| clu | Title | Description, rationale, potential use | Priority | Status | FMP | Species | Broad categories | Cross-listing | Notes |
|---|---|---|---|---|---|---|---|---|---|
| 1 | Efficiency estimation of NMFS trawl survey gear for monkfish, silver hake, and red hake; estimate efficiency based on gear configuration. | Identify any issues regarding the use of a constant catchability coefficient. | Strategic (future needs) | not begun | Monkfish, Small-mesh multispecies | Monkfish, Silver hake, Red hake | Fish surveys | unknown | Absolute abundance and biomass indices are not used for small-mesh multispecies. |
| 2 | Supplement existing surveys with the use of fixed gear and/or advanced sampling techniques to facilitate sampling in inaccessible areas. | e.g., use of longline or pot/trap gear to sample within complex habitat areas. | Important (near term) | underway | Multiple | Multiple | Fish surveys | unknown | NEFSC/CRB funding a longline survey. |
| 3 | Continue development of hydroacoustic surveys and other resource surveys of pelagic species to provide an independent means of estimating stock sizes and/or defining localized depletion (long-term research). | This priority has two parts, the first to help evaluate status of resource with acoustic survey and the second to see if that tool could be useful for defining localized depletion. | Important (near term) | underway | Atlantic herring | Atlantic herring | Fish surveys | assessment, RSA | One RSA project looked at defining localized depletion, but the work was not completed due to issues securing the research funds. It did test the utility of that survey technology. **A 2013 S-K project on herring acoustic survey.** |
| ~~4~~ | ~~Develop fishery acoustic indices for herring, and develop a volume-to-weight conversion factor for herring.~~ | ~~To improve data on estimate of herring biomass.~~ | ~~Important (near term)~~ | ~~underway~~ | ~~Atlantic herring~~ | ~~Atlantic herring~~ | ~~Fish surveys~~ | ~~unknown~~ | ~~This is similar to Priority #3 on acoustics.~~ **Herring PDT recommends deleting. A relative index from acoustics was used in the 2018 assessment. An absolute index may not be critical.** |
| 5 | Investigate availability and detectability of Atlantic herring in the NEFSC spring and fall trawl survey **to evaluate how well the survey detects herring**. | If this priority means evaluating how well the bottom trawl survey detects herring, that could be useful for assessing herring biomass and if it changes over time (i.e., depth preferences). | Important (near term) | underway | Atlantic herring | Atlantic herring | Fish surveys | unknown | The 2018 assessment did evaluate depth preferences ~~and notes trend toward deeper waters in recent years, but results are not conclusive.~~ **Commercial data (Study Fleet) may help identify depth preferences and trends. Herring PDT recommends this clarification.** |
| 6 | Conduct deep water (>200 m) surveys for red crab. | Would improve red crab stock assessment. | Important (near term) | not begun | Red crab | Red crab | Fish surveys | assessment | Red crab is a data poor stock and was last assessed in 2009. The assessment report noted that a survey "is the most important research recommendation for red crabs." |
| 7 | Develop a conversion factor between the survey results for the *R/V Albatross* and *R/V Bigelow* for wolffish. | Would improve wolffish stock assessment. | Important (near term) | unknown | Northeast multispecies | Atlantic wolffish | Fish surveys | unknown | This factor becomes less important as more years of *R/V Bigelow* data are used in assessments. |
| 8 | Further investigations into stock definition, stock movements, mixing, and migration through tagging studies, DNA markers, morphological characteristics and other means for groundfish (Atlantic cod and Atlantic halibut). | To improve the understanding of stock structure of Atlantic cod and Atlantic halibut, possibly make changes in the future to the stock boundaries. | Important (near term) | underway | Northeast multispecies | Cod, Halibut | Population dynamics | unknown | Multiple ongoing projects. Cod: SMAST, MA DMF, Cornell, UNH; **TNC and GMRI (three S-K projects),** contributions to the Atlantic Cod Stock Structure Working Group. Halibut: TNC. |
| 9 | Further investigations into stock definition, stock movements, mixing, and migration through tagging studies, DNA markers, morphological characteristics and other means for Atlantic herring. | To improve data on estimate of herring biomass and to support herring management under sub-ACL management by area. | Urgent (essential) | not begun | Atlantic herring | Atlantic herring | Population dynamics | assessment, RSA | |

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| 10 | Investigate stock definition, movement, mixing, and migration through tagging studies, DNA markers, morphological characteristics and other means for silver hake and red hake. | This has always been an issue for stock assessments and climate change has added to the uncertainty. | Important (near term) | underway | Small-mesh multispecies | Silver hake, Red hake | Population dynamics, Climate change | unknown | One genetic study for red hake has occurred and will be reviewed at the 2020 benchmark assessment. |
| 11 | Monkfish life history work focusing on age and growth, longevity, reproduction, and natural mortality. | Age-based assessment | Important (near term) | underway | Monkfish | Monkfish | Population dynamics | assessment, RSA | 2018 MF RSA project funded to use histological protocol for age determination; NEFSC efforts & timeline unknown. |
| 12 | Scallop life history work focusing on natural mortality, including all sources of non-harvest mortality such as predation, disease, and ~~incidental~~ **discard** mortality. | | Important (near term) | unknown | Sea scallop | Scallops | Population dynamics | RSA | **Scallop Cte recommends revising this, because the latest assessment modified the assumptions on incidental morality based on recent RSA projects. Discard mortality questions remain.** |
| 13 | Investigate age, growth, maturity, and fecundity of managed skate species. | | Strategic (future needs) | underway | Skates | Skates | Population dynamics | assessment | |
| 14 | Investigate the biology of red crab: growth rates; molt; reproductive cycles; maturity schedule; fecundity; sex ratios by depth and year; larval supply, transport and settlement; early juvenile distributions and abundance; and particularly the reproductive consequences of depleting large males. | Would improve red crab stock assessment. | Important (near term) | unknown | Red crab | Red crab | Population dynamics | assessment | Red crab is a data poor stock and was last assessed in 2009. The assessment report noted all of these topics as important. |
| 15 | Calculate and/or improve river herring and shad life stage-specific estimates of range-wide natural and human mortality rates, including fishing. | Would improve RH/S stock assessment. | Important (near term) | unknown | Atlantic herring | River herring, Shad | Population dynamics | TEWG | |
