



Marine Mammal Commission

An independent agency of the U.S. Government



Mitigating Marine Mammal Bycatch : *Technological and economic efficiency*

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Overview

- Marine mammals and fishery bycatch
- U.S. bycatch management
- A look at incentivizing approaches
- Two case studies



Bycatch – a global threat

Top killer of marine mammals worldwide
– over 650,000 mortalities each year



Bycatch – Why do we care?

- Marine mammals:
 - Protected species – some endangered
 - Non-consumptive value (e.g., tourism)



\$13 Billion
Value society gains
from recovering threatened and
endangered marine species.

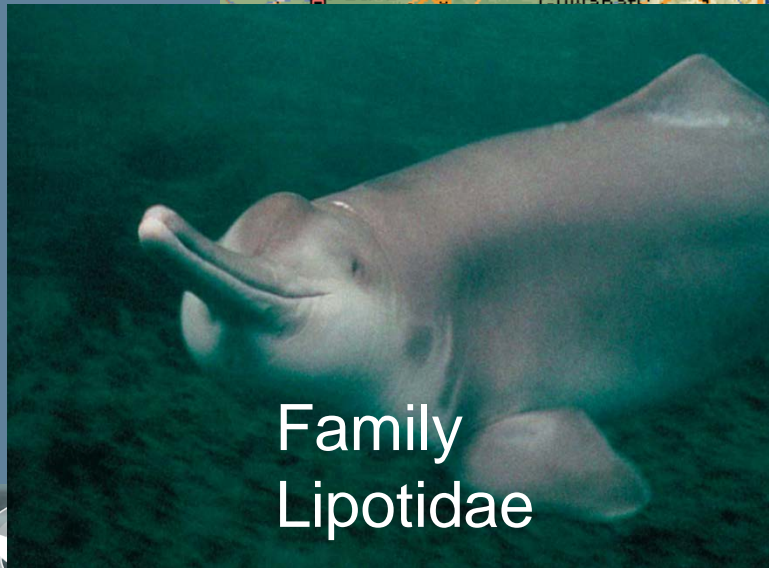
<https://www.st.nmfs.noaa.gov/marine-mammals-turtles/PRSIPP>



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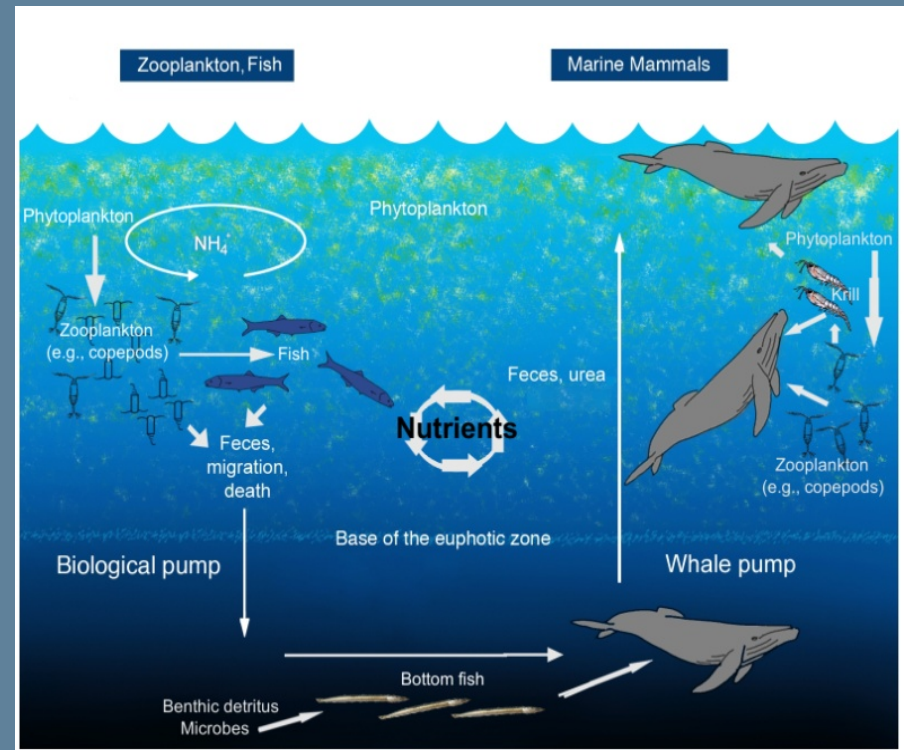
Baiji: first human-caused extinction of a cetacean species



Family
Lipotidae

Bycatch – Why do we care?

