# Habitat Committee and Advisory Panel

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AUGUST 20, 2026

NEW BEDFORD, MA AND VIA WEBINAR

# AGENDA

1. Ocean Planning Updates
2. 2026 Essential Fish Habitat Framework
3. Clam Exemption Review
4. Other Business – as needed

# LOOKING AHEAD

**Council meeting, Habitat CTE Report** – Wednesday, September 16 – 10:00 am – Hotel 1620, Plymouth, MA

- Take final action on 2026 EFH Framework
- Review the Great South Channel Surfclam Exemption Program Review Report and consider in context of priorities setting

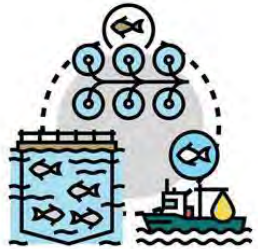
- *Staff will work with the Plan Development Team (PDT) to revise the 2026 EFH Framework and Surfclam Exemption Program Review Report prior to the Council meeting, based on feedback provided today*

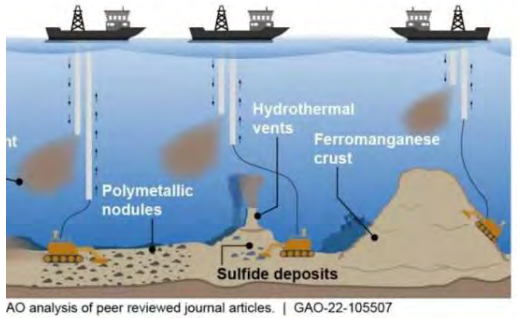
# OCEAN PLANNING UPDATES

**Objective:** Receive updates on current ocean planning issues on recent and near-term engagement and comment opportunities

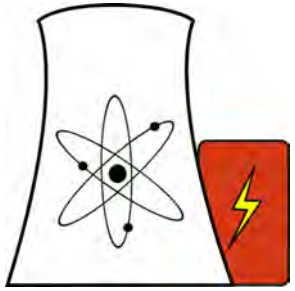
**Topics:**

- Offshore aquaculture
- Offshore wind
- Deep-sea mineral mining
- Space launch / recovery
- Offshore nuclear





AO analysis of peer reviewed journal articles. | GAO-22-105507



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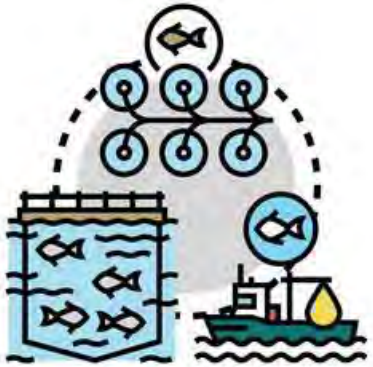
# OFFSHORE AQUACULTURE SLOWLY PROGRESSES



- Newport Mussels project
  - Remains under development
  - Reminder: project presentation to Habitat AP/Committee in September 2025
  - NEFMC Comment letter Feb. 2026
    - https://d23h0vhsm26o6d.cloudfront.net/260310-NEFMC-to-USACE-RE-Newport-Mussel-Farm-application.pdf
  - *Update*:
    - Currently responding to comments received
    - Preparing formal fisheries and economic analyses
    - NCCOS revising siting analysis with more recent fishing & AIS data
    - Next steps: submit everything to USACE → 6-month timeline begins UNLESS an EIS is required (then much longer)

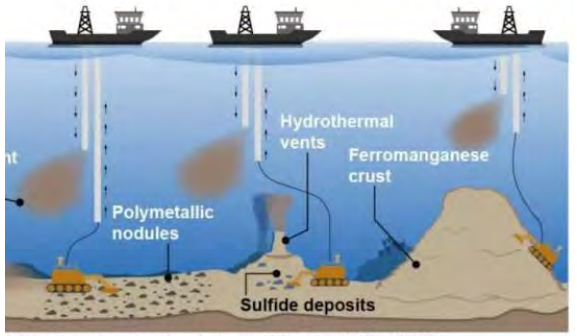
# OFFSHORE WIND ACTIVITY CONTINUES TO EVOLVE

- An increasing number of offshore wind leases are rescinded / cancelled
  - RWE: Aug. 2026, NY Bight, CA, LA
  - Invenergy: June 2026, NY Bight, GOM, CA
  - Duke Energy: June 2026, NC
  - TotalEnergies: March 2026, NY Bight, NC
  - Etc.

*Promise to not build offshore wind in the future; shift investment to LNG, nuclear, etc.*

- Offshore Wind Regional Fund Administration (RFA)
  - 11-State draft fisheries compensation program design
  - Public comment opportunity → ***expected early September***
  - Council presentation in September

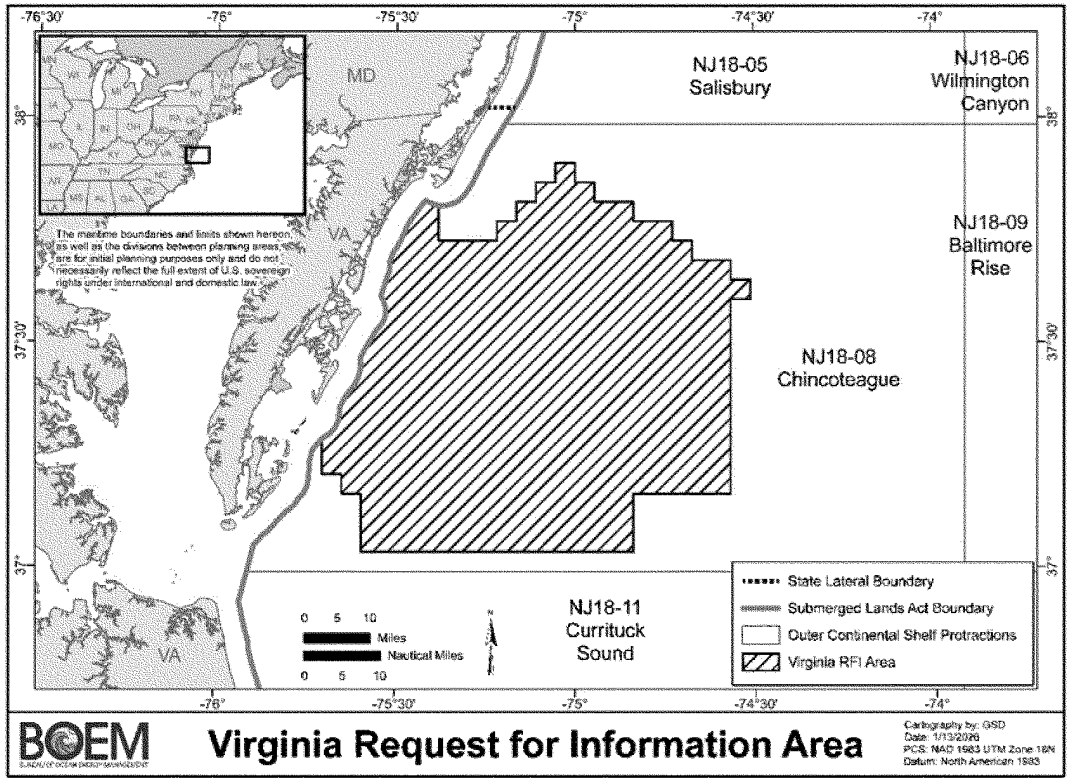
# DEEP-SEA MINERAL MINING PROGRESSES TO NEXT STAGE



AO analysis of peer reviewed journal articles. | GAO-22-105507

- RFI published in June 2026
  - *Area*: off Virginia
  - Commercial lease for Outer Continental Shelf off Virginia
  - *Minerals*: heavy minerals sands, phosphorites
  - *Next steps*: 1) Mining Area Identification, 2) Proposed Leasing Notice, 3) Final Leasing Notice (lease sale), 4) Bid Submission & Evaluation, 5) Lease Issuance

Joint NEFMC/MAFMC letter (July 21st)



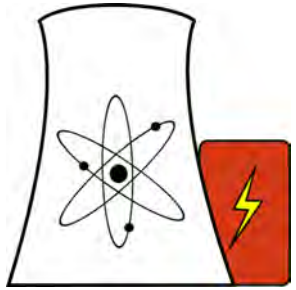
# OFFSHORE SPACE LAUNCH / RECOVERY RELATED ACTIVITIES NOW BEING EVALUATED

- BOEM published RFI on potential use of submerged lands/existing offshore facilities on Outer Continental Shelf
  - When? RFI published July 2026
  - Why? Space-related activities: siting, operation of offshore space launch platform & re-entry sites

NEFMC / MAFMC / SAFMC Joint Council comment letter

- https://d23h0vhsm26o6d.cloudfront.net/LN202626_-SAFMC-NEFMC-MAFMC-Potential-Use-of-the-Outer-Continental-space-reentry-and-launch.pdf

# OFFSHORE NUCLEAR ENERGY: BUILDING EXPERTISE, IMPROVING REGULATORY EFFICIENCY



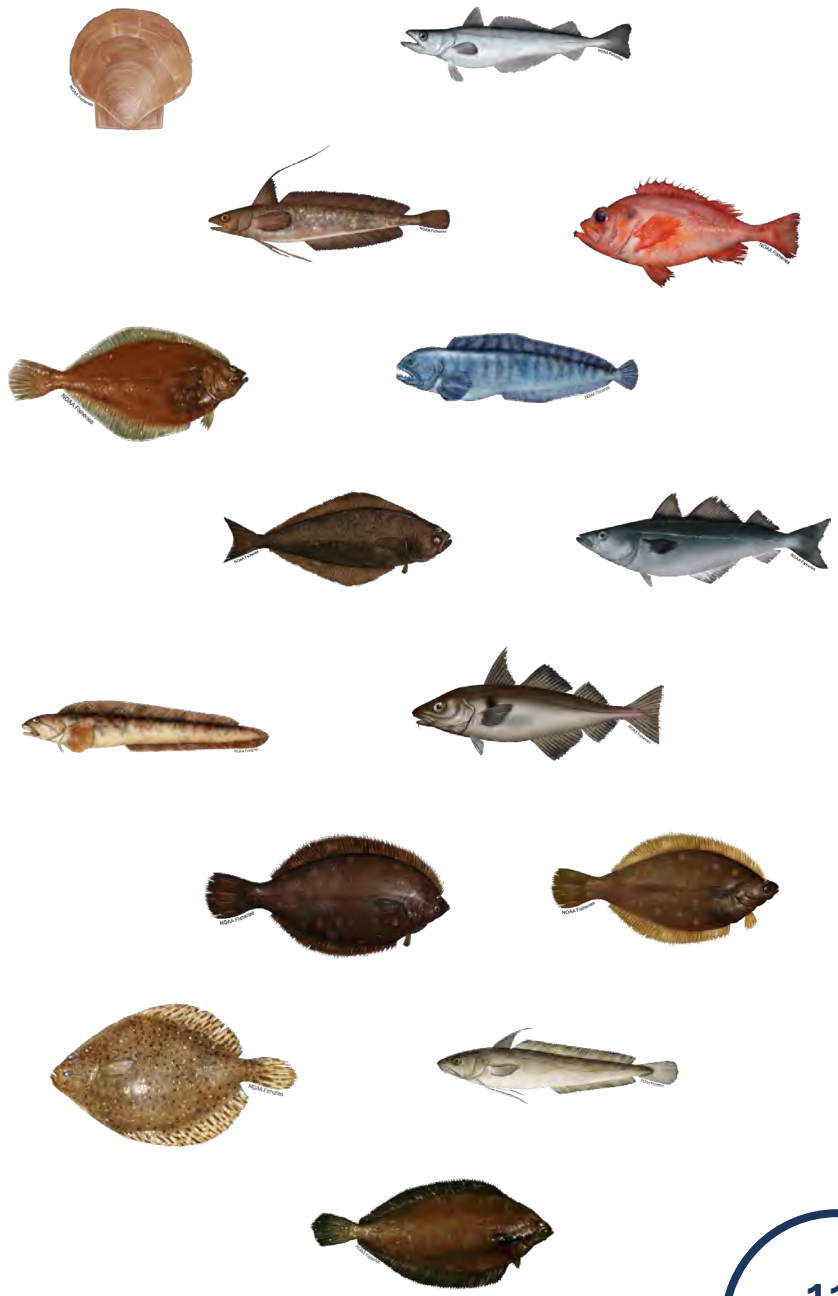
- MOU signed between Marine Minerals Administration and the Nuclear Regulatory Commission
  - *When?* MOU published July 22, 2026
  - *What?*
    - "Strengthen cooperation between agencies regarding potential nuclear projects on the Outer Continental Shelf"
    - Build "the technical expertise, regulatory clarity, and interagency coordination needed to assess whether and how this technology could be responsibly implemented in the years ahead"

*No public comment opportunity yet* → staff will remain apprised of this new activity

# AND…ANY OTHER MISCELLANEOUS OCEAN PLANNING ACTIVITIES AS THEY ARISE!

# 2026 EFH DESIGNATION FRAMEWORK

- Review feedback received
- Review draft designations, including species with separate species distribution models
- Review draft Framework and recommend preferred alternative



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# 2026 EFH UPDATES AND TIMELINE: HOW DID WE GET HERE?

| Time Period | Action / |
|---|---|
| 2004-2018 (effective 2018) | NEFMC Omnibus Habitat Amendment 2 (OHA2) |
| 2017-2022 (updates ongoing) | Northeast Regional Habitat Assessment (NRHA) |
| 2024-2025 | Essential Fish Habitat 5-Year Review – joint review w/ MAFMC |
| September 2025 | Final action on 2025 EFH Designation Framework – 10 species |
| April 2026 | Final action on MAFMC Omnibus EFH Amendment – 14 species |
| ***2026 EFH Designation Framework – all remaining NEFMC species (16) except salmon, red crab*** | |
| January 2026 | Framework Initiation: 2026 EFH Designation Framework |
| Spring + Summer 2026 | 2026 EFH Framework development:<br>• Feedback and revisions to draft designations<br>• Development and review of species-specific SDMs |
| August 2026 | Habitat AP and Committee review and recommend preferred alternative |
| *September 2026* | *Final action on 2026 EFH Designation Framework* |

# 2026 EFH UPDATES: FEEDBACK AND ENGAGEMENT

# 2026 EFH FEEDBACK MEETINGS (BEYOND HABITAT PDT)

- 5/29 – Habitat Advisory Panel
- 6/11 – Whiting PDT
- 6/12 – Habitat Committee
- 6/24 – Council
- 7/14 – Groundfish PDT / Assessment leads, Group C (Flatfish)
- 7/22 – Groundfish PDT / Assessment leads, Group A (Redfish, haddock, pollock)
- 7/29 – Scallop PDT
- 7/31 – Groundfish PDT / Assessment leads, Group B (Halibut, wolffish, ocean pout, white hake)
- 8/10 – GARFO staff

*Contacted groundfish, whiting, scallop APs via email to solicit input or requests for meetings; didn't receive any new feedback but still open to talking with AP members before the Council meeting*

*Plus additional feedback and discussions via correspondence*

# TYPES OF FEEDBACK RECEIVED TO DATE (2026 EFH DESIGNATIONS)

See 6/12 Habitat CTE slides for feedback process info

- **Methods**
  - Model inputs and assumptions, soliciting feedback, size cutoffs, data processing
- **Map Adjustments**
  - North / south extent, inshore zones, banks and ledges, slope and canyon areas, trimming or extending EFH footprint
- **Biology / Life History**
  - Distributions (shifts, regional differences), environmental drivers, seasonal habitat use
- **Information Sources**
  - Additional surveys and commercial catch (groundtruth), literature suggestions, assessments (Research, Management Track), other scientific / industry experts beyond PDTs / APs
- **Presentation / Wording**
  - Map overlays (NOAA nautical charts, SAMS areas), highlight improvements vs previous EFH maps

# IMPLEMENTING FEEDBACK – GENERAL CONSIDERATIONS

- Ad-hoc map adjustments considered if well-supported by data and/or literature
  - Balance consistency in methods across species VS species-specific nuances
  - Otherwise, rely on model-based and inshore analyses

- Lean more conservative (broader) when data are more uncertain

- Feedback on biology / life history – extremely helpful for revising text descriptions

- Updated designations in EFH consultations context – e.g., reduce patchiness, consider change in northern / southern extent, etc.

- Additional data sources (surveys, commercial catch) – generally use as groundtruth, but may be incorporated more directly in future EFH Reviews and updates

# 2026 EFH: DRAFT UPDATED DESIGNATIONS

# FOR AP AND COMMITTEE DISCUSSION:

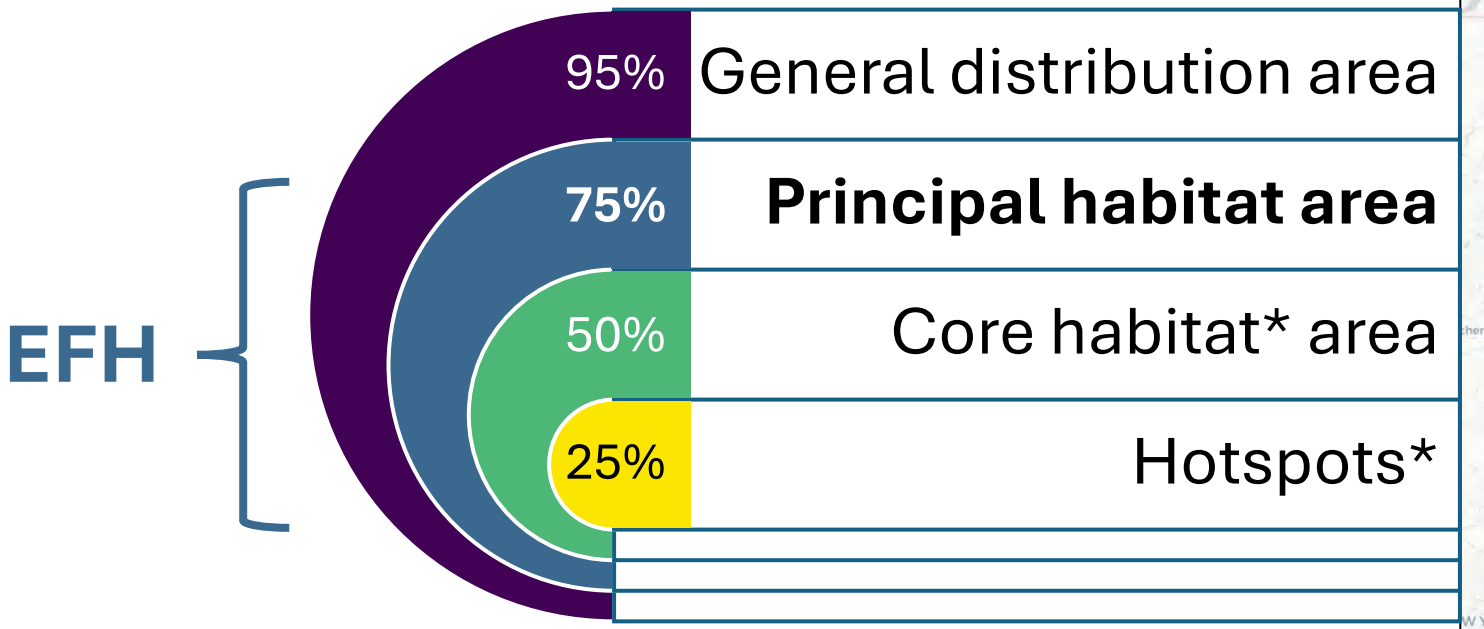
- **Does the narrower or wider map for adult wolffish seem more reasonable?**
  - *Tradeoffs:* population declines and data uncertainty

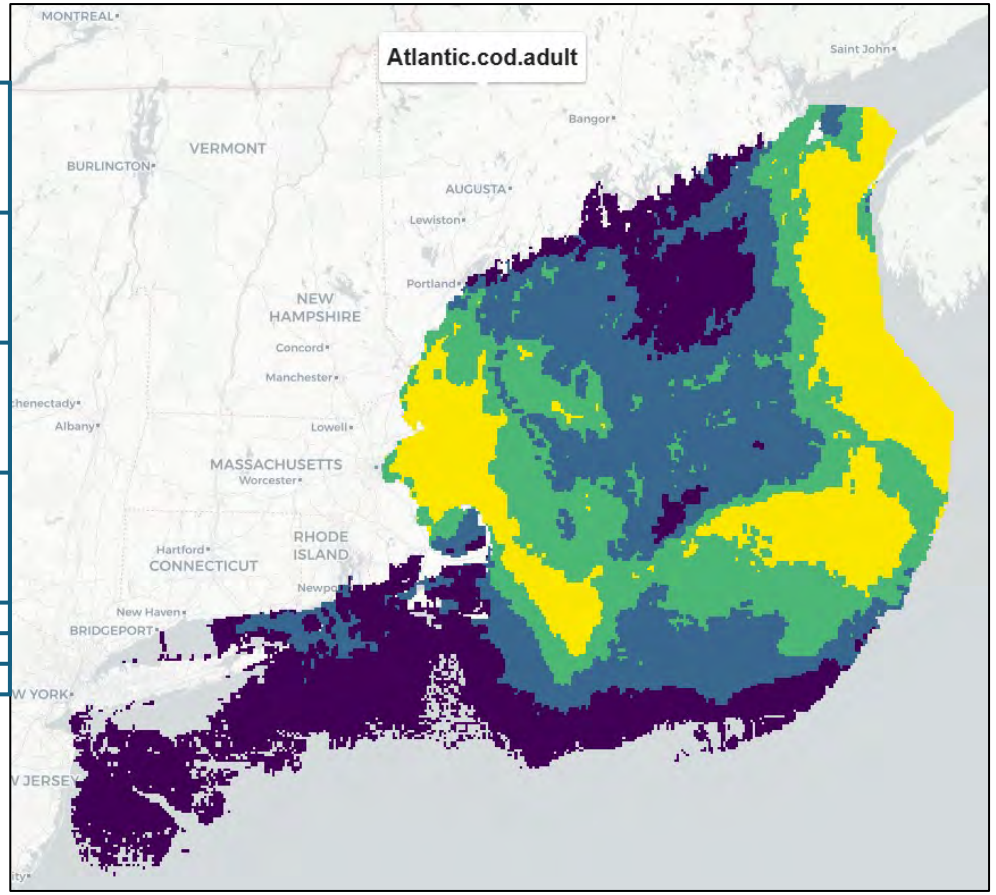
- **Should the Council set a latitudinal cutoff (e.g., Absecon Inlet) for the winter flounder designation along the New Jersey coast?**
  - *Consider:* seasonal dredging projects, EFH consultation needs, inshore occurrence data, model quantiles

- **Are there any final adjustments to the draft EFH designations (maps, text)?**
  - *Note:* major adjustments or changes to data inputs, modeling approaches can be considered for next round of EFH 5-year review

# RECAP: SDM DENSITY QUANTILES

➢ *Quantiles group the mean density predictions into bins:*




*2025 quantiles example: Atlantic cod adults*

- ** Terminology is from North Pacific (model-based EFH since 2017)*
- *Within top 75% quantile (principal habitat area) = EFH*

# MAP UPDATES: HALIBUT, WOLFFISH, OFFSHORE HAKE

- Halibut, wolffish, and offshore hake models = single-species GAMs, simplified to most explanatory set of environmental covariates

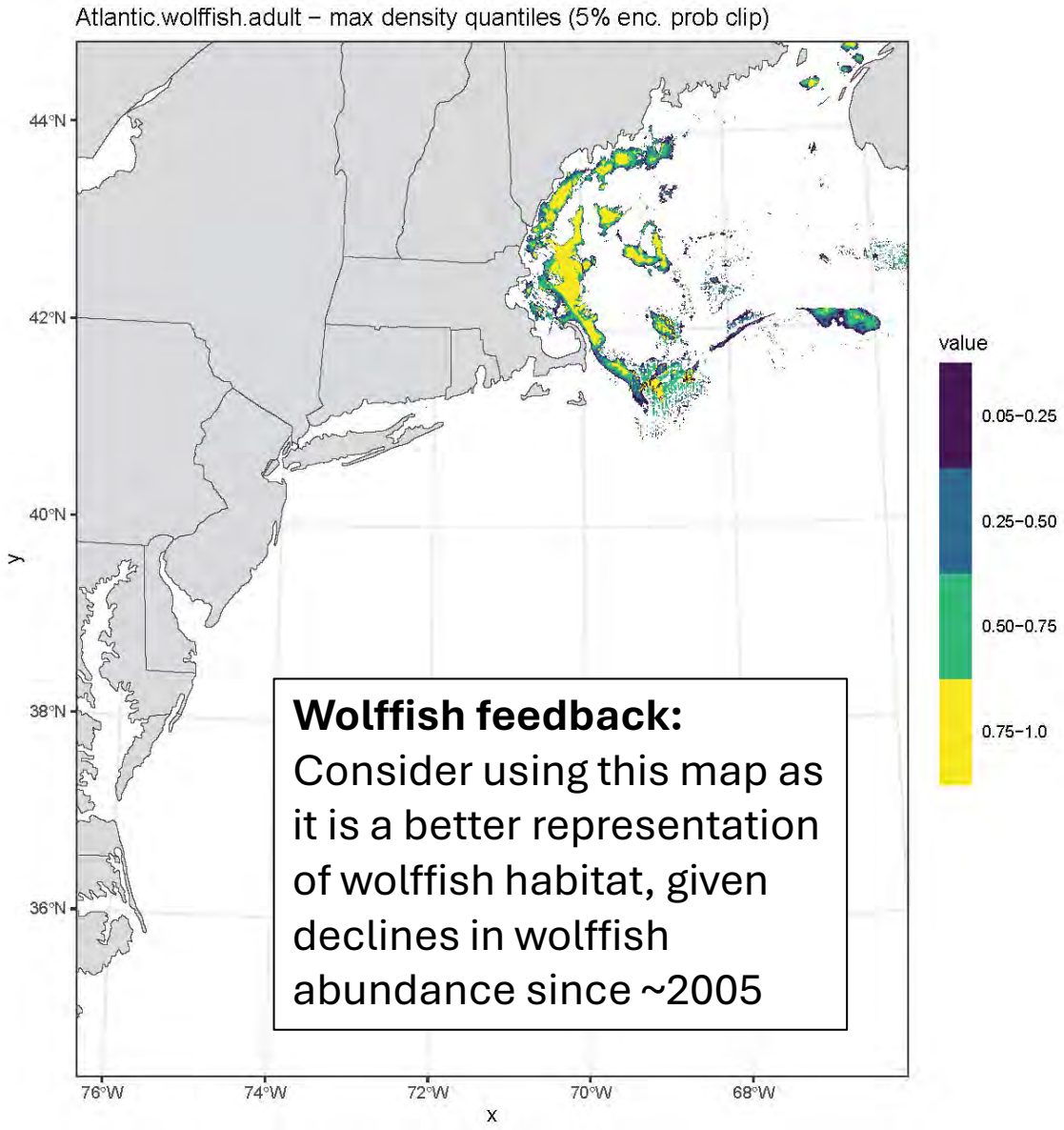
- For most NEFMC species (ten 2025 EFH + twelve 2026 EFH) in joint hurdle models, workflow is:
  - SDM density predictions ➔ *trim cells w/ < 5% encounter probability* ➔ calculate density quantiles within updated footprint

- Encounter probability approach underestimates size of habitat footprint for rare species (i.e., **adult halibut, adult wolffish**)…alternate approach factors in cumulative proportion of abundance:
  - SDM density predictions ➔ ***trim cells that collectively contribute < 5% of total estimate population*** ➔ calculate density quantiles within updated footprint

