Analysis of United States Longline Fishing Regulations and Effects on Sea Turtles

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U.S.Longline Fishing Regulations aimed to protect sea turtles-2004

In Hawaii and some regions in the North Atlantic, shallow-based longline swordfish vessels had following regulations:

1) Use of maximum 10 degree offset 18/0 circle hooks and fish bait (vessels had previously used narrower 9/0 J hooks with squid bait),
2) Restricted annual effort,
3) Annual limits on loggerhead (*C. caretta*) & leatherback (*D. coriacea*) turtle captures; and
4) 100% onboard observer coverage

Goals

- To complete a robust analysis of existing shallow set longline fisheries observer data to assess the efficacy of sea turtle bycatch regulations implemented in U.S. Atlantic and Pacific longline fisheries.

- The outcome will assist in evaluating the effectiveness of recovery actions for loggerhead, leatherback, olive ridley, and green sea turtles.

Data

- Hawaii's Longline Observer
- Atlantic Ocean Pelagic Observer Program

- Analyses to investigate relationships between the number and type of turtle interactions (live/dead, hooking/entangled) and operational components such as, depth, proximity to light sticks, bait type, hook shape, and hook size.

- Ocean's pelagic observer program from time periods prior to regulations (~ 1994 - 2000) to post regulation (~ 2004 - 2014).

Results will Inform:

- Domestic: Biological Opinions (how Federal actions affect protected species)

- International: RFMOs, eg.,ICCAT Subcommittee on Ecosystems and Inter American Convention on Sea Turtles (IAC). Also of value to the WCPFC, ISSF, and the FAO that aim to promote sustainable fishing worldwide.

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Reducing sea turtle interactions in the Hawaii-based longline swordfish fishery

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Fig. 1 – Mustad 9/0 J hook (left) and Lingren-Pitman 10° offset 18/0 circle hook (photo E. Gilman).

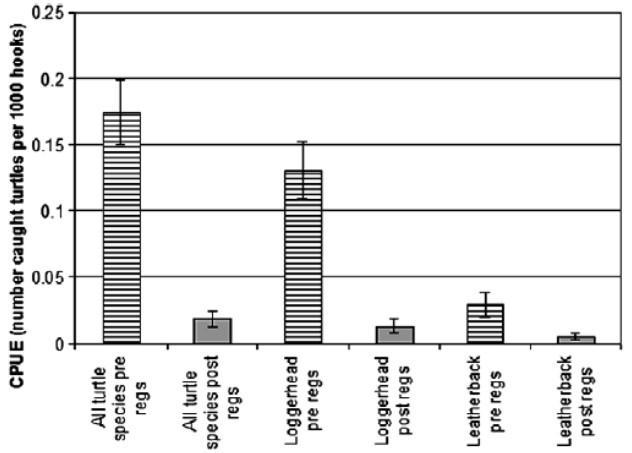


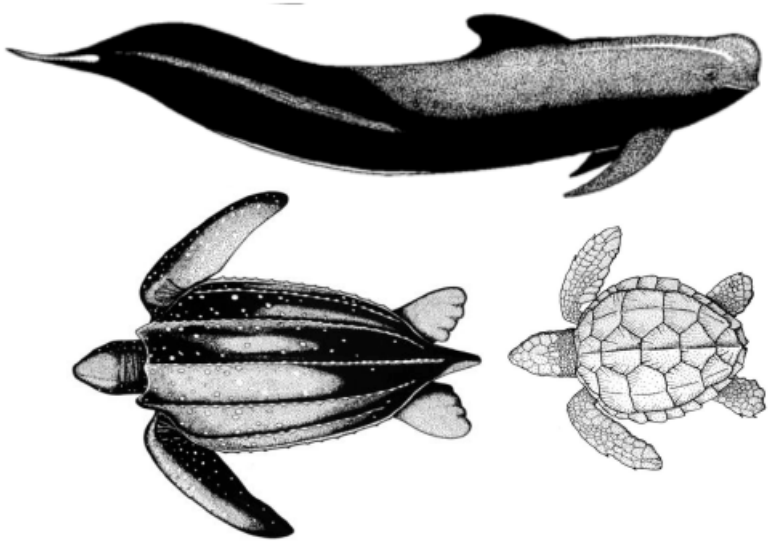
Fig. 2 – Sea turtle capture rates (captures per 1000 hooks) in the Hawaii-based pelagic longline swordfish fishery for combined turtle species, loggerhead turtles, and leatherback turtles, for the periods before and after regulations designed to reduce sea turtle captures came into effect. Error bars are bootstrapped (N = 1000) 95% non-parametric confidence intervals.

