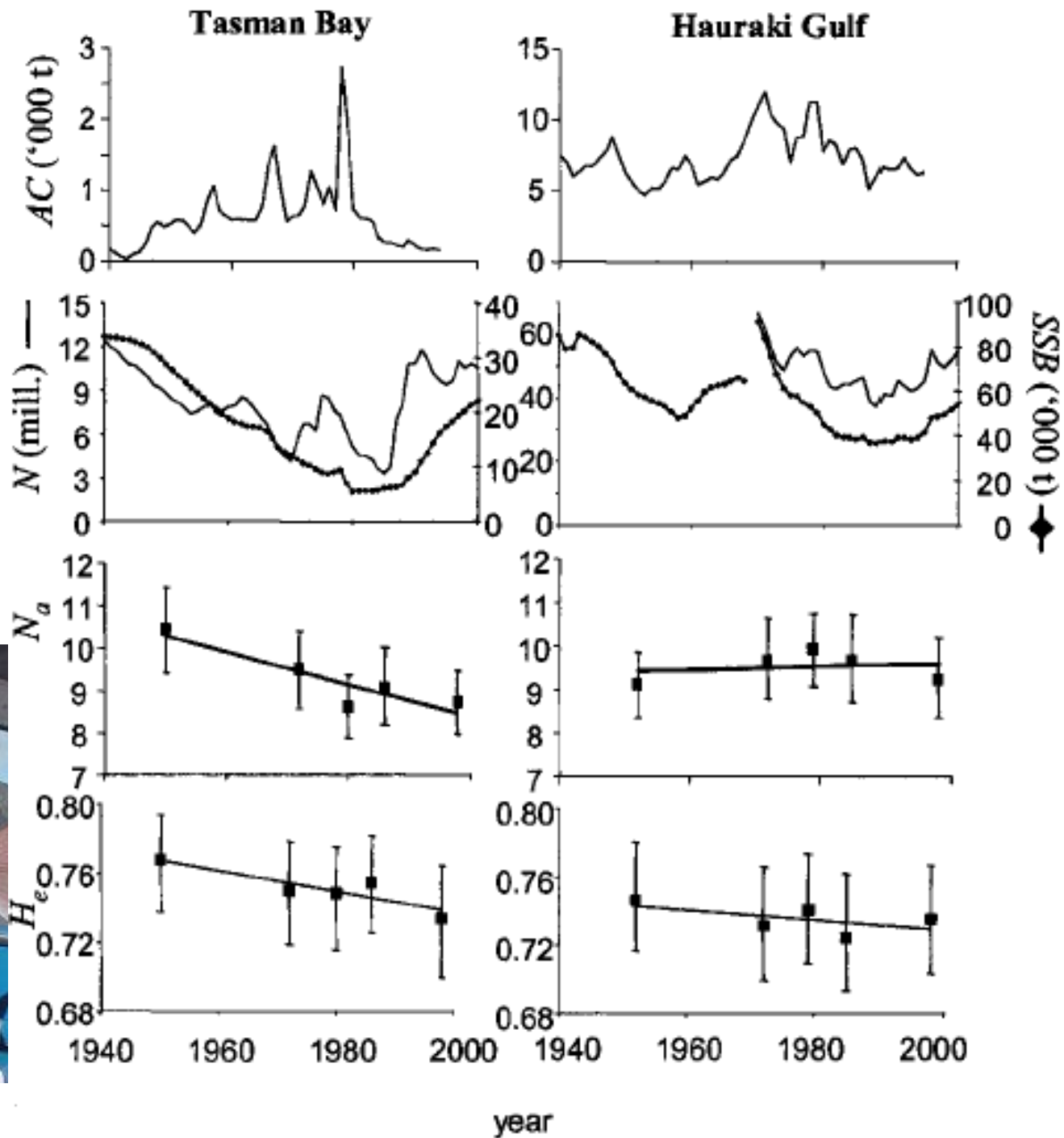
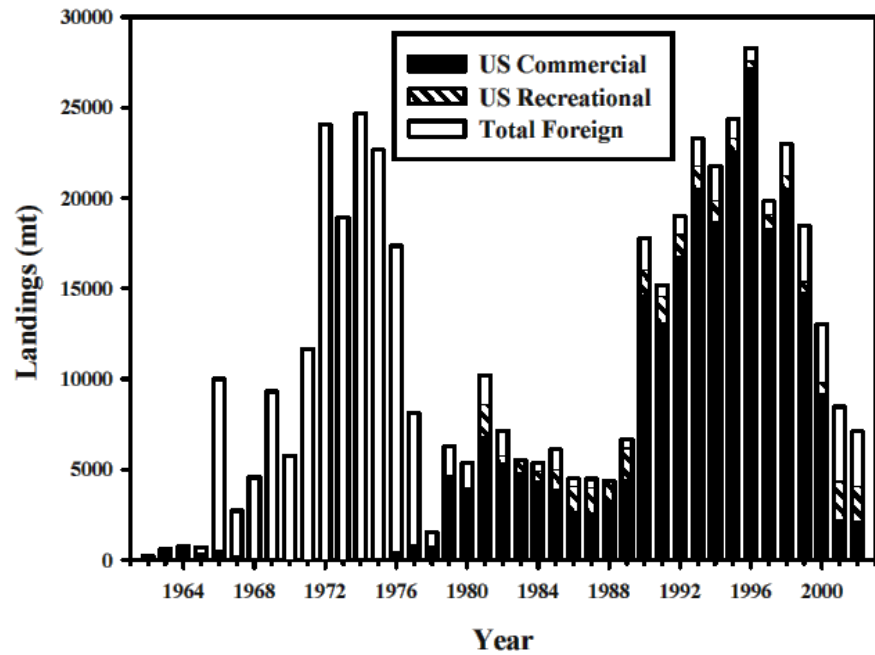
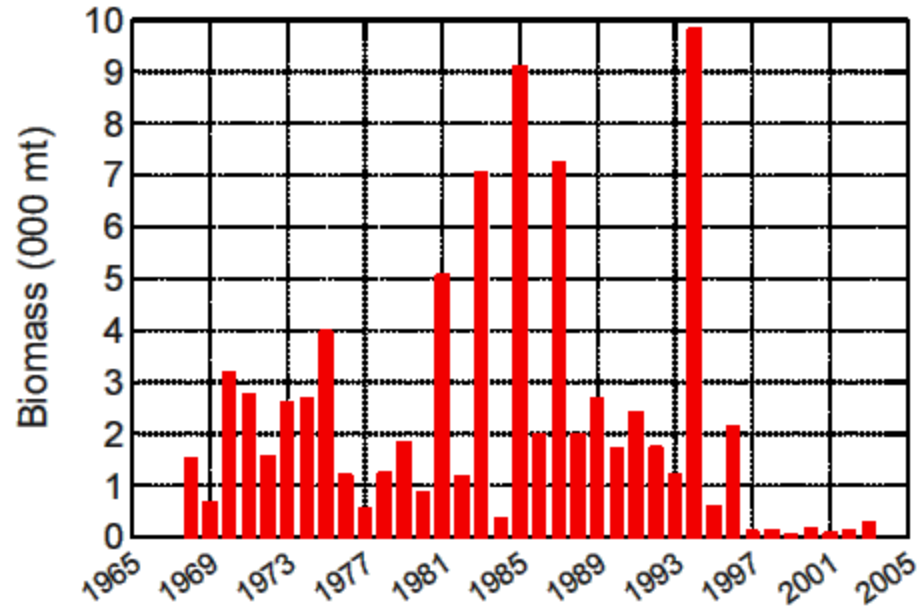


Hippocratic Oath for Fisheries Biologist:

