



Mackerel – Dogfish Update

October 2023

Goals

- Familiarity with assessments and upcoming issues for Atlantic mackerel and spiny dogfish
 - Specifications in December
- Start a question list for follow-up by the Center on assessment questions

Agenda

1. Mackerel assessment overview
2. Upcoming meetings/actions
3. Spiny dogfish assessment overview
4. Upcoming meetings/actions

Questions (email follow-up fine too!)

jdidden@mafmc.org

Acronyms

- SSC = Scientific and Statistical Committee
- ABC = Acceptable Biological Catch
- MT = Metric Tons = 2,204.6 pounds

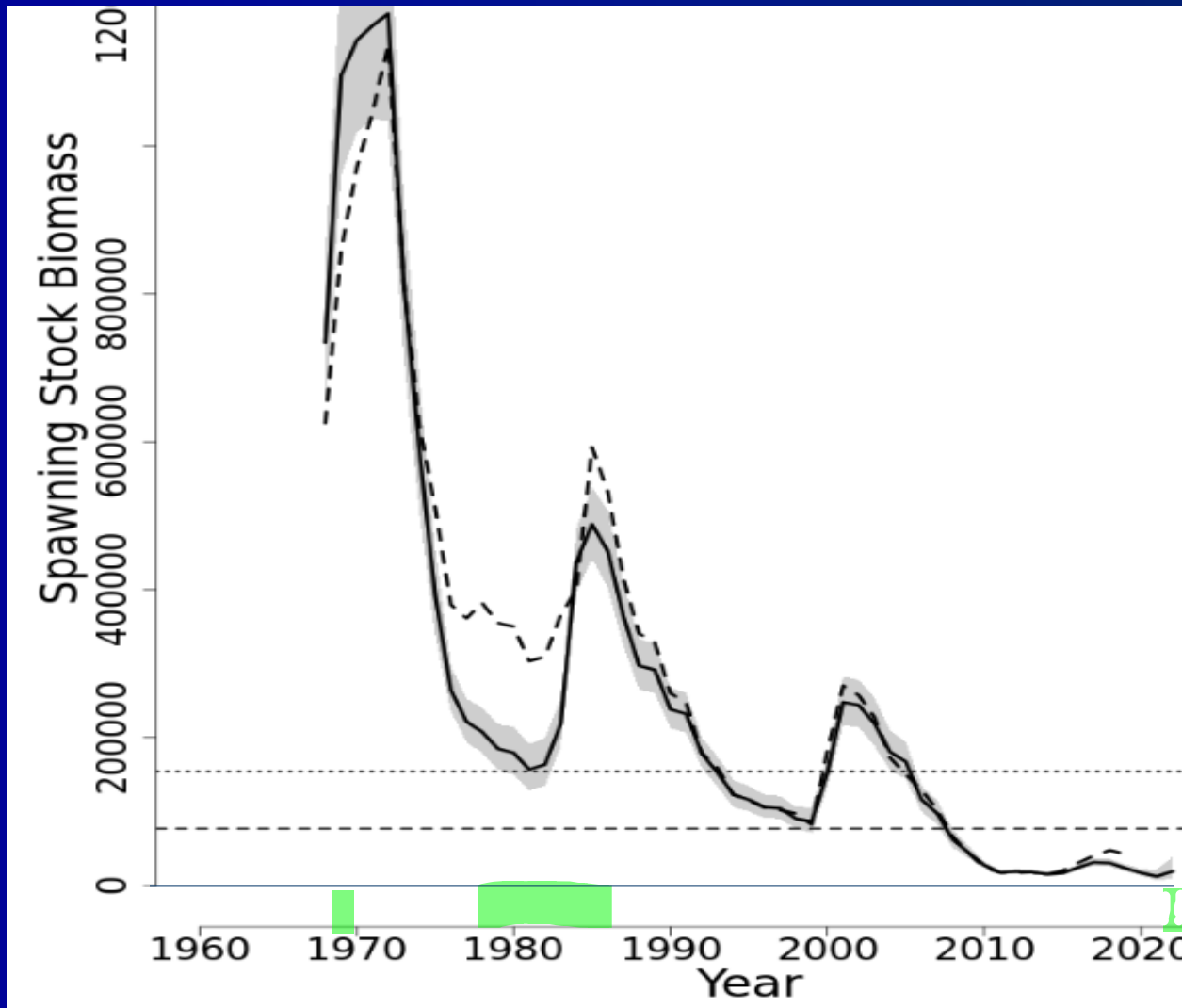
Statistical assessment models

- Use a series of core equations developed and refined over last 100+ years to describe the biology of a species (like reproduction and growth) and its interaction with the fishery over time, link the equations to data, and estimate population size, fishing mortality, and biomass/catch targets
- Reconstruct the number of individuals (population size) and how quickly they died (mortality) by trying to match the model's predictions to observed data like scientific surveys and fishery catches

Statistical assessment models

- Scientific peer review evaluates if model is reliable enough to use for management
 - whether the model fits all the data reasonably well?
 - are the estimates relatively stable if assumptions are modified or new years are added?