NOAA FISHERIES

NOAA TECHNICAL MEMORANDUM NMFS-SEFSC-607

Estimated Bycatch of Marine Mammals and Sea Turtles in the U.S. Atlantic Pelagic Longline Fleet During 2009

Lance P. Garrison and Lesley Stokes



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National Marine Fisheries Service
Southeast Fisheries Science Center
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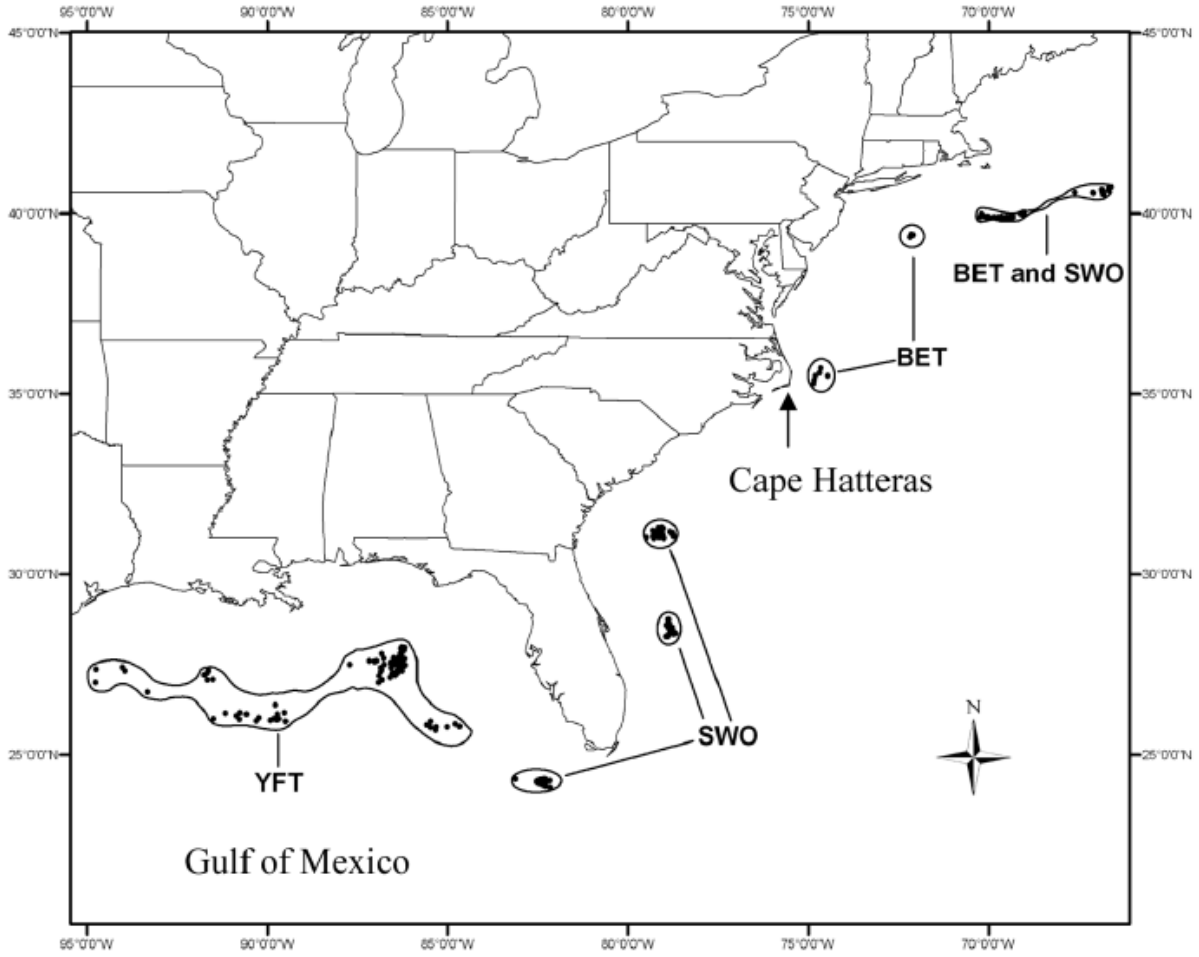
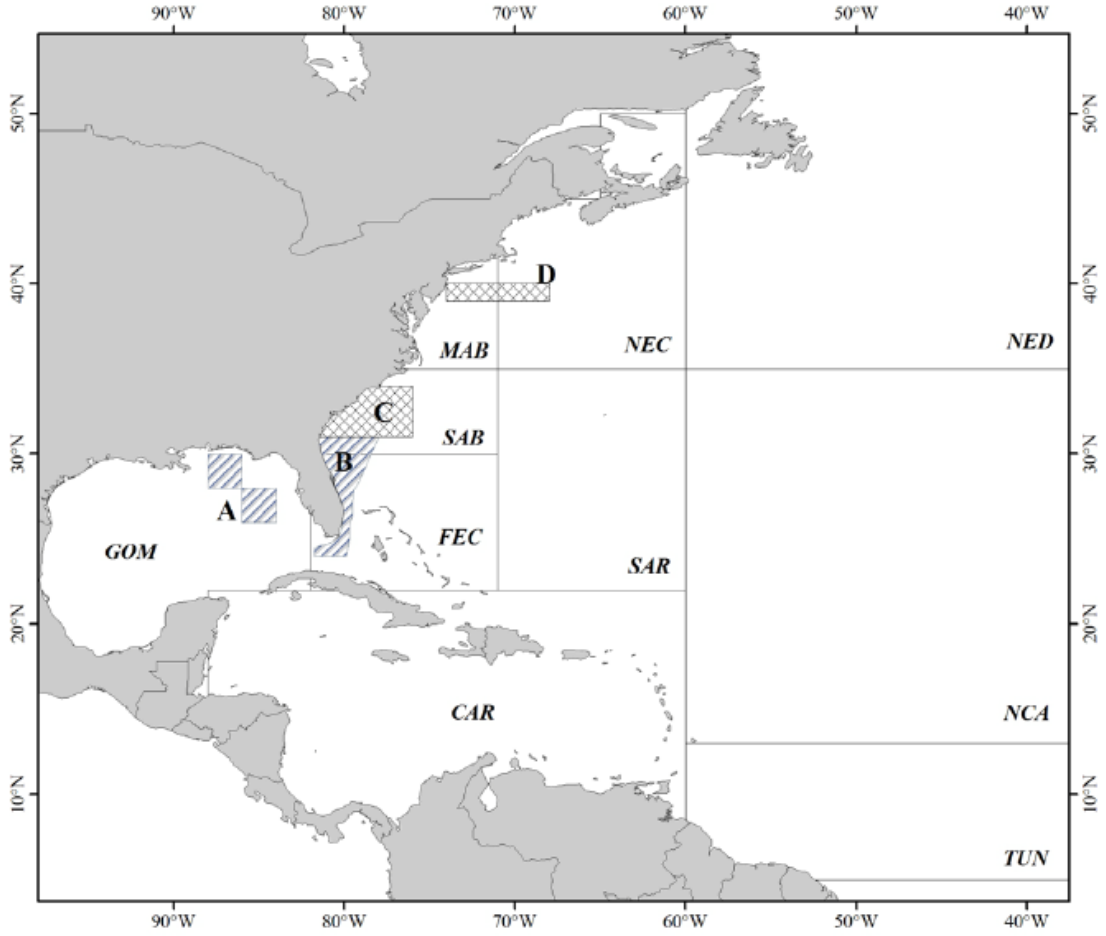


Figure 1. Map of the western North Atlantic off the coast of the United States showing the location of experimental sets by target (SWO = swordfish, YFT = yellowfin tuna, BET = bigeye tuna).

Atlantic Reporting Areas

Figure 1. Pelagic longline fishing areas in the North Atlantic Ocean: CAR = Caribbean, GOM = Gulf of Mexico, FEC = Florida East Coast, SAB = South Atlantic Bight, SAR = Sargasso Sea, MAB = Mid-Atlantic Bight, NEC = Northeast Coastal, NED = Northeast Distant, NCA = North Central Atlantic, TUN = Tuna North. Year-round closed areas in the De Soto Canyon (A) and the Florida East Coast (B) are indicated along with seasonal closures in the Charleston Bump (C) and in the Mid-Atlantic (D).



Will report on findings in future meetings

Questions & comments:

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