- **"First, Don't drive any God Damn population or species extinct".**



Good Science – Bad Decisions



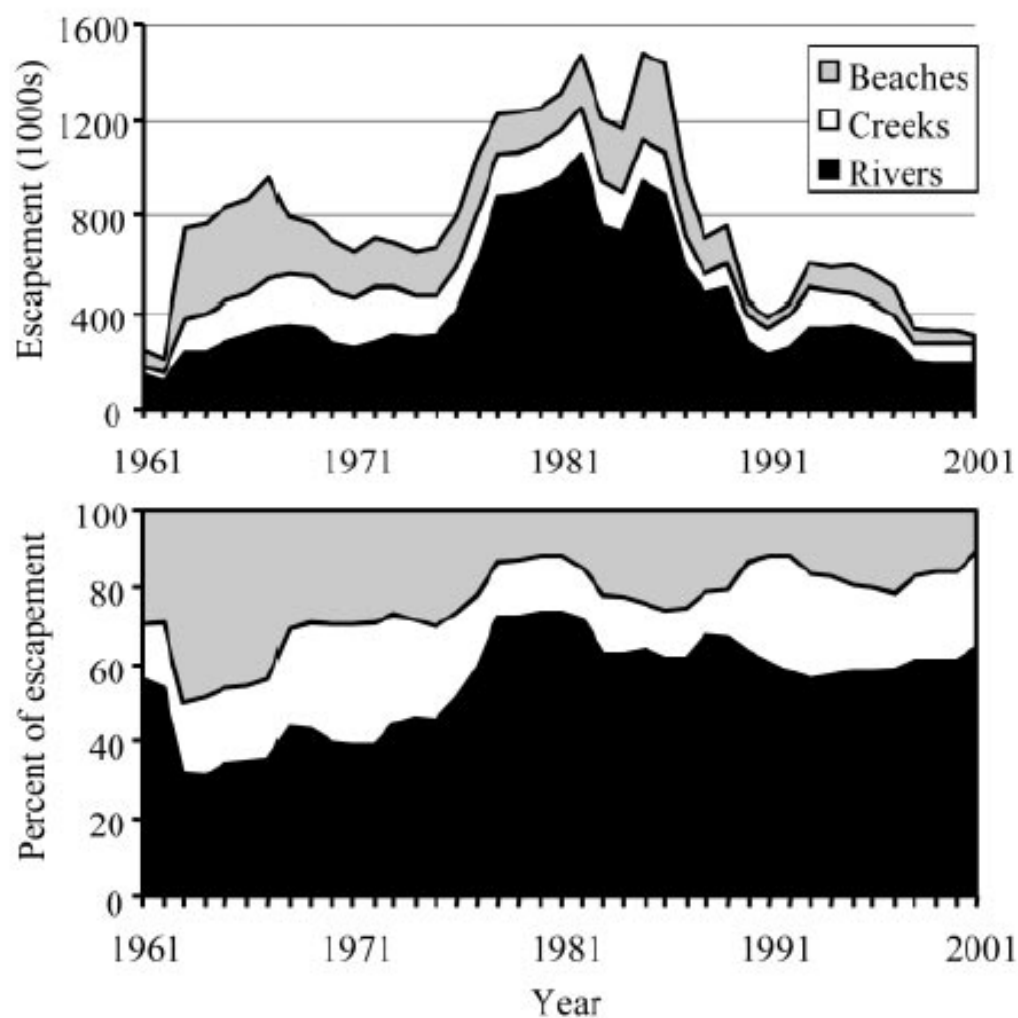
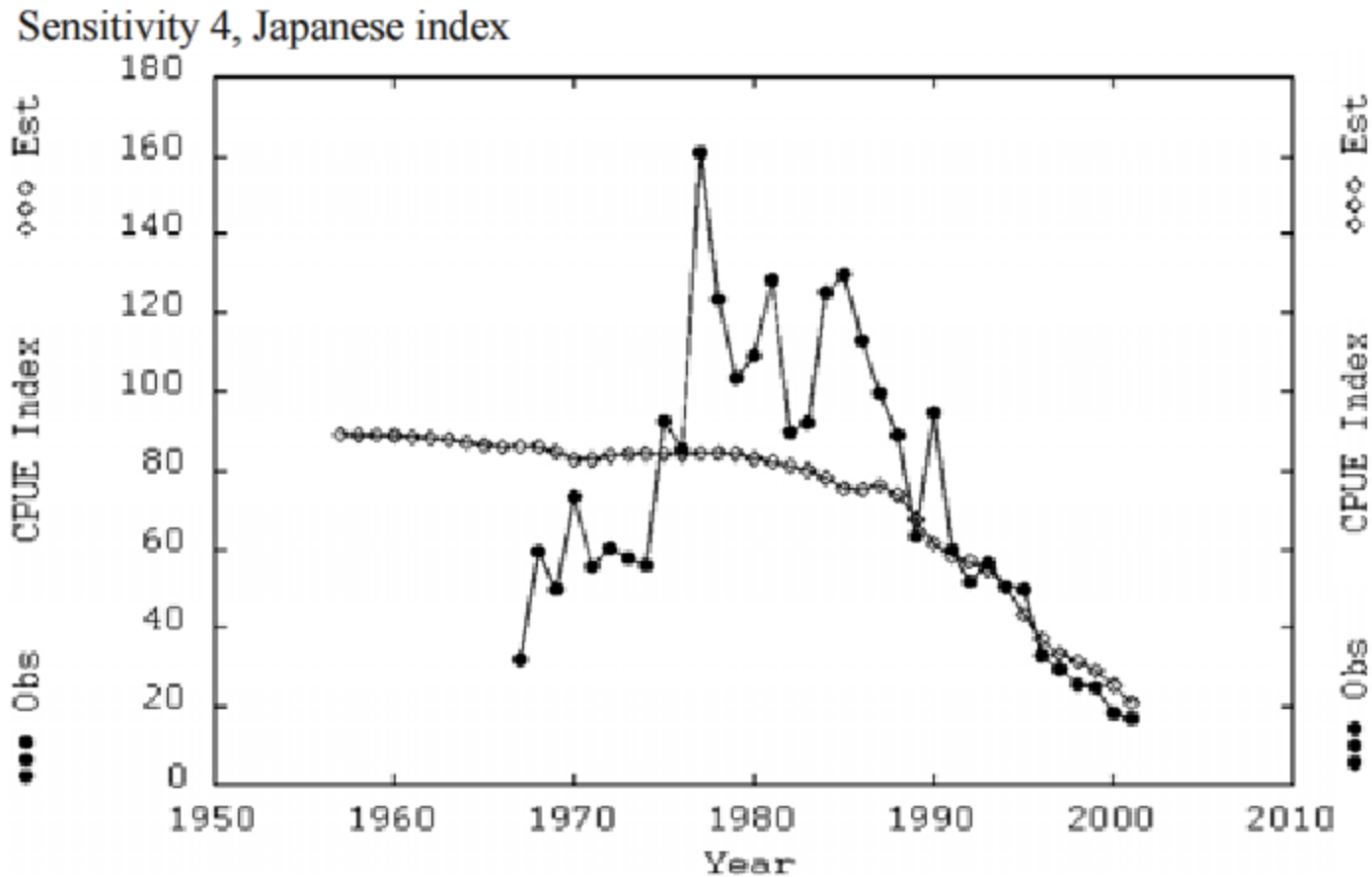
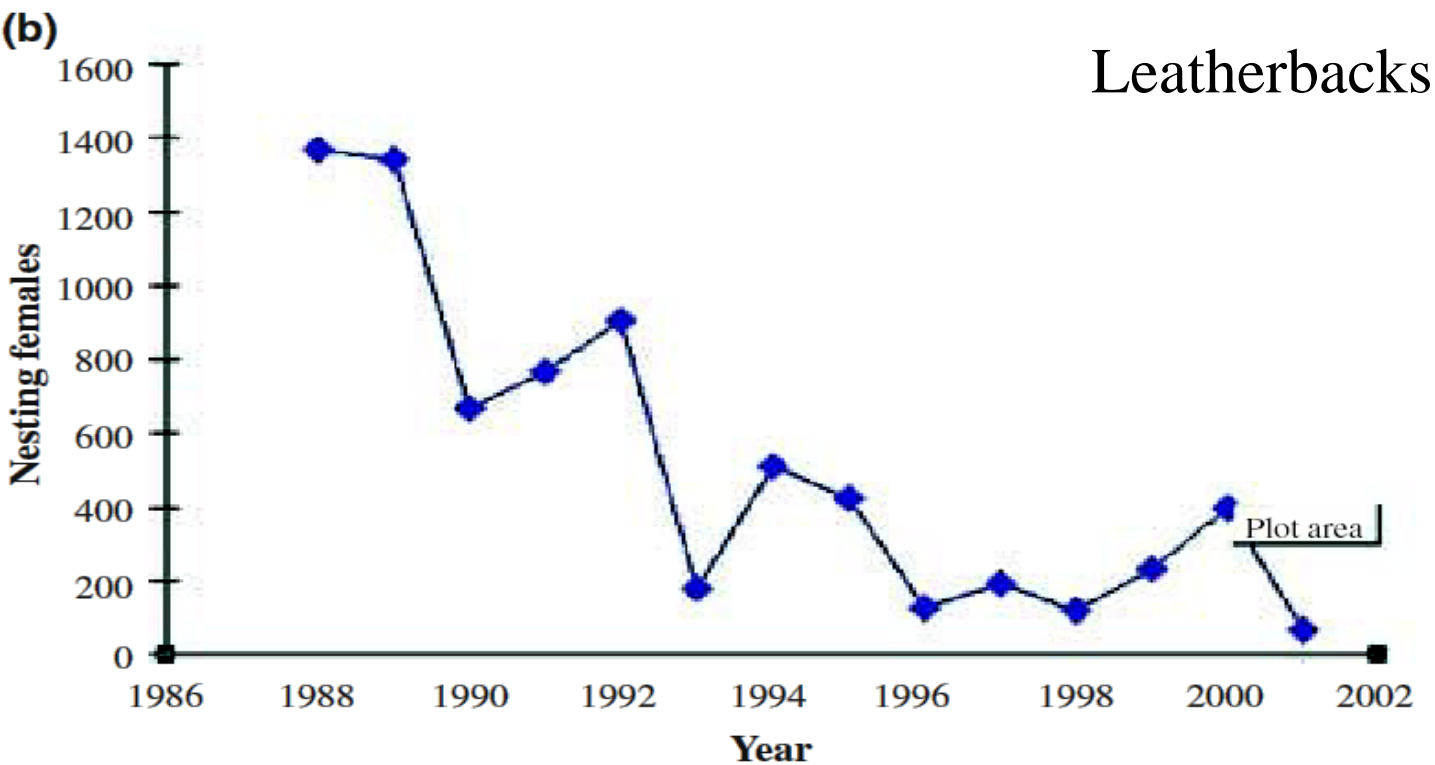
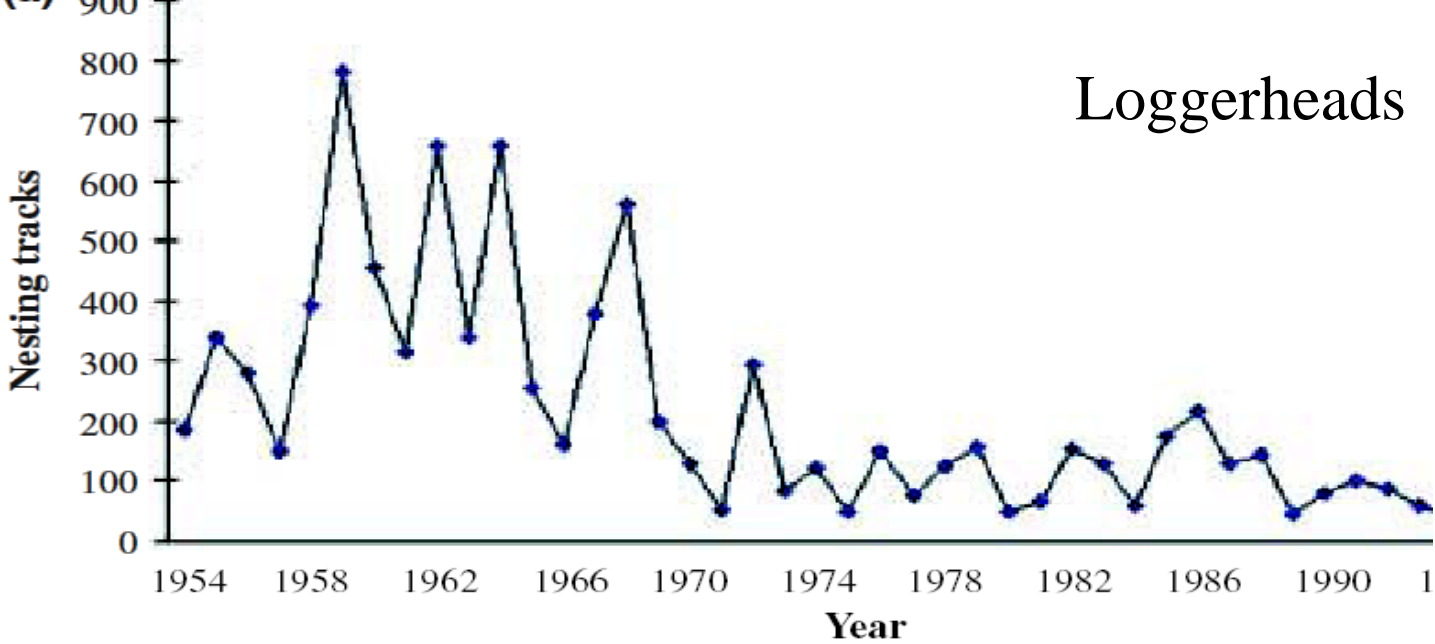