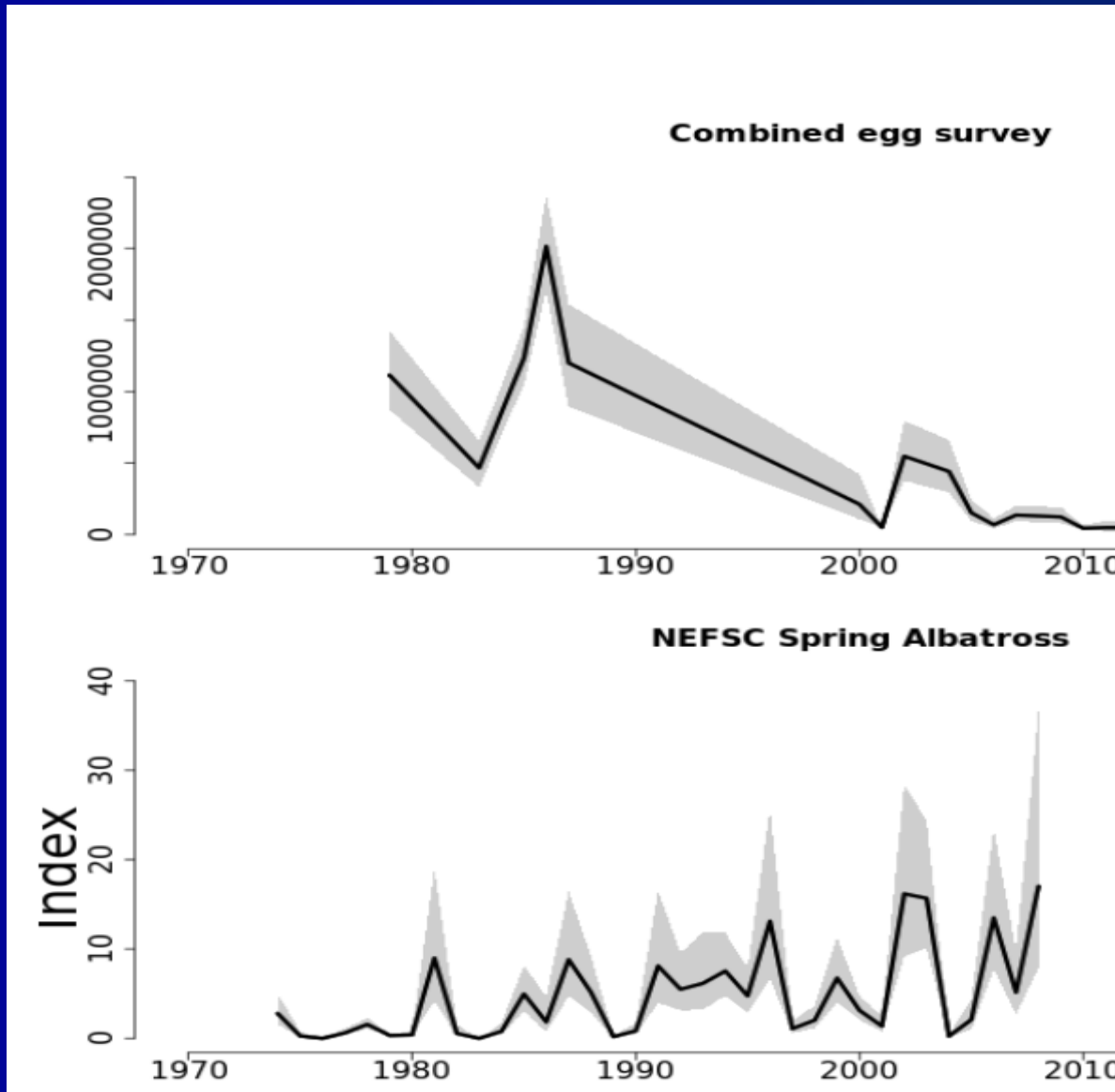
1. Mackerel assessment overview



1. Mackerel assessment overview

- What changed?
- Added another survey: mackerel eggs in Canadian and U.S. surveys
 - better matched other data (like few old fish in landings)