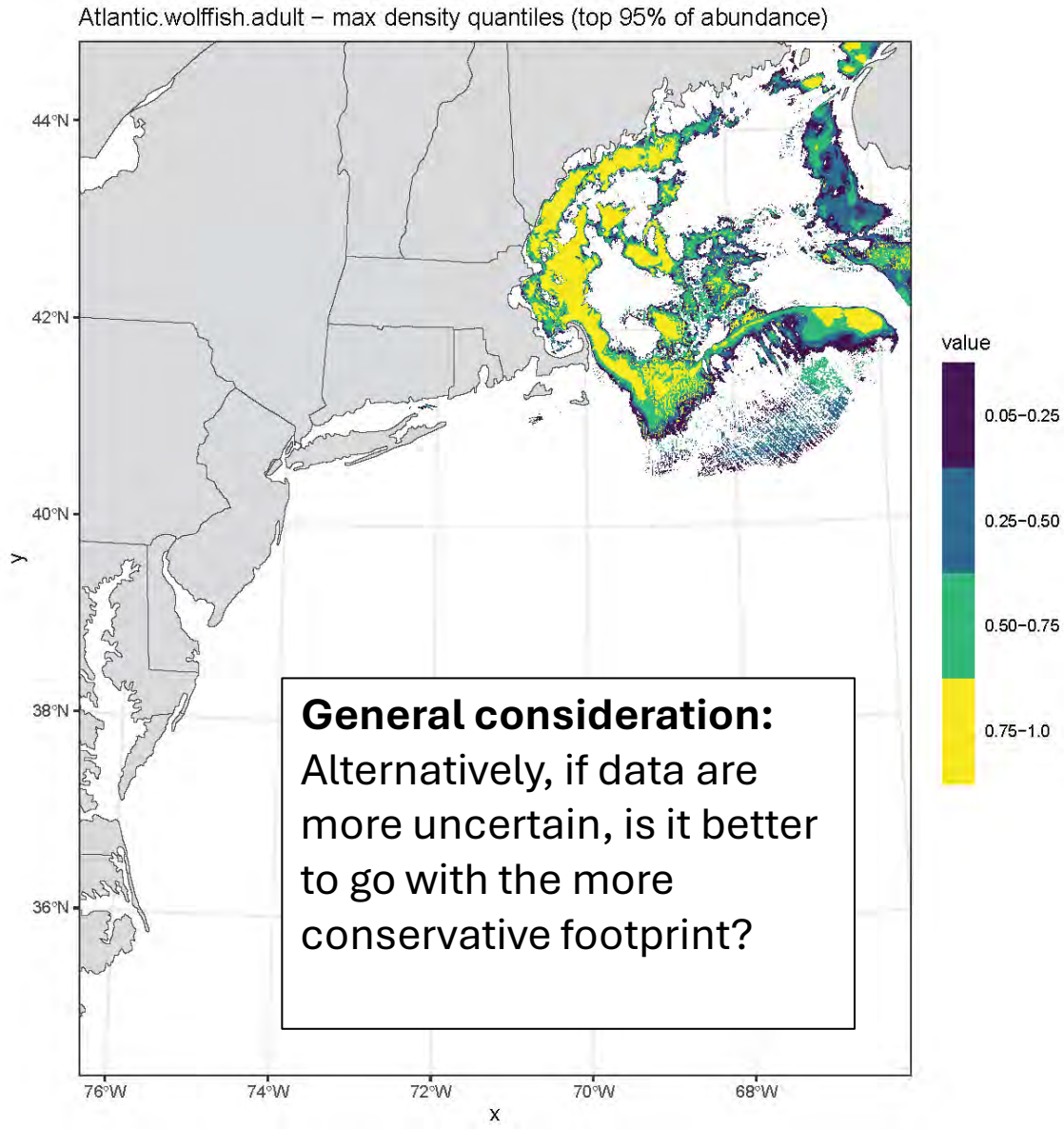
- For more abundant life stages (juvenile halibut, juvenile wolffish; juvenile and adult offshore hake), difference between methods is less pronounced ➔ **retain original approach for consistency**

# ADULT WOLFFISH COMPARISON:

## 5% ENCOUNTER PROBABILITY VS 95% CUMULATIVE PROPORTION

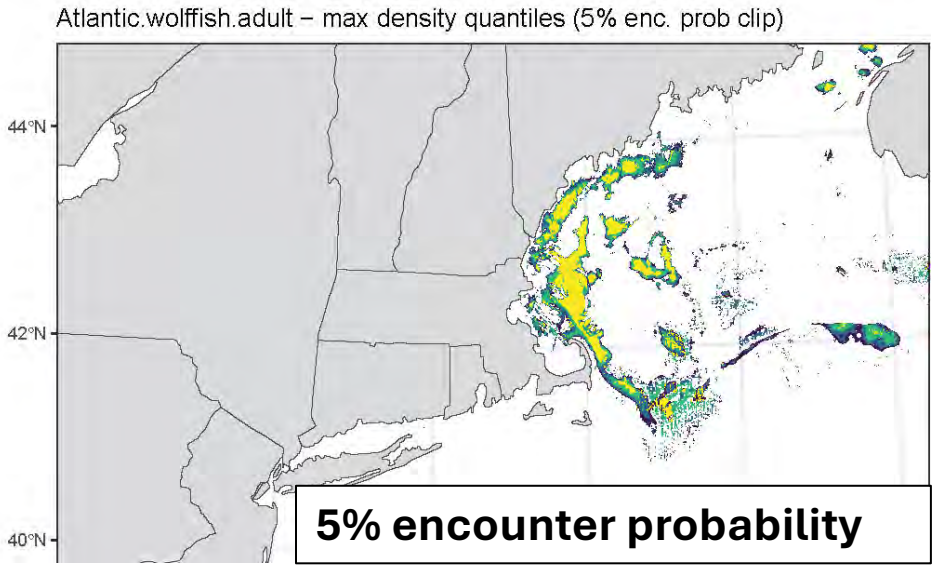


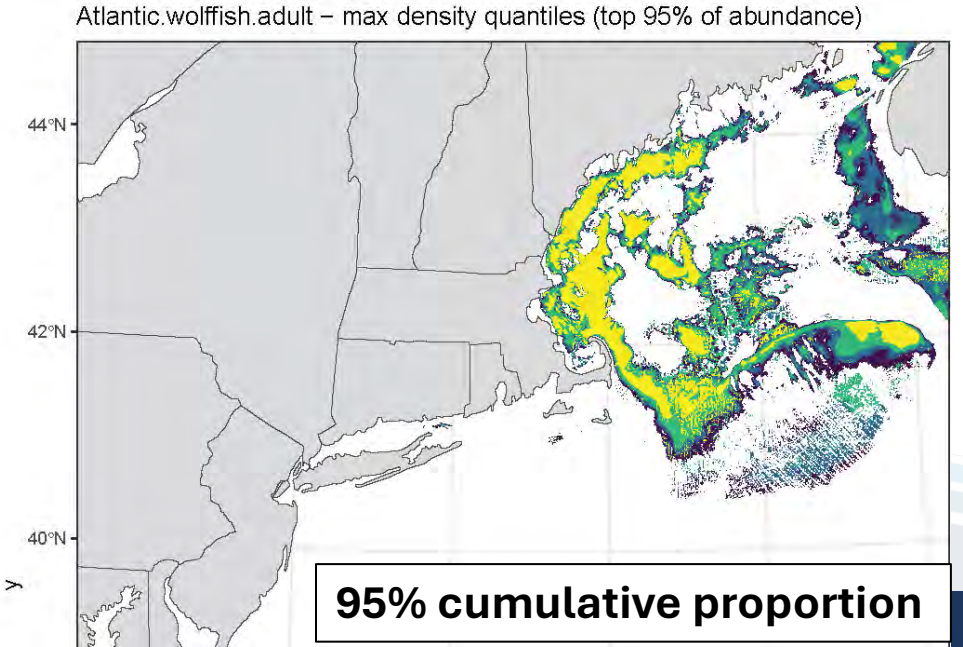

**Wolffish feedback:**
Consider using this map as it is a better representation of wolffish habitat, given declines in wolffish abundance since ~2005




**General consideration:**
Alternatively, if data are more uncertain, is it better to go with the more conservative footprint?

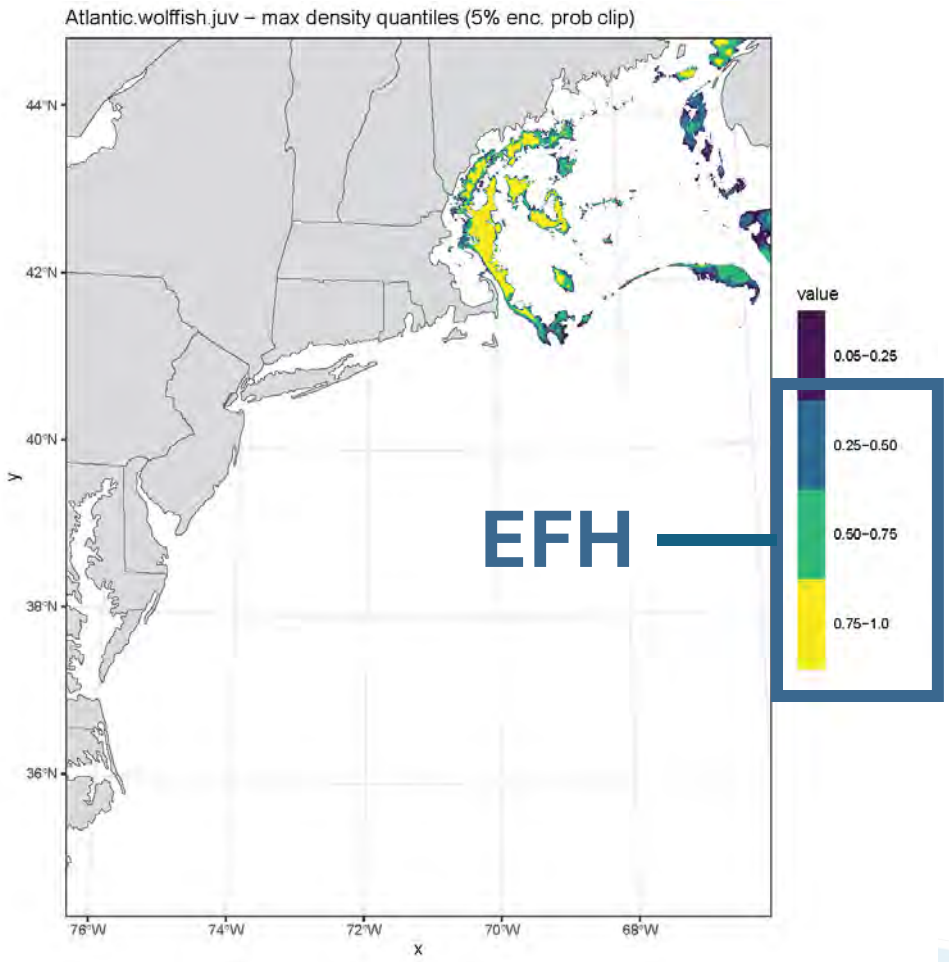
# ATLANTIC WOLFFISH (ADULT)




Essential fish habitat for adult Atlantic wolffish (TL ≥ 40 cm) consists of the principal habitat area and includes subtidal benthic habitats in the western Gulf of Maine and on the northern portion of Georges Bank (Map 9). Within the principal habitat area, adult wolffish have been caught in federal trawl surveys in waters ranging from 24-205 meters depth, but are encountered most commonly in these surveys between 52-153 meters depth (Appendix B, Table 22). Adults are commonly found in bottom temperatures between 2-11°C and marine waters between 31-35 ppt (Appendix B, Table 22). Sub-tidal benthic habitats at depths less than 173 meters within the geographic area defined as EFH. Adult Atlantic wolffish have been observed spawning and guarding eggs in rocky habitats in less than 30 meters of water in the Gulf of St. Lawrence and Newfoundland and in deeper (50-100 meters) boulder reef habitats in the Gulf of Maine. Egg masses have been collected on the Scotian Shelf in depths of 100-130 meters, indicating that spawning is not restricted to coastal waters. Adults are distributed over a wider variety of sand and gravel substrates once they leave rocky spawning habitats but are not caught over muddy bottom.

# ATLANTIC WOLFFISH (JUVENILE)




Essential fish habitat for juvenile Atlantic wolffish (TL < 40 cm) consists of the principal habitat area and includes subtidal benthic habitats in the western Gulf of Maine and along the northern edge of Georges Bank (Map 8). Within the principal habitat area, juvenile wolffish have been caught in federal trawl surveys in waters ranging from 37-230 meters depth but are encountered most commonly in these surveys between 73-172 meters depth (Appendix B, Table 14). Juveniles are commonly found in bottom temperatures between 3-11°C and marine waters between 32-35 ppt (Appendix B, Table 14). Sub-tidal benthic habitats at depths of 70-184 meters within the geographic area defined as EFH. Juvenile Atlantic wolffish do not have strong substrate preferences.

# SCALLOP SDM DEVELOPMENT - REVIEW

- Single-index integrated SDM; spatial, time-averaged model (individuals 75+ mm)
  - Single, adult EFH map assumed representative of juveniles (< 75 mm)

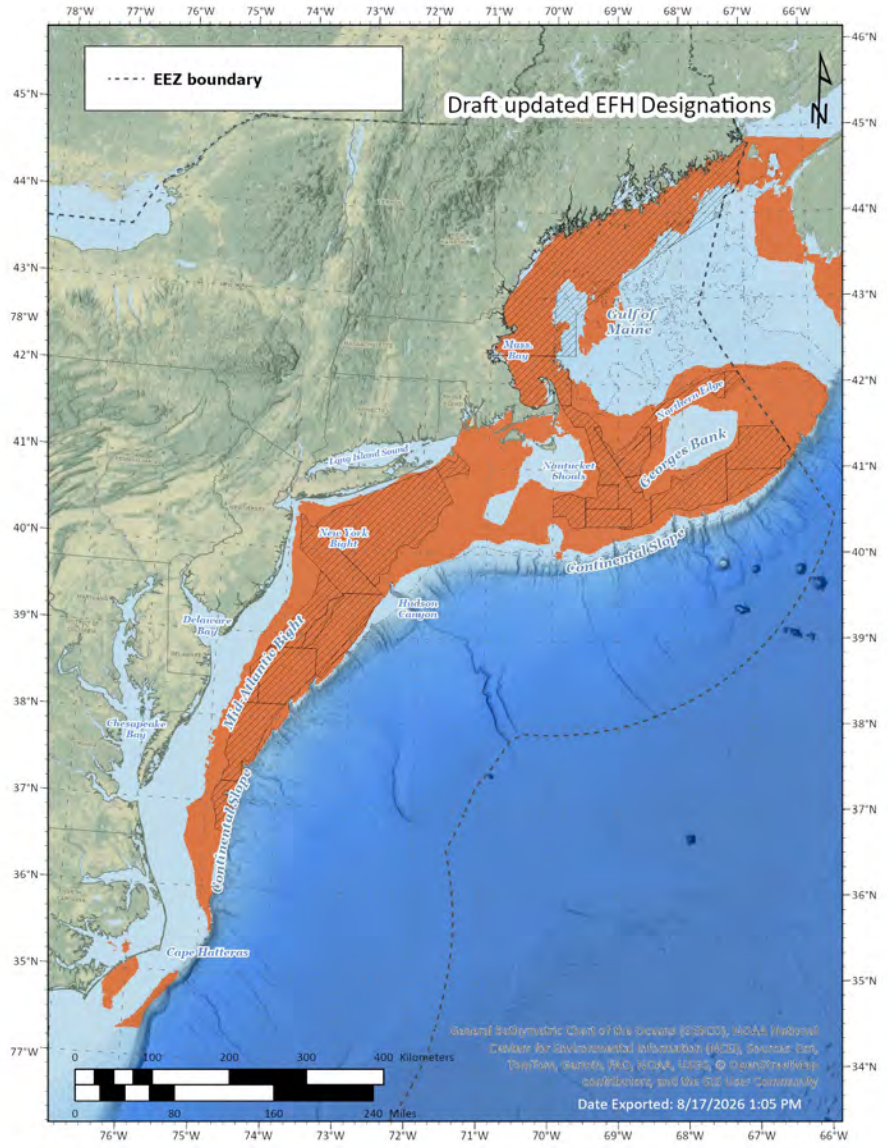
- **Data sources** (2003-2022): NEFSC spring / fall bottom trawl survey, Maine DMR dredge survey, VIMS Industry-based scallop dredge survey

- **Environmental covariates**: bathymetry position index (BPI), topographical complexity, depth, sediment grain size, salinity, stress, bottom temperature, velocity

- **Explored directions**: (continued development, but would require additional time investment beyond what is within the scope of the 2026 EFH updates):
  - Drop-camera integration, spatiotemporal (time-varying) component to the model

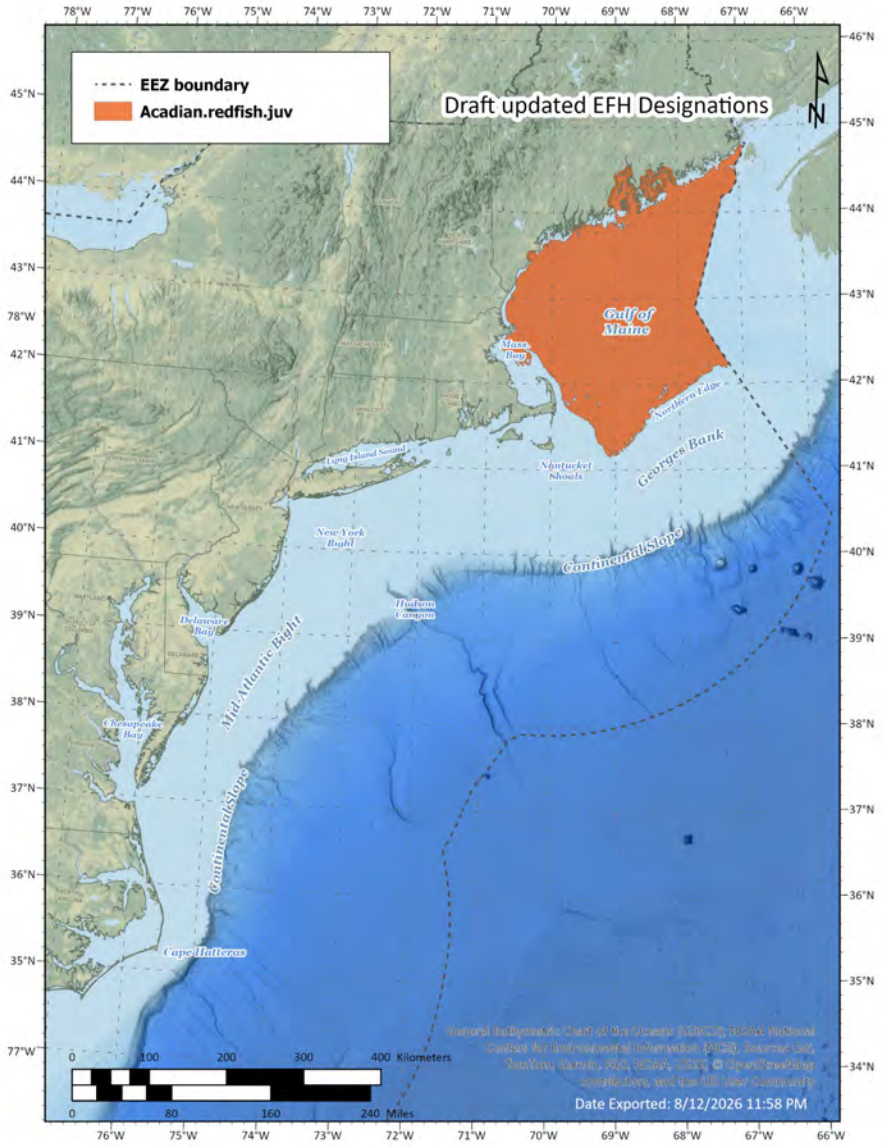
- **Challenges:** artifacts arising from sampling, timing, and data quantity differences between surveys; habitat type affects catchability, especially for trawl surveys; targeted nature of dredge surveys

# ATLANTIC SEA SCALLOP (ADULT - PLACEHOLDER)



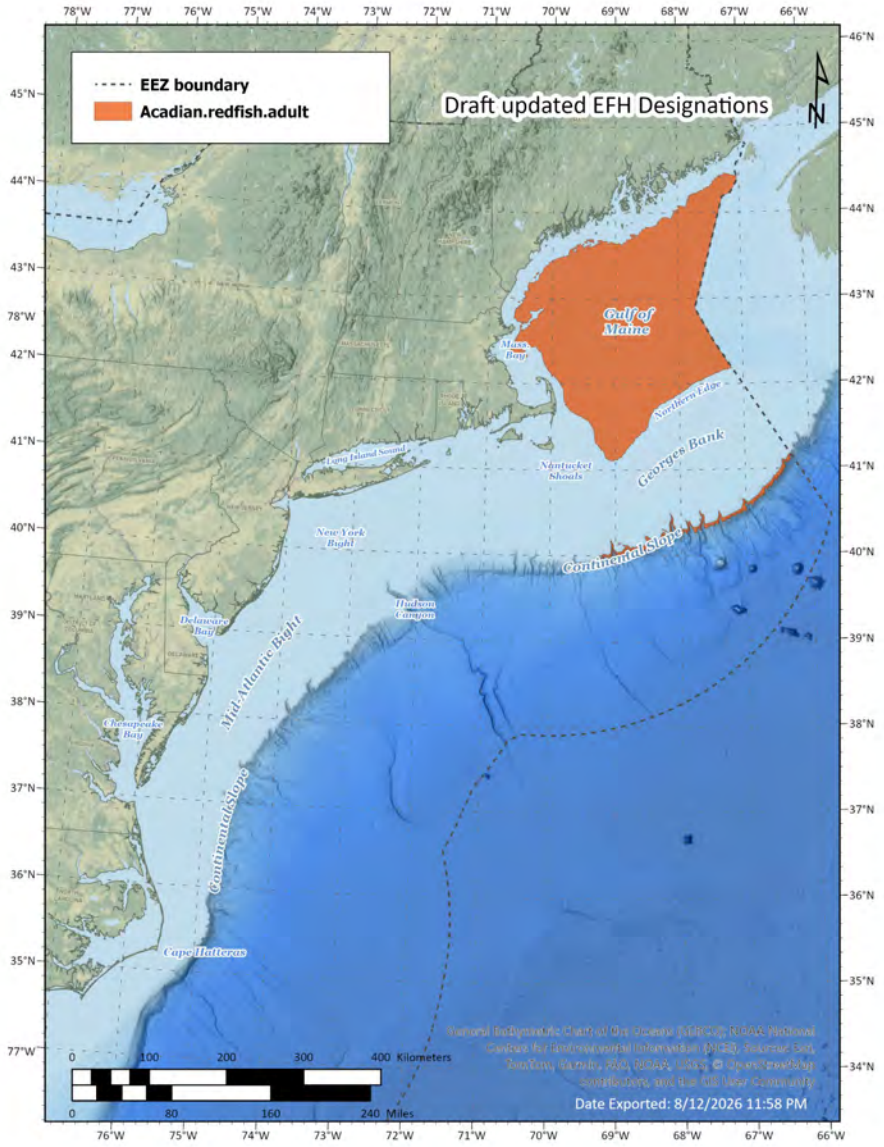

Essential fish habitat (EFH) for juvenile (shell height ≤ 75 mm) and adult (shell height > 75 mm) Atlantic sea scallop consists of the principal habitat area and includes subtidal and coastal offshore benthic habitats in the Gulf of Maine, on Georges Bank, and in the Mid-Atlantic region as far south as Cape Hatteras (Map 7). Inshore adult EFH typically includes the marine zones of bays and estuaries; specific portions of these inshore areas can be identified from Map 7. Within the principal habitat area, adult EFH ranges from 18 to 180 meters depth, but they are also found in shallower water and as deep as 180 meters in the Gulf of Maine. In the Mid-Atlantic, they are found primarily between 45-75 meters and on Georges Bank they are more abundant between 70-90 meters. Adult EFH consists of sand and gravel substrates, where scallops often form aggregations called beds. These beds may be sporadic or essentially permanent, depending on how suitable the habitat conditions are (temperature, food availability, and substrate) and whether oceanographic features (fronts, currents) keep larval stages in the vicinity of the spawning population. Bottom currents stronger than 25 cm/sec (half a knot) inhibit feeding. Growth of adult scallops is optimal between 10 and 15°C and they prefer full strength seawater.

# ACADIAN REDFISH (JUVENILE)



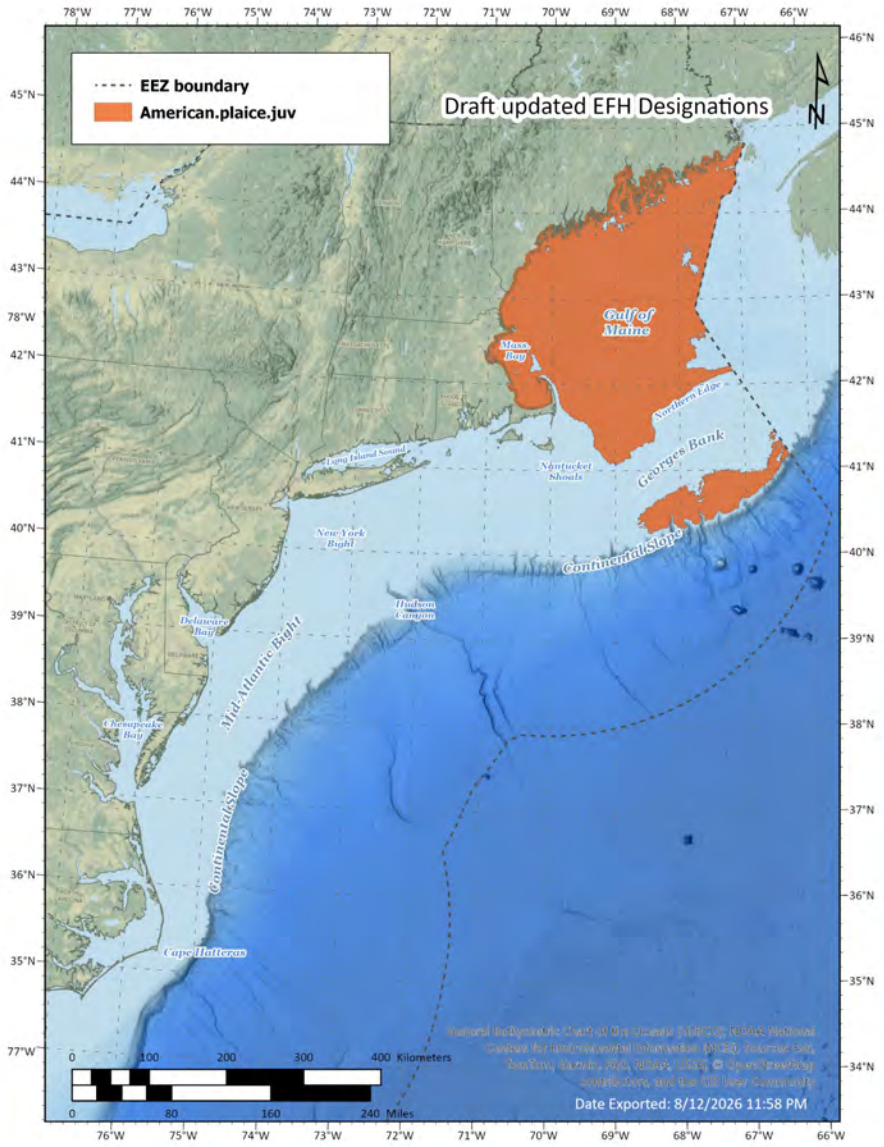

Essential fish habitat (EFH) for juvenile Acadian redfish (TL < 22 cm) consists of the principal habitat area and includes subtidal coastal and offshore benthic habitats in the Gulf of Maine as well as continental slope habitats on the southern edge of Georges Bank (Map 1). Within the principal habitat area, juvenile EFH ranges from 30-244 meters depth, but juveniles most commonly occur between 74-209 meters depth (Appendix B, Table 22). On the continental slope, they can be found to maximum depth of 600 meters (Appendix B, Table 23). Juvenile EFH also includes bottom temperatures between 3-12°C and marine waters between 31-36 ppt (Appendix B, Table 22). Bottom habitats of complex rocky reef substrates with associated structure-forming epifauna (e.g., sponges , corals, sea pens), and soft sediments with cerianthid anemones are EFH for juvenile redfish. Young-of-the-year juveniles are found on boulder reefs, while older juveniles are found in dense cerianthid habitats. Juvenile redfish expand their distribution to adjacent gravel habitats when local abundance on reefs is high. Both juvenile and adult redfish make diel vertical migrations, and juveniles have been observed migrating to sponge habitat during daytime hours and feeding in the water column at night; these sponge habitats also appear to serve as refugia from predators and strong currents. They do not use unstructured mud habitat. Areas of hard bottom in the deep basins are also good habitat for juveniles.