| 16 | Collect information on the marine phases of river herring and shad specific to: migrations at sea. | Data would improve RH/S stock assessment on determining: 1) river origin of individual catch in coastal/ocean (independent surveys, tagging) and in non-targeted ocean fisheries; and 2) marine survival. | Important (near term) | unknown | Atlantic herring | River herring, Shad | Population dynamics | TEWG | |
| 17 | Investigate fine-scale spawning dynamics and the appropriate size and timing of spawning area closures. | Potential to adjust time-area closures for groundfish species. | Important (near term) | underway | Multiple | Multiple | Population dynamics | unknown | **Two S-K projects and** Council-funded projects on cod and winter flounder spawning. |
| 18 | Continue to explore the sources of uncertainties in groundfish stock assessments, including retrospective patterns, and identify appropriate adjustments (e.g., data or modeling revisions) to resolve those patterns. | Would improve groundfish stock assessments. | Important (near term) | underway | Northeast multispecies | Groundfish | Stock assessment | unknown | Council contracted with John Wiedenmann and Olaf Jensen at Rutgers for this work; NEFSC also working on this issue. |

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| 19 | Explore the sources of uncertainties in Atlantic herring stock assessments, including retrospective patterns, and identify appropriate adjustments (e.g., data or modeling revisions) to resolve those patterns. | To improve data on estimate of herring biomass. | Strategic (future needs) | underway | Atlantic herring | Atlantic herring | Stock assessment | unknown | Very large topic for all assessments, challenging to resolve. |
| 20 | Develop guidance for rejecting stock assessments and next steps. | Would improve the stock assessment process. | Urgent (essential) | unknown | Multiple | Multiple | Stock assessment | unknown | Badly needed. |
| 21 | Improve and standardize data collection methods for river herring and shad stocks. | Needed for management & assessment of RH/S (e.g., for catch caps). Useful beyond Herring FMP. | Urgent (essential) | underway | Atlantic herring | River herring, Shad | Stock assessment | TEWG | |
| 22 | Develop biological benchmarks used in RH/S assessment modeling and management. | Needed for management & assessment of RH/S (e.g., for catch caps). Useful beyond Herring FMP. | Urgent (essential) | underway | Atlantic herring | River herring, Shad | Stock assessment | TEWG | |
| 23 | Explore use of survey results from the *R/V Bigelow* as a separate index of abundance as the survey time series lengthens. | Would improve stock assessments. | Important (near term) | underway | Multiple | Multiple | Stock assessment | unknown | This is part of the benchmark assessment process already. The 2018 A. herring benchmark assess. was the first to do so for a NE species/stock. |
| 24 | Incorporate other surveys into stock assessments as appropriate. | Would improve stock assessments. Including industry-based surveys, state surveys, NEAMAP, collaborative surveys with industry and scientists. | Important (near term) | underway | Multiple | Multiple | Stock assessment | unknown | Used recently for GOM cod, witch flounder, and GB yellowtail flounder assessments. |
| 25 | Evaluate the effectiveness of the groundfish ABC control rule for setting groundfish catch advice. | Use of the groundfish ABC control rule has been difficult recently. Investigate: 1) the potential for using F-ramp procedures in control rules, and 2) when to use "Option C" and how to estimate ABC with it (for stocks that cannot rebuild to $B_{MSY}$ in the specified rebuilding period, even with no fishing, the ABC should be based on incidental bycatch, including a reduction in bycatch rate). | Strategic (future needs) | unknown | Northeast multispecies | Groundfish | Fisheries management | unknown | This was a Nov. 2016 SSC recommendation resulting from discussion of the Wiedenmann and Jenson work. The SSC felt that control rules for all FMPs should be investigated starting with groundfish. |
| 26 | Examine whether the current definition of the directed groundfish fishery (landing >1 lb. groundfish per year) is still appropriate. | Investigate the modern groundfish fishery, **and explore other definitions to identify whether the economic analyses for groundfish actions accurately capture the fishery.** | Strategic (future needs) | unknown | Northeast multispecies | Groundfish | **Fisheries management, Human dimensions** | unknown | **Groundfish Cte reaffirms the need for this.** |
| 27 | How should the inshore and offshore components of the groundfish fishery be identified? | Investigate the modern groundfish fishery. | Strategic (future needs) | unknown | Northeast multispecies | Groundfish | **Fisheries management, Human dimensions** | unknown | |

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| 28 | Investigate the feasibility of ~~groundfish~~ permit splitting ~~by stocks~~ **across and within all FMPs.** | ~~Investigate the modern groundfish fishery.~~ **Explore additional ways to increase flexibility and reduce the barriers for new entrants to various NEFMC managed fisheries, to achieve the goals of the FMPs. The Council should explore why the decision was made to bind certain permits together and revisit this to see whether it is still appropriate today. This could involve the MAFMC or be limited to NEFMC permits.** | Strategic (future needs) | unknown | Northeast multispecies | **Multiple** | **Fisheries management, Human dimensions** | unknown | **Groundfish Cte recommends broadening this.** |
| 29 | Catch efficiencies by mesh size, when new minimum fish size regulations are implemented. | Investigate potential means to improve access to healthy stocks while minimizing impacts to stocks needing conservation. | Strategic (future needs) | unknown | Northeast multispecies | Groundfish | Fisheries management | unknown | |
| 30 | Options to broaden the definition of the sector system & increase flexibility in groundfish fishery operations (e.g., expanding the range of participants allowed to join sectors and the suite of permits and their associated allocations that can be used under sectors). | Investigate potential means to improve access to healthy stocks while minimizing impacts to stocks needing conservation. | strategic (future needs) | unknown | Northeast multispecies | Groundfish | Fisheries management | unknown | |
| 31 | Evaluate the efficacy of existing and potentially new small-mesh multispecies exemption areas and seasons. | Investigate potential means to improve access to healthy stocks while minimizing impacts to stocks needing conservation. | Important (near term) | underway | Northeast multispecies, Small-mesh multispecies | Groundfish, Small-mesh multispecies | Fisheries management | unknown | SMAST recently completed an EFP on this topic. |
| ~~32~~ | ~~Evaluate the efficacy of existing and potentially General Category scallop exemption areas and seasons.~~ | ~~Investigate potential means to improve access to healthy stocks while minimizing impacts to stocks needing conservation.~~ | ~~Important (near term)~~ | ~~underway~~ | ~~Northeast multispecies, Sea scallop~~ | ~~Groundfish, Scallops~~ | ~~Fisheries management~~ | ~~RSA~~ | ~~NEFMC sent a letter to GARFO in 2017 requesting expansions of exemption areas. GARFO is working to evaluate.~~ **Scallop Cte recommends deleting this. GARFO is proposing modifications based on Council recommendation. Additional work not needed at this time.** |