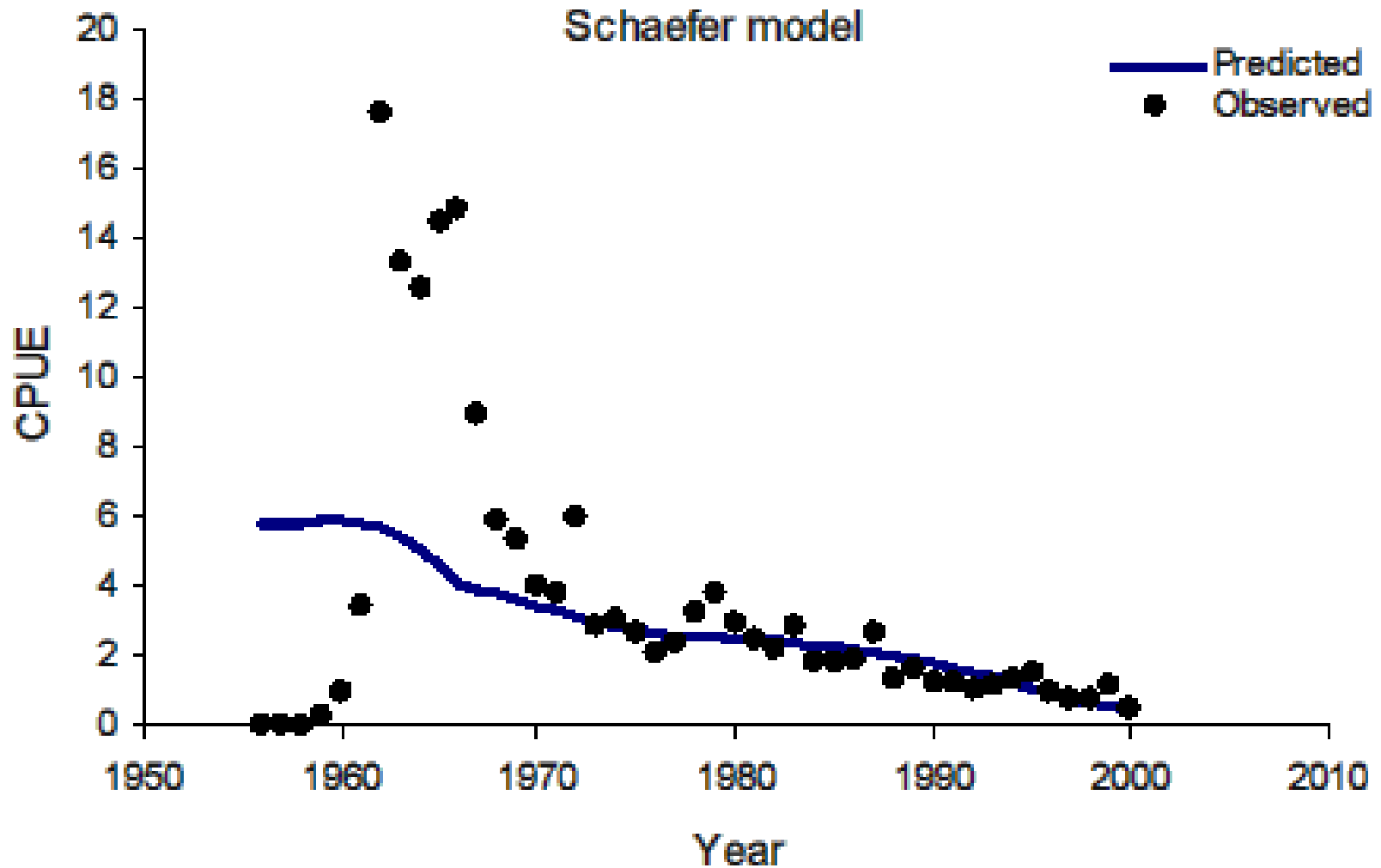
Fig. 5. The absolute (*Upper*) and relative (*Lower*) contributions of sockeye salmon using three types of spawning habitats within the Iliamna Lake system since 1961. Data have been smoothed with a 5-year running mean to emphasize the long-term trends.