# ACADIAN REDFISH (ADULT)



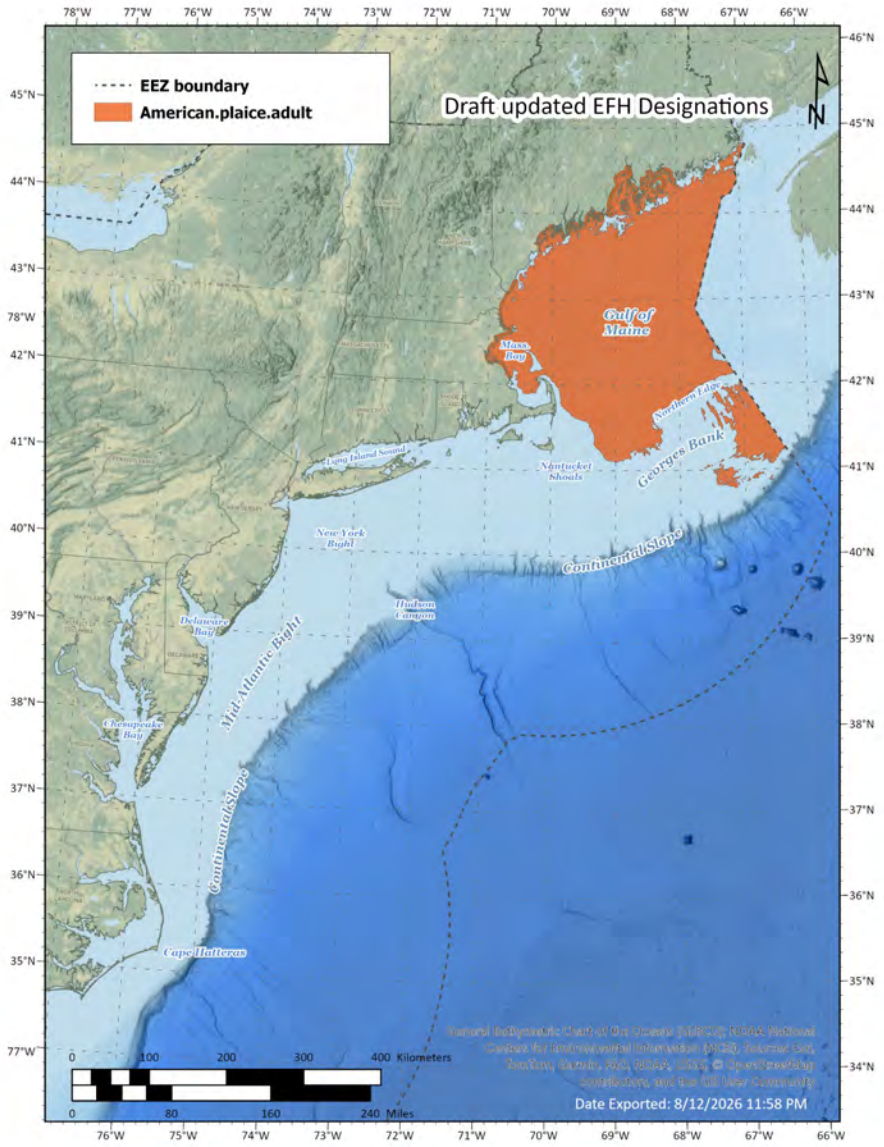

Essential fish habitat (EFH) for adult Acadian redfish (TL ≥ 22 cm) consists of the principal habitat area and includes offshore benthic habitats in the Gulf of Maine and on the continental slope as far south as Hudson Canyon (Map 2). Within the principal habitat area, adult EFH ranges from 48-355 meters depth, but adults most commonly occur between 106-230 meters depth (Appendix B, Table 22). On the continental slope, they can be found to maximum depth of 600 meters (Appendix B, Table 23). Adult EFH also includes bottom temperatures between 3-11°C and marine waters between 32-36 ppt (Appendix B, Table 22). EFH for adult Acadian redfish occurs on finer grained bottom sediments and variable deposits of clays, silts, gravel, and boulders with associated structure-forming epifauna (e.g. corals, sponges, cerianthid anemones, sea pens). Complex sponge habitats may serve as feeding grounds for adult redfish as well as refugia from predators and strong currents. Mating is thought to occur in the fall (broadly, sometime between September and December), but larval extrusion does not occur until the following late spring / early summer (April to July).

# AMERICAN PLAICE (JUVENILE)



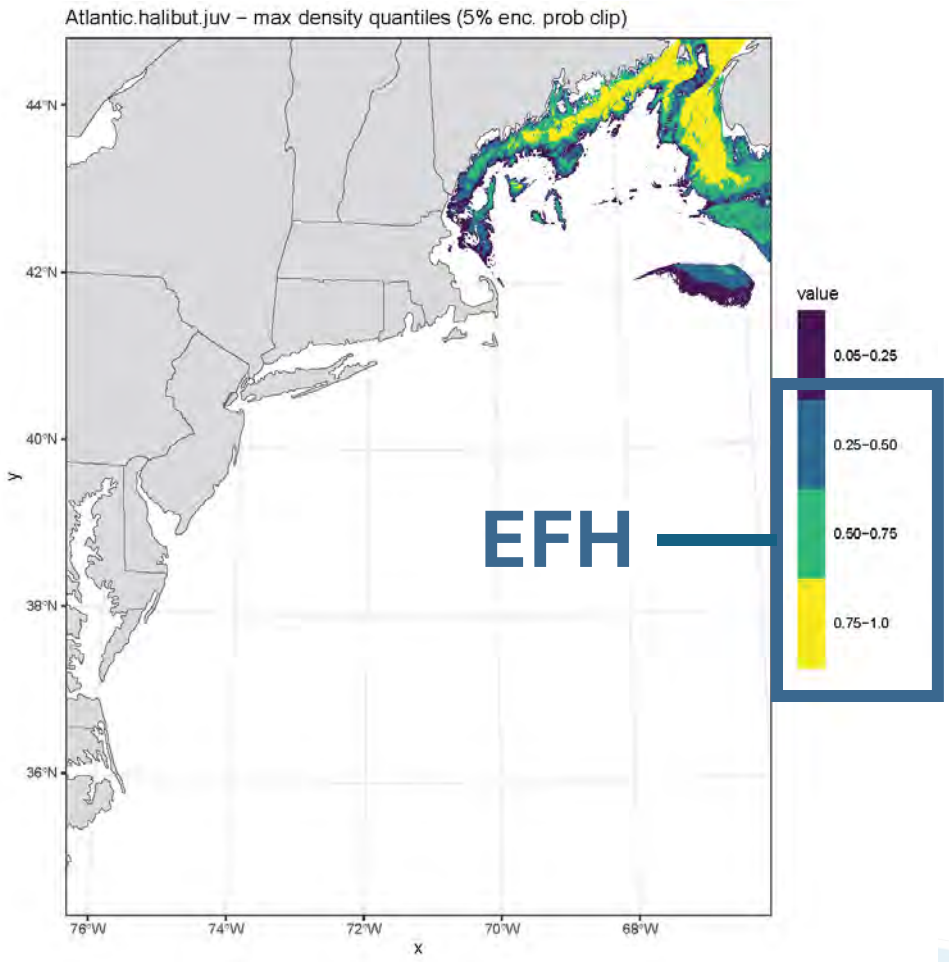

Essential fish habitat (EFH) for juvenile American plaice (TL < 24 cm) consists of the principal habitat area and includes subtidal benthic habitats in the Gulf of Maine and on the western and southern portions of Georges Bank (Map 3). Inshore juvenile EFH typically includes marine zones of bays and estuaries; specific portions of these inshore areas can be identified from Map 3. Within the principal habitat area, juvenile EFH ranges from 23-273 meters depth, but juveniles most commonly occur between 48-179 meters depth (Appendix B, Table 22). Juvenile EFH also includes bottom temperatures between 3-12°C and marine waters between 31-35 ppt (Appendix B, Table 22). EFH for juvenile American plaice consists of soft bottom substrates (mud and sand), and generally prefer finer, gravelly sand versus sand mixed with mud, silt, or clay. They are also found on gravel and sandy substrates bordering bedrock, which is thought to be preferred habitat for green sea urchins, an important prey species. Deep-sea, offshore sponge habitats may act as nursery grounds for juvenile plaice, particularly in the summer and autumn.

# AMERICAN PLAICE (ADULT)



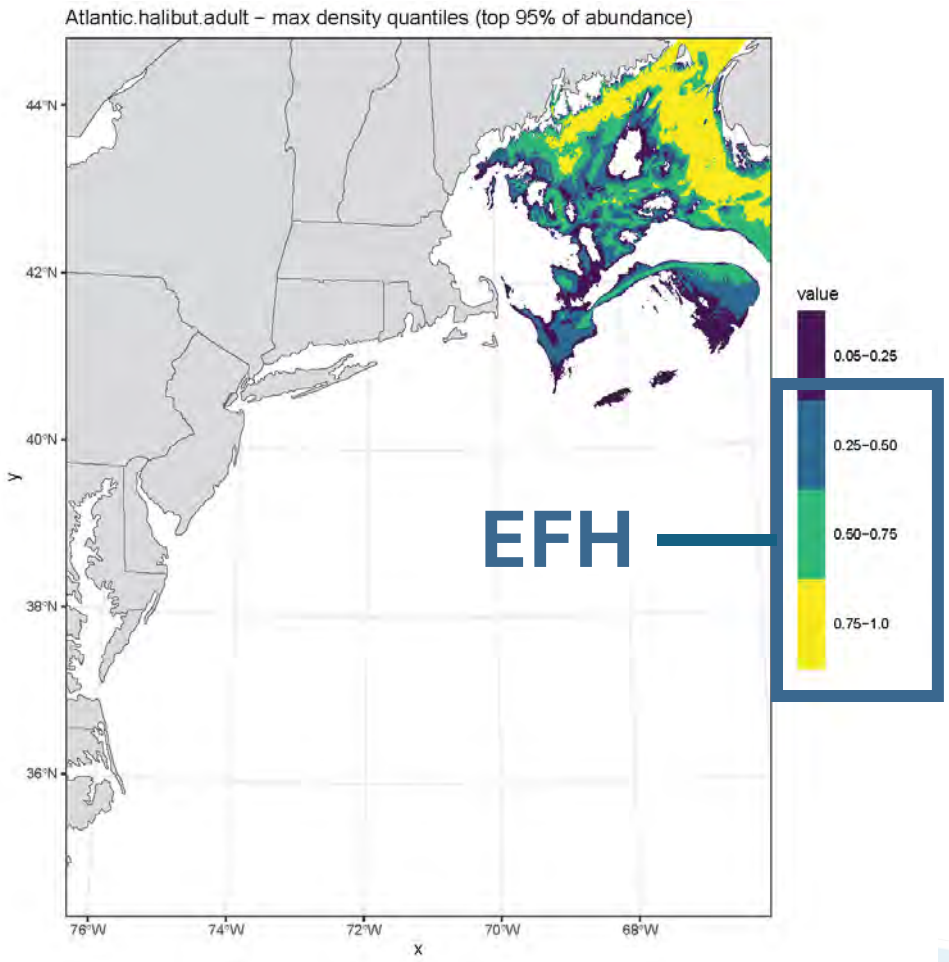

Essential fish habitat (EFH) for adult American plaice (TL ≥ 24 cm) consists of the principal habitat area and includes subtidal benthic habitats in the Gulf of Maine and on the western and eastern portions of Georges Bank (Map 4). Inshore adult EFH typically includes marine zones of bays and estuaries; specific portions of these inshore areas can be identified from Map 4. Within the principal habitat area, adult EFH ranges from 26-313 meters depth, but adults most commonly occur between 53-200 meters depth (Appendix B, Table 22). Adult EFH also includes bottom temperatures between 3-12°C and marine waters between 31-35 ppt (Appendix B, Table 22). EFH for adult American plaice consists of soft bottom substrates (mud and sand), but they are also found on gravel and sandy substrates bordering bedrock, which is thought to be preferred habitat of green sea urchins, an important prey species. Adults make limited migrations to shallower (typically < 90 m depth), coastal waters to spawn. The timing of spawning season varies regionally; in northern Gulf of Maine, spawning occurs in the summer, whereas in the southern portion of its range spawning occurs between March and mid-June, peaking in April-May. In Canadian waters, American plaice have been found to make seasonal migrations to deeper, warmer waters in the winter.

# ATLANTIC HALIBUT (JUVENILE)



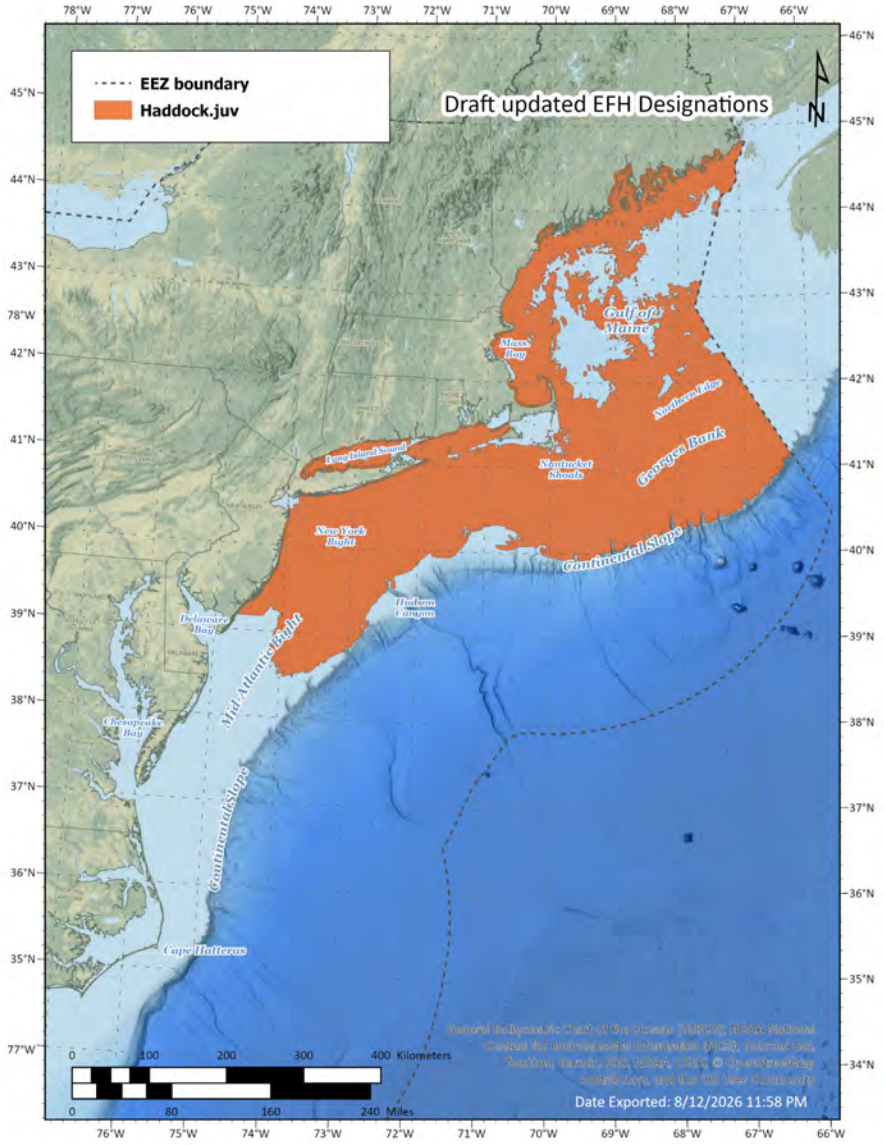

Essential fish habitat for juvenile Atlantic halibut (TL < 75 cm) consists of the principal habitat area and includes subtidal and coastal offshore benthic habitats in the Gulf of Maine and on Georges Bank (Map 5). Nearshore juvenile and adult EFH typically includes marine zones of coastal areas, which can be identified from Map 5. Within the principal habitat area, juvenile EFH ranges from 13-214 meters depth, but juveniles most commonly occur between 42-125 meters depth (Appendix B, Table 22). On the continental slope, they can be found to a maximum depth of 900 meters (Appendix B, Table 23). Juvenile EFH also includes bottom temperatures between 3-13°C and marine waters between 31-35 ppt (Appendix B, Table 22). Generally, EFH for Atlantic halibut consists of sand, gravel, or clay substrates. Juvenile nursery grounds are in waters 20-60 meters deep in apparently well-defined coastal areas with sandy bottoms. At around 3-4 years old, juveniles migrate away from nursery areas, and tagging studies have shown that juveniles undergo greater migrations than adults.

# ATLANTIC HALIBUT (ADULT)



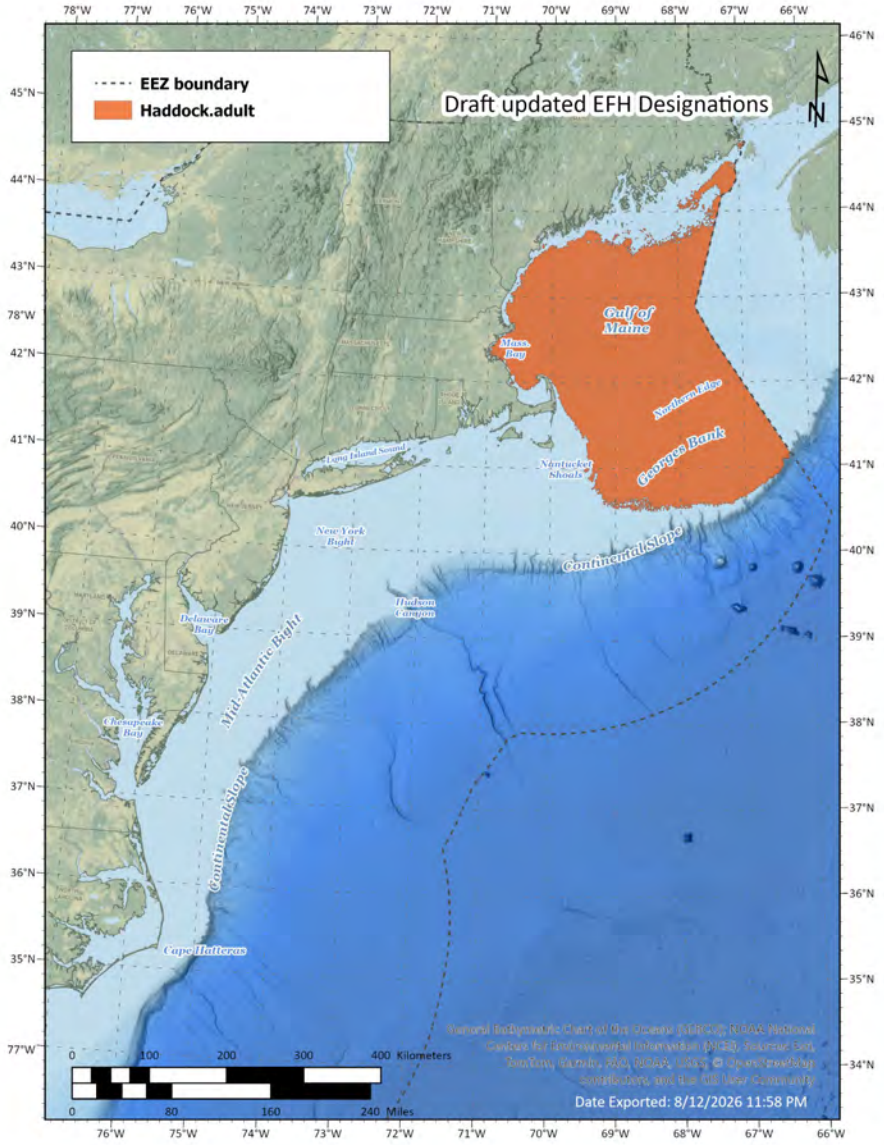

Essential fish habitat for adult Atlantic halibut (TL ≥ 75 cm) consists of the principal habitat area and includes subtidal and coastal offshore benthic habitats in the Gulf of Maine and on Georges Bank (Map 6). Nearshore juvenile and adult EFH typically includes marine zones of coastal areas, which can be identified from Map 6. Adults occupy similar conditions as juveniles but are typically found deeper. Within the principal habitat area, adult EFH ranges from 30-255 meters depth, but adults most commonly occur between 70-175 (Appendix B, Table 22). Like juveniles, adults can be found on the continental slope to 900 meters (Appendix B, Table 23). Adult EFH also includes bottom temperatures between 3-12°C and marine waters between 31-35 ppt (Appendix B, Table 22). Generally, EFH for Atlantic halibut consists of sand, gravel, or clay substrates. Tagging studies have shown that Atlantic halibut within the Gulf of Maine exhibit both year-long residency and migratory behavior (both short- and long-distance, including across the Hague line), for example between summer feeding grounds and winter spawning grounds. Adults have been observed or inferred spawning on the eastern Scotian Shelf and in the eastern Gulf of Maine, typically from November to April (peaking in mid-February), but not in the western Gulf of Maine. Spawning generally occurs over rough or rocky bottom along the deepwater margins of offshore banks, in deeper canyons, and on the continental slope, such as in the Gully Marine Protected Area, Laurentian Channel, and Northeast Channel.

# HADDOCK (JUVENILE)



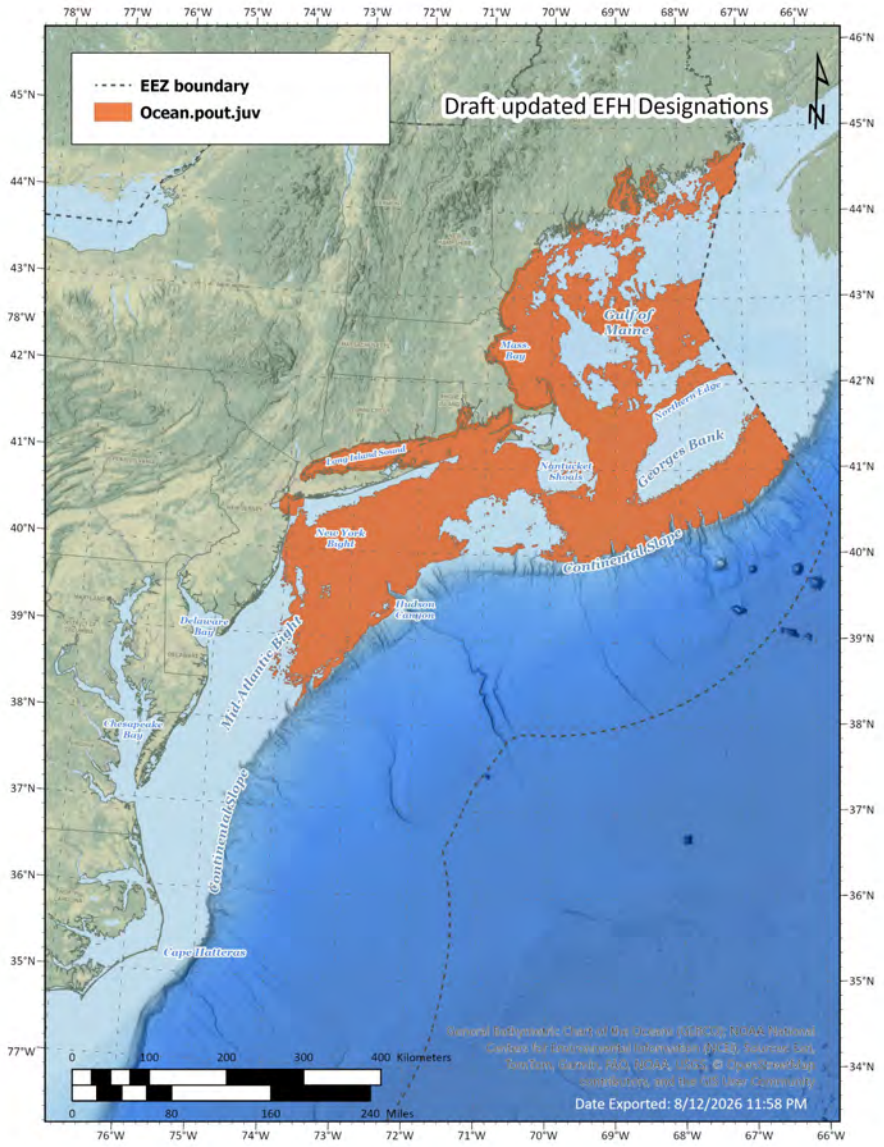

Essential fish habitat (EFH) for juvenile haddock (TL < 32 cm) consists of the principal habitat area and includes coastal and subtidal benthic habitats in the Gulf of Maine, on Georges Bank, and in coastal and continental shelf waters in southern New England including the Long Island Sound, and in the Mid-Atlantic region as far south as Delaware (Map 10). Inshore juvenile EFH typically includes the marine zones of bays and estuaries; specific portions of these inshore areas can be identified from Map 10. Within the principal habitat area, juvenile EFH ranges from 14-271 meters depth, but juveniles most commonly occur between 44-159 meters depth (Appendix B, Table 22). Juvenile EFH also includes bottom temperatures between 3-15°C and marine waters between 31-36 ppt (Appendix B, Table 22). EFH for juvenile haddock occurs on hard sand (particularly smooth patches between rocks), mixed sand and shell, gravelly sand, and gravel. Young-of-the-year juveniles settle on sand and gravel on Georges Bank, but are found predominantly on gravel pavement areas within a few months after settlement. As they grow, they disperse over a greater variety of substrate types on the bank. Young-of-the-year haddock do not inhabit shallow, inshore habitats.