| 33 | Research to elucidate modes of infection, transmission and distribution of scallop diseases and parasites that may adversely impact scallop health, meat quality and reproductive viability. | Special attention should be directed to conditions that may result in modifications to the scallop rotational area management strategy to maximize yield. | Important (near term) | underway | Sea scallop | Scallops | Fisheries management | RSA | Susan Ingalls has been funded through S-K **in 2017**. |
| 34 | Evaluate ways to control predation on scallops. | Managing to optimize yield/recruit; natural mortality events can impact short and long-term management. | Strategic (future needs) | not begun | Sea scallop | Scallops | Fisheries management | unknown | |

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| 35 | Research to address potential implications of spat collection, seeding and relocation of scallops for enhancement purposes in light of unknown impacts of diseases and parasites. | | Strategic (future needs) | underway | Sea scallop | Scallops | Fisheries management | RSA | CFF has been funded to do some of this work. |
| 36 | Research that investigates the factors affecting scallop fishing power and estimates of how they relate to projections of landings per unit of effort. | | Important (near term) | underway | Sea scallop | Scallops | Fisheries management | RSA | SMAST (Wright, Cadrin, O'Keefe) funded by RSA to complete LPUE work. It was presented to the SAW 65 workgroup. |
| 37 | Research related to identifying the major sources of scallop management uncertainty and measuring their potential effects on future fishery allocations. | | Important (near term) | unknown | Sea scallop | Scallops | Fisheries management | unknown | A15 lists sources of mgmt. uncertainty. Scallop CTE wants to look at carryover as a potential 2019 priority, & the PDT would consider mgmt. uncertainty in this evaluation. |
| 38 | Develop effective skate species identification methods for fishermen, dealers, and port samplers (e.g., inexpensive biochemical/genetic assay method, better training & morphological keys for juvenile skates and skate wings). | To improve data on species composition of landings and discards. | Strategic (future needs) | unknown | Skates | Skates | Fisheries management | assessment | |
| 39 | Evaluate the benefits of skate species-specific management. | | Strategic (future needs) | unknown | Skates | Skates | Fisheries management | unknown | Recommended by the SSC. |
| 40 | Investigate skate discards: discard mortality rates for any outstanding species and gear type; alternative methods of estimating dead discards in the specifications process, e.g. forecasting; and examining trends in magnitude of discards. | Discards affect TALs; recent estimates have fluctuated; incidental possession limits triggered in FY2016 & 2017; moving away from the assumed discard rate. | Important (near term) | underway | Skates | Skates | Fisheries management | assessment, RSA | 2018 MF RSA project funded to reduce skate bycatch in MF gillnets. |
| 41 | Investigate monkfish age validation. | Resolve the age and growth issues that prevented the stock assessment model from being updated in the 2016 Operational Assessment. | Important (near term) | unknown | Monkfish | Monkfish | Fisheries management | assessment, RSA | |
| 42 | Investigate monkfish discard mortality rate estimates across gear types. | Improve stock assessments | Strategic (future needs) | unknown | Monkfish | Monkfish | Fisheries management | unknown | The assumed rate is currently set at 100%. |
| 43 | Continue to improve reporting accuracy, including accurate reporting of species and area fished. | Would improve catch reporting, including proper identification of key species, which are often misreported by fishermen (e.g. red/white hake; silver/offshore hake). | Important (near term) | underway | Multiple, Small-mesh multispecies, Northeast multispecies | Multiple, Offshore hake, Red hake, White hake | Fishery performance & monitoring | unknown | Amendment 23/Groundfish Monitoring for the Commercial Fishery. |

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| ~~44~~ | ~~Improve sampling for commercial A. herring catch at age data (e.g., cooperative NMFS industry programs to supplement port agent efforts), with an emphasis on bycatch (incl. incidental catch).~~ | | ~~Strategic (future needs)~~ | ~~underway~~ | ~~Atlantic herring~~ | ~~Atlantic herring~~ | ~~Fishery performance & monitoring~~ | ~~unknown~~ | ~~This priority is unclear. Catch at age data are not critical for this species – lots of data already collected. If this is about bycatch port sampling, that has higher relevance.~~ **Herring PDT recommends deleting. It is partially redundant with #61 and there is plenty of catch-at-age data already.** |
| 45 | Improve sampling for commercial groundfish catch at age data, such as through cooperative NMFS-industry programs to supplement port agent activities, with an emphasis on bycatch (incl. incidental catch). | Improve data for stock assessments | Strategic (future needs) | unknown | Northeast multispecies | Groundfish | Fishery performance & monitoring | unknown | |
| 46 | Define localized depletion of spawning components on a spatial and temporal scale for Atlantic herring. | Progress on other herring research priories on acoustics and stock mixing would help with this priority. | Important (near term) | unknown | Atlantic herring | Atlantic herring | Fishery performance & monitoring | unknown | |
| 47 | Investigate Atlantic herring fishery fleet behavior and decision-making with respect to their relationship to population dynamics, closed areas, catch rates, etc. | | Strategic (future needs) | not begun | Atlantic herring | Atlantic herring | Fishery performance & monitoring | unknown | Generally lower priority, not very clear what main objective is here. Could help evaluate current and future management measures. |
| 48 | Evaluate spatially-explicit changes in groundfish fleet behavior in response to restricted fishing in closed areas. | Impacts analysis of management actions. | Strategic (future needs) | unknown | Northeast multispecies | Groundfish | Fishery performance & monitoring | unknown | It is important to understand the effects of a primary management tool, i.e. closed areas. |
| 49 | Research the extent and composition of discards and bycatch in the skate and monkfish fisheries. | | Strategic (future needs) | unknown | Skates, Monkfish | Skates, Monkfish | Fishery performance & monitoring | assessment | |
| 50 | Research the extent and composition of discards and bycatch in the large-mesh groundfish fishery. | Improve catch reporting. | Important (near term) | underway | Northeast multispecies | Groundfish | Fishery performance & monitoring | unknown | Multiple - GARFO, NEFSC, PDT |
| 51 | Research the extent and composition of discards and bycatch in the small-mesh multispecies fishery. | Could be used to design selective gear or area/season management. | Strategic (future needs) | not begun | Small-mesh multispecies | Small-mesh multispecies | Fishery performance & monitoring | unknown | |