Single species models are not even remotely consistent with the data, e.g. Swordfish from the South Atlantic





White Marlin: Atlantic, single species models do not work
Very well.



ICCAT shark assessments in the Atlantic don't even remotely fit reliable data:
Similar pattern for US government research surveys.

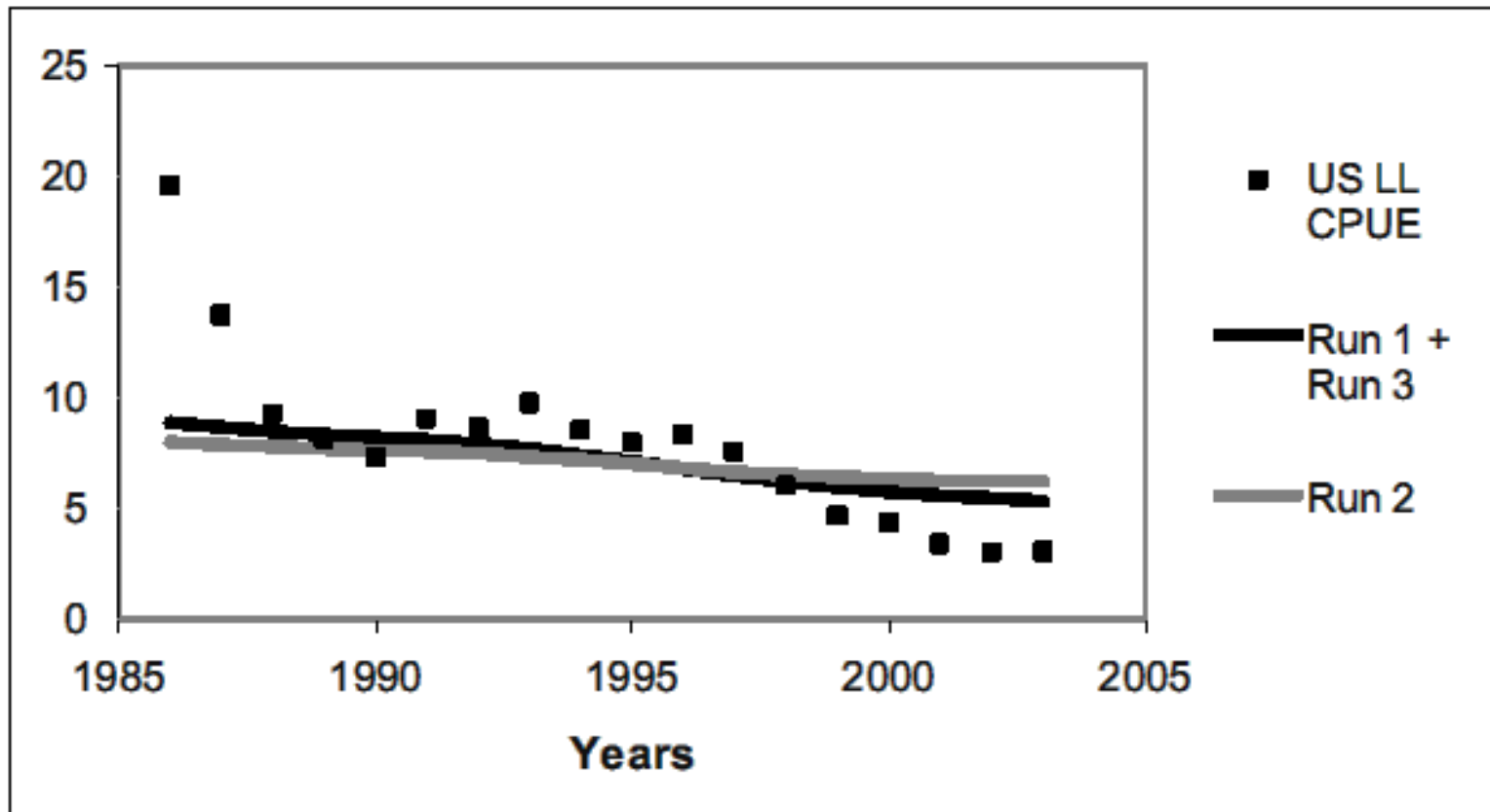


Figure 10 (above). Fit of the model to the North Atlantic blue shark CPUE data for each of the runs considered.

Bluefine tuna (observed diamonds) and modeled – not a very good fit.

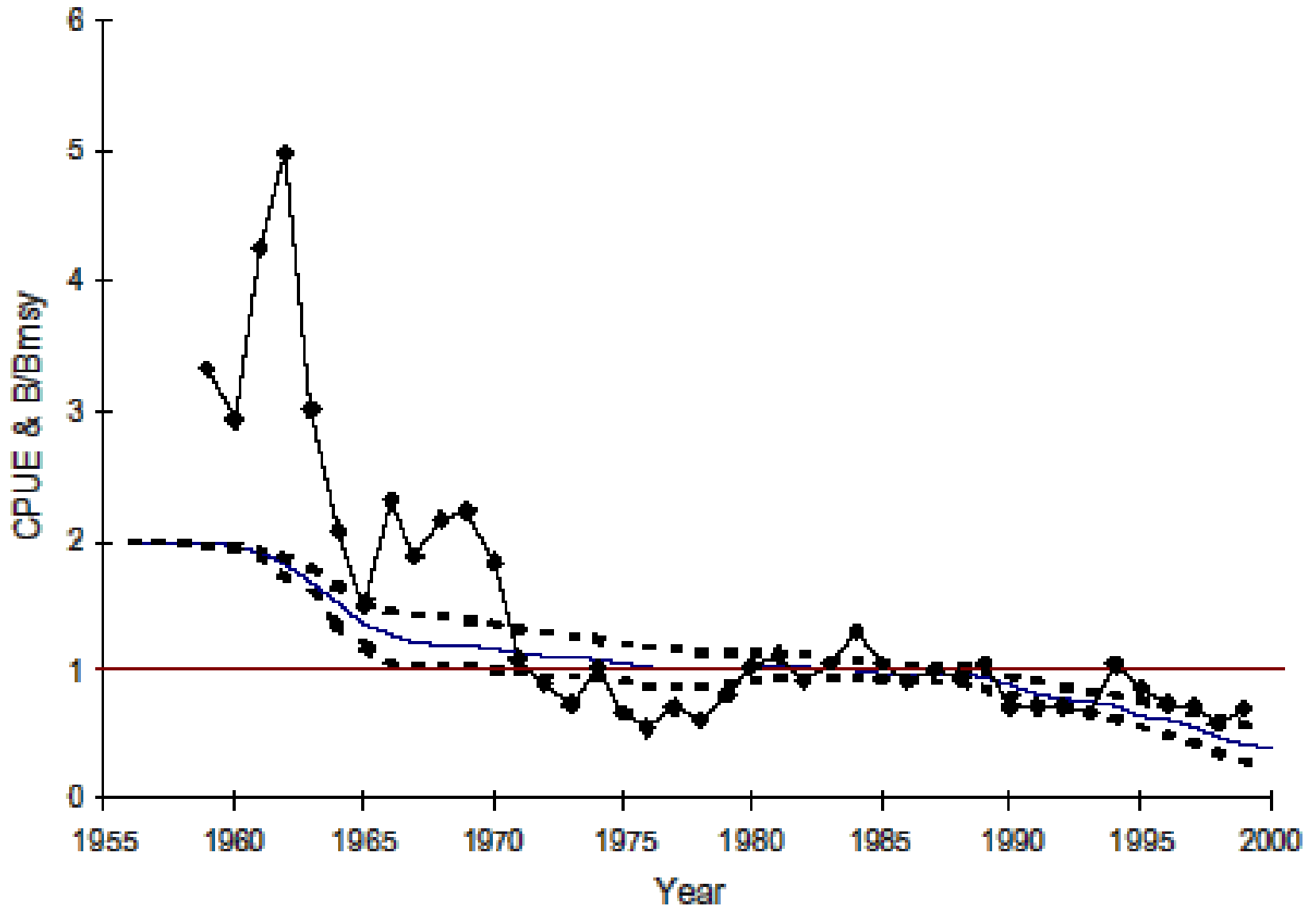


Table 7. The occurrence of bramidae and gempylidae in tuna and billfish stomach contents in other studies.