# HADDOCK (ADULT)



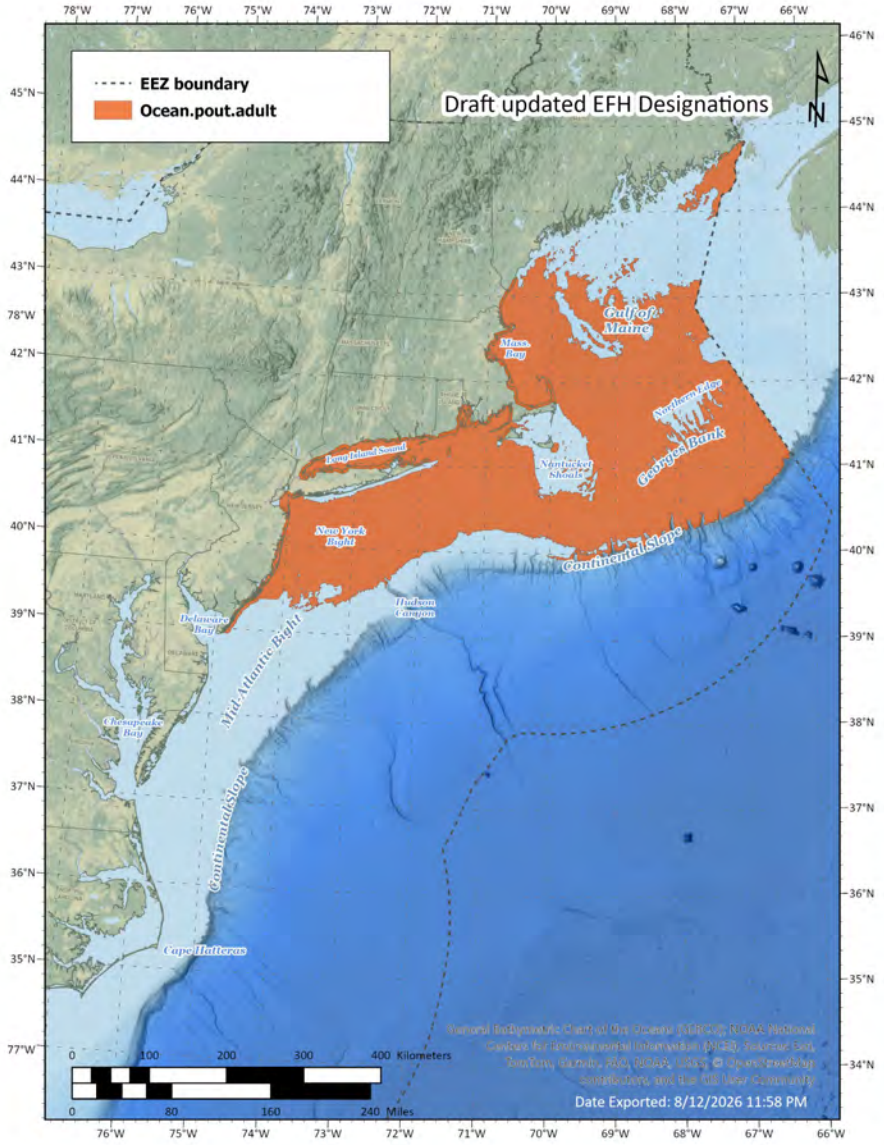

Essential fish habitat (EFH) for adult haddock (TL ≥ 32 cm) consists of the principal habitat area and includes subtidal benthic habitats in the Gulf of Maine, including coastal waters in Massachusetts Bay, and on Georges Bank (Map 11). Nearshore adult EFH typically includes the marine zones of coastal areas, which can be identified from Map 11. Within the principal habitat area, adult EFH ranges from 32-338 meters depth, but adults most commonly occur between 62-205 meters depth (Appendix B, Table 22). Adult EFH also includes bottom temperatures between 3-13°C and marine waters between 32-36 ppt (Appendix B, Table 22). EFH for adult haddock occurs on hard sand (particularly smooth patches between rocks), mixed sand and shell, gravelly sand, and gravel substrates. They also are found adjacent to boulders and cobbles along the margins of rocky reefs in the Gulf of Maine.

# OCEAN POUT (JUVENILE)



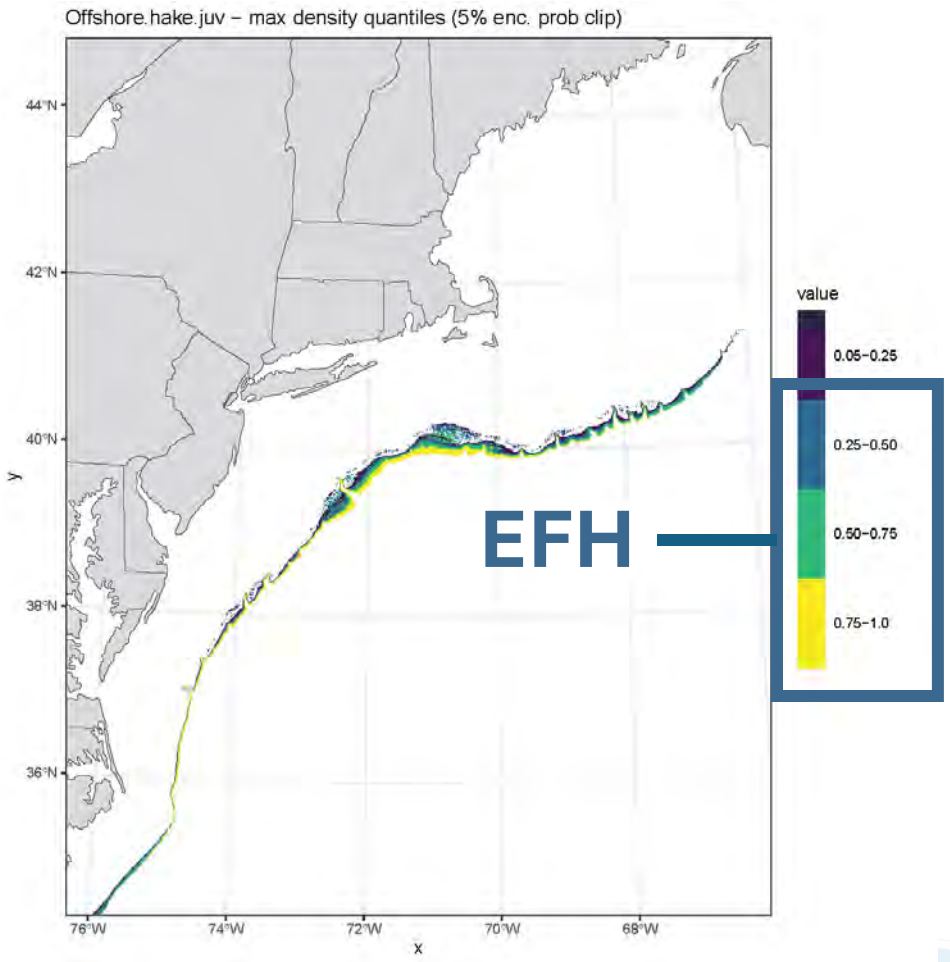

Essential fish habitat (EFH) for juvenile ocean pout (TL < 29 cm) consists of the principal habitat area and includes intertidal and subtidal benthic habitats in the Gulf of Maine, on the western and southern portion of Georges Bank, and in coastal and continental shelf waters in southern New England extending into the Mid-Atlantic region as far south as Delaware. Juvenile EFH is relatively patchy in the Gulf of Maine (Map 12). Inshore juvenile EFH typically includes the polyhaline and marine zones of bays and estuaries; specific portions of these inshore areas can be identified from Map 12. Within the principal habitat area, juvenile EFH ranges from intertidal areas out to 243 meters depth, but juveniles most commonly occur between 30-144 meters depth (Appendix B, Table 22). Juvenile EFH also includes bottom temperatures between 3-14°C and polyhaline and marine waters between 30-36 ppt (Appendix B, Table 22). EFH for juvenile ocean pout occurs on a wide variety of substrates, including shells, rocks, algae, soft sediments, sand, and gravel.

# OCEAN POUT(ADULT)



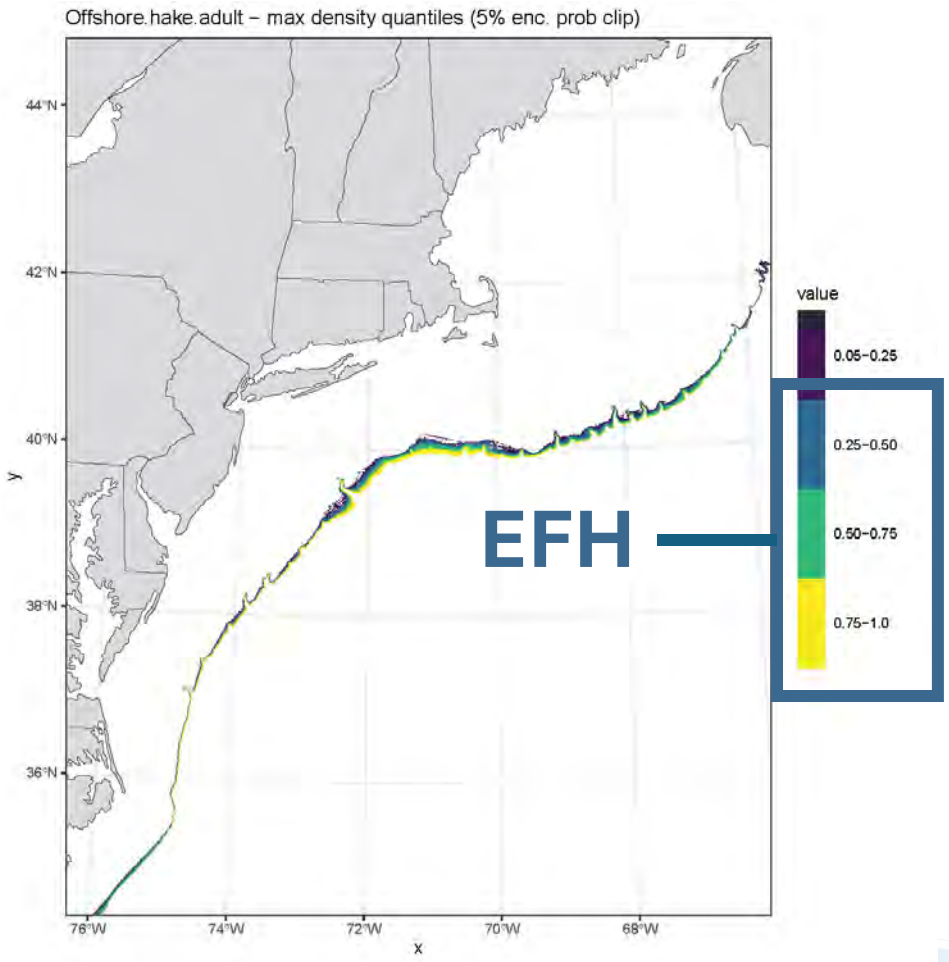

Essential fish habitat (EFH) for adult ocean pout (TL ≥ 29 cm) consists of the principal habitat area and includes subtidal benthic habitats in the Gulf of Maine, on Georges Bank, and in coastal and continental shelf waters in southern New England and the Mid-Atlantic region as far south as the mouth of Delaware Bay (Map 13). Inshore adult EFH typically includes the polyhaline and marine zones of bays and estuaries; specific portions of these inshore areas can be identified from Map 13. Within the principal habitat area, adult EFH ranges from 8-239 meters depth, but adults most commonly occur between 23-115 meters depth (Appendix B, Table 22). Adult EFH also includes bottom temperatures between 3-13°C and polyhaline and marine waters between 29-36 ppt (Appendix B, Table 22). EFH for adult ocean pout includes mud and sand, particularly in association with structure-forming habitat types, i.e. shells, gravel, or boulders. In softer sediments, they burrow tail-first and leave a depression on the sediment surface. Ocean pout congregate in rocky areas prior to spawning and frequently occupy nesting holes under rocks or in crevices in depths less than 100 meters.

# OFFSHORE HAKE (JUVENILE)



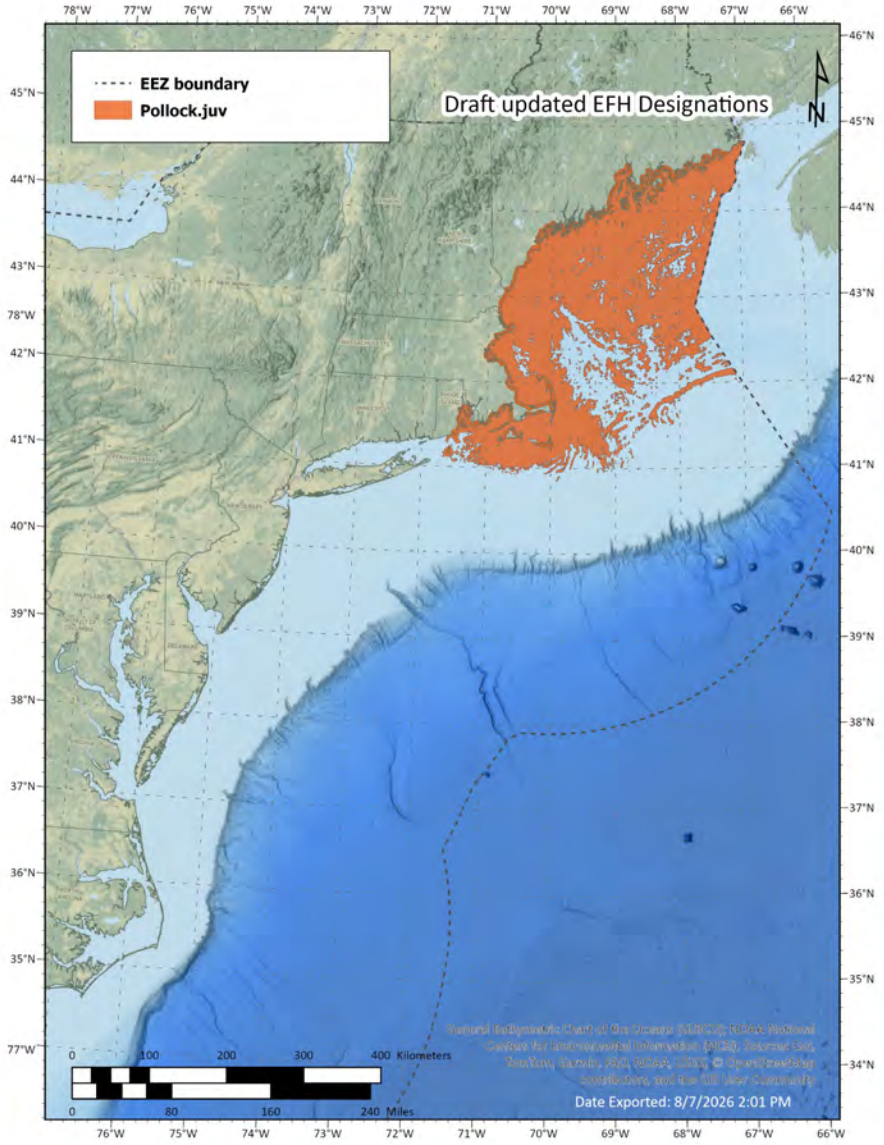

Essential fish habitat for juvenile offshore hake (TL < 26 cm) consists of the principal habitat area and includes outer continental shelf and slope waters from southern Georges Bank to as far south as Cape Hatteras (Map 14). Within the principal habitat area, juvenile offshore hake have been caught in federal trawl surveys in waters ranging from 81-430 meters depth but are encountered most commonly between 193-323 meters depth (Appendix B, Table 22). On the continental slope, juveniles can be encountered to 750 meters depth (Appendix B, Table 23). Juveniles are commonly found in bottom temperatures between 5-15°C and marine waters between 35-36 ppt (Appendix B, Table 22). Pelagic and benthic habitats on the outer continental shelf and slope in depths of 160-750 meters.

# OFFSHORE HAKE (ADULT)



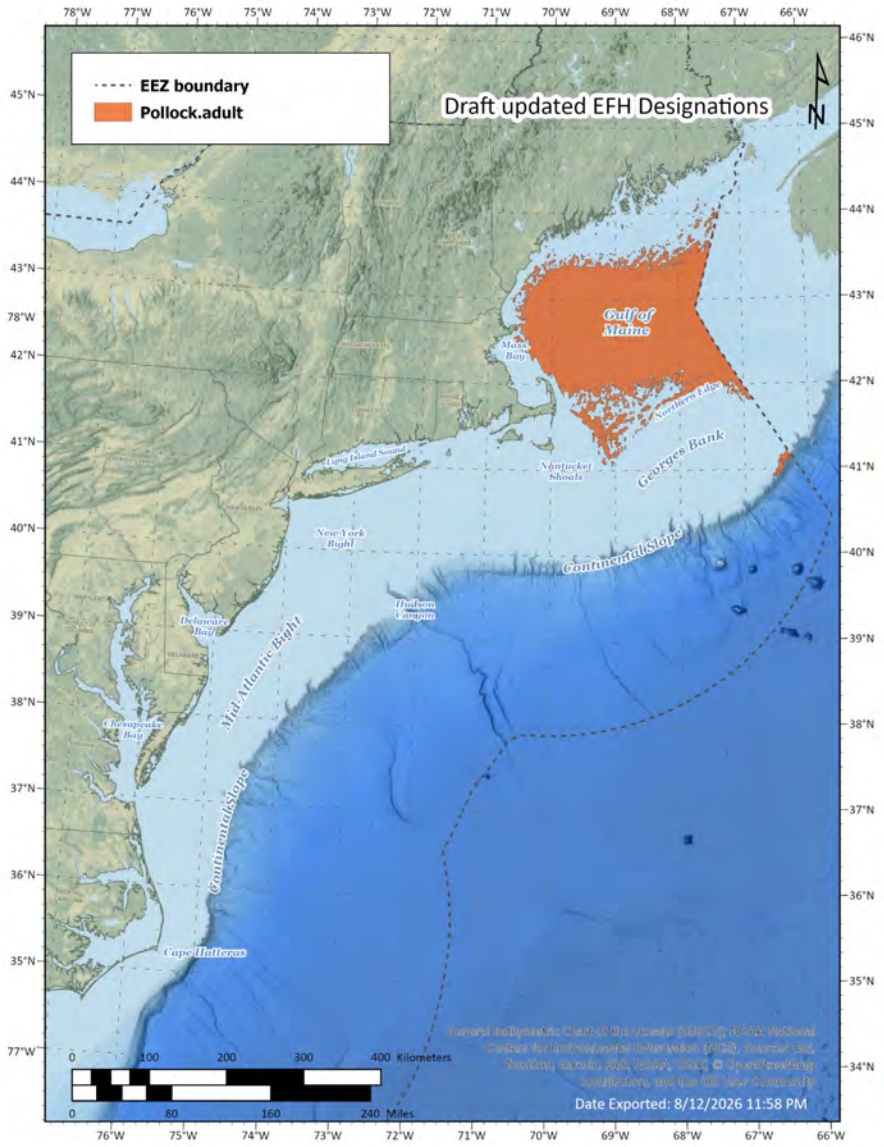

Essential fish habitat for adult offshore hake (TL ≥ 26 cm) consists of the principal habitat area and includes outer continental shelf and slope waters from southern Georges Bank to as far south as Cape Hatteras (Map 15). Within the principal habitat area, adult offshore hake have been caught in federal trawl surveys in waters ranging from 63-496 meters depth but are encountered most commonly between 168-327 meters depth (Appendix B, Table 22). Like juveniles, adults can be encountered on the continental slope to 750 meters depth (Appendix B, Table 23). Adults are commonly found in bottom temperatures between 5-14°C and marine waters between 34-36 ppt (Appendix B, Table 22). Pelagic and benthic habitats on the outer continental shelf and slope in depths of 200-750 meters. Spawning generally occurs between 330 and 550 meters between April and July.

# POLLOCK (JUVENILE)



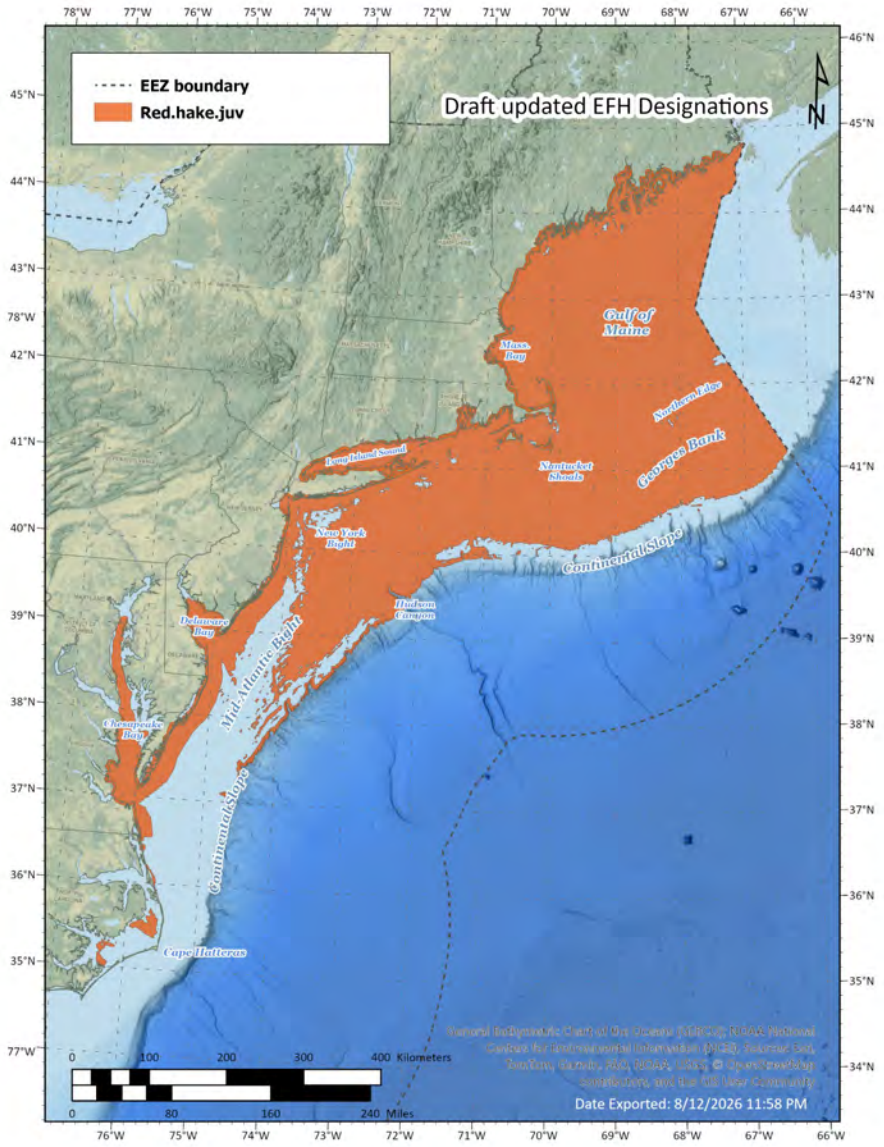

Essential fish habitat (EFH) for juvenile pollock (TL < 39 cm) consists of the principal habitat area and includes inshore and offshore pelagic habitats in the Gulf of Maine and in coastal waters in southern New England as far south as Nantucket Shoals (Map 16). Inshore juvenile EFH typically includes the polyhaline and marine zones of bays and estuaries; specific portions of these areas can be identified from Map 16. Within the principal habitat area, juvenile EFH ranges from intertidal areas out to 253 meters depth, but juveniles most commonly occur between 17-166 meters depth (Appendix B, Table 22). Juvenile EFH also includes bottom temperatures between 3-15°C and polyhaline and marine waters between 29-35 ppt (Appendix B, Table 22). EFH for juvenile pollock consists of rocky bottom habitats with attached macroalgae (rockweed and kelp) that provide refuge from predators. Shallow water eelgrass beds are also essential habitats for young-of-the-year pollock in the Gulf of Maine. Older juveniles move into deeper water habitats also occupied by adults.

# POLLOCK (ADULT)



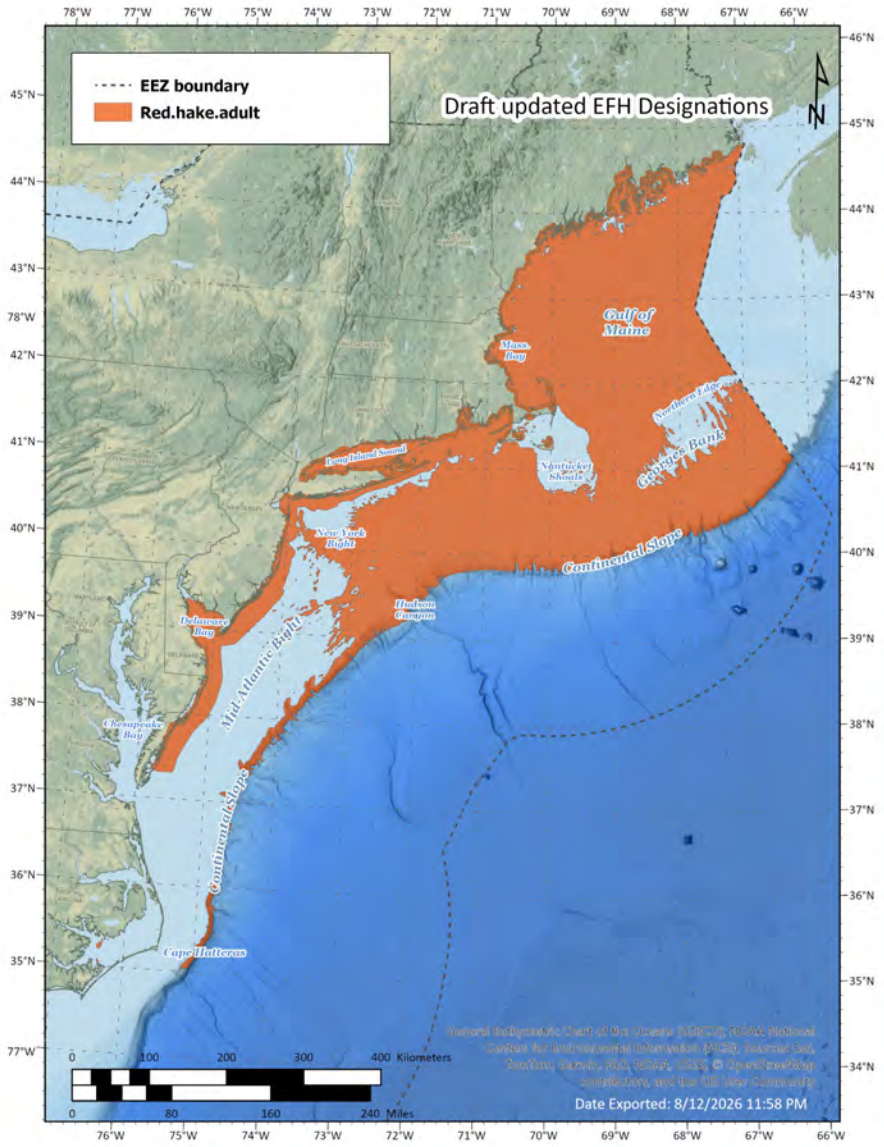

Essential fish habitat (EFH) for adult pollock (TL ≥ 39 cm) consists of the principal habitat area and includes offshore pelagic habitats in the Gulf of Maine and along the northern edge of Georges Bank but not on the bank itself (Map 17). Adult EFH includes just the marine zones of nearshore areas, such as Massachusetts Bay; specific portions of these areas can be identified from Map 17. Within the principal habitat area, adult EFH ranges from 26-319 meters depth, but adults most commonly occur between 72-221 meters depth (Appendix B, Table 22). Adult EFH also includes bottom temperatures between 4-11°C and marine waters between 32-36 ppt (Appendix B, Table 22). Adult EFH consists of the tops and edges of offshore banks and shoals (e.g., Cashes Ledge) with mixed rocky substrates, often with attached macro algae.