| 52 | Investigate groundfish discard mortality rate estimates across gear types **(e.g., GB cod for the recreational fishery).** | **There are currently different mortality rates used for GB and GOM cod for the recreational fishery; the explanation for this difference is unclear.** | Important (near term) | underway | Northeast multispecies | Groundfish | Fishery performance & monitoring | unknown | Recent Council-funded project and literature review by PDT changed discard mortality rates for wolffish, Atlantic halibut, and GOM haddock. **Groundfish Cte recommends examining GB cod for rec fishery.** |
| 53 | Investigate discard mortality rates by gear type, area, season, depth, and bottom type for all seven skate species with an emphasis on overfished species (thorny and smooth skates). | Improve data for specifications setting. | Important (near term) | unknown | Skates | Skates, Smooth skate, Thorny skate | Fishery performance & monitoring | unknown | |

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| 54 | Improve estimates of red and silver hake discards from the northern shrimp fishery (if reopened). | Could be used to design selective gear or area/season management. | Strategic (future needs) | not begun | Small-mesh multispecies | Red hake, Silver hake | Bycatch | unknown | This priority was more important when northern red hake overfishing was occurring. |
| 55 | Identify gears and/or methods that would reduce bycatch and/or improve discard survival of unwanted catch of red hake discards in the small mesh fishery. | Could be used to design selective gear or area/season management. | Urgent (essential) | not begun | Small-mesh multispecies | Red hake | Bycatch | unknown | This priority is very important because southern red hake is overfished and the Council is initiating action, although research results are unlikely to be available in time. |
| 56 | Identify gears and/or methods that would reduce bycatch and/or improve discard survival of unwanted catch of silver hake discards in the large mesh fishery. | Could be used to design selective gear or area/season management. | Strategic (future needs) | not begun | Small-mesh multispecies, Northeast multispecies | Silver hake | Bycatch | unknown | Silver hake catches have been a fraction of the ACL, but we have reduced the southern whiting specifications by 38% due to declining biomass. |
| 57 | Identify gears and/or methods that would reduce bycatch and/or improve discard survival of unwanted catch, that may change the ratio of component catch species or improve size and species selectivity of gear for groundfish. | Minimize bycatch | Important (near term) | underway | Northeast multispecies | Groundfish | Bycatch | unknown | Many projects, e.g., a BREP 2018 award is creating a bycatch avoidance model for the rec fishery; Also small-mesh belly panel to reduce flatfish. **Four S-K projects on lobster trap bycatch and haddock trawls.** |
| 58 | Identify gears and/or methods that would reduce bycatch and/or improve discard survival of unwanted catch, that may change the ratio of component catch species or improve size and species selectivity of gear for monkfish, herring and skates. | | Important (near term) | underway | Monkfish, Atlantic herring, Skates | Monkfish, Atlantic herring, Skates | Bycatch | RSA | **A 2013 S-K project on reducing sturgeon bycatch in monkfish gillnet.** |
| ~~59~~ | ~~Investigate portside sampling & electronic monitoring as tools to monitor the A. herring fishery.~~ | ~~Improve monitoring~~ | ~~Important (near term)~~ | ~~underway~~ | ~~Atlantic herring~~ | ~~Atlantic herring~~ | ~~Bycatch~~ | ~~unknown~~ | ~~Pilot study recently funded for MWT fishery.~~ **Herring PDT recommends removing this. Enough work has been done to date. Peer review found that PS/EM was sufficient for catch cap monitoring.** |
| 60 | Collect data on discards of other clupeids in the A. herring and other fisheries; develop improvements to river herring/shad catch estimation methods in the A. herring fishery. | Improve monitoring and reduce bycatch. | Important (near term) | underway | Atlantic herring | River herring, Shad | Bycatch | TEWG | **The PS program is collecting catch and discard data in the A. herring fishery. This could be expanded to other fisheries, but that is outside the scope of the current herring PS program. The process was** ~~NMFS had a discard~~ peer reviewed **and deemed sufficient for catch cap monitoring with no changes recommended. to look at this. Herring PDT recommends this update.** |

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| 61 | Continue River Herring Bycatch Avoidance Program in the Atlantic herring fishery, and develop or evaluate innovative approaches for avoidance or monitoring river herring/shad catch in small mesh fisheries (e.g., environmental cues and bycatch avoidance, electronic monitoring and portside sampling). | | Important (near term) | underway | Atlantic herring | River herring, Shad | Bycatch | TEWG, RSA | Council maintained this as a research priority for 2019-2021 RSA. |
| 62 | Policy evaluation of bycatch management, incl. possible implementation of a 100% retention policy to minimize discarding and ecosystem effects. | | Important (near term) | unknown | Multiple | Multiple | Bycatch | unknown | |
| 63 | Research resulting in greater understanding of the relationships between managed species and the geological, biological, and physical features of the habitats they occupy; assess spatial variation in habitat use and fisheries productivity. **Specific suggestions for work: (1) Concurrent spatial data on recruitment, growth and reproduction of managed fish and shellfish across habitats and environmental settings. (2) Links between habitat characteristics and primary prey species, through a concurrent assessment of habitat characteristics and prey species occurrence. (3) Evaluate and quantify linkages between habitat types (e.g., space/time variation of shelter and prey) and the productivity of managed species.** | Research to help analyze **and evaluate the benefits of** spatial management alternatives for habitat. **This work could help refine EFH designations.** Ideally, these results will contain spatially-explicit data incl. species abundance at different life-history stages, measures of species condition (or survivorship, growth rate, or similar metric linked to variation in productivity across the landscape) and the characteristics of concurrently sampled habitat features, substrates and associated prey. | **Urgent (essential)** | unknown | Multiple | Multiple | Habitat | unknown | This is also an important priority for habitat management in an ecosystem plan. This priority is very general; Priorities #64-66 are related. The work should explicitly explain data limitations defining essential fish habitat, given the original sampling design and spatial and temporal scales of sampling. **Habitat Cte recommends merging #64-66 into this and changed the priority from "strategic" to "urgent," because it is really the cornerstone of habitat management.** |