species	Bramidae	Gempylidae	Literature	Region
Bigeye tuna	High	low	Moteki <i>et al.</i> (2001)	Pacific
	High	no	Mattews <i>et al.</i> (1977)	Atlantic
Yellowfin tuna	High	low	Moteki <i>et al.</i> (2001)	Pacific
	High	low	Mattews <i>et al.</i> (1977)	Atlantic
Albacore	High	High	Mattews <i>et al.</i> (1977)	Atlantic
Sword fish	High	low	Moteki <i>et al.</i> (2001)	Pacific

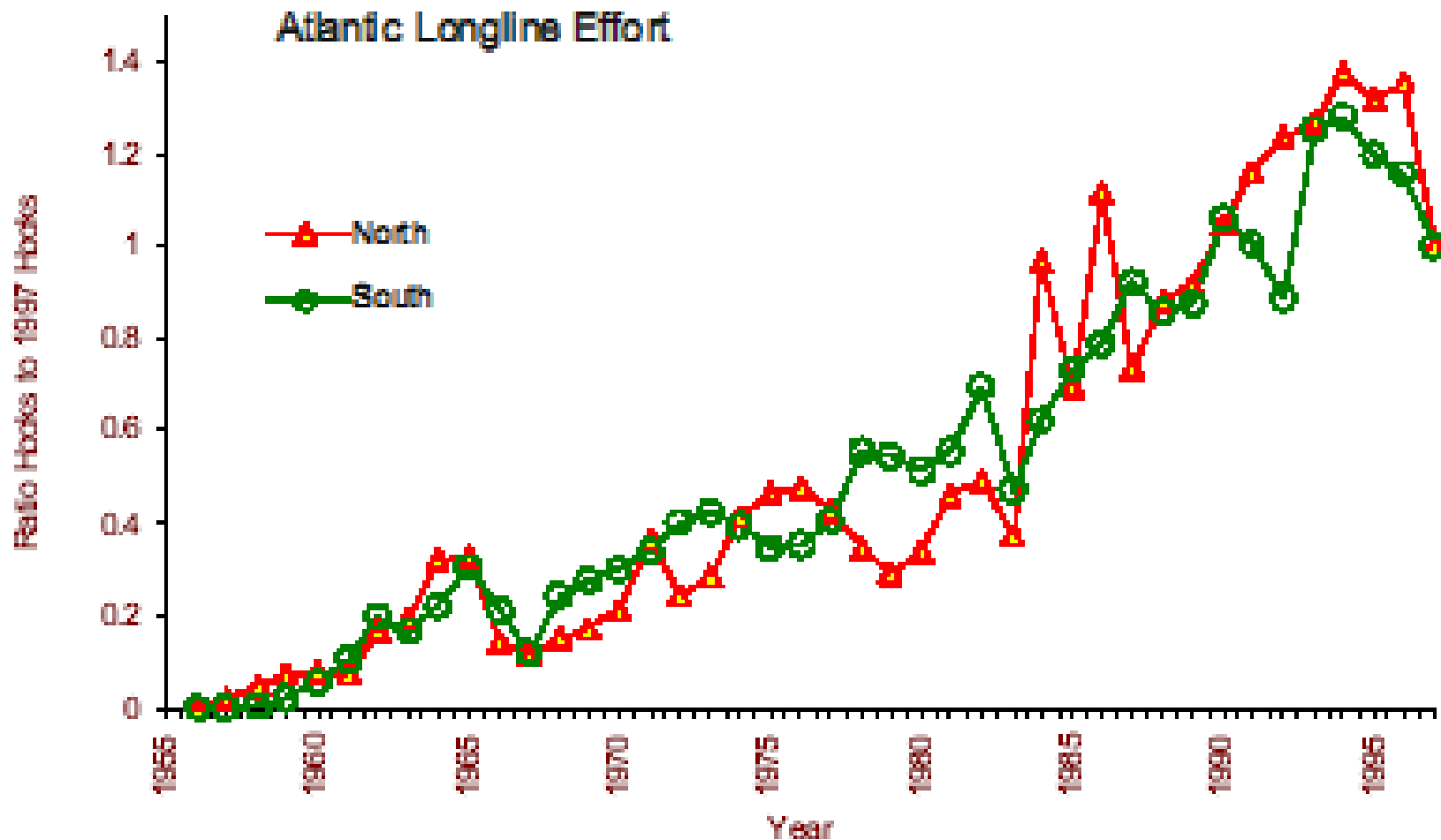
PRELIMINARY STOMACH CONTENTS ANALYSIS OF PELAGIC FISH
COLLECTED BY SHOYO-MARU 2002 RESEARCH CRUISE
IN THE ATLANTIC OCEAN

Perceived Contradiction in Initial Rapid Decline in CPUE

- 1. Declines occurred when effort was relatively small

Perceived Contradiction in Initial Rapid Decline in CPUE

2. Present Effort is much higher.



Perceived Contradiction in Initial Rapid Decline in CPUE

3. Present fishing mortality due to longlines is around 0.6

Perceived Contradiction in Initial Rapid Decline in CPUE

IF catchability is constant

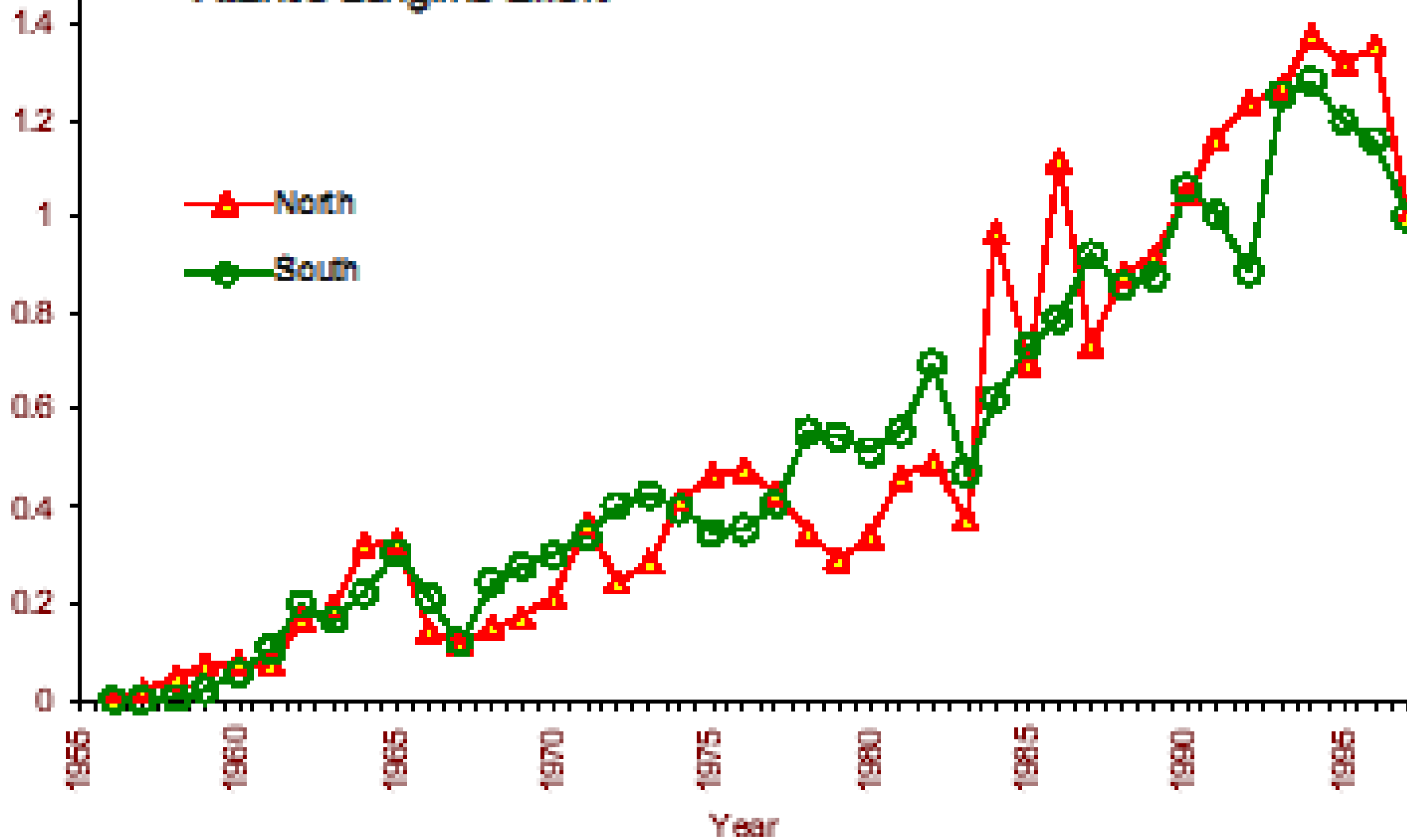
THEN the population dynamics are
impossible.