# RED HAKE (JUVENILE)



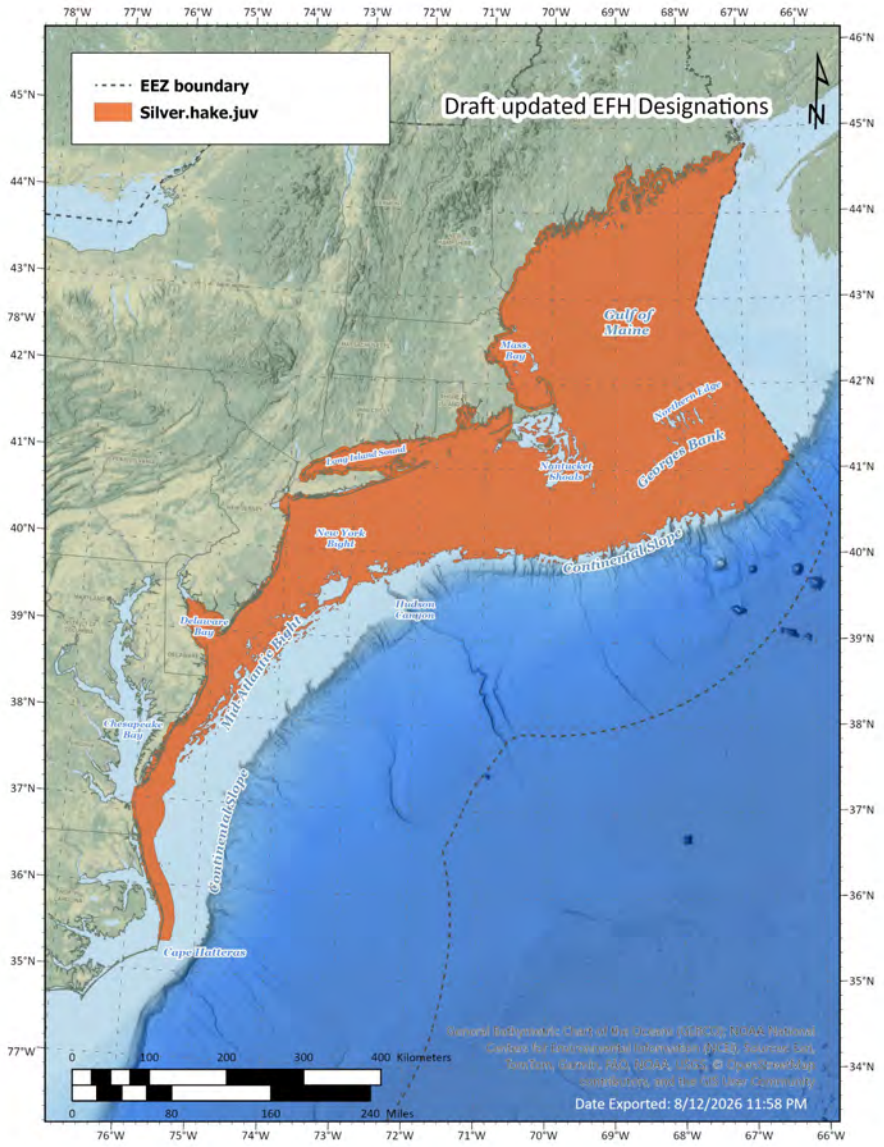

Essential fish habitat (EFH) for juvenile red hake (TL < 22 cm) consists of the principal habitat area and includes intertidal and subtidal benthic habitats in the Gulf of Maine, on Georges Bank, in southern New England, and in coastal waters in the Mid-Atlantic region as far south as Cape Hatteras (Map 18). Inshore juvenile EFH typically includes the polyhaline and marine zones of bays and estuaries; specific portions of these inshore areas can be identified from Map 18. Within the principal habitat area, juvenile EFH ranges from intertidal area out to 296 meters depth, but juveniles most commonly occur between 15-162 meters depth (Appendix B, Table 22). Juvenile EFH also includes bottom temperatures between 3-19°C and polyhaline and marine waters between 22-36 ppt (Appendix B, Table 22). Bottom habitats that provide shelter are essential for juvenile red hake, including mud substrates with biogenic depressions and other substrates that provide biogenic complexity (e.g., eelgrass, macroalgae, shells, anemone and polychaete tubes). Similarly, artificial reefs provide suitable shelter for juvenile red hake. Newly settled juveniles occur in depressions on the open seabed, while older juveniles are commonly associated with shelter or structure, often including live bivalves, such as scallops.

# RED HAKE (ADULT)



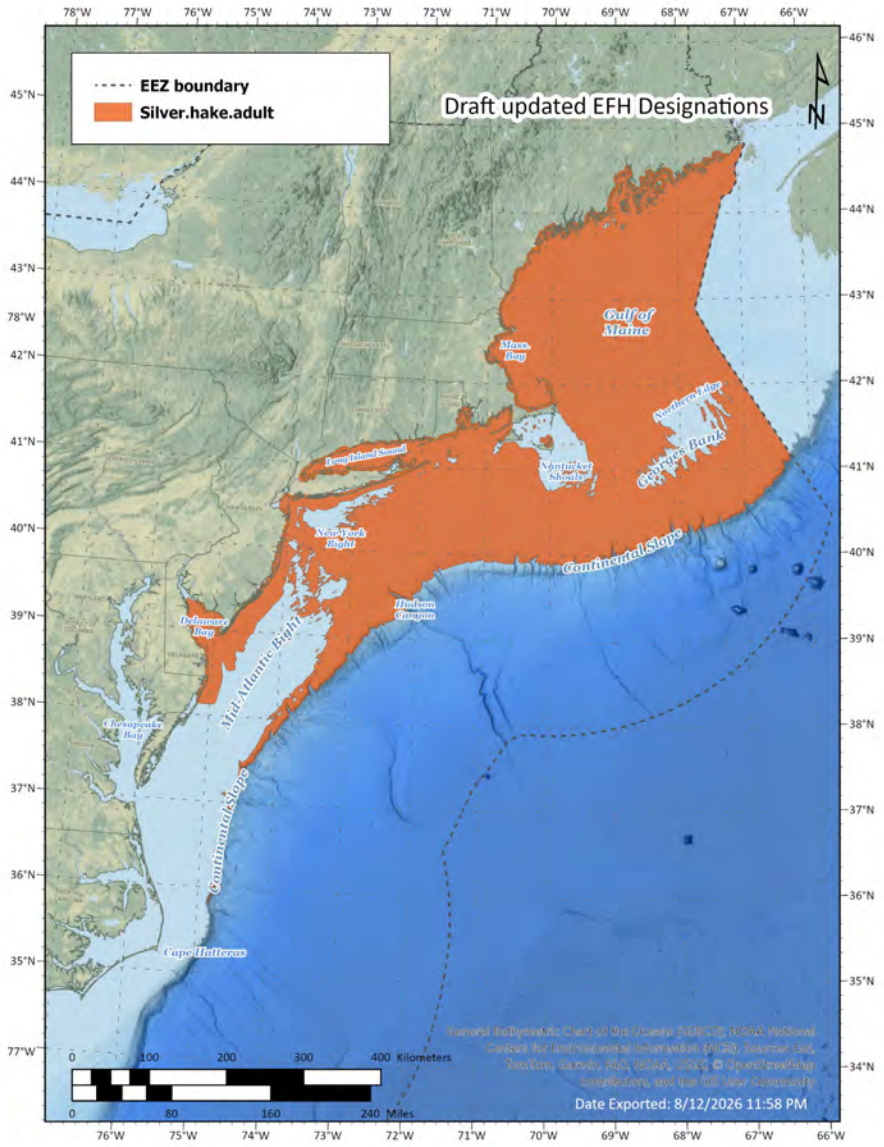

Essential fish habitat (EFH) for adult red hake (TL ≥ 22 cm) consists of the principal habitat area and includes benthic habitats in the Gulf of Maine, on Georges Bank, and in coastal and continental shelf waters in southern New England and the Mid-Atlantic region extending as far south as Chesapeake Bay. Adult EFH also includes continental slope habitats from the southern edge of Georges Bank as far south as Chesapeake Bay (Map 19). Inshore adult EFH typically includes the polyhaline and marine zones of bays and estuaries; specific portions of these inshore areas can be identified from Map 19. Within the principal habitat area, adult EFH ranges from 8-329 meters depth, but adults most commonly occur between 33-199 meters depth (Appendix B, Table 22). On the continental slope, they can be found to a maximum depth of 1000 meters (Appendix B, Table 23). Adult EFH also includes bottom temperatures between 4-17°C and polyhaline and marine waters between 28-36 ppt (Appendix B, Table 22). EFH for adult red hake includes shell beds, soft sediments (mud and sand) and artificial reefs. They are usually found in depressions in softer sediments or in shell beds but not on open sandy bottom. In the Gulf of Maine, they are much less common on gravel or hard bottom, but they are reported to be abundant on hard bottoms in temperate reef areas of Maryland and northern Virginia.

# SILVER HAKE (JUVENILE)



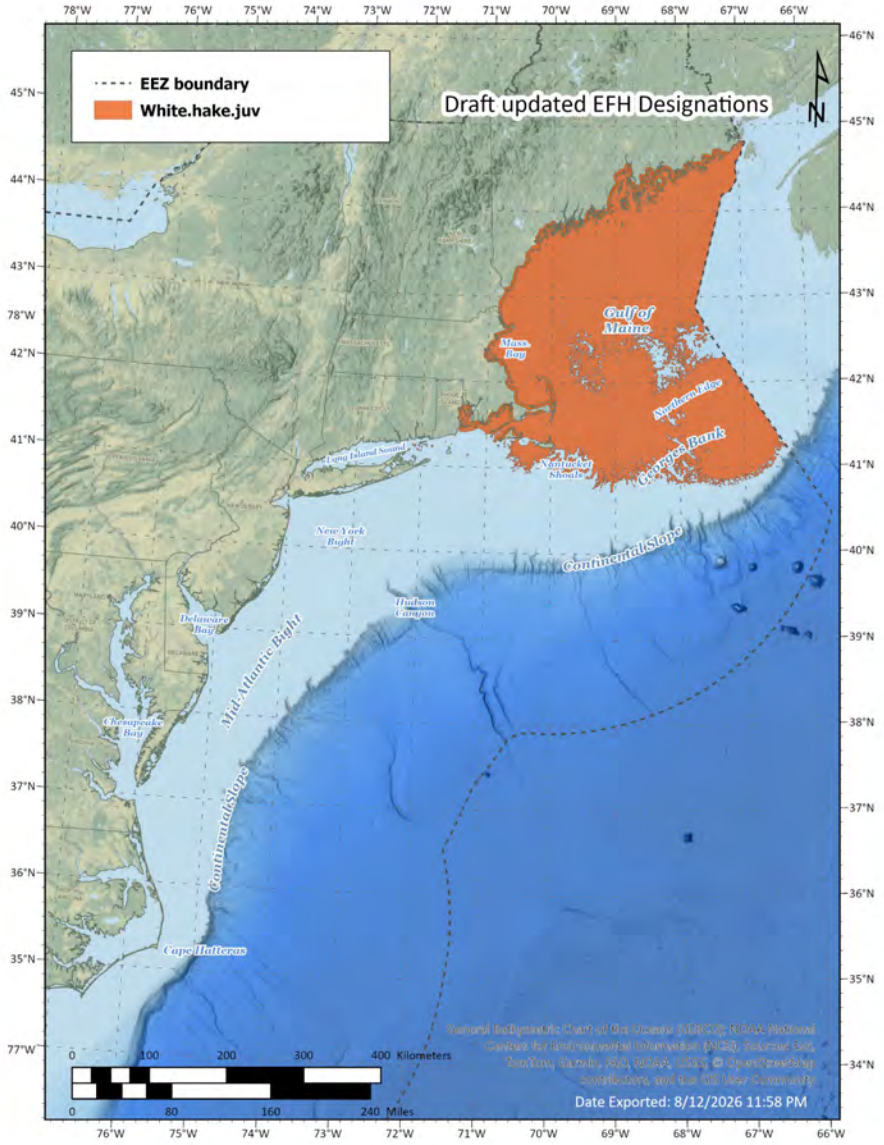

Essential fish habitat (EFH) for juvenile silver hake (TL < 22 cm) consists of the principal habitat area and includes pelagic and benthic habitats in the Gulf of Maine including coastal bays and estuaries, on Georges Bank, in coastal and outer continental shelf waters in southern New England, and along the Mid-Atlantic coast as far south as Cape Hatteras (Map 20). Inshore juvenile EFH typically includes the polyhaline and marine zones of bays and estuaries; specific portions of these inshore areas can be identified from Map 20. Within the principal habitat area, juvenile EFH ranges from 7-320 meters depth, but juveniles most commonly occur in bottom trawl surveys between 17-179 meters depth (Appendix B, Table 22). Juvenile EFH also includes bottom temperatures between 3-19°C and polyhaline and marine waters between 27-36 ppt (Appendix B, Table 22). EFH for juvenile silver hake occurs on sandy substrates often in association with sand waves, flat sand with amphipod tubes and shells, and in biogenic depressions. In the New York Bight, juveniles settle to the bottom at mid-shelf depths on muddy sand substrates and find refuge in amphipod tube mats.

# SILVER HAKE (ADULT)



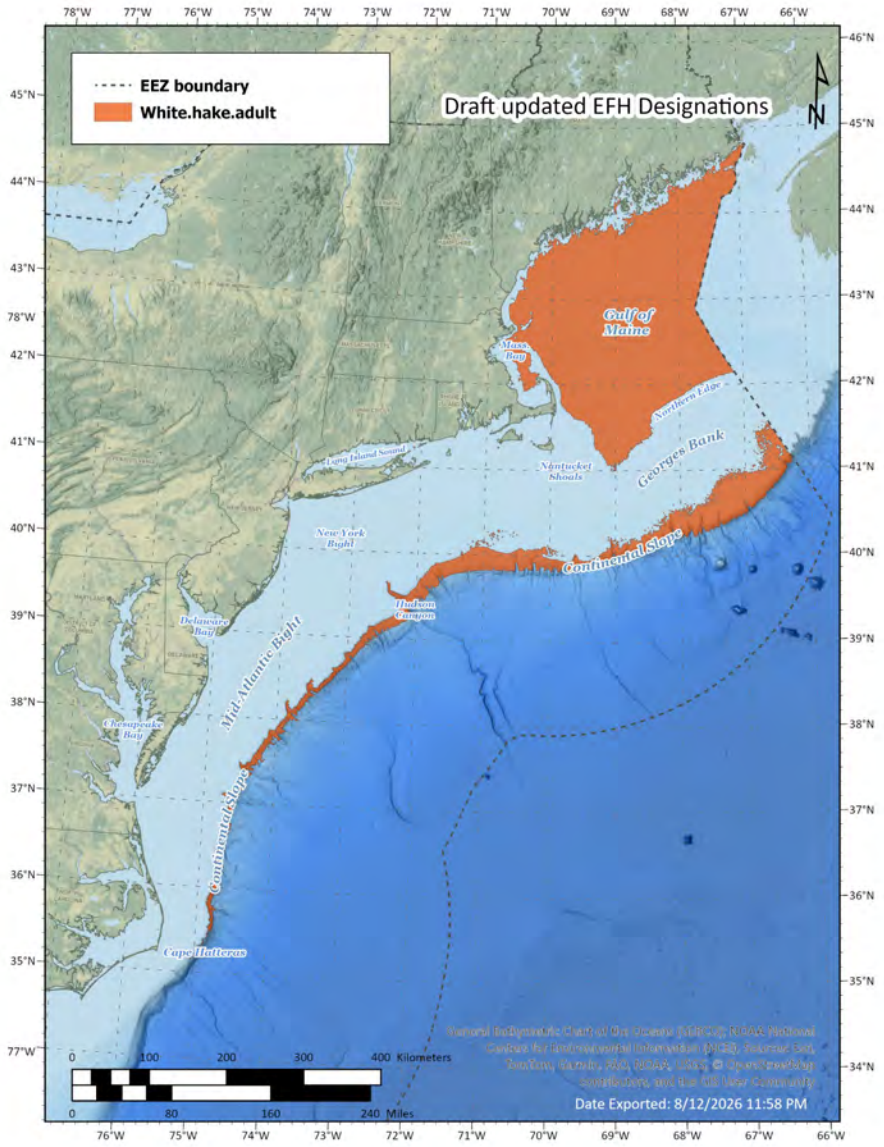

Essential fish habitat (EFH) for adult silver hake (TL ≥ 22 cm) consists of the principal habitat area and includes pelagic and benthic habitats in the Gulf of Maine, on Georges Bank (excluding portions along the northern edge), in coastal and continental shelf waters in southern New England (excluding Nantucket Shoals), and in coastal and outer shelf waters in the Mid-Atlantic Bight (Map 21). Inshore adult EFH typically includes the marine zones of bays and estuaries; specific portions of these inshore areas can be identified from Map 21. Within the principal habitat area, adult EFH ranges from 11-341 meters depth, but adults most commonly occur in bottom trawl surveys between 34-201 meters depth (Appendix B, Table 22). On the outer continental shelf, they can be found to a maximum of 500 meters (Appendix B, Table 23). Adult EFH also includes bottom temperatures between 4-16°C and marine waters between 31-36 ppt (Appendix B, Table 22). EFH for adult silver hake includes both soft substrates and hard structures. They are often found on sandy substrates in bottom depressions or in association with sand waves and shell fragments. They have also been observed in high densities in mud habitats bordering deep boulder reefs, resting on boulder surfaces, and foraging over deep boulder reefs in the southwestern Gulf of Maine. This species makes greater use of the water column than red or white hake, particularly for nighttime feeding.

# WHITE HAKE (JUVENILE)



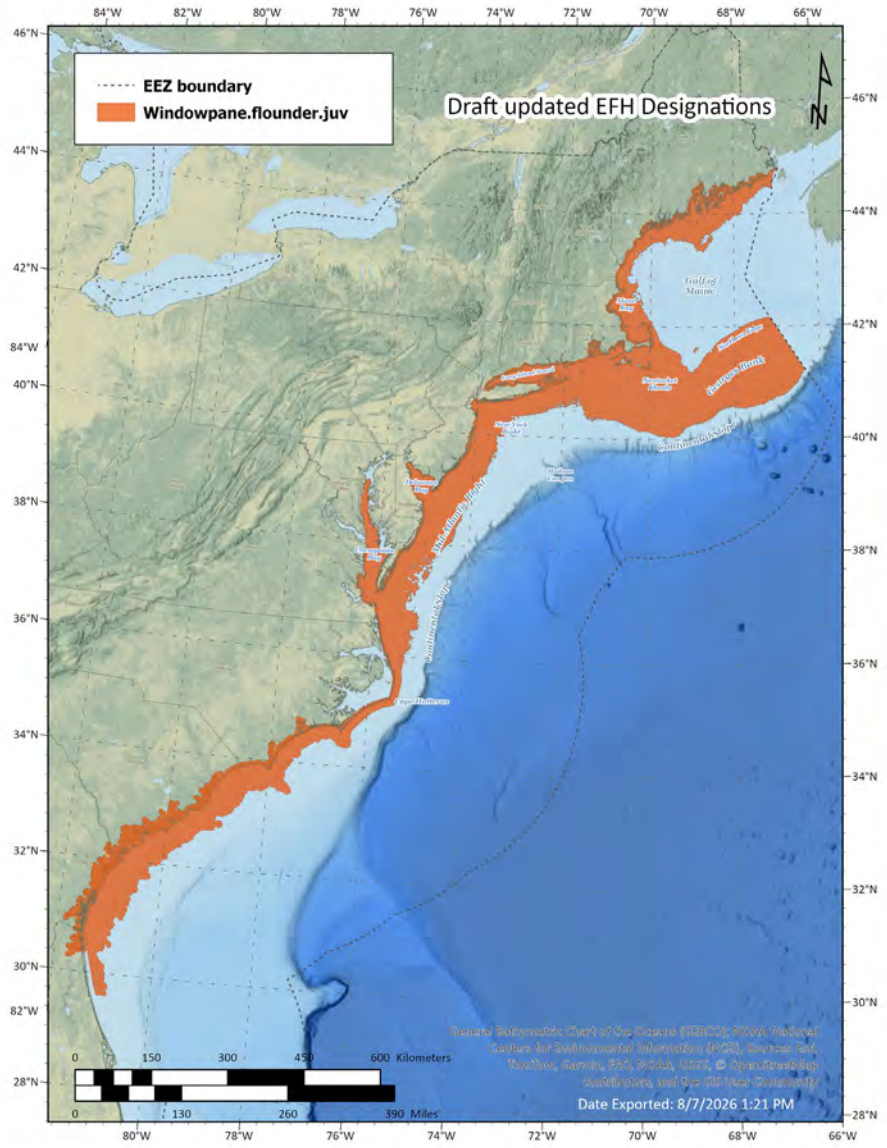

Essential fish habitat (EFH) for juvenile white hake (TL < 32 cm) consists of the principal habitat area and includes intertidal and subtidal habitats in the Gulf of Maine, on the northern portions of Georges Bank, and in southern New England along the Massachusetts and Rhode Island coastline, including Nantucket Shoals and coastal estuaries (Map 22). Inshore juvenile EFH typically includes the marine zones of bays and estuaries; specific portions of these inshore areas can be identified from Map 22. Within the principal habitat area, juvenile EFH ranges from 0-292 meters depth, but juveniles most commonly occur in bottom trawl surveys between 29-179 meters depth (Appendix B, Table 22). Juvenile EFH also includes bottom temperatures between 3-16°C and marine waters between 31-35 ppt (Appendix B, Table 22). Offshore-spawned pelagic juveniles typically move inshore to estuarine nursery areas Pelagic phase juveniles remain in the water column for about two months. In nearshore waters, EFH for benthic phase juveniles occurs on fine-grained, sandy substrates in eelgrass, macroalgae, and un-vegetated habitats. In the Mid-Atlantic, most juveniles settle to the bottom on the continental shelf, but some enter estuaries, especially those in southern New England. Older young-of-the-year juveniles occupy the same habitat types as the recently settled juveniles but move into deeper water (> 50 meters).

# WHITE HAKE (ADULT)



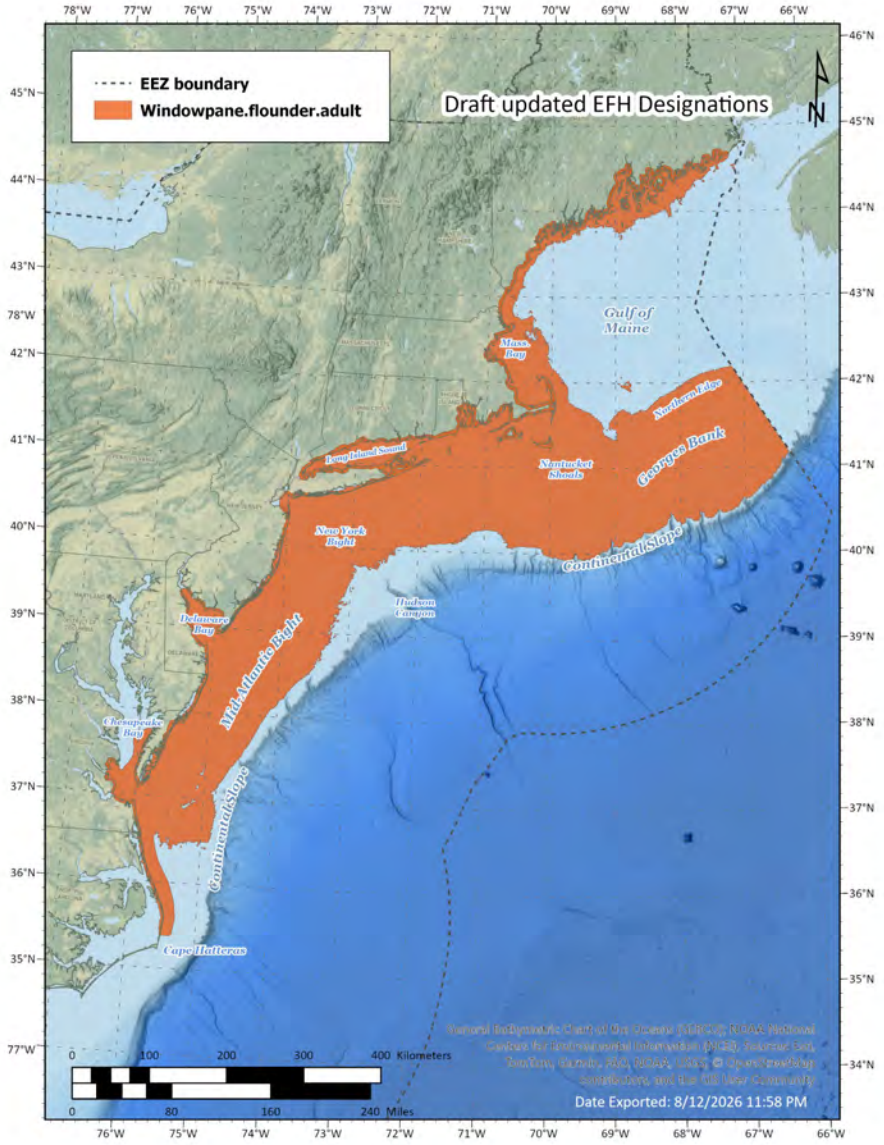

Essential fish habitat (EFH) for adult white hake (TL ≥ 32 cm) consists of the principal habitat area and includes subtidal benthic habitats in the Gulf of Maine, while on the outer continental shelf and slope, EFH ranges from the southern edge of Georges Bank as far south as Cape Hatteras (Map 23). Within the principal habitat area, adult EFH ranges from 29-361 meters depth, but adults most commonly occur in the bottom trawl surveys between 80-236 meters depth (Appendix B, Table 22). On the continental slope, they can be found to a maximum of 1000 meters (Appendix B, Table 23). Adult EFH also includes bottom temperatures between 4-13°C and marine waters between 32-36 ppt (Appendix B, Table 22). EFH for adult white hake occurs on fine-grained, muddy substrates and in mixed soft and rocky habitats. Spawning takes place in deep water on the continental slope and in Canadian waters.

# WINDOWPANE FLOUNDER (JUVENILE)



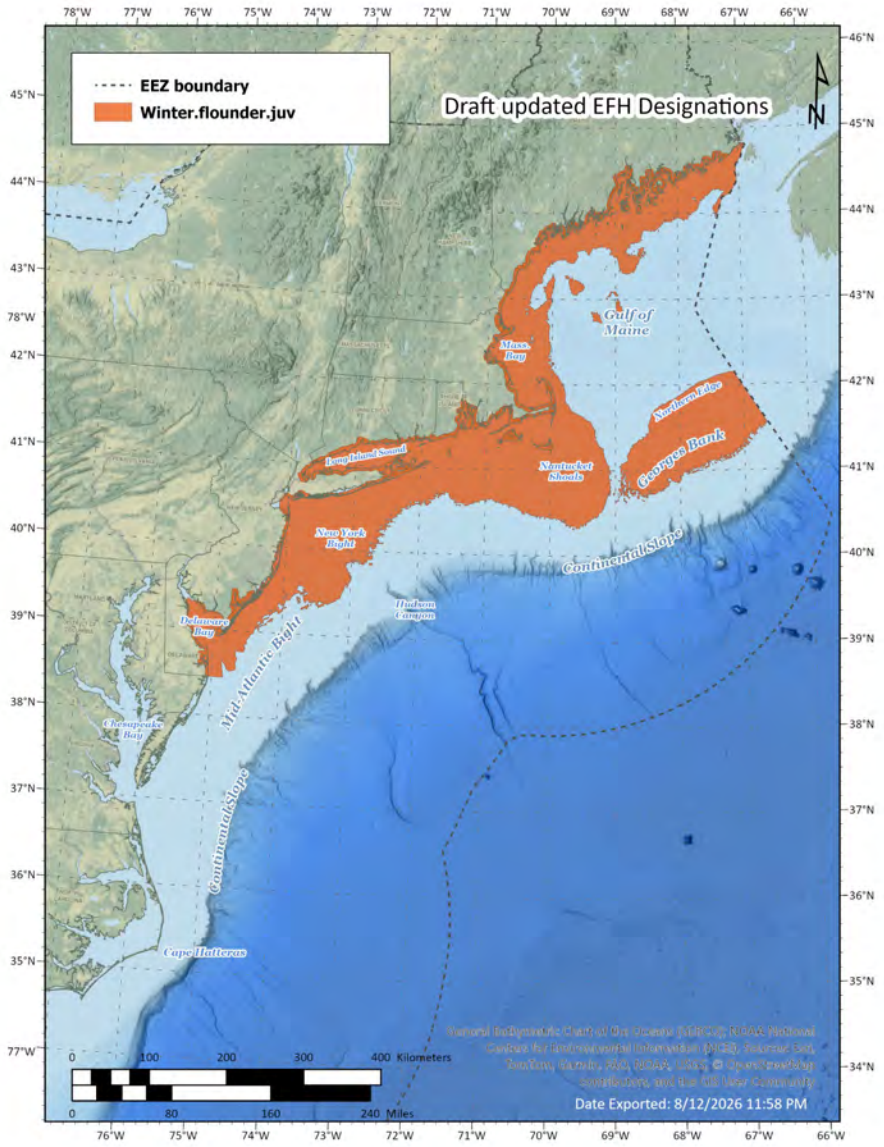

Essential fish habitat (EFH) for juvenile windowpane flounder (TL < 22 cm) consists of the principal habitat area and includes intertidal and subtidal benthic habitats in estuarine, coastal, and continental shelf waters from the Gulf of Maine to northern Florida (Map 24). Inshore juvenile EFH typically includes the polyhaline and marine zones of bays and estuaries; specific portions of these inshore areas can be identified from Map 24. Within the principal habitat area, juvenile EFH ranges from 0-116 meters depth, but juveniles most commonly occur between 8-55 meters depth (Appendix B, Table 22). Juvenile EFH also includes bottom temperatures between 3-25°C and polyhaline and marine waters between 17-34 ppt (Appendix B, Table 22). EFH for juvenile windowpane flounder occurs on mud and sand substrates and includes polyhaline and marine waters in bays and estuaries. Young-of-the-year juveniles prefer sand over mud.