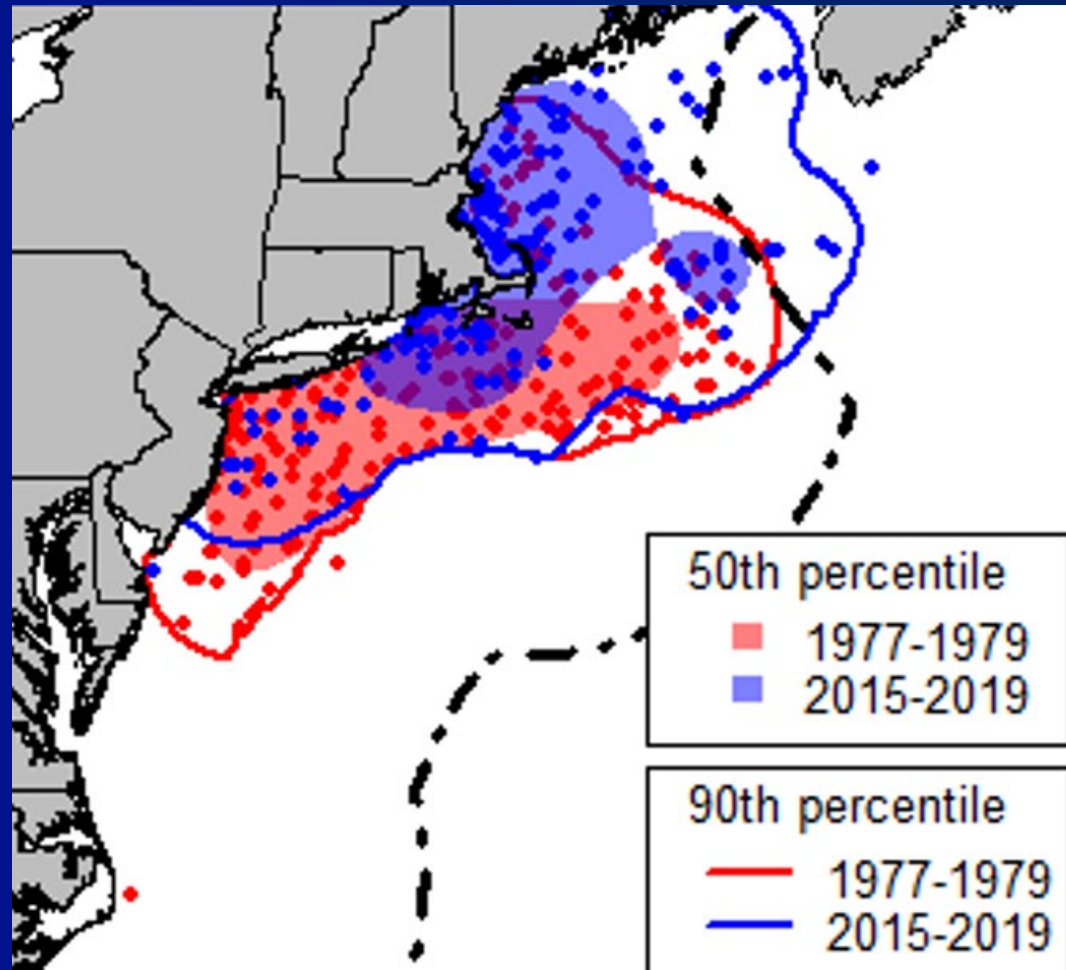
1. Mackerel assessment overview



1. Mackerel assessment overview

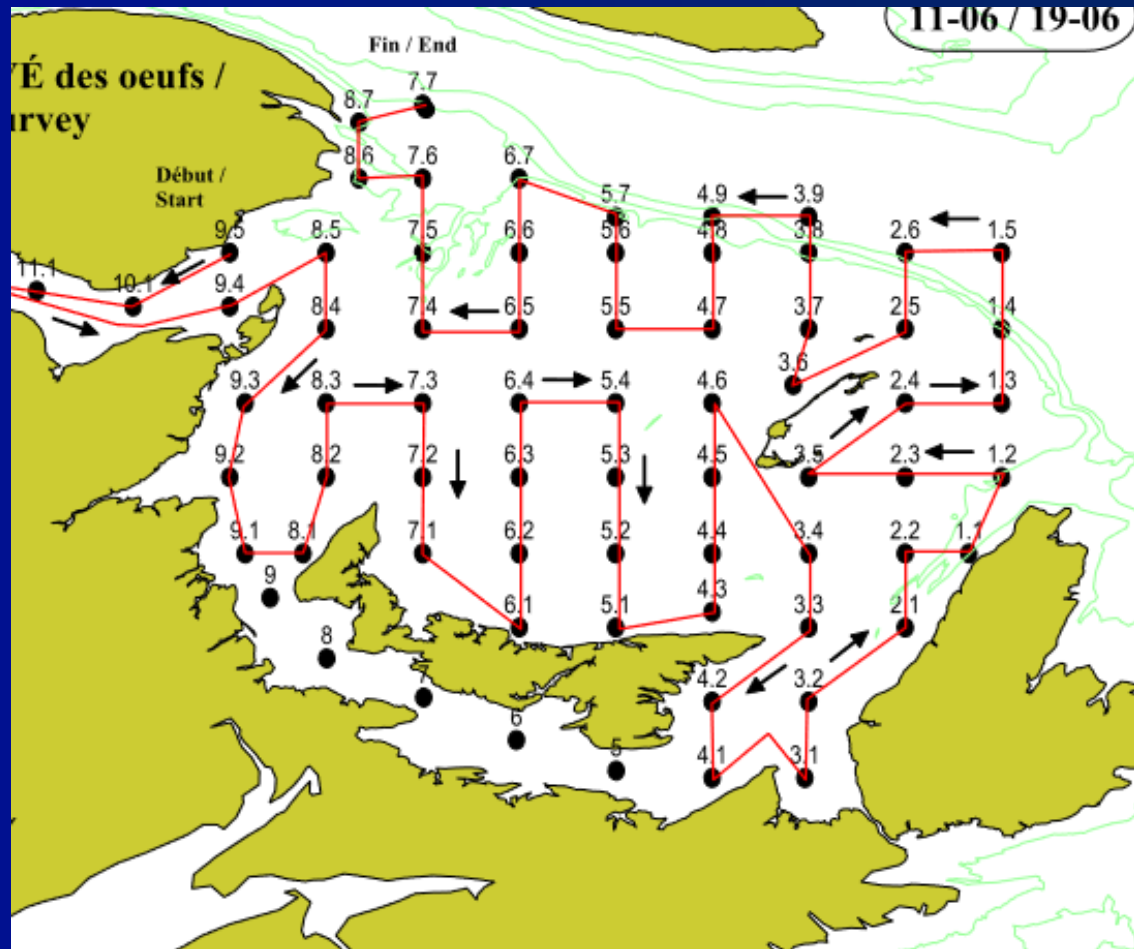
Change in Distribution of Mackerel Eggs

Micah Dean, Ph.D.
Massachusetts Division of Marine Fisheries



1. Mackerel assessment overview

Canada's
survey