| ~~64~~ | ~~Concurrent spatial data on recruitment, growth and reproduction of managed fish and shellfish across habitats and environmental settings.~~ | ~~Would improve our understanding of the linkages between habitat type and the attributes of habitat that enhance managed species production.~~ | ~~Strategic (future needs)~~ | ~~not begun, unknown~~ | ~~Multiple~~ | ~~Multiple~~ | ~~Habitat~~ | ~~unknown~~ | ~~This is an important priority for habitat management in an ecosystem plan. Often when the term "benthic" is mentioned, only epifauna are implied, but particularly in the GOM with it's large areas of soft bottom substrate (esp. mud). Should include infauna here. While infaunal surveys are very time consuming, without them, a big part of the benthic community structure is omitted, as well as possible fish food.~~ **Habitat Cte recommends merging into #63.** |

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| ~~65~~ | ~~Links between habitat characteristics and primary prey species, through a concurrent assessment of habitat characteristics and prey species occurrence.~~ | ~~Would improve understanding of the linkages between habitat type and the attributes of habitat that enhance managed species production.~~ | ~~Strategic (future needs)~~ | ~~unknown~~ | ~~Multiple~~ | ~~Multiple~~ | ~~Habitat~~ | ~~unknown~~ | ~~Related to #66. Should include infauna here.~~ Habitat Cte recommends merging into #63. |
| ~~66~~ | ~~Evaluate and quantify linkages between habitat types (e.g., space/time variation of shelter and prey) and the productivity of managed species.~~ | ~~This could help refine EFH designations to understand the relative benefits of EFH impact minimization alternatives, and possibly to inform reference point definitions.~~ | ~~Strategic (future needs)~~ | ~~unknown~~ | ~~Multiple~~ | ~~Multiple~~ | ~~Habitat~~ | ~~unknown~~ | ~~Very similar to #65.~~ Habitat Cte recommends merging into #63. |
| ~~67~~ | ~~Geological and biological sampling of the Gulf of Maine region to improve spatial resolution [of habitat distributions] and characterize temporal variability.~~ | ~~Some areas of the GOM are very sparsely sampled for benthic habitat characteristics. Would improve support for spatial management intended to target specific habitat types for protection.~~ | ~~Strategic (future needs)~~ | ~~unknown~~ | ~~Multiple~~ | ~~Multiple~~ | ~~Habitat~~ | ~~unknown~~ | ~~This is an important priority for habitat management in an ecosystem plan.~~ Habitat Cte recommends merging into #68. |
| 68 | Geological and biological sampling using acoustic, video, and grab sampling in the Gulf of Maine and Southern New England region to improve spatial resolution [of habitat distributions] and characterize temporal variability. Include targeted sampling of benthic community structure (infauna and epifauna) in representative substrate types (e.g., mud, sand, gravel, cobble, and boulder in high and low energy environments) across multiple environmental settings. | Would improve support for spatial management intended to target specific habitat types for protection. Some areas of the GOM are very sparsely sampled for benthic habitat characteristics. SNE includes habitat management areas of particular interest (i.e., Great South Channel HMA) as well as offshore wind development sites. | Important (near term) | underway | Multiple | Multiple | Habitat, Wind energy | unknown | This is an important priority for habitat management in an ecosystem plan. Acoustic mapping is underway in GOM for deep-sea corals (US/CAN collaboration using ROPOS platform). In addition to GOM, such mapping also being discussed in Great South Channel/Nantucket Shoals region. Data related to this priority exist in SNE region related to offshore wind projects but have not been provided to fisheries managers. Habitat Cte suggests adding GOM- and SNE-specific recommendations, clarifying the priority, changing the priority level from "strategic" to "important," and merging #67, 69, 70 into this. |
| ~~69~~ | ~~Studies that ground truth, via physical sampling, epibenthic fauna observed in video and still imagery based datasets.~~ | ~~Would help estimate biodiversity; this could be important in a deep-sea coral context as interactions between corals and other species can be quite specific.~~ | ~~Strategic (future needs)~~ | ~~underway~~ | ~~Multiple~~ | ~~Multiple~~ | ~~Habitat~~ | ~~unknown~~ | ~~This sort of work is being done for deep sea corals. Should include infauna here.~~ Habitat Cte recommends merging into #68. |
| ~~70~~ | ~~Acoustic surveys (e.g., multibeam, side scan sonar) to add to the growing number of seafloor habitat maps in the region, particularly in the Gulf of Maine.~~ | ~~Would facilitate development of spatial management approaches designed to encompass specific habitat types.~~ | ~~Strategic (future needs)~~ | ~~underway~~ | ~~Multiple~~ | ~~Multiple~~ | ~~Habitat~~ | ~~unknown~~ | ~~Also being discussed in Great South Channel/Nantucket Shoals region. Underway in GOM.~~ Habitat Cte recommends merging into #68. |

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| 71 | Studies that would inform assessments of the effects of fixed gears on seabed habitat components. | The extent of fixed gear movement along the seabed during setting, soaking, and hauling is unknown. Would support refinements to SASI/Fishing Effects model. Also important for deep-sea corals. | Strategic (future needs) | underway | Multiple | Multiple | Habitat | unknown | For example, Schweitzer & Stevens paper on trap gears. Consider impacts to coral and sponge habitats specifically, possibly using Jordan Basin as a study site. |
| 72 | Within a variety of habitat types, quantify the degree of seabed contact for fishing gears and their component parts, particularly groundfish trawls (e.g., chain vs. roller sweeps, modified ground cables (e.g. shortened, raised), semi-pelagic doors). **Better quantify gear dimensions (width) to more accurately estimate swept area.** | Would support refinements to the SASI/Fishing Effects model and facilitate the design of gear-restriction vs. closure area management approaches. | Strategic (future needs) | unknown | Northeast multispecies | Groundfish | Habitat | unknown | **SASI/Fishing Effects model has been updated recently (wrapping up in 2019) but did not tackle this issue. Habitat Cte recommends revising this.** |
| 73 | Refine estimates of benthic boundary shear stress at the seabed/water column interface and ground truth critical shear stress thresholds across seasons and depths (i.e., are seabed sediments stable/unstable at various levels of flow, as predicted by models, what are effects of variation in biological attributes that influence disturbance via shear stress). | Would support refinements to SASI/Fishing Effects model. When possible, use data from sensors deployed on the seabed to ground truth modeled estimates. | Strategic (future needs) | unknown | Multiple | Multiple | Habitat | unknown | Understanding this (i.e., sheer stress) might also be important for deep-sea coral habitat suitability modeling and perhaps other biological components of the benthos. |