There are at least 2 scalloped hammerhead sharks in the Northwest Atlantic

Stoner, D. S., J. M. Grady, W. B. Driggers, K. A. Priede and J. M. Quattro. Molecular Evidence for a Cryptic Species of Hammerhead Shark (Genus *Sphyrna*). *Marine Biology* (submitted).

Atlantic Longline Effort

Ratio Hooks to 1997 Hooks



Present models ignore size
selection, and thus cannot fit the
data



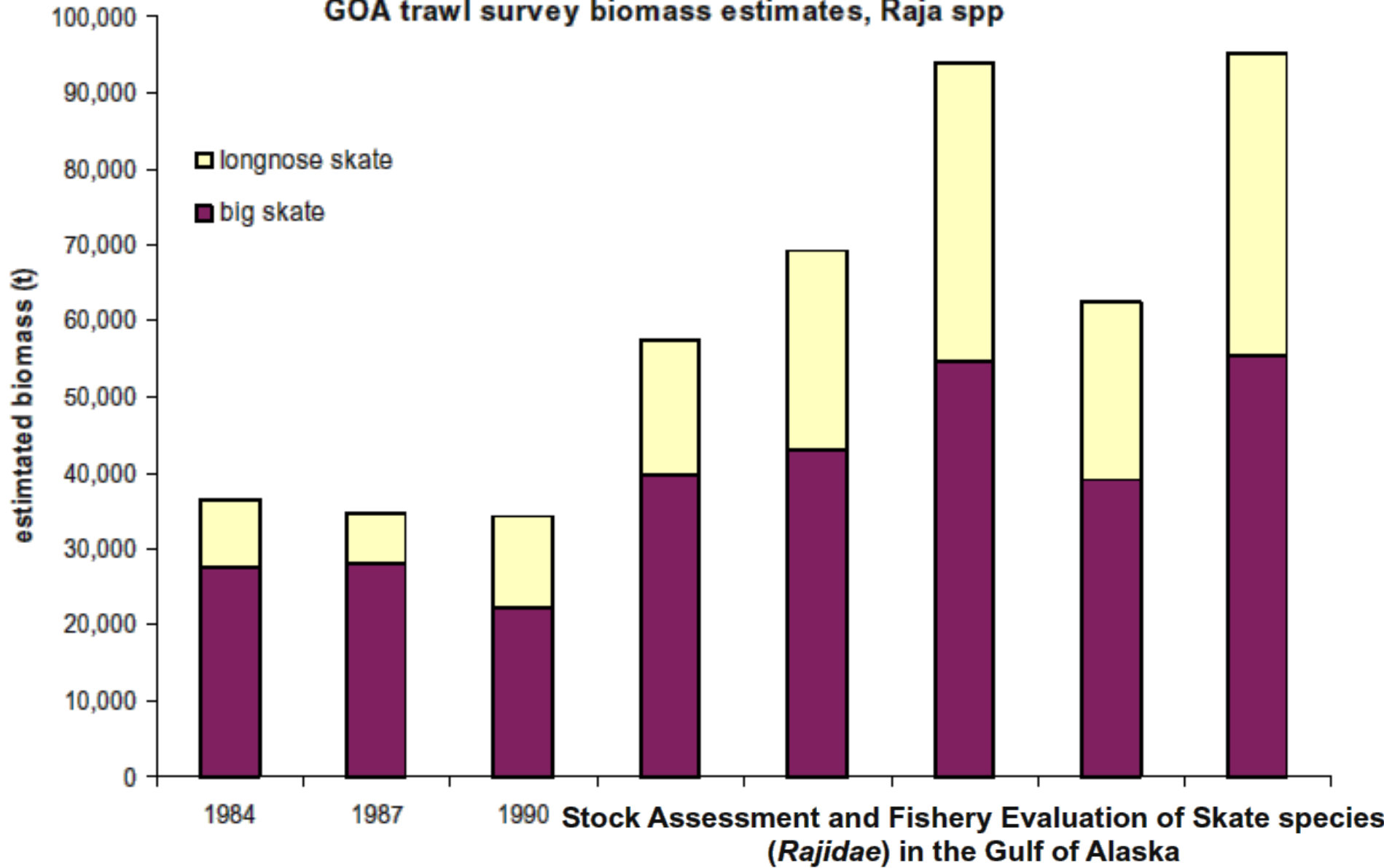


**Long - Term Changes In
The Gulf Of Alaska
Marine Ecosystem**

Figure stolen from Paul Anderson

- The Good -
 - Ban directed fisheries on sharks.
 - Control fishing on skates.
 - Keep a watch on bycatch.
-
- The Alaska Board of Fisheries prohibited all directed fisheries for sharks in 1998. In Southeast the bycatch rate for sharks and skates taken during other longline fisheries is 35% of the target species.

GOA trawl survey biomass estimates, Raja spp



by
Sarah Gaichas¹, Michael Ruccio², Duane Stevenson¹, and Rob Swanson³

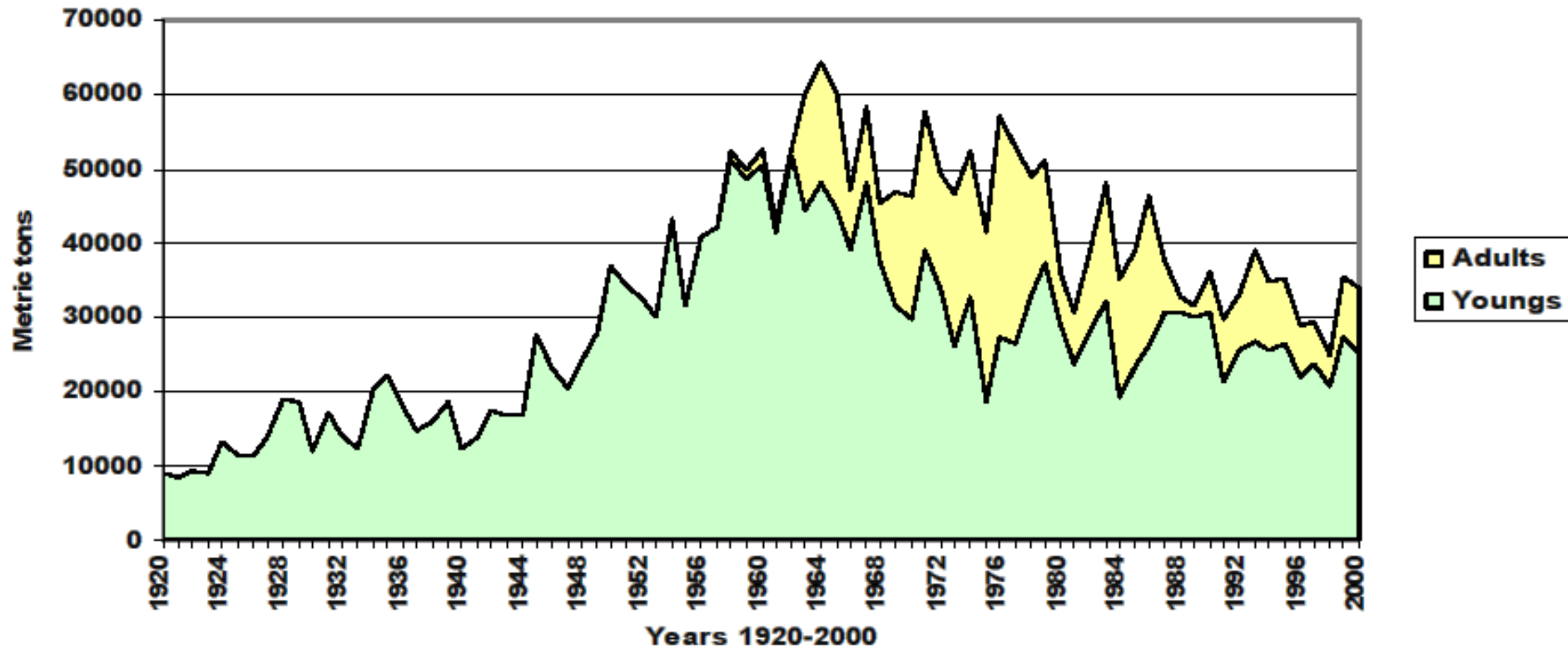


Figure 1. Big skate, *Raja binoculata*, with stock assessment author for scale.