1. Mackerel assessment overview

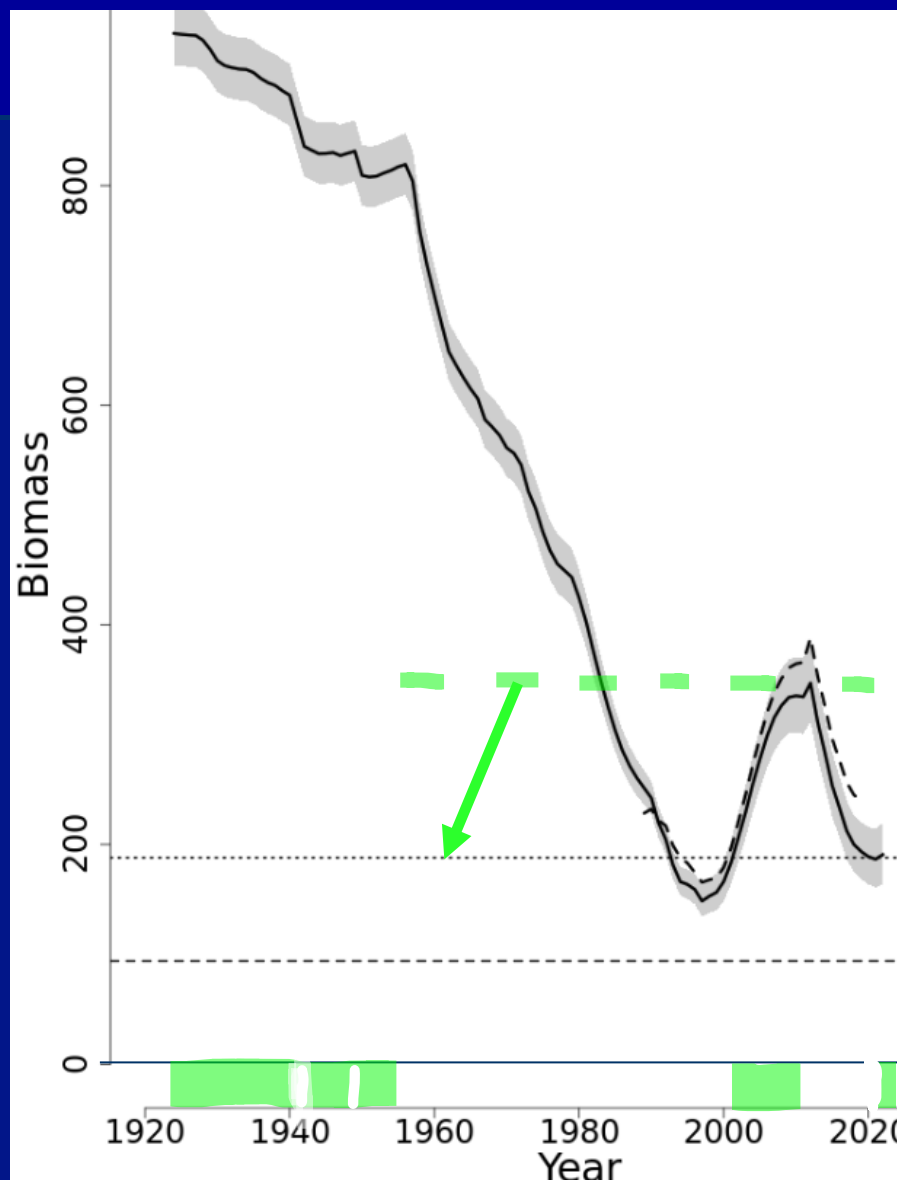
- We think we understand past better but...
- Twice (2019, 2021) stock has not behaved as projected (not rebuilding)
- Projections in 2023 for 2024/2025 considering various “penalties” on biomass to counter projections’ optimism

2. Upcoming meetings/actions

- October SSC – review preliminary ABCs
 - Peer review: Not final, but reviewers appeared generally positive regarding the scientific merit of the assessments
- Biomass penalty options
- Council request for 2-year averages
- 2024-2025 catch maybe barely enough to cover recreational + incidental commercial...