# WINDOWPANE FLOUNDER (ADULT)



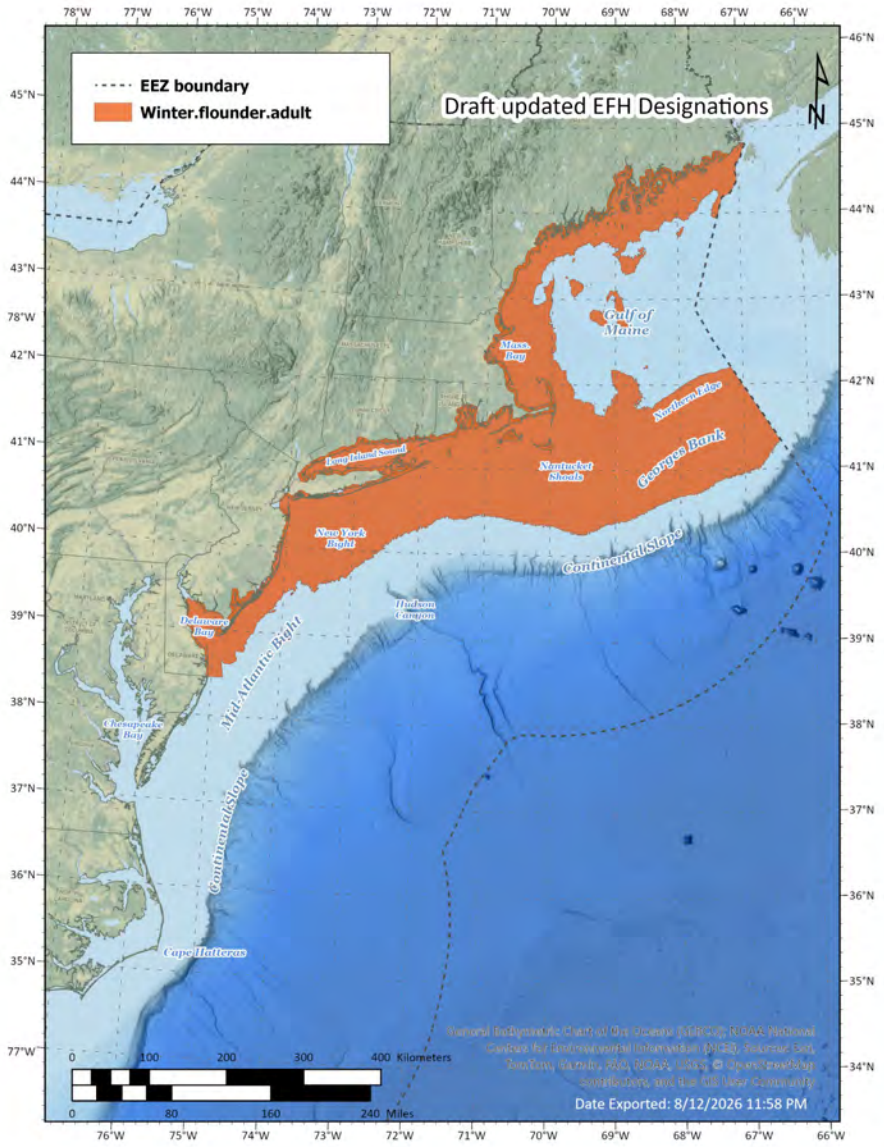

Essential fish habitat (EFH) for adult windowpane flounder (TL ≥ 22 cm) consists of the principal habitat area and includes intertidal and subtidal benthic habitats in estuarine, coastal, and continental shelf waters from the Gulf of Maine to Cape Hatteras (Map 25). Inshore adult EFH typically includes the polyhaline and marine zones of bays and estuaries; specific portions of these inshore areas can be identified from Map 25. Within the principal habitat area, adult EFH ranges from 0-127 meters depth, but adults most commonly occur between 10-58 meters depth (Appendix B, Table 22). Adult EFH also includes bottom temperatures between 3-22°C and polyhaline and marine waters between 24-35 ppt (Appendix B, Table 22). EFH for adult windowpane flounder occurs on mud and sand substrates and includes polyhaline and marine waters in bays and estuaries.

# WINTER FLOUNDER (JUVENILE)



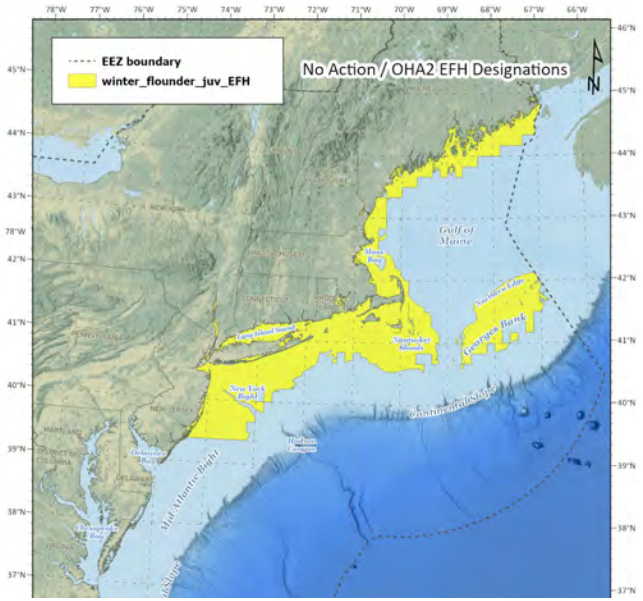

Essential fish habitat (EFH) for juvenile winter flounder (TL < 27 cm) consists of the principal habitat area and includes intertidal and subtidal benthic habitats in estuarine, coastal, and continental shelf waters from the Gulf of Maine to the Delaware-Maryland border (Map 26). Inshore juvenile EFH typically includes the polyhaline and marine zones of bays and estuaries; specific portions of these inshore areas can be identified from Map 26. Within the principal habitat area, juvenile EFH ranges from 0-140 meters depth, but juveniles most commonly occur between 11-75 meters depth (Appendix B, Table 22). Juvenile EFH also includes bottom temperatures between 3-22°C and polyhaline and marine waters between 24-34 ppt (Appendix B, Table 22). EFH for juvenile winter flounder occurs on a variety of bottom types, such as mud, sand, rocky substrates with attached macroalgae, tidal wetlands, and eelgrass. Young-of-the-year juveniles are found inshore on muddy and sandy sediments in and adjacent to eelgrass and macroalgae, in bottom debris, and in marsh creeks. They tend to settle to the bottom in soft-sediment depositional areas where currents concentrate late-stage larvae and disperse into coarser-grained substrates as they get older.

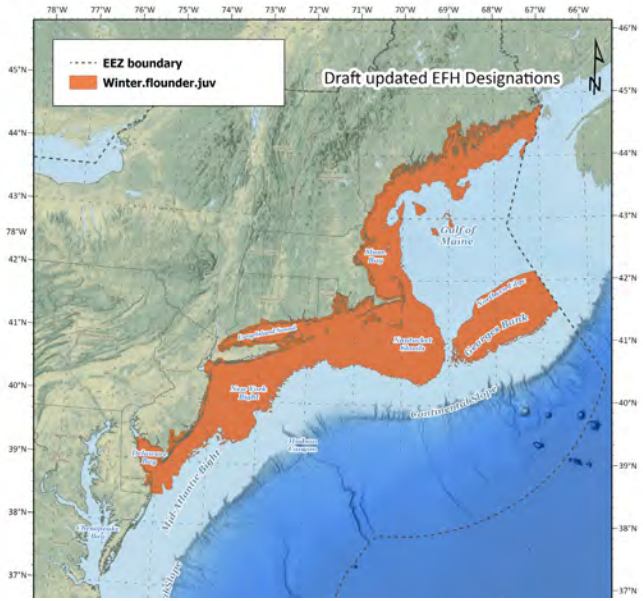
# WINTER FLOUNDER (ADULT)

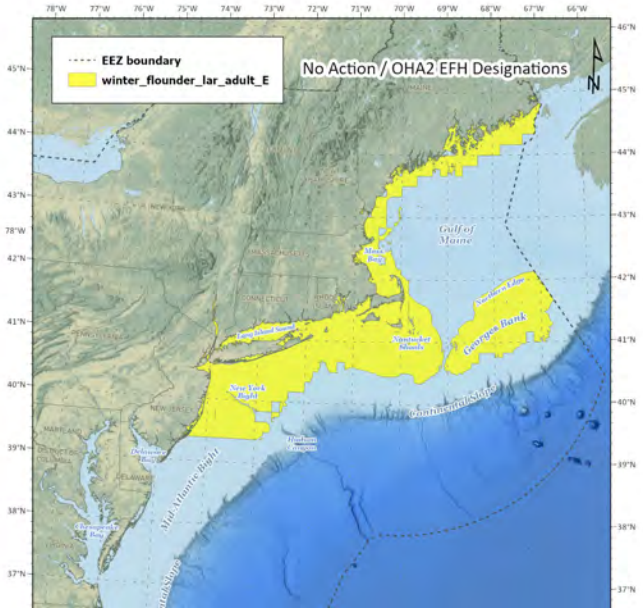


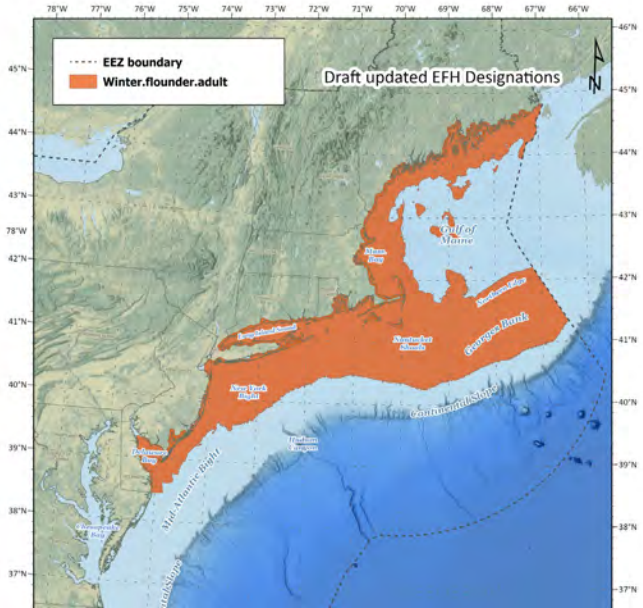

Essential fish habitat (EFH) for adult winter flounder (TL ≥ 27 cm) consists of the principal habitat area and includes intertidal and subtidal benthic habitats in estuarine, coastal, and continental shelf waters from the Gulf of Maine to the Delaware-Maryland border (Map 27). Inshore adult EFH typically includes the polyhaline and marine zones of bays and estuaries; specific portions of these inshore areas can be identified from Map 27. Within the principal habitat area, adult EFH ranges from 0-173 meters depth, but adults most commonly occur between 12-83 meters depth (Appendix B, Table 22). Adult EFH also includes bottom temperatures between 3-19°C and polyhaline and marine waters between 25-34 ppt (Appendix B, Table 22). EFH for adult winter flounder occurs on muddy and sandy substrates, and on hard bottom on offshore banks. In inshore spawning areas, EFH includes a variety of substrates where eggs are deposited on the bottom.

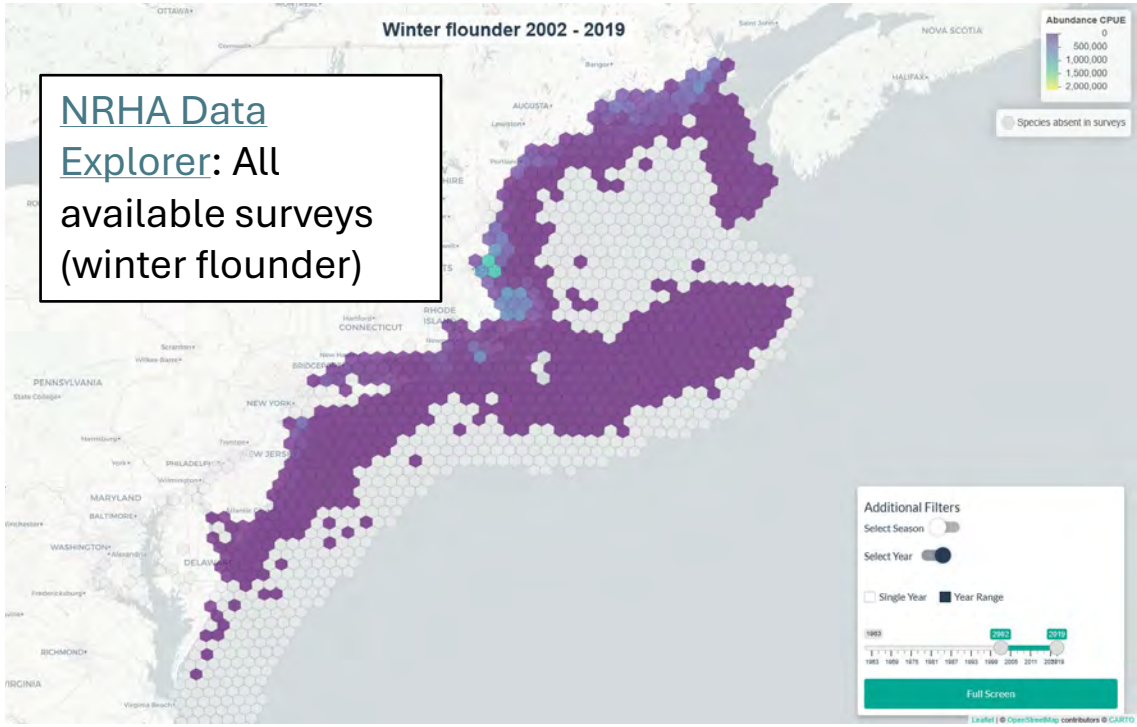
# WINTER FLOUNDER: SEASONAL DREDGE CONSIDERATIONS



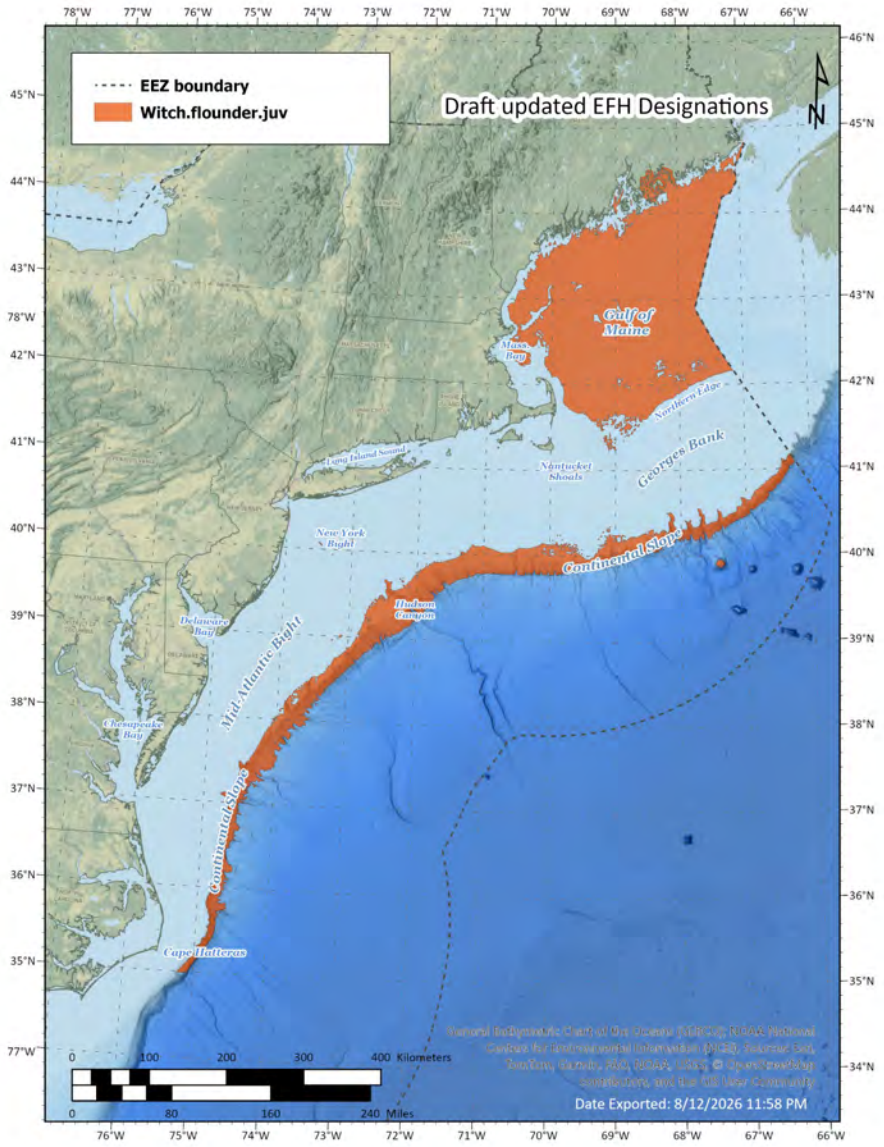




NRHA Data Explorer: All available surveys (winter flounder)

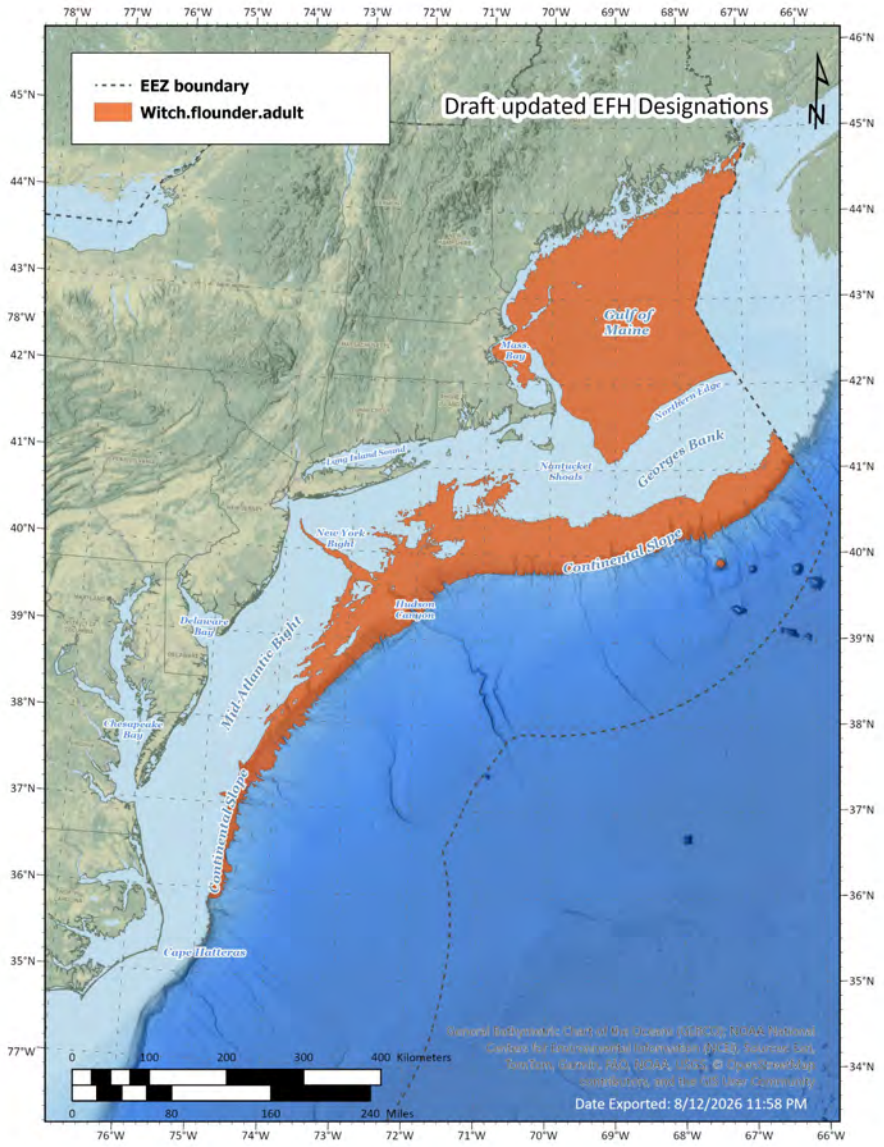
- Previously (OHA2), Council limited juvenile and adult designations to Absecon Inlet, NJ
- Seasonal dredging – EFH would trigger consultations and/or time-area closures
- Model quantiles and inshore data would support a further south designation, but rather low densities (esp. south of Delaware Bay)

# WITCH FLOUNDER (JUVENILE)



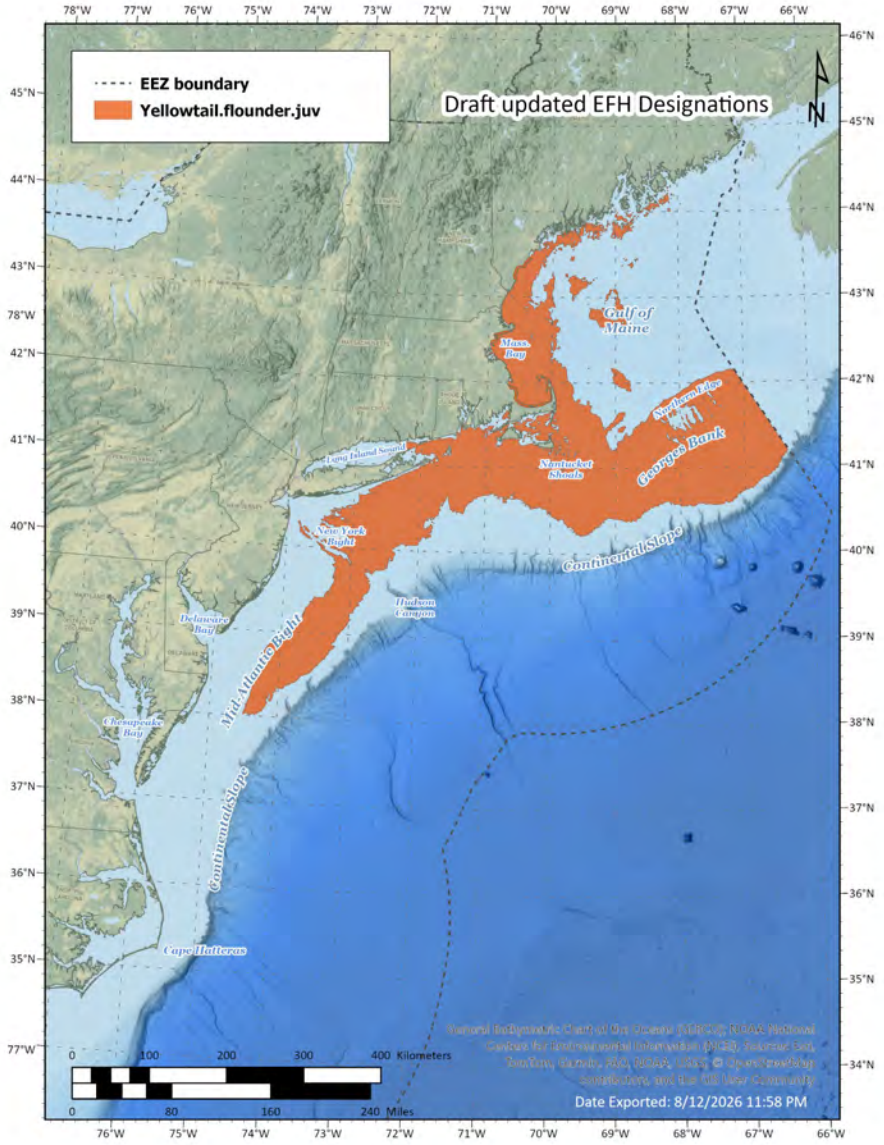

Essential fish habitat (EFH) for juvenile witch flounder (TL < 28 cm) consists of the principal habitat area and includes subtidal benthic habitats in the Gulf of Maine and on the outer continental shelf and slope from the southern edge of Georges Bank extending as far south as Cape Hatteras (Map 28). Within the principal habitat area in the Gulf of Maine and shelf waters, juvenile EFH ranges from 34-376 meters depth, but juveniles most commonly occur between 84-217 meters depth (Appendix B, Table 22) and tend to inhabit deeper water than adults. On the continental slope, they can be found to a maximum depth of 1500 meters (Appendix B, Table 23). Juvenile EFH also includes bottom temperatures between 3-13°C and marine waters between 31-36 ppt (Appendix B, Table 22). EFH for juvenile witch flounder occurs on mud, clay, silt, or muddy sand substrates, which may be tied to availability of prey such as polychaete worms. Sea pens fields may also serve as suitable feeding habitat for juvenile witch flounder.

# WITCH FLOUNDER (ADULT)



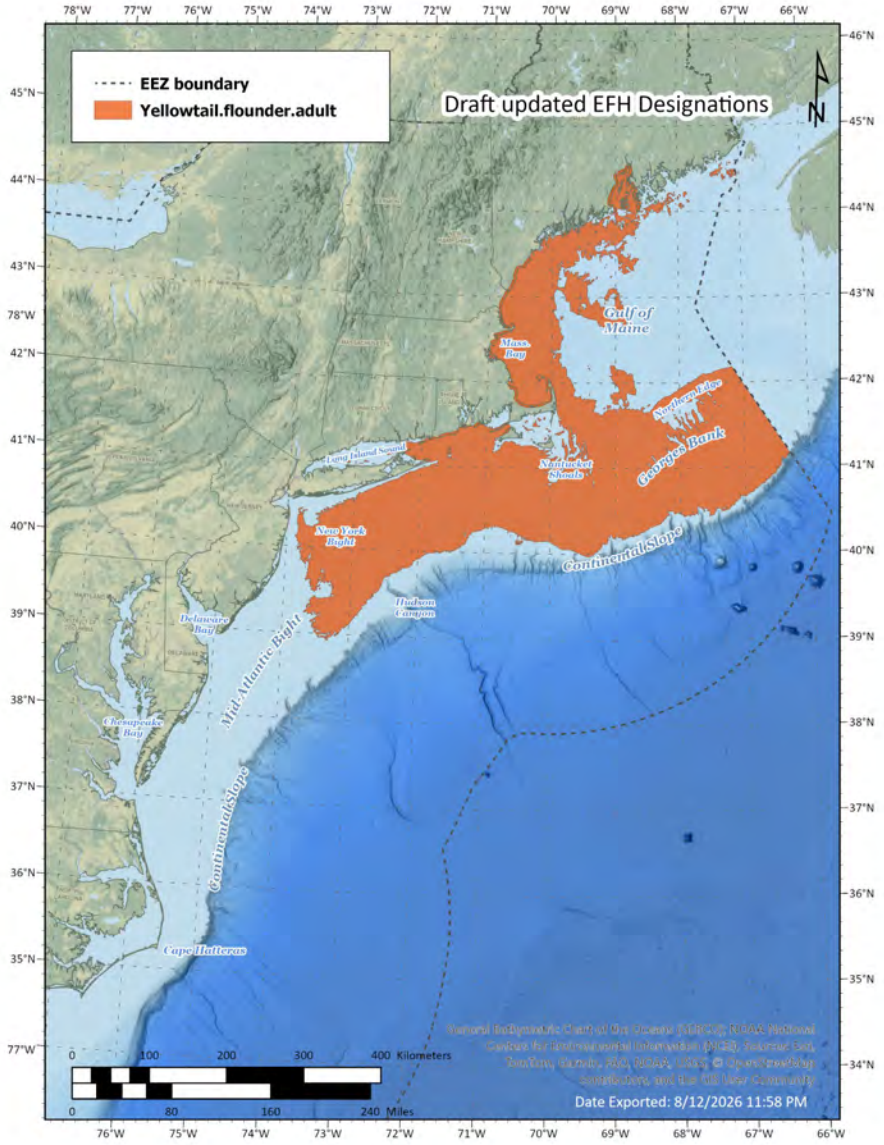

Essential fish habitat (EFH) for adult witch flounder (TL ≥ 28 cm) consists of the principal habitat area and includes subtidal benthic habitats in the Gulf of Maine and on the outer continental shelf and slope from the southern edge of Georges Bank extending as far south as Cape Hatteras (Map 29). Within the principal habitat area in the Gulf of Maine and shelf waters, adult EFH ranges from 23-357 meters depth, but adults most commonly occur between 71-219 meters depth (Appendix B, Table 22). On the continental slope, they can be found to a maximum depth of 1500 meters (Appendix B, Table 23). Adult EFH also includes bottom temperatures between 3-13°C and marine waters between 32-36 ppt (Appendix B, Table 22). EFH for adult witch flounder occurs on mud, clay, silt, or muddy sand substrates.