**Stock Assessment and Fishery Evaluation of Skate species
(*Rajidae*) in the Gulf of Alaska**

by
Sarah Gaichas¹, Michael Ruccio², Duane Stevenson¹, and Rob Swanson³

North Atlantic albacore cumulated catches of youngs and adults fish



Rapid decline in older albacore.

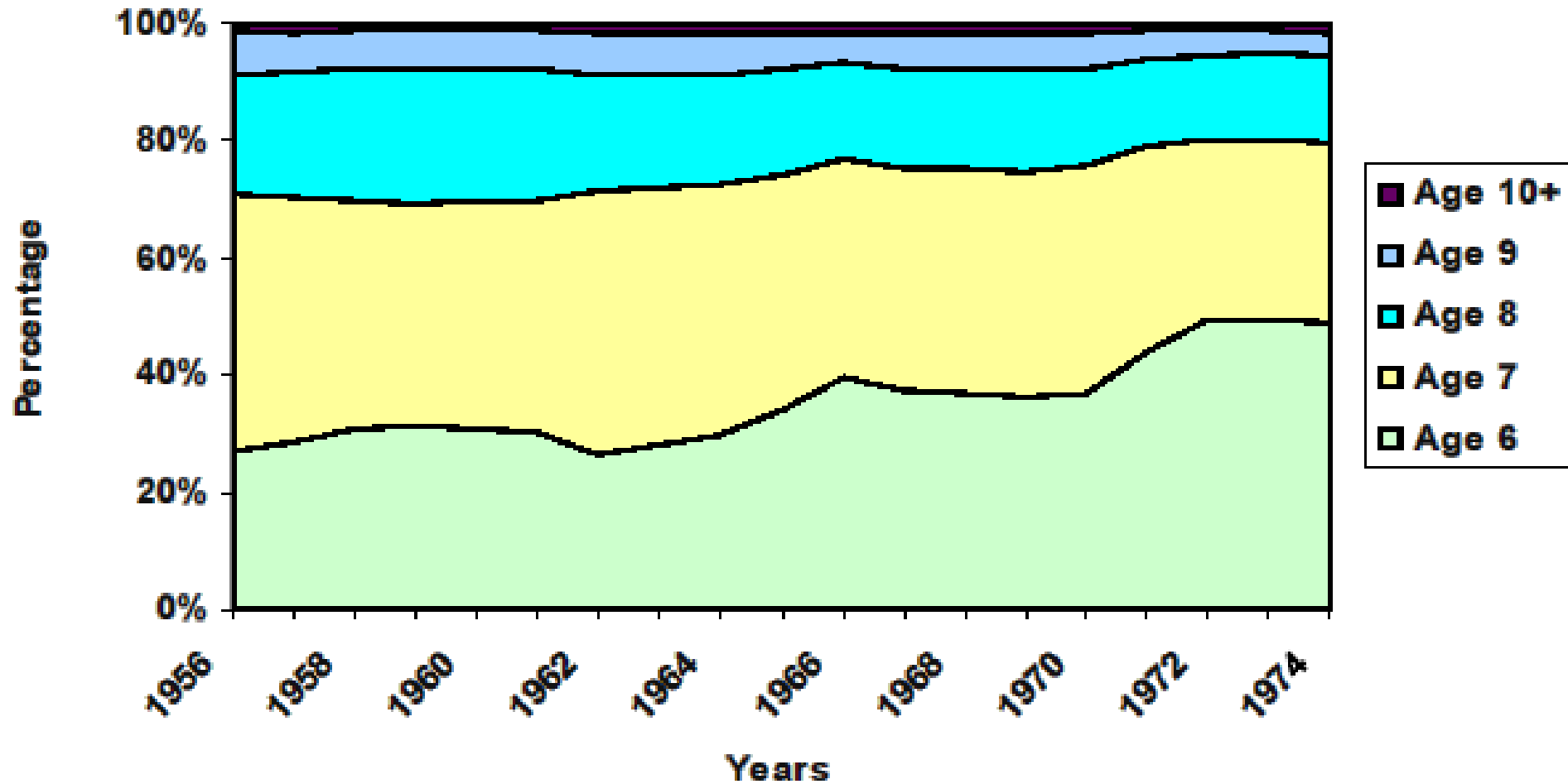
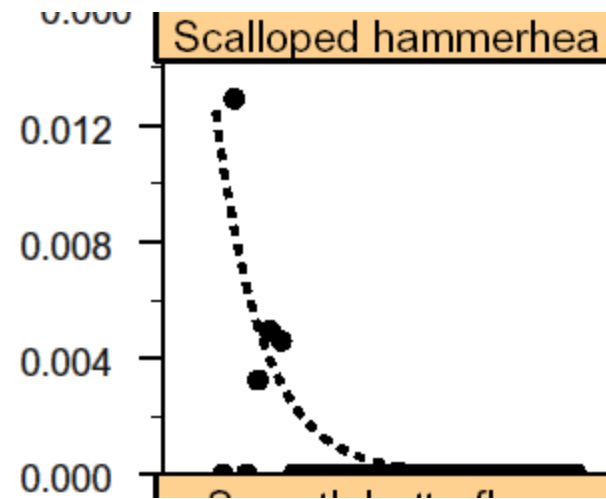
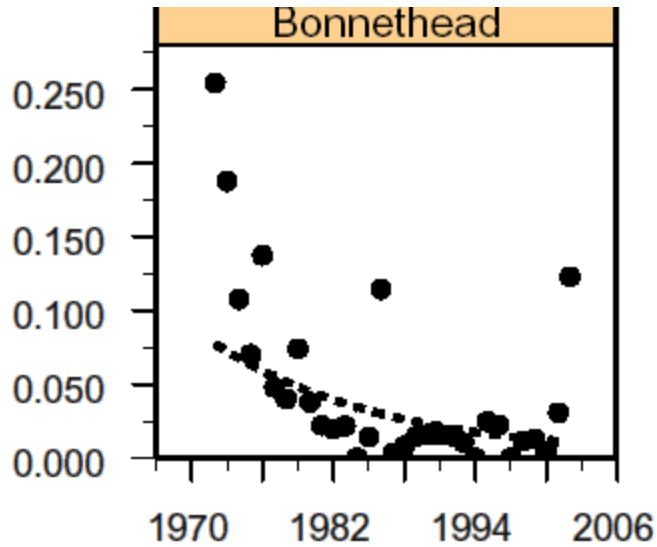


Figure 7 : Evolution of contribution of age classes 6 to 10+ computed by Morita (1977) in longliners albacore catches, 1956-1974.