- The “Whale Pump”
- Whales add more productivity than they remove



From: Roman et al. 2010



Most intense bycatch

Small cetaceans: *dolphins & porpoises in gillnets*

Large cetaceans - *baleen whales in vertical lines, longlines*



U.S. Bycatch Management

- U.S. Fisheries
 - Take Reduction Teams (TRTs)
 - 40% reduction in bycatch
 - Primarily “top-down” measures
- Increased focus on U.S. imports
 - Pelly, MMPA, Magnuson Stevens



Imports – *90% of U.S. seafood*

- Pelly Amendment
- Magnuson-Stevens Bycatch Provisions
- Marine Mammal Protection Act import provisions – 8/1/16



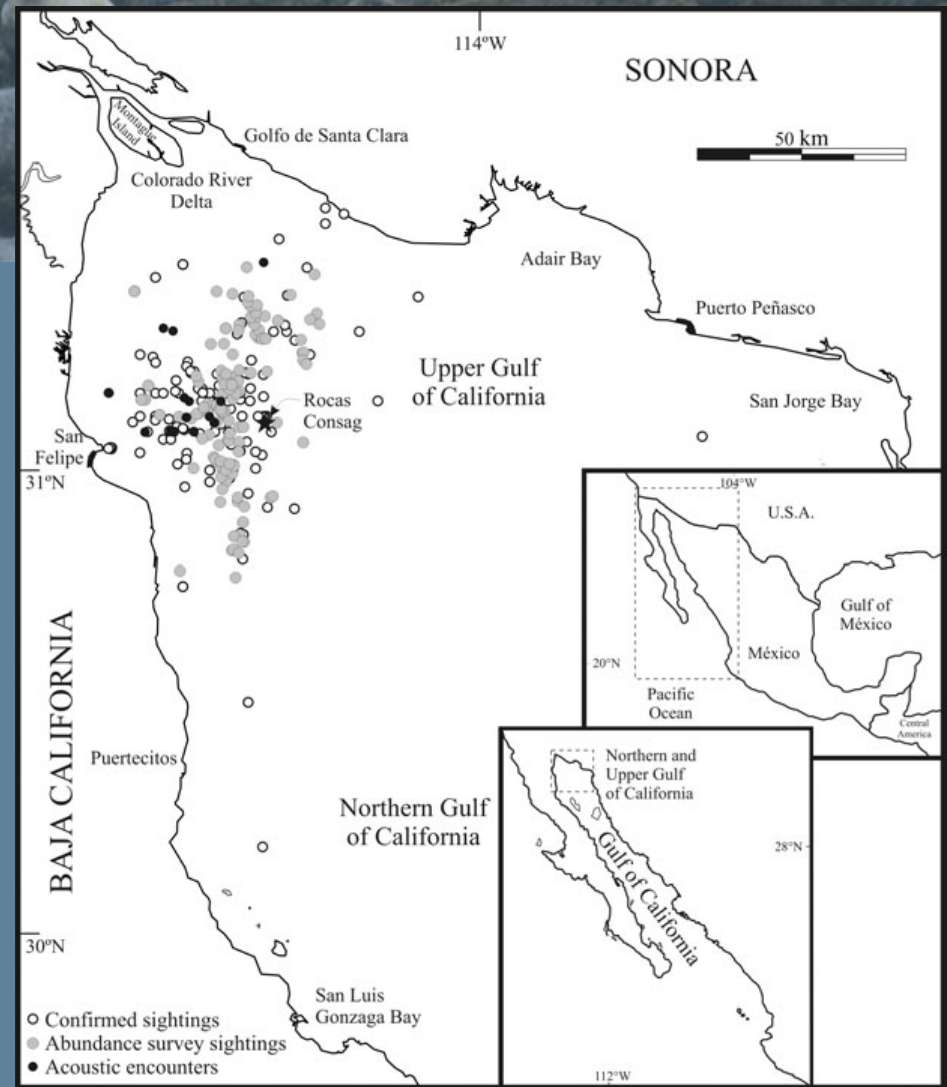
Incentivizing Bycatch Reduction

- Bycatch rights or credits
- Payments for ecosystem services (PES)
- Offsets
- Market measures
- Integrated Conservation Development Projects



Vaquita: *critically endangered*

- First described in 1958
- Endemic to the northern Gulf of California, Mexico



Rojas-Bracho et al.
2006

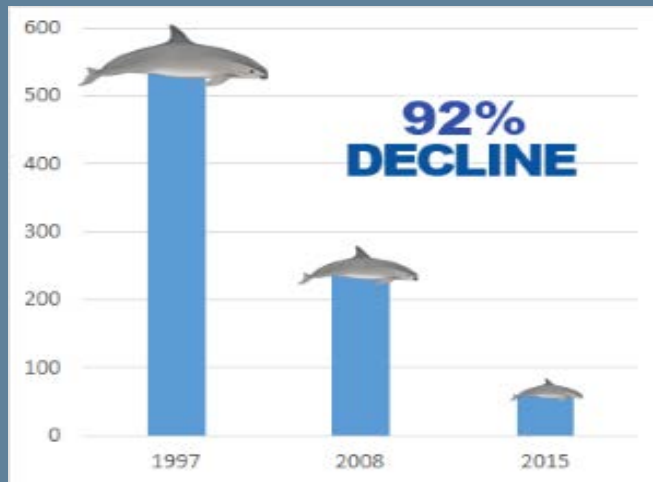


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Vaquita

- * 92% decline in population from 1997-2015
- * Only one cause: gillnet bycatch