# YELLOWTAIL FLOUNDER (JUVENILE)




Essential fish habitat (EFH) for juvenile yellowtail flounder (TL < 24 cm) consists of the principal habitat area and includes subtidal benthic habitats in coastal and continental shelf waters in the Gulf of Mane, on Georges Bank, in southern New England, and extending into the Mid-Atlantic region; south of the New York Bight, EFH primarily occurs in outer shelf waters but not to the continental slope (Map 30). Where applicable, inshore and nearshore juvenile EFH typically includes the marine zones of coastal areas, bays, and estuaries; specific portions of these areas can be identified from Map 30. Within the principal habitat area, juvenile EFH ranges from 7-159 meters depth, but juveniles occur most commonly occur between 24-81 meters depth (Appendix B, Table 22). Juvenile EFH also includes bottom temperatures between 3-15°C and marine waters between 31-34 ppt (Appendix B, Table 22). EFH for juvenile yellowtail flounder occurs on sand and muddy sand; in the Mid-Atlantic, young-of-the-year juveniles settle to the bottom on the continental shelf following the pelagic larvae stage, approximately two months after hatching. Both juvenile and adult yellowtail flounder undergo limited seasonal migrations away from coastal areas during late summer and into autumn. Notably, habitat preferences, spawning timing, and seasonal movements for yellowtail flounder can vary between the Gulf of Maine, Georges Bank, southern New England, and Mid-Atlantic regions.

# YELLOWTAIL FLOUNDER (ADULT)




Essential fish habitat (EFH) for adult yellowtail flounder (TL ≥ 24 cm) consists of the principal habitat area and includes subtidal benthic habitats in coastal and continental shelf waters in the Gulf of Maine, on Georges Bank, in southern New England, and extending into the Mid-Atlantic region as far south as Delaware Bay (Map 31). Where applicable, inshore and nearshore adult EFH typically includes the marine zones of coastal areas, bays, and estuaries; specific portions of these areas can be identified from Map 31. Within the principal habitat area, adult EFH ranges from 8-183 meters depth, but adults most commonly occur between 27-93 meters depth (Appendix B, Table 22). Adult EFH also includes bottom temperatures between 3-15°C and marine waters between 31-35 ppt (Appendix B, Table 22). EFH for adult yellowtail flounder occurs on sand and sand with mud, shell hash, gravel, and rocks, particularly in low energy environments with high availability and diversity of benthic invertebrates. Both juvenile and adult yellowtail flounder undergo limited seasonal migrations away from coastal areas during late summer and into autumn, while in winter adults are more dispersed throughout Georges Bank, southern New England, and the Mid-Atlantic Bight. Spawning generally occurs in continental shelf waters on Georges Bank, Gulf of Maine, and southern New England, particularly in waters between 5-12°C. Spawning spans mid-March to September but peaks in April to June. Notably, however, habitat preferences, spawning timing, and seasonal movements for yellowtail flounder can vary between the Gulf of Maine, Georges Bank, southern New England, and Mid-Atlantic regions.

# FOR AP AND COMMITTEE DISCUSSION:

- **Does the narrower or wider map for adult wolffish seem more reasonable?**
  - *Tradeoffs:* population declines and data uncertainty

- **Should the Council set a latitudinal cutoff (e.g., Absecon Inlet) for the winter flounder designation along the New Jersey coast?**
  - *Consider:* seasonal dredging projects, EFH consultation needs, inshore occurrence data, model quantiles

- **Are there any final adjustments to the draft EFH designations (maps, text)?**
  - *Note:* major adjustments or changes to data inputs, modeling approaches can be considered for next round of EFH 5-year review

# DRAFT 2026 EFH DESIGNATION FRAMEWORK

# EFH RANGE OF ALTERNATIVES

- **No action**: Current EFH designations from OHA2 (text and maps)
  - Relies on inshore and offshore survey data through ~2005
  - Data summarized by estuary / embayment and ten-minute squares
  - Includes adjacent areas with suitable depths, temperatures
  - Includes continental slope depth ranges
- **Single action alternative** to update EFH designations for each of the 16 species. For each species and life stage (egg, larval, juvenile, and adult):
  - Designation = specific, mapped locations to be designated as EFH and a text description
  - Juvenile & adult stages
    - Maps based on predictive outputs of species distribution models (SDMs)
    - Separate juvenile and adult maps for all species except scallops
  - Egg & larval stages:
    - Additional time and analyses would be needed to incorporate EcoMon icthyoplankton data
    - 2025 approach – proxy maps based on juvenile and/or adult maps
    - 2026 approach – separate (i.e., new) egg and larval maps NOT developed for species in this framework; where available, information added to text descriptions (feedback, literature)

# ADDITIONAL HABITAT INFORMATION

**Framework Appendices:**

- Appendix A – No Action EFH Designations (available in *Extra Slides*)
- Appendix B – Environmental Ranges (derived from survey data) – Depth, Temp, Salinity
- Appendix C – EFH Consultation Process
- Appendix D – Species Distribution Model Outputs [Document 4b]
    - *Model performance* – model performance metrics across all modeled species / life stages
    - *Relationships with environmental variables* – predictor significance, variance partitioning, smooth terms (response curves for individual covariates)
    - *Spatial distribution* – seasonal predicted density, seasonal density quantiles
- Appendix E – Detailed EFH Designation Methods [Document 4c]

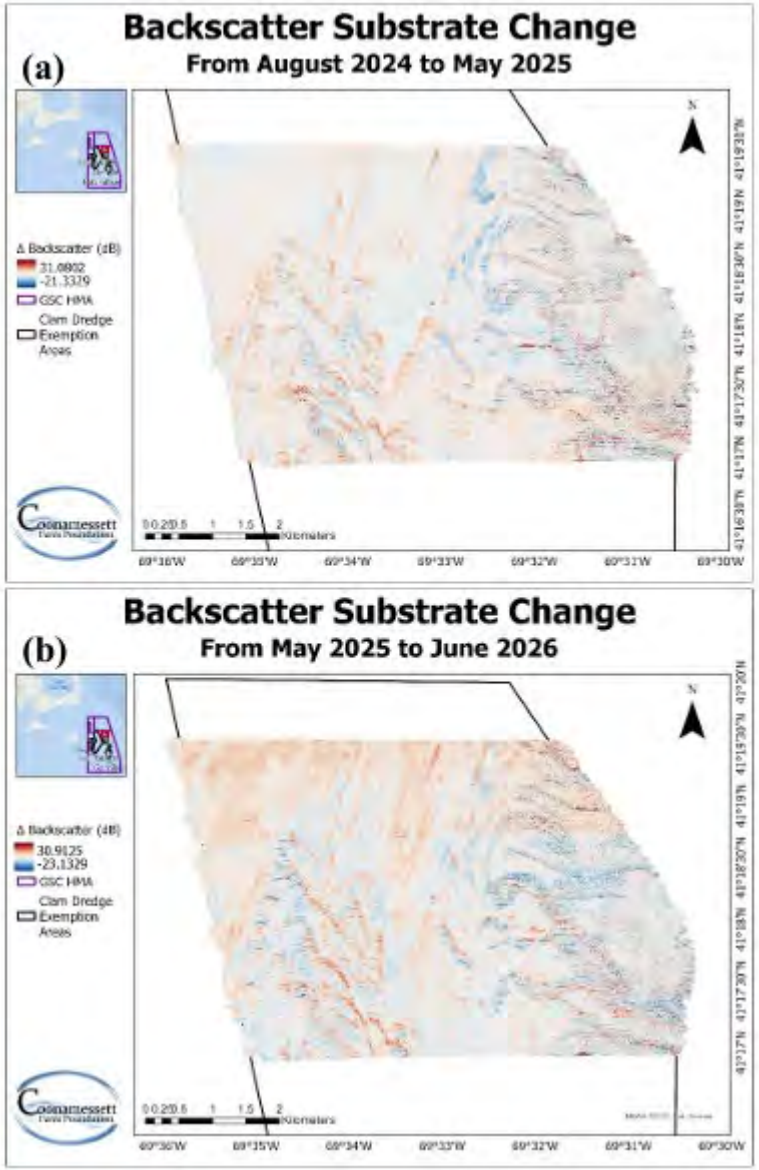
**Other information:** covariance matrices (shared responses between species), cumulative proportion maps, other model checks

# GREAT SOUTH CHANNEL HABITAT MANAGEMENT AREA SURFCLAM EXEMPTION PROGRAM REVIEW

- December 2018: Council identified three exemption areas within the Great South Channel HMA for clam dredging – in effect June 2020
- December 2025: Council prioritized review of the program
  - Objective: assess the effectiveness of surfclam exemption areas in the HMA from both habitat conservation and fishery perspectives, considering recent data and information
  - Possible next steps: prioritize development of management action
- **For today:**
  - **Discuss draft report, suggest additional information to include, ways to improve flow and clarity of text, maps, tables, and figures**
  - **How should the Council consider findings when setting 2027 priorities?**

# GREAT SOUTH CHANNEL HMA IS A HIGHLY DYNAMIC ENVIRONMENT

- Great South Channel HMA is highly dynamic environment, with high water flows along the seabed, strong currents, and notable sediment transport and reworking due to natural disturbance
- Fishing Effects Model assumes that background levels of natural disturbance influence seabed impact and recovery dynamics
- EFP 23073 demonstrates interannual variability in bedform positions and sediment characteristics with the Davis Bank East research area

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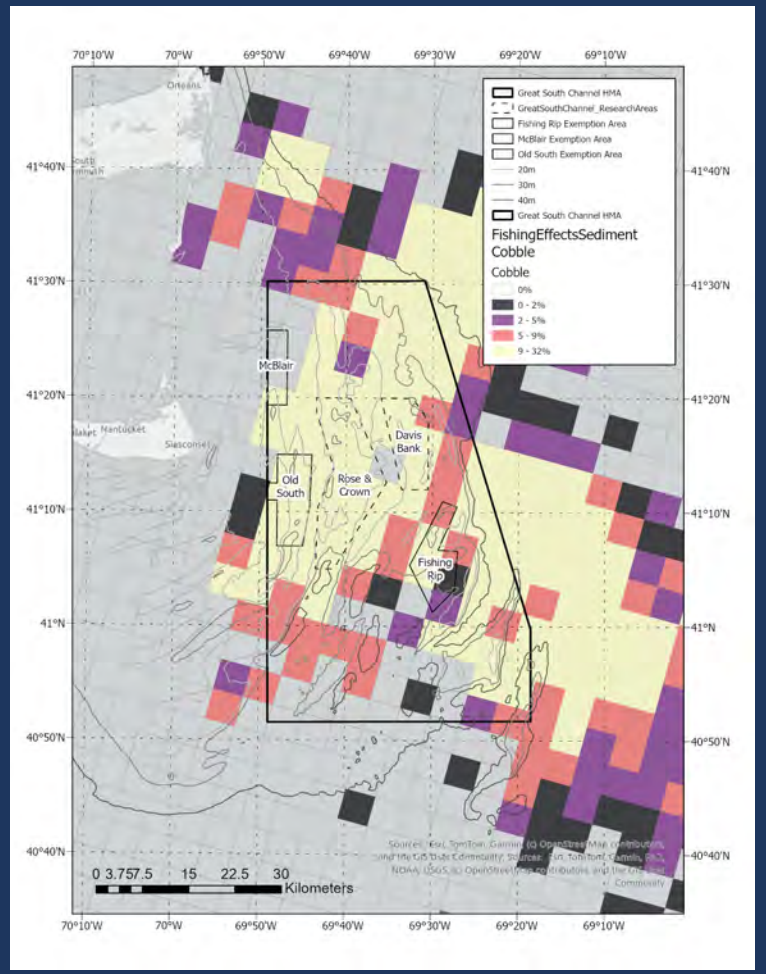
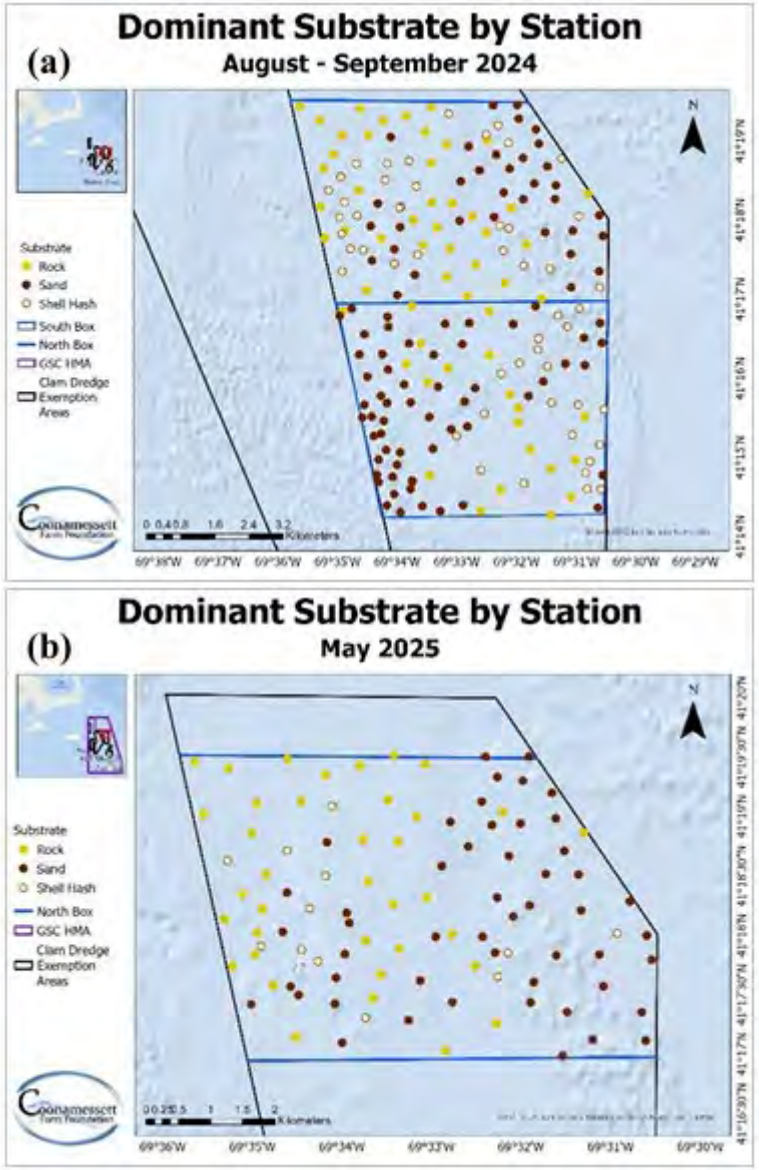
# SEAFLOOR HABITATS ARE HETEROGENEOUS

- Mix of sediment and epifauna types found throughout GSC HMA
- Different locations dominated by different grain sizes, taxa

Fishing Effects = Cobble




EFP 23073 Figure 4– Davis Bank

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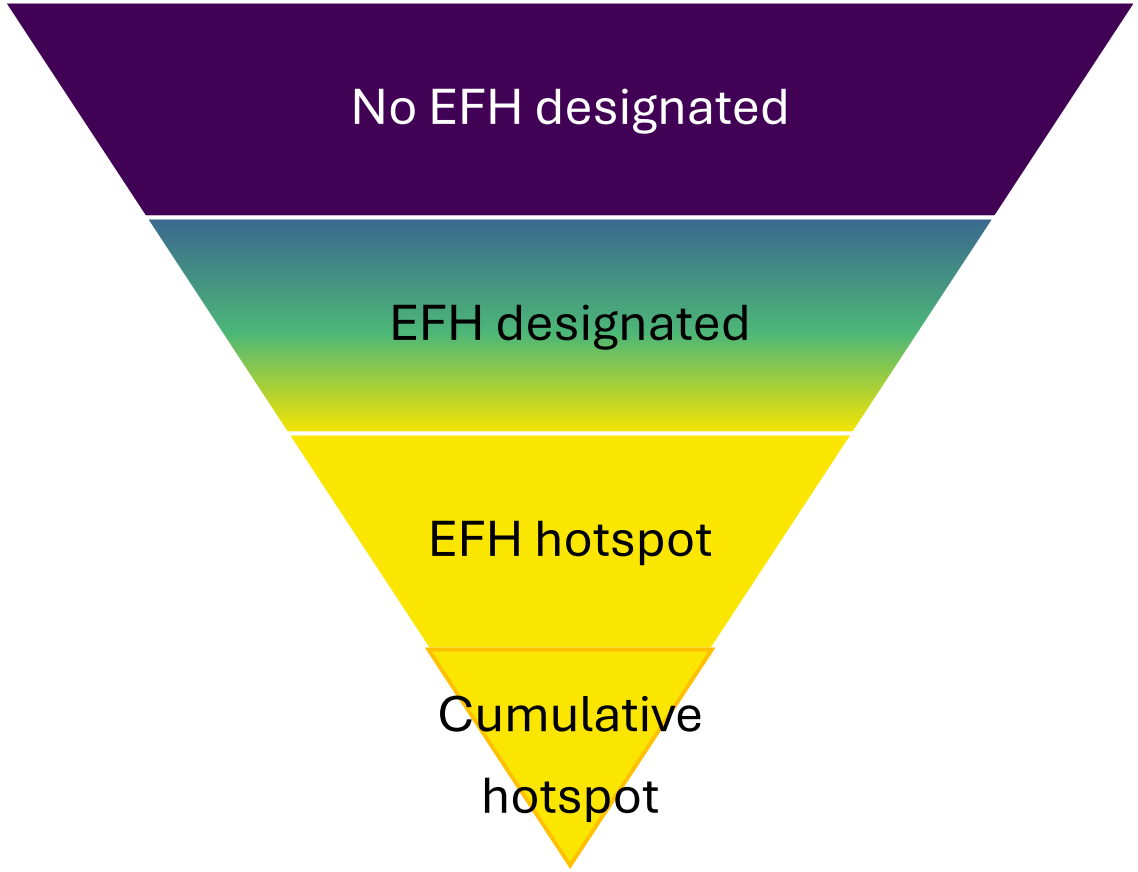
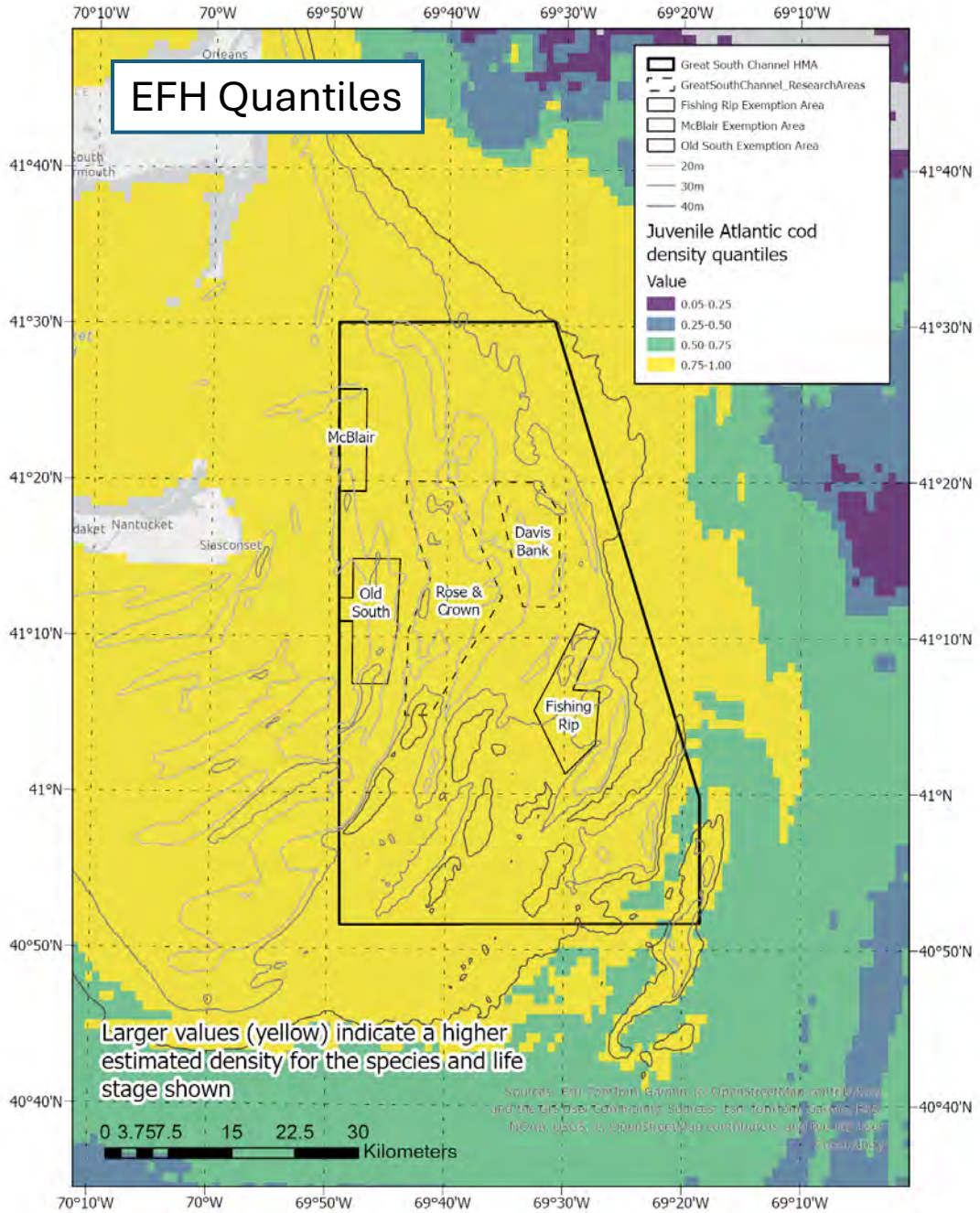
# INVESTIGATING FISH AND SHELLFISH DISTRIBUTIONS IN GSC HMA

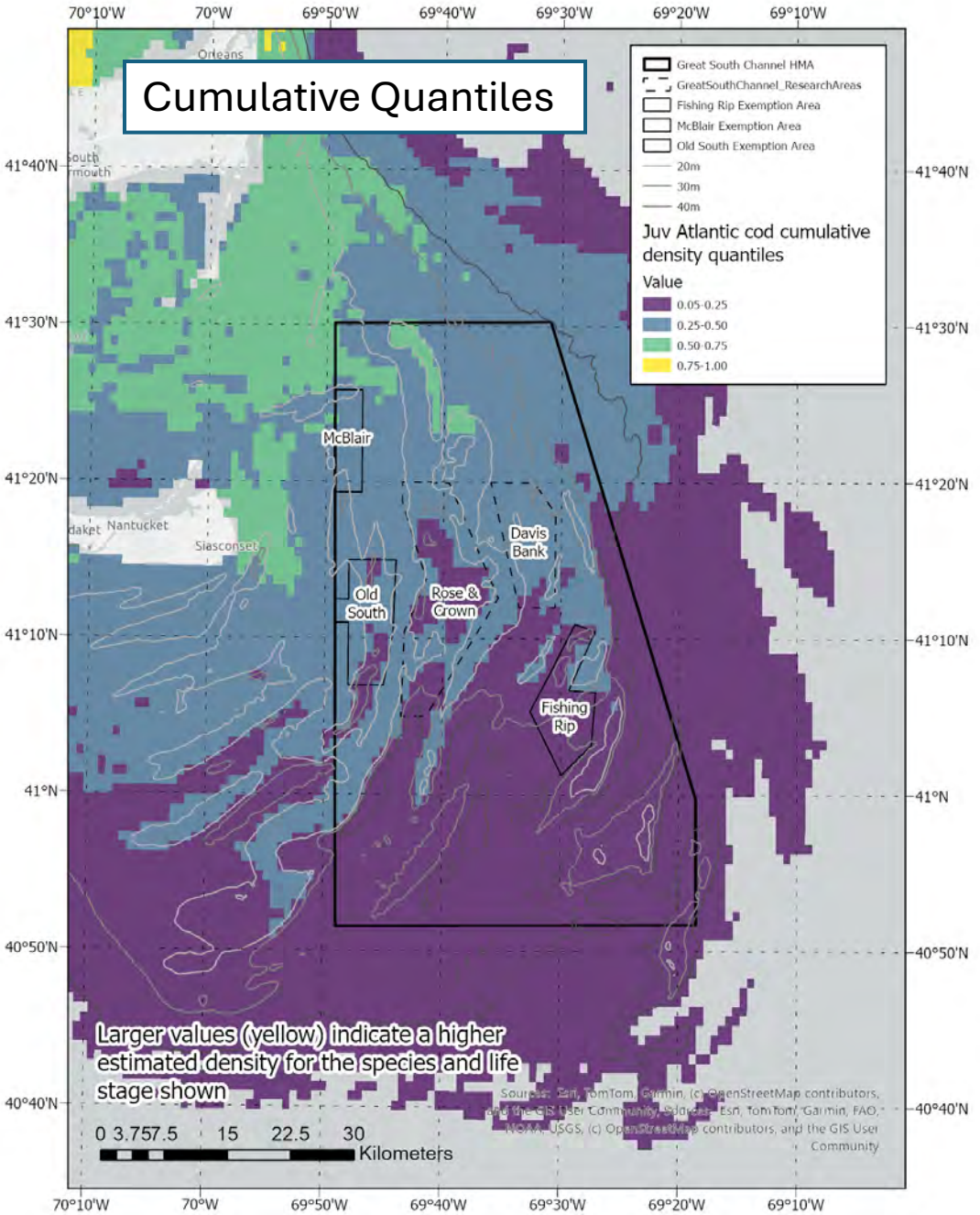
| Question | Information source / metric |
|---|---|
| Which species (juveniles and/or adults) occur in the GSC HMA / on Nantucket Shoals? | Overlap of the updated EFH designation map for a given species and life stage and the GSC HMA |
| What is the relative importance of the GSC HMA as habitat for the species and lifestages found in this area, as compared to other parts of the Northeast U.S. region? | Top 25% EFH density quantiles and top 25% cumulative density quantiles (i.e., relatively high predicted densities according to SDMs) |
| Based on updated EFH and SDM information, do exemption areas have higher degree of overlap of species vs. other parts of the HMA? | Magnitude of overlap of high species predicted density areas with exemption areas |
| Are there seasonal differences in habitat use within the HMA? | Differences in species distribution and predicted density between spring and fall seasons (seasons when the trawl survey is conducted) |
| Have there been shifts in species distribution onto/away from the shoals in the last ~10 years? | Products that indicate increase, decrease, or no change in density from 2002-2022 (SDM outputs showing increase/decrease) |

