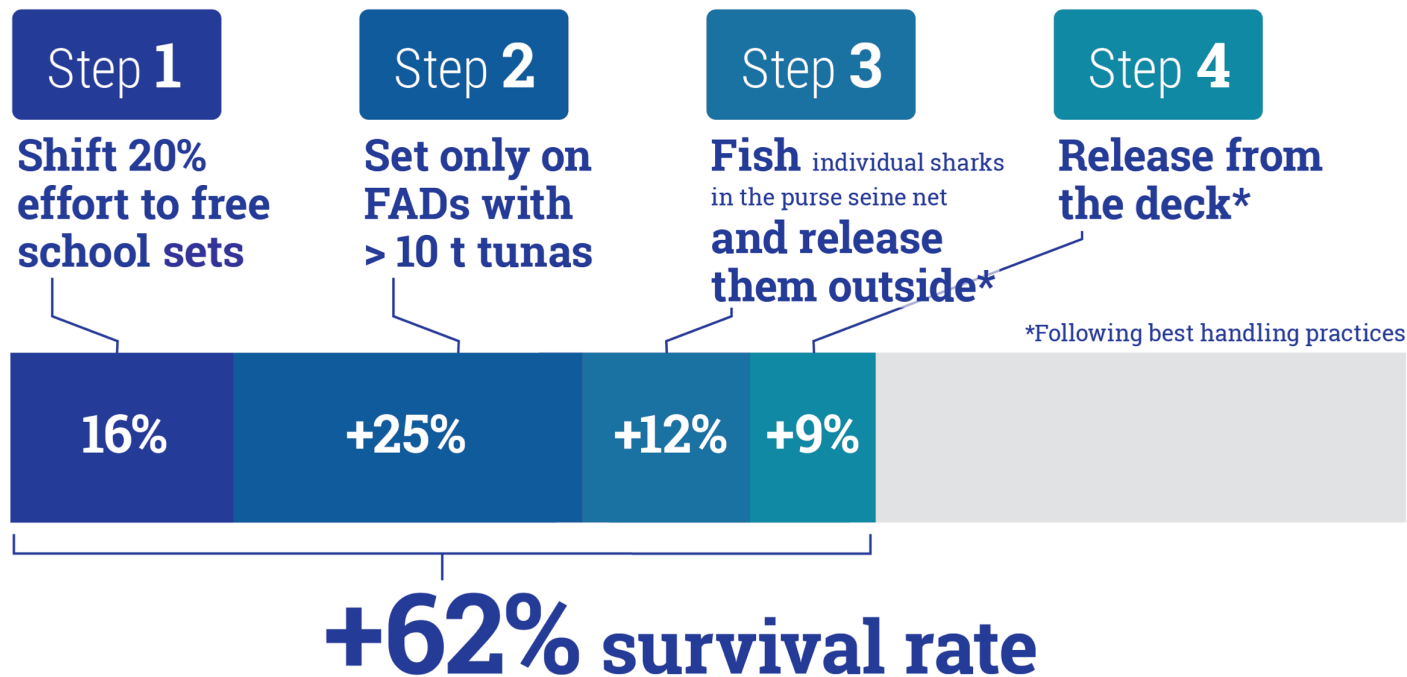
Illustrations based on Poisson et al, 2012

Improvements Achieved So Far



Improving Silky Shark Survival

Used in combination,
Four actions can increase silky shark survival in purse seine fisheries **by 62%**.



Use of non-entangling FADs will also increase survival related to unobserved (ghost) mortality.

Future research

- Electronic buoy counting sharks
- Attract sharks away from FADs
- Separate sharks from tuna in the net
- Avoid hotspots (exceptional sets with lots of sharks)