All large sharks declined

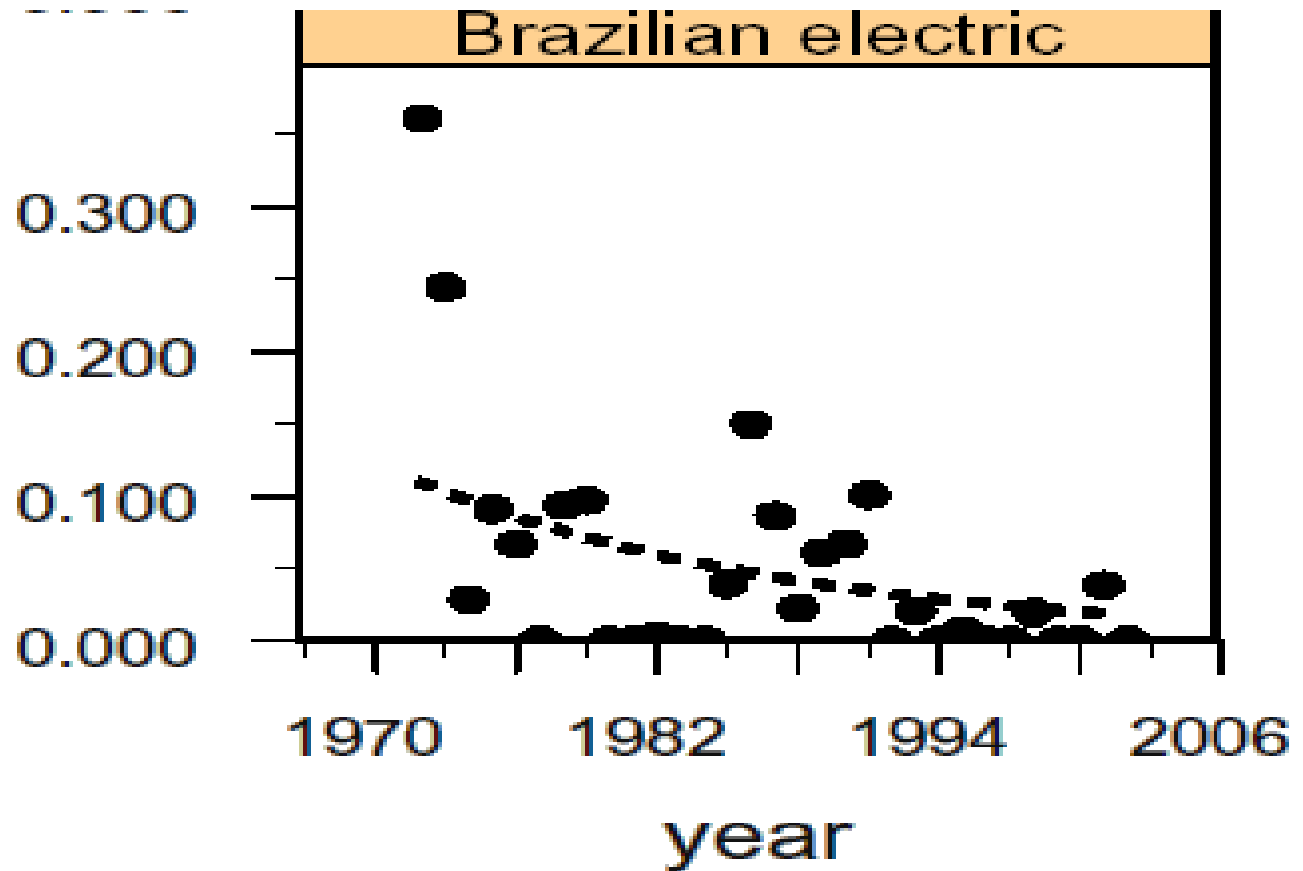




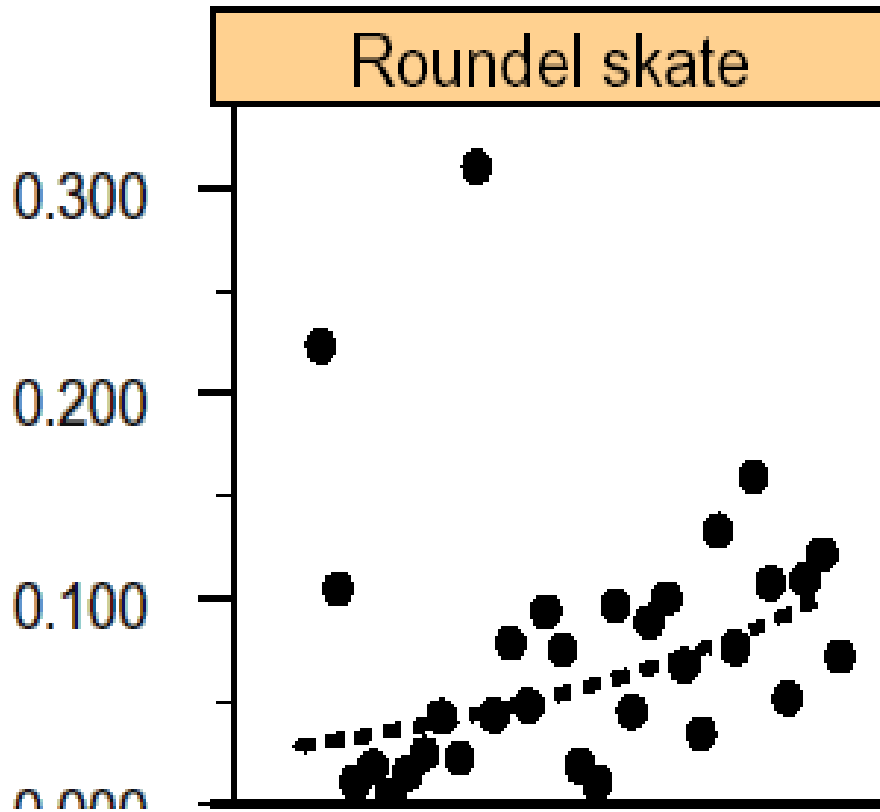
NOVA SCOTIA MUSEUM

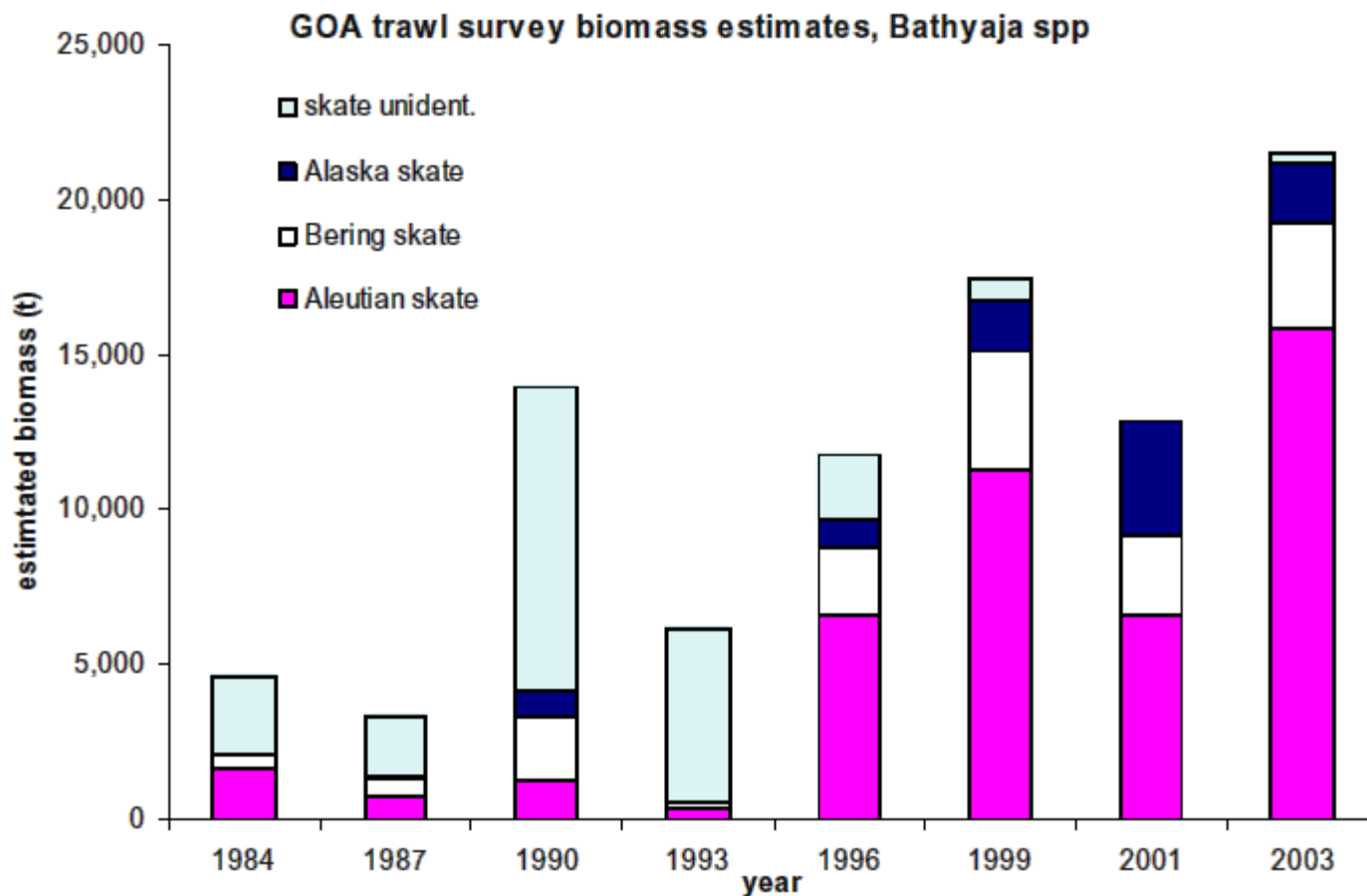
Swordfishing fleet at anchor, Neils Harbour, Cape Breton.—13.

Shallow water species that do not survive discarding: large declines:



Deeper skate species that survive discarding increased





**Stock Assessment and Fishery Evaluation of Skate species
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