



April 14, 2003 Cape Cod Bay

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## **Biodynamics of Large Whale Entanglements**

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# BACKGROUND

Large whale entanglements in fixed gear persists as a serious threat to NARWs and other species and populations not just in NE but worldwide

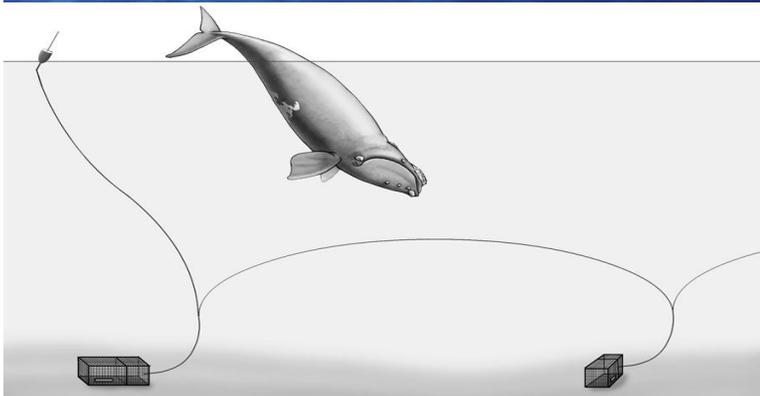
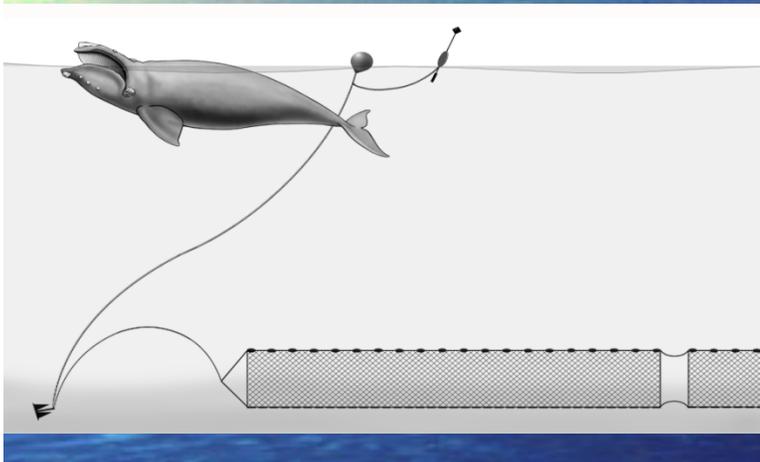
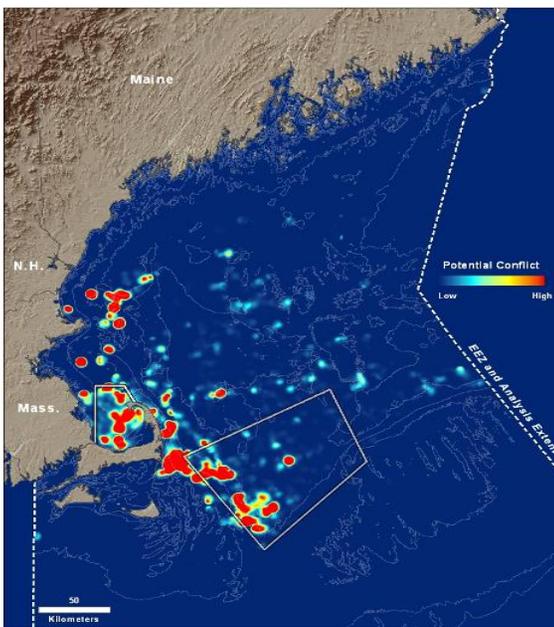
Pot and gillnet fishing not going away, so how can we change fishing so that it eliminates the threat?

# SOLUTIONS

- Spatial-temporal closures is one approach to avoid entanglement “hotspots” (for example, Jan-May gillnet ban in parts of Cape Cod Bay)

- Reduce or alter fisheries profile (e.g., vertical line reduction)

- Change fishing gear or methods (e.g., sinking groundline)