| 74 | Targeted studies following the 2013-2015 Northeast region deep-sea coral research in the Gulf of Maine and in the offshore canyons and seamounts that focus on defining areas/habitat conditions that support coral and sponge "garden" habitats. Studies of growth, reproduction, population connectivity and **particularly the functional role as fish habitat** are needed. Develop more sophisticated, higher-resolution models that predict coral presence/absence or relative abundance, not just likelihood of occurrence or habitat suitability. | Would facilitate future revisions (boundary changes, or additions of new areas) to deep-sea coral management zones in the Gulf of Maine and canyon. | Strategic (future needs) | underway | Multiple | Multiple | Habitat | unknown | It would also be nice to do more general DSC surveys, so as to both ground truth/improve the habitat suitability model, and lessen our need for it. Would also give us a handle on DSC biodiversity, biogeography, and genetics (or "population connectivity"). During discussion of the Jordan Basin coral DHRA, the Council requested studies on the effects of mobile trawl gear. Potentially a separate topic. **Additional funding through the Deep-Sea Coral Research and Technology Program will be available for the northeast region in a few years; will likely lead to work on this priority. Habitat Cte recommended emphasizing research to understand the role of corals as fish habitat.** |
| ~~75~~ | ~~Studies of invasive organisms to understand their distribution and spread, and to evaluate impacts on habitats, ecosystems, and target species.~~ | ~~Invasive species could be considered when managing fisheries spatially, if fishing facilitates their spread, or if invasive species impact managed resources or habitat function.~~ | ~~Strategic (future needs)~~ | ~~unknown~~ | ~~Multiple~~ | ~~Multiple~~ | ~~Habitat~~ | ~~unknown~~ | **Habitat Cte recommends deleting. Work on Didemnum tunicates has largely concluded. This is an important issue, but doesn't rise to the level of priorities.** |

| clu | Title | Description, rationale, potential use | Priority | Status | FMP | Species | Broad categories | Cross-listing | Notes |
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| ~~76~~ | ~~Characterize habitats within scallop fishing grounds: identification of nursery and over-wintering habitats of species vulnerable to habitat alteration by scallop fishing.~~ | ~~Would facilitate development of or revisions to spatial management approaches for habitat protection.~~ | ~~Strategic (future needs)~~ | ~~underway~~ | ~~Sea scallop~~ | ~~Scallops~~ | ~~Habitat~~ | ~~unknown~~ | ~~Partially completed through OHA2.~~ Scallop Cte recommends merging this priority into #80. |
| ~~77~~ | ~~Experimental examination of gear impacts on seabed habitats in Northeast US waters that take effort, season, sedimentary character and biological community into account.~~ | ~~Sampling should follow an appropriate experimental design, such as before-after control impact (BACI). Pay attention to studies that replicate the broad scale impacts of commercial levels of fishing activity rather than single impact studies, and to monitoring long-term recovery of habitat features.~~ | ~~Important (near term)~~ | ~~underway~~ | ~~Multiple~~ | ~~Multiple~~ | ~~Habitat~~ | ~~unknown~~ | ~~Scott Gallagher's Closed Area II study of scallop dredge impacts is an example of this. See Priorities #78-80.~~ Scallop Cte recommends merging this priority into #81. |
| ~~78~~ | ~~Evaluate habitat recovery following impact with scallop dredges or trawls.~~ | ~~Would help develop or revise spatial management approaches for habitat protection.~~ | ~~Urgent (essential)~~ | ~~underway~~ | ~~Sea scallop~~ | ~~Scallops~~ | ~~Habitat~~ | ~~RSA~~ | ~~RSA has funded Scott Gallagher at WHOI to compete 3 years of BACI work in the EGB HAPC.~~ Scallop Cte recommends merging this priority into #81. Habitat Cte recmmonds broadening merged priority to include clam dredges. |
| ~~79~~ | ~~Examine fine scale fishing effort distributions in relation to fine scale habitat distribution.~~ | ~~Would help develop or revise spatial management approaches for habitat protection.~~ | ~~Urgent (essential)~~ | ~~underway~~ | ~~Sea scallop~~ | ~~Scallops~~ | ~~Habitat~~ | ~~RSA~~ | ~~RSA has funded Scott Gallagher at WHOI to compete 3 years of BACI work in the EGB HAPC.~~ Scallop Cte recommends merging this priority into #81. |
| 80 | Characterize and evaluate current and potential HMAs and HAPCs. | ~~Assess whether these areas are accomplishing their stated purposes; better define the complex ecosystem processes occurring in these areas.~~ Identify nursery and over-wintering habitats of species vulnerable to habitat alteration by fishing gear (e.g., scallop dredge). | Important (near term) | underway | Sea scallop | Scallops | Habitat | RSA | Scallop RSA has funded Scott Gallagher at WHOI to compete 3 years of BACI work in the EGB HAPC. Scallop Cte recommends merging #76 into #80; Habitat Cte agrees this is an important to urgent priority. |
| 81 | Evaluate habitat recovery following impact by fishing gear (e.g., scallop dredges or trawls and clam dredge), and long-term or chronic effects of fishing on marine resource productivity. | Would help develop or revise spatial management for habitat protection. This includes examining gear impacts on seabed habitats in Northeast US waters that take effort, season, sedimentary character and biological community into account. | Strategic (future needs) | unknown | Sea scallop | Scallops | Habitat | unknown | Scallop Cte recommends merging #77-79 into this priority. Habitat Cte recommends adding clam dredges. |
| 82 | Identify and evaluate methods to reduce the habitat impacts of scallop and clam dredge fishing, including studies that evaluate variability in dredge efficiency across habitats, times, areas. | Would support development of gear-restriction vs. closure area management approaches. | Strategic (future needs) | underway | Sea scallop | Scallops | Habitat | unknown | Habitat Cte recommends adding clam dredges. |

| clu | Title | Description, rationale, potential use | Priority | Status | FMP | Species | Broad categories | Cross-listing | Notes |
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| 83 | Monkfish tagging and telemetry studies that focus on basic life history and habitat use. | **Monkfish was proposed as a species to monitor to assess adverse and beneficial impacts of wind farm development in the MA and RI-MA WEAs.** | Strategic (future needs) | underway | Monkfish | Monkfish | Habitat, Wind energy | RSA | RSA has funded tagging work in recent years partly tied with age validation work. **Habitat Cte recommends clarifying the rationale.** |
| 84 | Research ecosystem operational advice: synthesize existing data, modelling, and meta-data analysis, incl. environmental variability and climate change; relationship between habitat and fishery resource productivity (incl. impact of fishing on functional value of habitat); trophic interactions and their implications; managing mix species fisheries; function and effectiveness of closed area management. | Information is needed to develop ecosystem management tools and approaches. | Important (near term) | underway | Multiple | Multiple | Ecosystems, Climate change | unknown | This integrates other habitat research priorities, including the importance and role of quality habitat on recruitment and juvenile productivity/survival. **A 2017 S-K project on "choke" species in a changing climate.** |
