



**NOAA
FISHERIES**

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Overview of the Atlantic Highly Migratory Species (HMS) Essential Fish Habitat (EFH) Process

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Atlantic HMS EFH Overview

- Swordfish, billfish, sharks, and tunas - managed by NMFS under a single fishery management plan
- Secretary managed – HMS Division staff prepare FMP amendments, including EFH analyses & designations
- 55 stocks x 3 life stages (neo/YOY, juvenile, adult)



Current Methodology

- Mostly point/distribution data from fishery independent surveys, observer information, and research (Level 1)
 - **Amendment 10:** 44 datasets, 32 sources
- Kernel density estimators, isopleths (95% probability boundary) – e.g., ArcGIS, Hawth's Tools, Geospatial Modeling Environment (GME)
- Products: life history account, text descriptions, maps

EFH Life History

Overview of known information:

- Distribution
- Behavior
- Predator-prey interactions
- Reproduction and early life
- Fisheries, fisheries status
- Growth and mortality
- Habitat associations (mostly pelagic features)



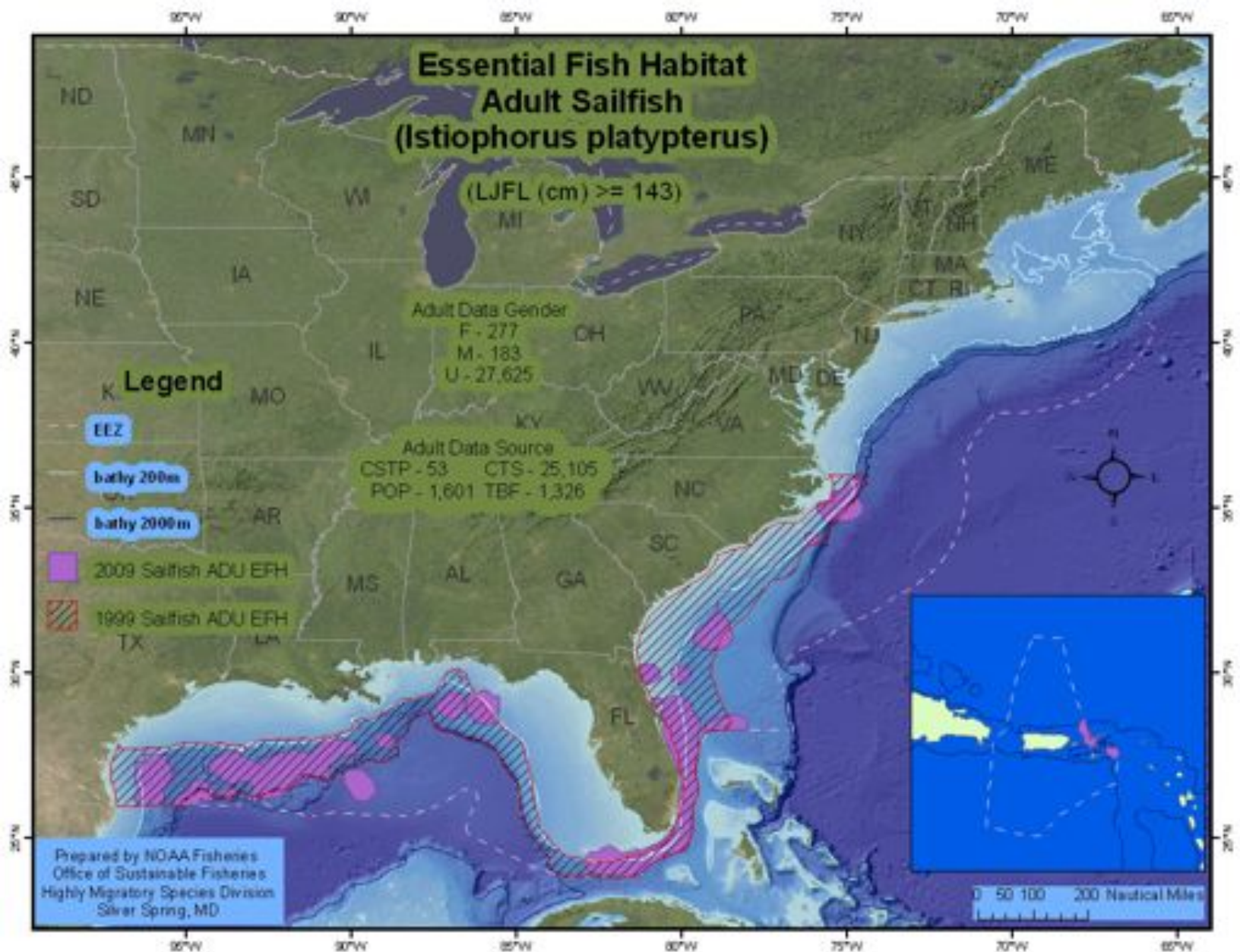
Text Description of EFH

- More specific description of EFH by life stage, which varies by group:
 - Tunas –spawning/eggs/larvae, juveniles, adults
 - Swordfish and billfish - spawning/eggs/larvae, juveniles/subadults, adults
 - Sharks –neonate/young of year, juveniles, adults
- Reflective of boundaries shown in maps