# CHALLENGES

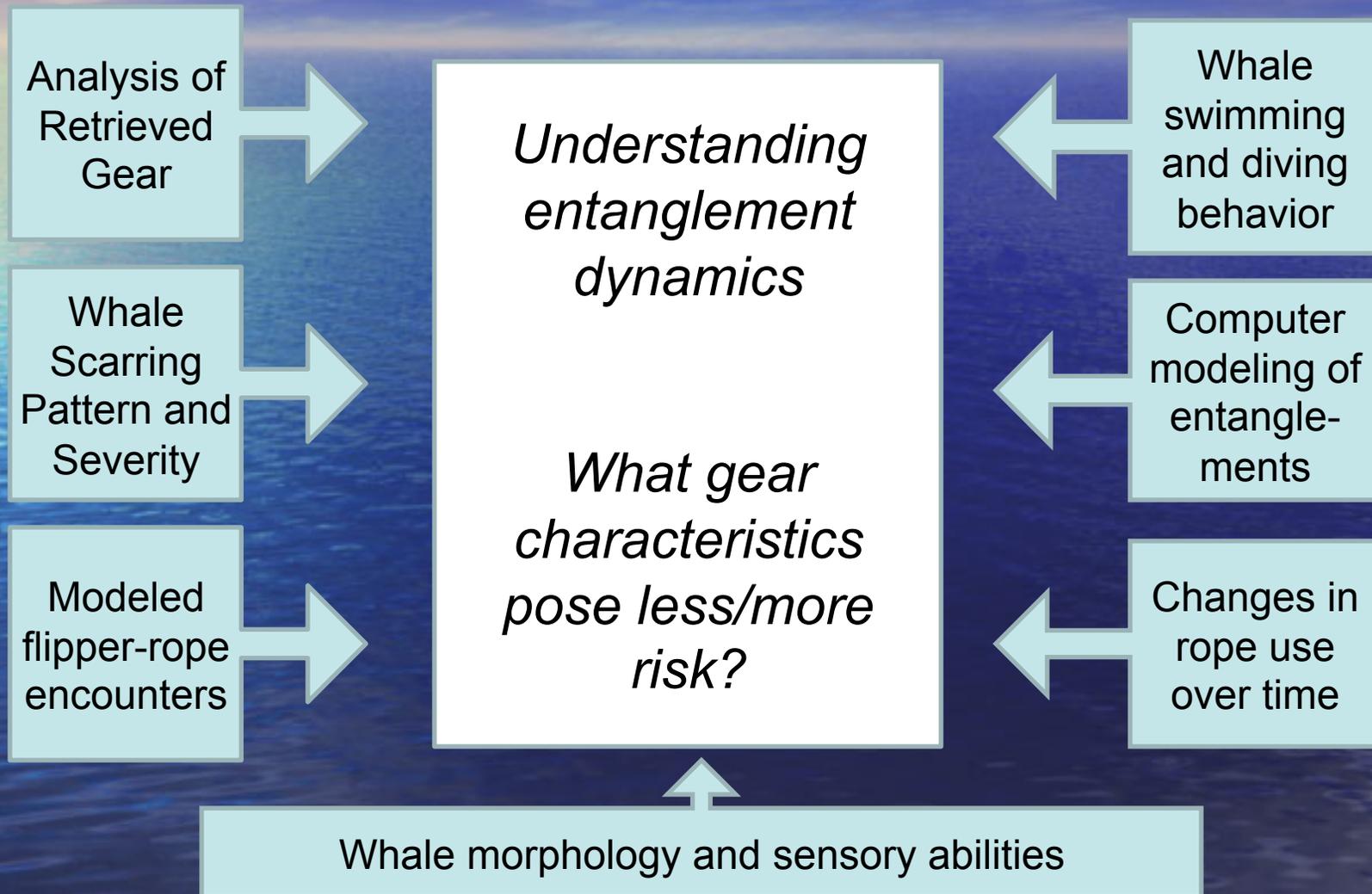
We don't understand very well the dynamics of whale entanglements

- *Are there gear characteristics that correlate with entanglement severity?*
- *Does certain whale behavior put them at risk of entanglement?*
- *What do whales do immediately after contact with gear?*
- *Could stiffer ropes reduce the probability of entanglement?*
- *Are there sensory cues that could be employed to help whales avoid gear?*

# OPPORTUNITIES

- Additional analysis of retrieved gear
- Incorporate information on scarring and whale swimming behavior
- Study the dynamics of gear-whale model encounters
- Model the dynamics of entanglements
- Study sensory capabilities of whales
- Study dive behavior of whales by time, light, habitat, and season to evaluate risky behavior

# BIODYNAMICS OF LARGE WHALE ENTANGLEMENTS PROJECT



# NEXT STEP

- Reverse Engineering Workshop, Feb. 16-18, Woods Hole
- 15-20 fishermen plus disentanglement experts, engineers, wildlife biologists, fisheries experts

# Acknowledgements

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