| 85 | Synthesize predator/prey information on A. herring and other forage fish, fill data gaps; investigate the role of forage fish in the Northwest Atlantic ecosystem and their importance for other managed species; assess the relative importance of herring vs. other forage as both prey and predator in the ecosystem (e.g., competition with right whales and juvenile cod for C. finmarchicus). | Information is needed to develop ecosystem management tools and approaches. | Important (near term) | underway | Atlantic herring | Atlantic herring | Ecosystems | unknown | Amendment 8 MSE and 2018 herring assessment looked at some of this but not all. For example, the food web model explored in MSE. |
| 86 | Evaluate potential resilience of managed species to climate change and ecosystem change by preservation of forage diversity. | Information is needed to develop ecosystem management tools and approaches. | Important (near term) | not begun | Multiple | Multiple | Ecosystems, Climate change | unknown | |
| 87 | Quantify predator/prey relationships that are important to the development of management strategy evaluations. | Information is needed to develop ecosystem management tools and approaches. | Important (near term) | not begun | Multiple | Multiple | Ecosystems | unknown | |
| 88 | Study trophic interactions of monkfish predation on other species and monkfish cannibalism; recognize the need to incorporate monkfish into prey assessments. | | Strategic (future needs) | unknown | Monkfish | Monkfish | Ecosystems | RSA | Can be combined with a broader issue under ecosystems research. |
| 89 | Investigate the influence of physical factors (incl. environmental changes) on shifts in the range and distribution of skate species. | Could improve understanding of why thorny skate is not rebuilding. | Important (near term) | underway | Skates | Skates | Ecosystems | unknown | Can be combined with a broader issue under ecosystems research. |
| 90 | Examine trophic interactions between skate species and other bottom species that occupy the same habitats. | | Strategic (future needs) | unknown | Skates | Skates | Ecosystems | unknown | Can be combined with a broader issue under ecosystems research. |
| 91 | Evaluate whether stock status of some species is increasing the rebuilding timeline of groundfish stocks. | Information is needed to develop ecosystem management tools and approaches. | Urgent (essential) | not begun | Northeast multispecies | Groundfish | Ecosystems | unknown | This is the complimentary factor of Priority #90. |

| clu | Title | Description, rationale, potential use | Priority | Status | FMP | Species | Broad categories | Cross-listing | Notes |
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| 92 | Investigate effectiveness of seasonal and year-round spatial management to achieve goals such as: improved yield, mortality reduction, spawning protection, bycatch avoidance/reduction, and ecosystem protection and improvement. | Information is needed to develop ecosystem management tools and approaches. | Strategic (future needs) | unknown | Multiple | Multiple | Ecosystems | unknown | |
| 93 | Monitor trends in non-target, ecosystem components. | Information is needed to develop ecosystem management tools and approaches. | Strategic (future needs) | unknown | Multiple | Multiple | Ecosystems | unknown | |
| 94 | Develop and enhance industry-based oceanographic data collection (e.g., physical, primary productivity, habitat metrics). | Information is needed to develop ecosystem management tools and approaches. | Strategic (future needs) | underway | Multiple | Multiple | Ecosystems | NEFSC | |
| 95 | Identify "hot spots" within the scallop fishery using data on observed take of sea turtles and other suitable information. | Need data on observed turtle interactions for other fisheries or fishery surveys in the area where the scallop fishery operates. | Strategic (future needs) | underway | Sea scallop | Scallops | Protected species | RSA | There has not been an observed take of a turtle in a scallop dredge in several years. CFF funded for many years to do sea turtle research. |
| 96 | Develop gear modifications or fishing techniques that may reduce or eliminate the threat of sea turtle interactions without unacceptable reductions in target retention in all fisheries. | | Strategic (future needs) | underway | Multiple | Multiple | Protected species | unknown | MADMF funded in 2016 with a NMFS Species Recovery Grant to study leatherback behavior off Cape Cod to help reduce entanglements. **CFF funded with 2015 S-K grant.** |
| ~~97~~ | ~~Investigate protected species bycatch/discards in the Atlantic herring fishery.~~ | | ~~Strategic (future needs)~~ | ~~underway~~ | ~~Atlantic herring~~ | ~~Atlantic herring~~ | ~~Protected species~~ | ~~unknown~~ | ~~Observers collect these data. EM has proven useful.~~ **Herring PDT recommends deleting. All observed bycatch of protected species are summarized in Council Actions. Amendment 8 most recently included detailed tables and figures by gear, area and year.** |
| 98 | Investigate the existence value of deep-sea corals and evaluate tradeoffs between coral protection and fishing. | | Strategic (future needs) | unknown | Multiple | Multiple | Human dimensions | unknown | |
| 99 | Evaluate barriers to marketing whiting and red hake, which could lower fishery discards and improve profitability. | Could help the industry to improve opportunities to market fish that might otherwise be discarded. | Strategic (future needs) | not begun | Small-mesh multispecies | Small-mesh multispecies | Human dimensions | unknown | |
| 100 | Continue to support data collection efforts for improved social and economic impact analyses, as well as cost-benefit analysis, for all fisheries, but particularly groundfish. | | Important (near term) | underway | Northeast multispecies, Multiple | Groundfish, Multiple | Human dimensions | unknown | **2013 and 2017 S-K projects on groundfish communities.** |
| 101 | Continue to support data collection efforts for improved social and economic impact analyses, as well as cost-benefit analysis, for all fisheries, but particularly Atlantic herring. | Some of this is done but need more fixed cost info. | Strategic (future needs) | underway | Atlantic herring, Multiple | Atlantic herring, Multiple | Human dimensions | unknown | Some work was done on this for the IFM amendment. |

| clu | Title | Description, rationale, potential use | Priority | Status | FMP | Species | Broad categories | Cross-listing | Notes |
|---|---|---|---|---|---|---|---|---|---|
| 102 | ~~For the Atlantic herring fishery: (1) Characterize the individuals, families, firms, organizations, and communities involved in the Atlantic herring fishery; (2) Identify capacity use and fixed costs of Atlantic herring vessels; (3) Characterize Atlantic herring stakeholders besides those of the commercial herring fishery (e.g., whale watching, tuna, groundfish, lobster fisheries); (4) Characterize Atlantic herring dealers and processors (e.g., dependence on herring, location, costs, earnings, employment); and (5) Characterize market dynamics (e.g., relationships between fishermen, buyers, and processors; and end users in bait and fresh markets).~~ | ~~Some of this is done but more info always useful. Amendment 8 did expand the description of other stakeholders in the Herring FMP, but there are data limitations.~~ | ~~Strategic (future needs)~~ | ~~underway~~ | ~~Atlantic herring~~ | ~~Atlantic herring~~ | ~~Human dimensions~~ | ~~unknown~~ | **Herring PDT recommends deleting. Many of these have been included in Amendment 8. Some data are still limited to get at everything, especially (2) and (5), but most of these have been evaluated to the extent practicable. The PDT supports development of a more holistic priority that would look at costs, fishing communities, and relationships between various users overall, not just specific to herring (see NEW priority).** |