# ESTIMATED DENSITIES OF MANAGED SPECIES IN GSC HMA

| |
|---|
| Acadian redfish, American plaice, Atlantic halibut, Atlantic wolffish, Blueline tilefish, Clearnose skate, Golden tilefish, Monkfish (j), Offshore hake, Pollock (a), Rosette skate, Smooth skate, Summer flounder (j), White hake (a), Witch flounder |
| Atlantic herring (a), Atlantic mackerel (a), Black sea bass (a), Bluefish (j), Butterfish (a), Haddock (a), Monkfish (a), Ocean pout, Red hake (a), Silver hake, Barndoor skate, Haddock (j), Northern shortfin squid (a), Ocean quahog, Spiny dogfish (j), White hake (j), Yellowtail flounder (a), Atlantic wolffish (j), Summer flounder (a) |
| Atlantic cod, Black sea bass (j), Longfin squid (a), Nothern shortfin squid (j), Pollock (j), Scup (a), Windowpane flounder (j), Winter flounder (j), Yellowtail flounder (j) |
| Butterfish (j), Little skate, Longfin squid (j), Red hake (j), Scup (j), Spiny dogfish (a), Windowpane flounder (a), Winter flounder (a), Winter skate |




EFH Quantiles
Great South Channel HMA
GreatSouthChannel_ResearchAreas
Fishing Rip Exemption Area
McBlair Exemption Area
Old South Exemption Area
20m
30m
40m
Juvenile Atlantic cod density quantiles
Value
0.05-0.25
0.25-0.50
0.50-0.75
0.75-1.00
McBlair
Davis Bank
Old South
Rose & Crown
Fishing Rip
Nantucket
Siasconset
Larger values (yellow) indicate a higher estimated density for the species and life stage shown
0 3.757.5 15 22.5 30
Kilometers
70°10'W
70°W
69°50'W
69°40'W
69°30'W
69°20'W
69°10'W
41°40'N
41°30'N
41°20'N
41°10'N
41°N
40°50'N
40°40'N


Cumulative Quantiles
Great South Channel HMA
GreatSouthChannel_ResearchAreas
Fishing Rip Exemption Area
McBlair Exemption Area
Old South Exemption Area
20m
30m
40m
Juv Atlantic cod cumulative density quantiles
Value
0.05-0.25
0.25-0.50
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0.75-1.00
McBlair
Davis Bank
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Larger values (yellow) indicate a higher estimated density for the species and life stage shown
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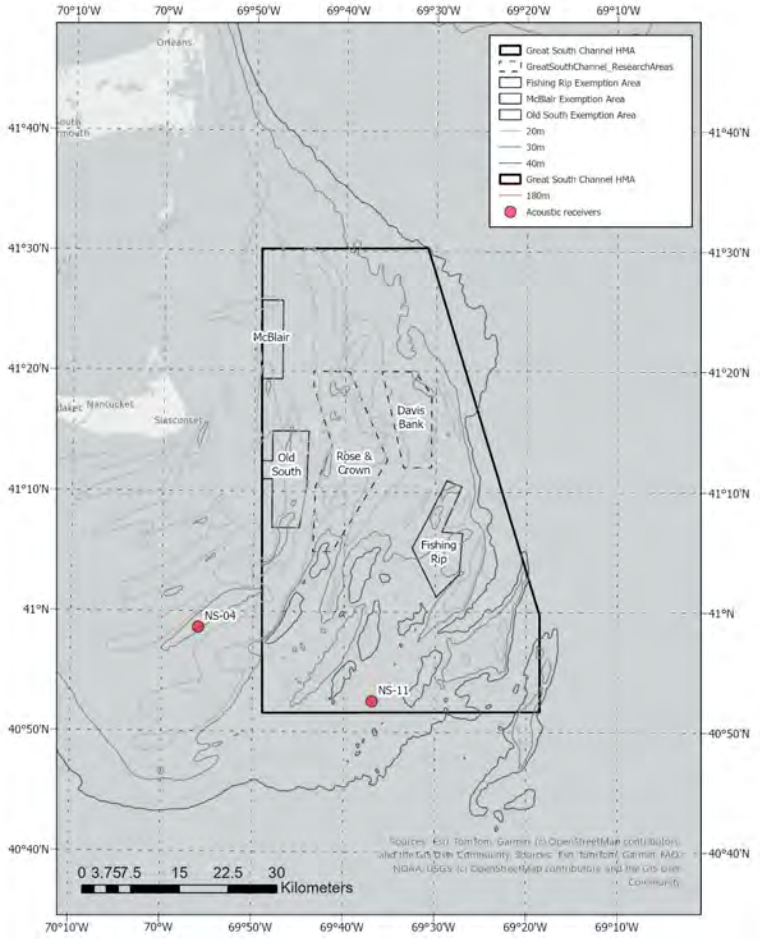
Kilometers
70°10'W
70°W
69°50'W
69°40'W
69°30'W
69°20'W
69°10'W
41°40'N
41°30'N
41°20'N
41°10'N
41°N
40°50'N
40°40'N

# USE OF THE HMA FOR ATLANTIC COD SPAWNING REMAINS UNCERTAIN

- SNE cod spawn during winter
- Trawl surveys do not sample during this time, limited coverage in GSC HMA during spring or fall
- Acoustic receivers (fixed, or on gliders) able to hear cod as they are aggregating to spawn – ‘grunts’
- Most of the data has been collected west of the GSC HMA
- NEFSC could analyze data from receivers near GSC HMA to see if cod were detected during spawning season

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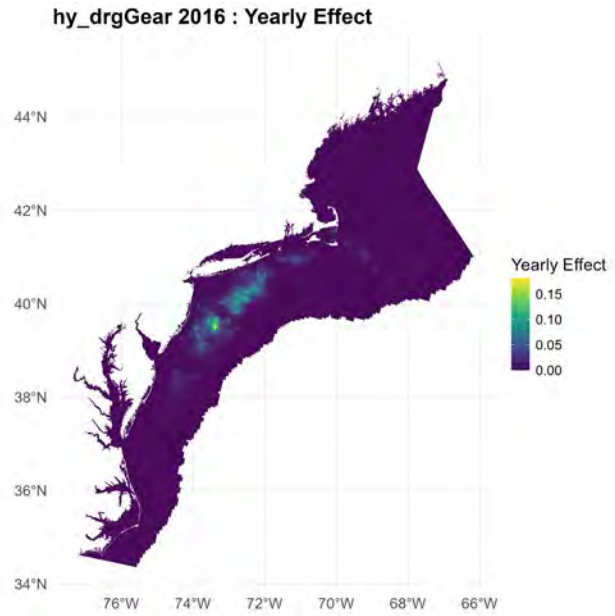
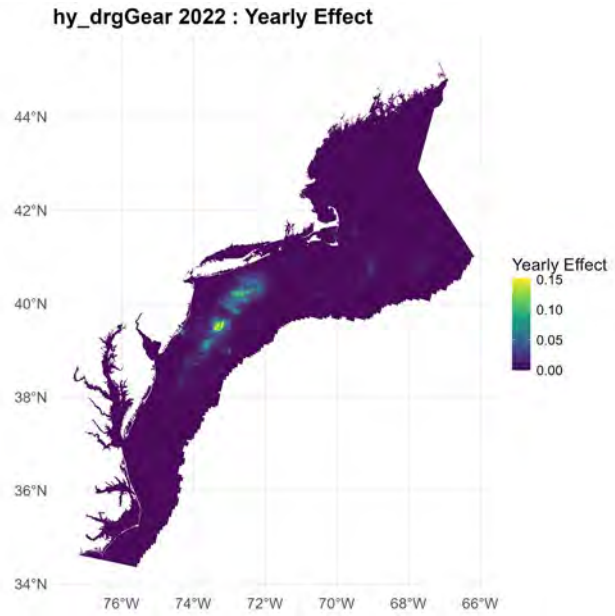
# PERCENT DISTURBANCE ESTIMATES ARE LOW ON AVERAGE

- Estimated using Fishing Effects Model
  - Averaging across grids that overlap GSC HMA, < 1% disturbance, 2013-2022
    - Per-grid disturbance estimates > 3% in some locations, years
  - Coastwide, maximum values 10-15% in some locations during 2022
- EFP 23073 report documented effects of fishing at selected drop camera stations
  - Natural disturbance more important to sediment distribution at stations
  - Some effects of fishing on epifauna noted

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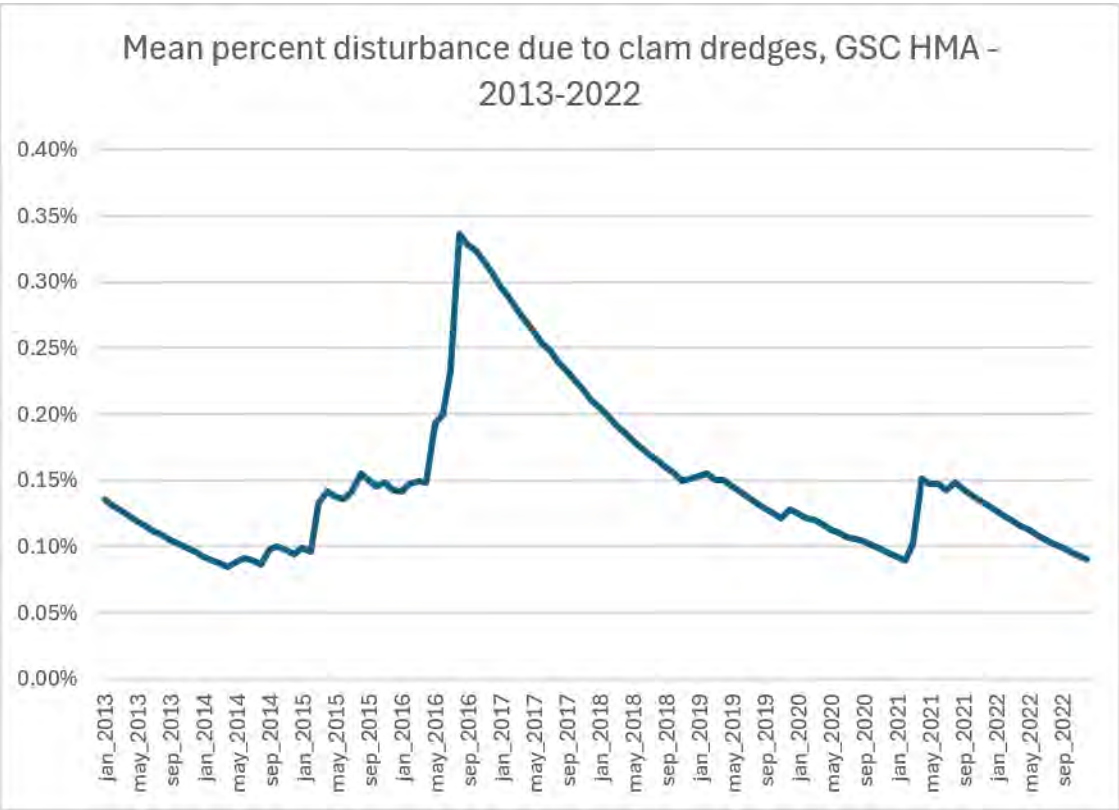
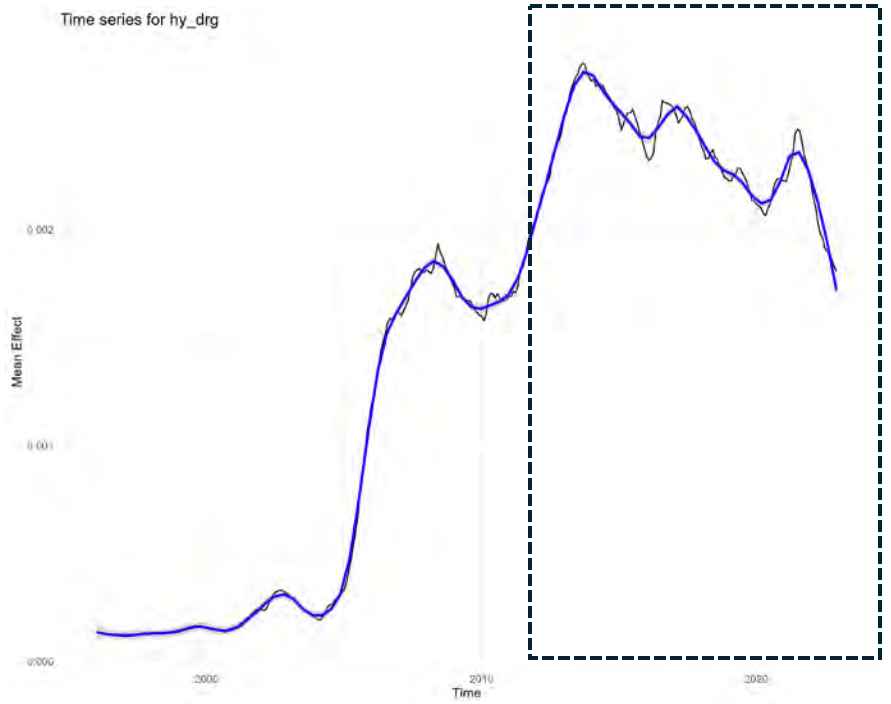
# FISHING EFFECTS ANALYSIS

Within Great South Channel HMA:



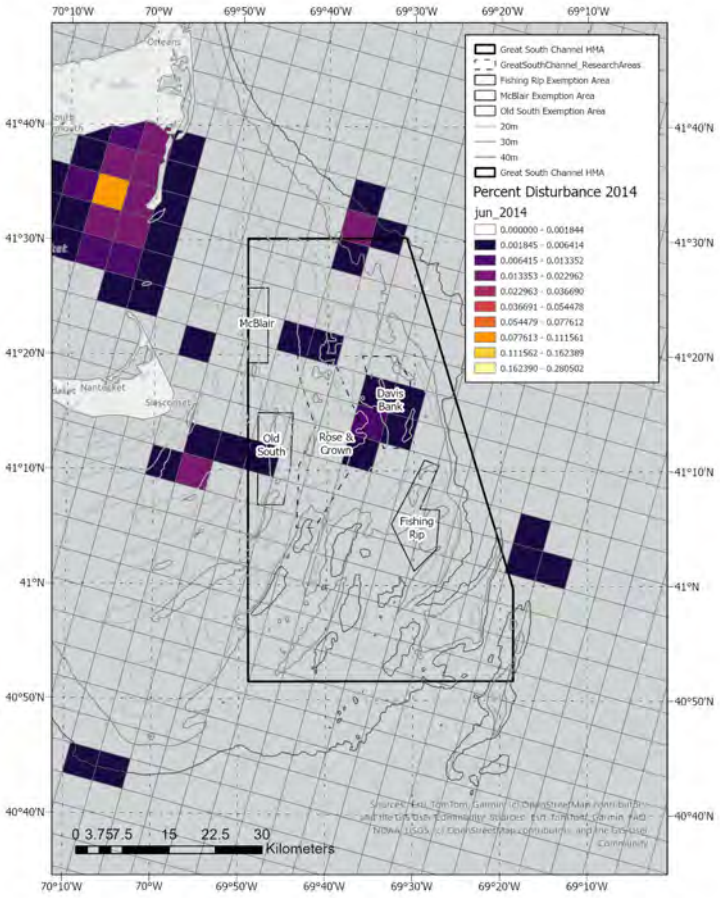

Northeast Region:



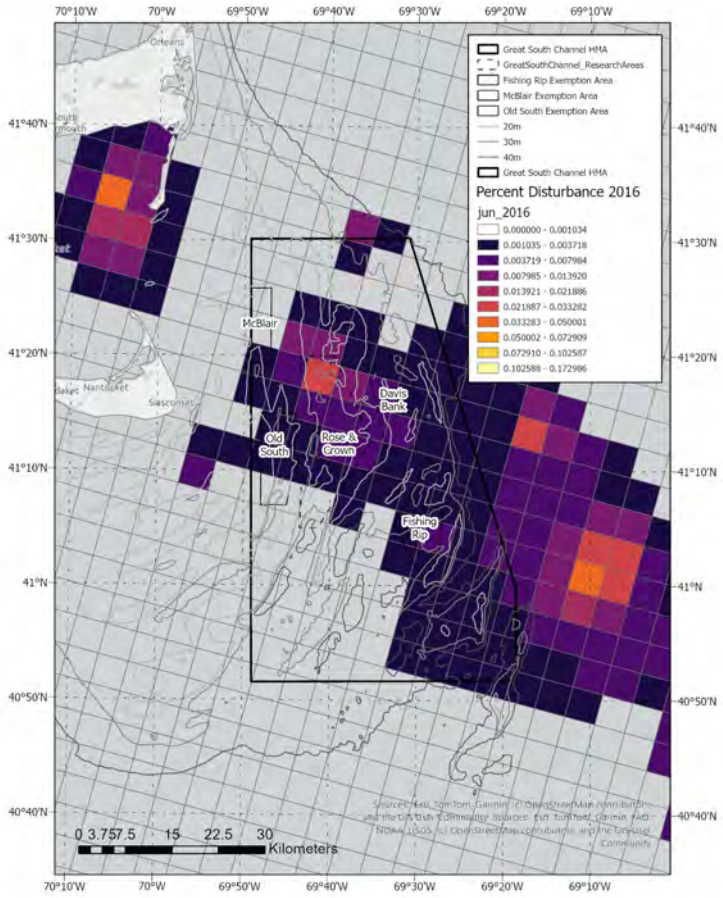

2013-2022

# DISTRIBUTION OF DISTURBANCE – CLAM DREDGE GEAR

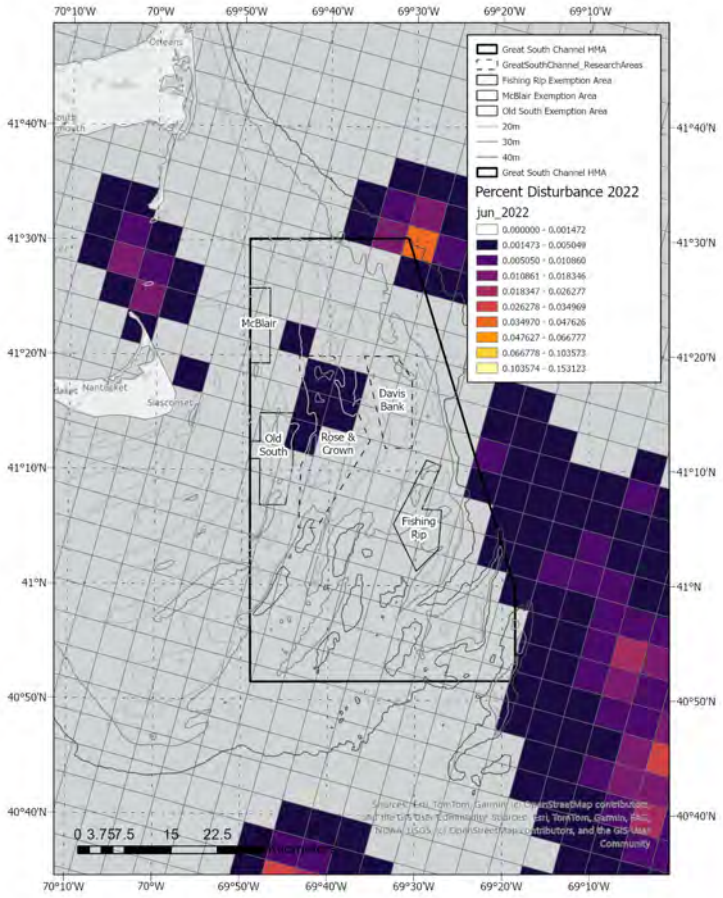
June 2014 – pre-closure




June 2014 – pre-closure, peak year




June 2022 – exemption program in effect




* Scales vary across figures

# SURFCLAM DISTRIBUTION HETEROGENEOUS, SOMEWHAT UNCERTAIN

- Most complete fishery-independent data – East of Nantucket Survey – about a decade old
  - Smaller vs. larger clams in different parts of HMA
- No federal clam survey in this location
- Fishing effort as a proxy
  - Tow locations and clam sizes from EFP projects available
  - EFP fishing areas adjusted during recent project – uncertainty in distribution/ abundance
  - Fishing distribution from VMS available, but confidential

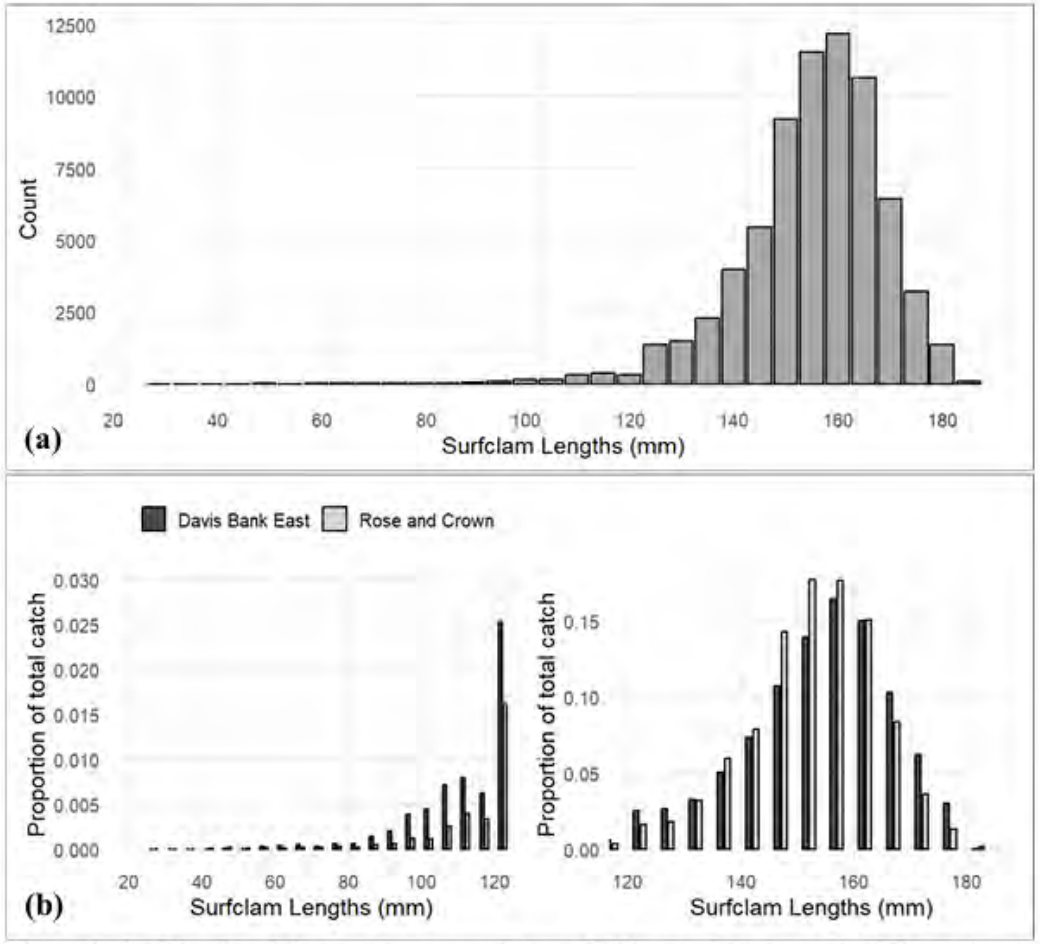



**Figure 15.** Surfclam length frequencies measured during CFF covered compensation fishing trips. (a) Overall length distribution of 70,804 measured clams. (b) Length frequency distributions for Davis Bank East and Rose and Crown expressed as the proportion of the total catch in the area. The lower panels are split at 120 mm and are shown with two different scale values.

EFP 23073 – Figure 15, p. 32

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# EFFORT, LANDINGS, AND REVENUES LOWER UNDER EXEMPTION PROGRAM

Between 2013 and 2025, surfclam fishing effort, landings, and revenue declined within the Great South Channel HMA

Surfclam landings and revenues declined coast-wide over this same period, but landings and revenue from the Great South Channel HMA currently comprise a smaller fraction of coast-wide revenues than they did prior to the exemption program's enactment.

The reduced contribution of the Great South Channel HMA to coast-wide surfclam landings, while northern fishing areas generally remain important to the fishery, suggests that reduced access to surfclams under the exemption program is largely responsible for the decline in landings rather than a marked decline in resource conditions on Nantucket Shoals.

# LANDINGS, REVENUE, AND EFFORT DURING DIFFERENT TIME PERIODS

**Mean monthly values of landed bushels, revenue in ex-vessel value (not adjusted for inflation), and effort as days fished for the entire Great South Channel Habitat Management Area for each period from 2013 - 2026. Dealer and permit numbers indicate the total unique number of each reflected in the data set for that period.**

| Time period | Mean bushels per month | Mean revenue per month | Mean days fished per month | Total number of dealers | Total number of permits |
|---|---|---|---|---|---|
| Pre-closure (01/2013-03/2019) | 33,463 | $561,619 | 32.8 | 15 | 28 |
| Total closure (04/2019-05/2020) | 2,810 | $60,066 | 1.9 | 3 | 7 |
| Exemption program (06/2020-05/2026) | 5,050 | $150,294 | 5.2 | 7 | 11 |

# TOTAL LANDINGS, REVENUE, AND EFFORT FROM GSC HMA 203-2026

* Confidential

| Year | Bushels | Revenue | Days fished | Total number of dealers | Total number of permits |
|---|---|---|---|---|---|
| 2013 | 513,770 | $7,223,408 | 427.5 | 7 | 16 |
| 2014 | 519,011 | $7,682,965 | 475.0 | 9 | 16 |
| 2015 | 411,945 | $6,774,191 | 369.4 | 8 | 14 |
| 2016 | 418,501 | $7,435,840 | 508.1 | 11 | 18 |
| 2017 | 316,808 | $6,206,759 | 383.8 | 8 | 15 |
| 2018 | 244,100 | $4,935,444 | 222.9 | 4 | 13 |
| 2019 | 99,569 | $2,162,305 | 86.2 | 3 | 8 |
| 2020 | 73,167 | $1,814,967 | 69.7 | 3 | 5 |
| 2021 | 43,436 | $1,211,090 | 51.0 | 3 | 5 |
| 2022 | * | * | * | * | * |
| 2023 | * | * | * | * | * |
| 2024 | * | * | * | * | * |
| 2025 | 52,962 | $1,578,278 | 66.1 | 5 | 6 |
| 2026 | * | * | * | * | * |

# LANDINGS, REVENUE, AND EFFORT BY TIME PERIOD AND AREA

| Exemption or research area | Time period | Mean bushels per month | Mean revenue per month | Mean days fished per month | Total number of dealers | Total number of permits |
|---|---|---|---|---|---|---|
| **Davis Bank East** | Pre-closure | 4,451 | $70,975 | 4.2 | 13 | 19 |
| **Davis Bank East** | Total-closure | 0 | 0 | 0.0 | 0 | 0 |
| **Davis Bank East** | Exemption program | 1,889 | $56,200 | 2.0 | 3 | 3 |
| | | | | | | |
| **Fishing Rip** | Pre-closure | 4,131 | $58,632 | 3.5 | 8 | 16 |
| **Fishing Rip** | Total-closure | 0 | 0 | 0.0 | 0 | 0 |
| **Fishing Rip** | Exemption program | 3,247 | $97,043 | 3.7 | 3 | 4 |
| | | | | | | |
| **McBlair** | Pre-closure | 688 | $12,809 | 0.8 | 8 | 16 |
| **McBlair** | Total-closure | 0 | 0 | 0.0 | 0 | 0 |
| **McBlair** | Exemption program | * | * | * | * | * |
| | | | | | | |
| **Old South** | Pre-closure | 5,027 | $87,855 | 5.1 | 13 | 21 |
| **Old South** | Total-closure | 1,891 | $43,030 | 1.2 | 3 | 4 |
| **Old South** | Exemption program | 3,457 | $102,792 | 3.7 | 4 | 7 |
| | | | | | | |
| **Rose & Crown** | Pre-closure | 13,638 | $231,399 | 13.3 | 13 | 23 |
| **Rose & Crown** | Total-closure | 5,243 | $105,164 | 4.7 | 3 | 5 |
| **Rose & Crown** | Exemption program | 4,569 | $134,110 | 3.4 | 3 | 4 |

# DISCUSSION

- What additional information can we add to this report?
    - Timeframe: Prior to Council meeting (before 9/4) or later this fall before the report is finalized
- How can we more effectively present the information already included in the report?
- What should the Council take away from this work when considering management priorities for 2027?