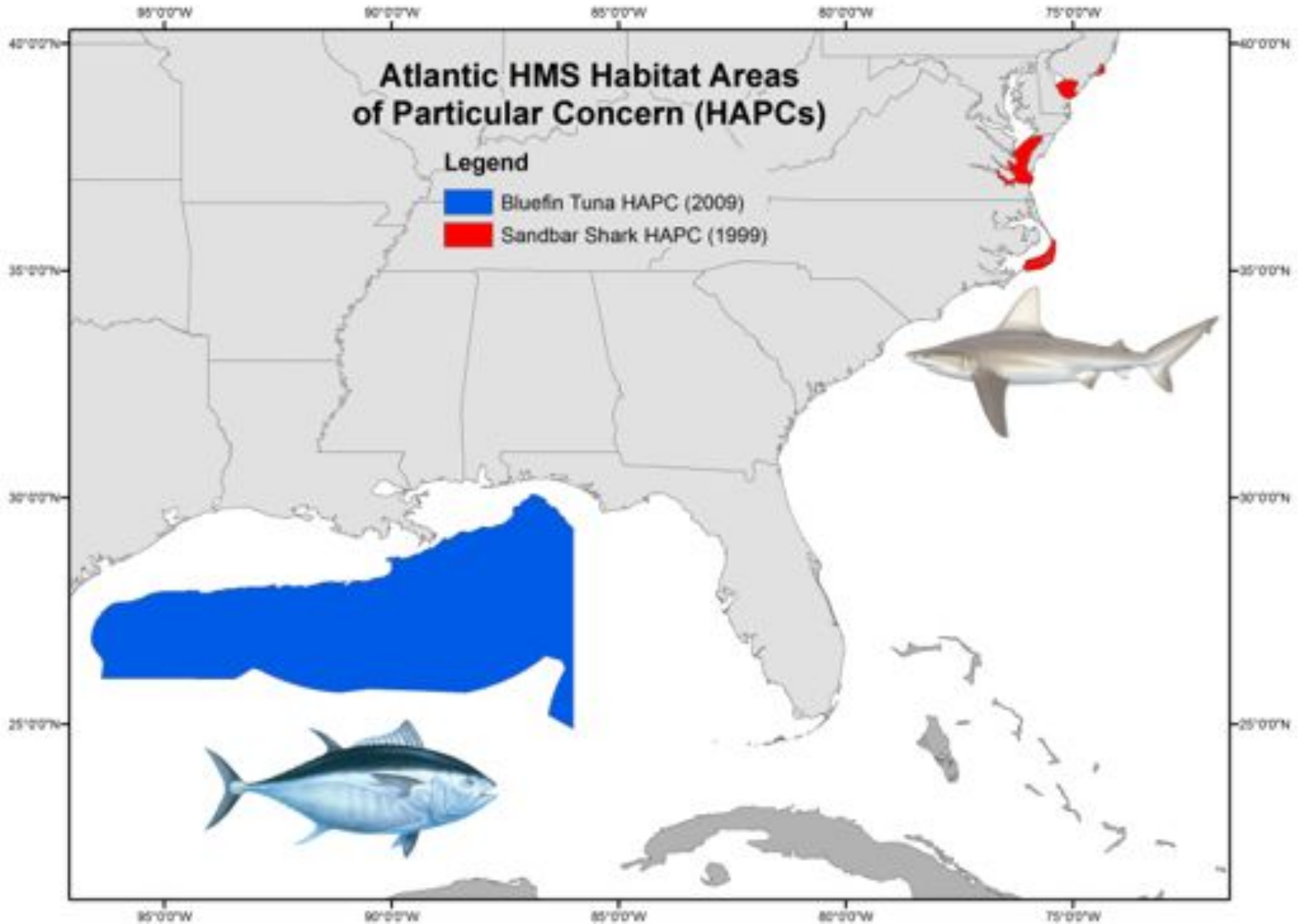


Photo by Howard Hall

Maps of Atlantic HMS EFH



What are the Current HMS HAPCs?



Challenges in Atlantic HMS EFH Delineation

- Most Atlantic HMS are pelagic, highly mobile, and align along dynamic current boundaries (not bottom features)
- Coastal sharks are often ubiquitously distributed across multiple types of habitats
- Data poor species –
 - combine life stages if data are unavailable for separate determinations (e.g., whale shark, porbeagle shark)
 - sometimes we cannot make EFH determinations (e.g., narrowtooth shark, sixgill shark)

Challenges in Atlantic HMS EFH Delineation

- How to combine multiple types of information (PSATs, acoustic, survey, observer, small research projects) collected under unique sampling regiments we do not have control over?
- Mismatch between scales of Atlantic HMS EFH (across ocean basins / US EEZ) and scale of habitat consultations (localized)

Timeline of HMS EFH Actions

- 1999:** EFH is first designated for Atlantic HMS
- 2006:** Consolidated Atlantic HMS Fishery Management Plan – announced intent to revise EFH
- 2009:** Amendment 1 – completed initial 5-year review and update of EFH for Atlantic HMS
- 2010:** Amendment 3 –EFH for smoothhound complex
Interpretive Rule – recognized roundscale spearfish, added species to management unit, designated EFH
- 2014:** Atlantic HMS EFH 5-Year Review - initiated
- 2015:** Atlantic HMS EFH 5-Year Review – finalized; Notice Of Intent to prepare Amendment 10
- 2016:** Draft Amendment 10 in development
- 2017:** Final Amendment 10