| 103 | Improve quantification of economic impacts from restricted fishing in closed areas (e.g., develop spatially-explicit fleet behavior model). | | Strategic (future needs) | unknown | Multiple | Multiple | Human dimensions | unknown | |
| 104 | Evaluate the social and economic impacts and consequences of area rotation on the scallop fishery, including evaluation of potential distributional effects and impacts on other fisheries. | | Important (near term) | not begun | Sea scallop | Scallops | Human dimensions | RSA | 2019/2020 Scallop RSA priority to conduct MSE. Also related to 2018 priority of follow-up to OHA2. |
| **NEW** | **Research and development of fishery dependent data collection systems that support scallop management.** | **In-season, near real-time data collection at haul level to inform fishing (e.g., bycatch avoidance) and management.** | **Important (near term)** | **not begun** | **Sea scallop** | **Scallops** | **Bycatch, Fishery performance & monitoring** | | **Scallop Cte recommends adding this priority to improve fishing operations and more real-time management.** |
| **NEW** | **Impact of offshore wind development on scallop production.** | **Could include: impacts on scallop larval settlement, growth, reproduction, fishing opportunities, etc.** | **Urgent (essential)** | **not begun** | **Sea scallop** | **Scallops** | **Fisheries management, Population dynamics, Habitat, Wind energy** | **RSA** | **A 2019/2020 Scallop RSA priority. Scallop Cte recommends adding this priority due to uncertain impacts of offshore development on the fishery.** |
| **NEW** | **Evaluate the effects of noise (e.g., from pile driving, seismic testing, etc.) on behavior and reproductive success of managed fish and shellfish species.** | **Information is needed to assess impacts of offshore development on marine fishery resources, particularly offshore wind.** | **Urgent (essential)** | **unknown** | **Habitat** | **Multiple** | **Habitat, Wind energy** | **unknown** | **A 2019/2020 Scallop RSA priority. Habitat Cte recommends this.** |
| **NEW** | **Evaluate fishability of offshore windfarms, fishing displacement in response to offshore windfarms, and how this affects spatial management of fisheries.** | **Information is needed to allow the Council to accurately articulate concerns about these projects.** | **Urgent (essential)** | **unknown** | **Habitat** | **Multiple** | **Fishery performance & monitoring, Wind energy** | **unknown** | **Not sure if anyone is looking at this issue in a formal way. Habitat Cte recommends this.** |
| **NEW** | **Assess how changes in fisheries-independent surveys that cannot access wind farms for sampling will affect stock assessments and the impact of additional uncertainty in management advice.** | **Information is needed to plan for necessary changes in survey efforts so that adequate assessment of fishery resources can be maintained post-development.** | **Urgent (essential)** | **underway** | **Multiple** | **Multiple** | **Fishery performance & monitoring, Wind energy** | **unknown** | **NEFSC is discussing this issue. Habitat Cte recommends this.** |

| clu | Title | Description, rationale, potential use | Priority | Status | FMP | Species | Broad categories | Cross-listing | Notes |
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| NEW | Will specific changes to FMPs be able to mitigate impacts of wind farm placement on either fishermen or on resource areas (e.g., Demarcation Line adjustments, management/habitat boundary adjustments)? | Need to understand how fisheries management approaches and offshore wind development intersect, and how fisheries management could be adapted to react to offshore wind development. | Important (near term) | unknown | Multiple | Multiple | Ecosystems, Habitat, Fisheries management, Wind energy | unknown | Not sure if anyone is looking at this issue in a formal way. Habitat Cte recommends this. |
| NEW | Better understand species responses to climate change (e.g. distribution changes) and how these changes may affect fisheries. | Information is needed to build resiliency into FMPs, and to account for possible new interactions between fisheries and fish species. | Urgent (essential) | underway | Multiple | Multiple | Ecosystems, Habitat, Climate change | unknown | Climate vulnerability assessment work, Rutgers modeling work. Habitat Cte recommends this. |
| NEW | Develop habitat suitability modeling capability for purpose of exploring climate effects on fisheries stock distribution and abundance. | Habitat suitability modeling is and has already been used to predict deep-sea coral distributions in the NE. Can adapt the models to support other habitat research such as predicting habitat effects related to aquaculture expansion and potential offshore wind energy areas. Monthly modeling could predict when and where seasonal migrations (versus summer residence) may be affected by climate change and when and where interaction with offshore wind construction activities and permanent habitat alterations may occur so as to better facilitate mitigation plans. Work can support the Northeast Regional Habitat Assessment including the Nearshore, Offshore & Blueprint tasks. The higher resolution of these models is well suited for better delineation of EFH. | Important (near term) | underway | Multiple | Multiple | Ecosystems, Habitat, Wind energy, Climate change | unknown | Work is underway at NMFS Sandy Hook Lab for the mid-Atlantic region. To date three habitat suitability models (i.e., Species Distribution Models including Generalized Additive Model, Random Forest, and Maximum Entropy) have been compared for their ability to accurately predict species distributions. Efforts are underway to update the climatology database and to integrate the latest high-resolution global climate model acquired from NOAA's Geophysical Fluid Dynamics Lab. The new models are being used for current and historic habitat suitability predictions in place of previous climate models to produce improved species response curves. University of Maine is modeling sea scallop and lobster distributions. Habitat Cte recommends this. |
| NEW | For all fisheries: (1) Characterize the vessels, firms, organizations, and communities involved; (2) Identify capacity use and fixed costs; (3) Characterize stakeholders besides directed fishery participants; (4) Characterize dealers and processors (e.g., dependence on fishery, location, costs, earnings, employment); and (5) Characterize market dynamics (e.g., relationships between fishermen, buyers, and processors; and end users). | For use in Council actions: describing the potentially impacted human communities and potential impacts. | Important (near term) | underway | Multiple | Multiple | Human dimensions | unknown | Herring PDT recommends deleting #102 and adding one more general. |
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