- * Legal gillnet fishery closed, illegal fishing continues



Addressing vaquita bycatch

Short Term:

Gillnet 2-year closure with
compensation (“PES-like”)

Longer term

Alternative gear

Blue markets

Alternative livelihoods – ICDP



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Other actions for vaquita

- USG Market Measures:
 - Pelly filed 2014 – just updated
 - Potential MMPA import provisions
- Intense international focus
- Alternative sources of PES funding?



Bycatch Case Study: North Atlantic Right Whale

- Some 85% of whales have gear on them or entanglement scars
- Primarily vertical line from lobster pot gear



Addressing NARW bycatch

Top-down measures:

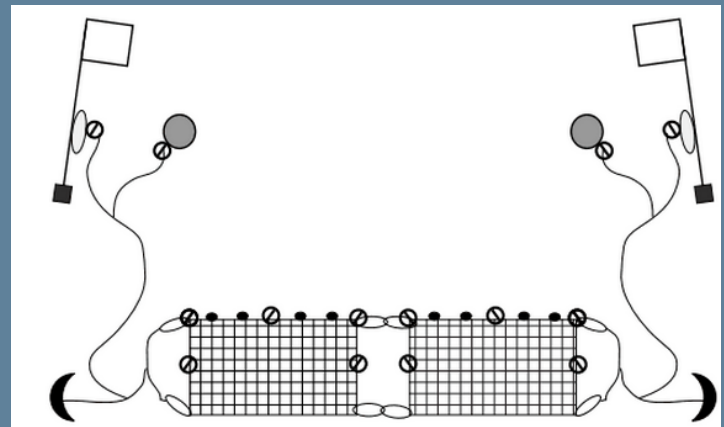
- Gear mods

- T/A closures

Incentivizing measures:

- Tax on landings/
deployment

- Gear marking



Canada's Atlantic Lobster Fishery

- * Nearly all is exported to the U.S. market
- Potential action under MMPA regulations?



Conclusions

- Marine mammal bycatch is a continued threat
- Need a wide range of tools
- Incentivizing approaches are working for finfish bycatch – let's get creative



Thank you!



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