3. Spiny dogfish assessment overview

- Biomass:
- Spawning Output in 2022 was estimated to be 190.8 million pups



3. Spiny dogfish assessment overview

- Previously biomass was basically an expansion of the survey
- Now we have a quantitative statistical assessment model
- Biomass target more uncertain than recent trends

3. Spiny dogfish assessment overview

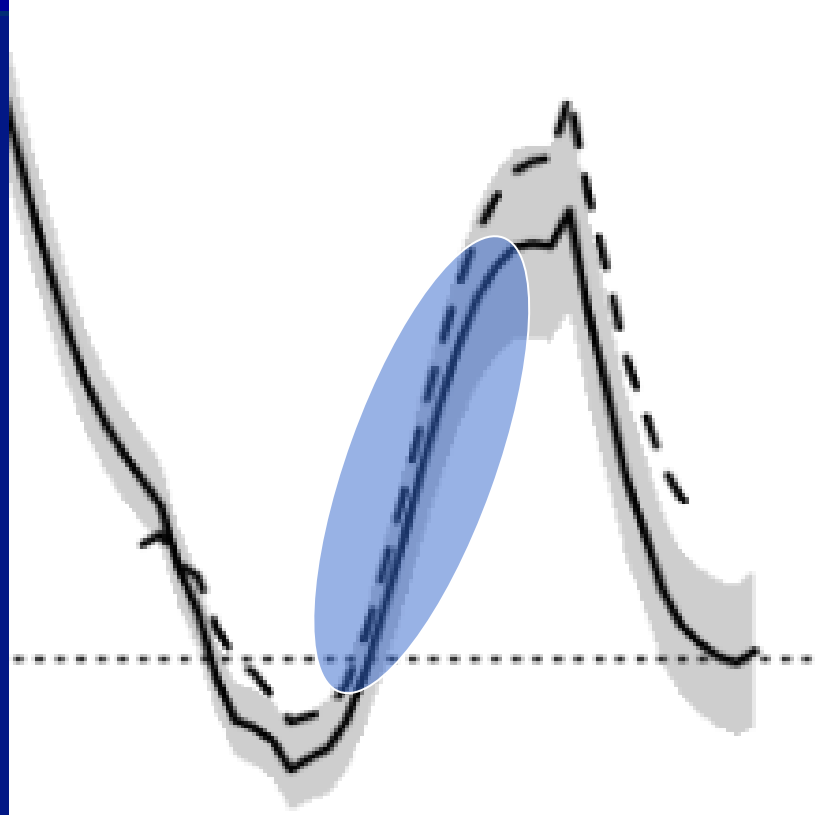
- Double edged sword of lower productivity...
- At our target...
- But lower catches... may support ABCs only around 7,000 MT.
 - 2022: 17,498 MT
 - 2023: 7,788 MT (12 million-pound quota)

3. Spiny dogfish assessment overview

- An empirical observation relative to the stock staying near where it is at catches around 8,000 MT:
- From 2001 to 2009 biomass went up 80% from about the same spot as we are now (2022)
 - with average catch over 10,000 MT...

3. Spiny dogfish assessment overview

- Recent Biomass



3. Recent and upcoming meetings/ actions

- Sept 20: Advisory Panel
- Oct 30: Scientific and Statistical Committee
- Nov 6: Monitoring Committee
- Nov 17: Spiny Dogfish Committee
- Dec: MAFMC Meeting
- Jan: NEFMC Meeting

Questions?