

No.	Title	Description, rationale, potential use	Rating	Status	FMP	Species	Broad categories	Cross-listing	Notes
10	Further investigation into understanding the recent low recruitment of Atlantic herring and possible drivers.	Better understand the implications for the herring population (e.g., environmental, fertilization rates, egg	Urgent (essential)	unknown	Atlantic herring	Atlantic herring	Population dynamics	unknown	Priority added in 2020.
12	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	A TEWG synthesis is being prepared. NEFSC staff involved in shad assessment.
16	Further investigations into stock definition, stock movements, mixing, and migration through tagging studies, DNA markers, morphological characteristics and other means for groundfish	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& GMRI (3 S-K projects); contributions to the Atlantic Cod Stock Structure Working
18	Document fishermen's ecological knowledge for red hake.	As a low value species, landings and targeted fishing for red hake is	Strategic (future needs)	underway	Small-mesh multispecies	Red hake	Population dynamics,	assessment	Priority added in 2020. This has been identified as a medium priority by the
21	Expand the body of knowledge on scallops in the Gulf of Maine bioregion.	Understanding growth, reproduction, natural mortality in GOM would address	Strategic (future needs)	unknown	Sea scallop	Scallops	Population dynamics	unknown	Priority added in 2020. Was a 2020/2021 Scallop RSA priority.
23	Investigate age, growth, maturity, and fecundity of managed skate species (esp. thorny and rosette).	Thorny skate life history would help address rebuilding issues, but data on rosette is particularly lacking.	Important (near term)	underway	Skates	Skates	Population dynamics	assessment	Recent literature review may help. James (2018, 2019) found sexual maturation can lead to decreased
44	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)	underway	Skates	Skates	Fisheries management	assessment	Reporting skate species landed has been required since FW 2, but it can be very difficult, particularly for juvenile skates. There are known data errors (e.g., landings of "smooth skates"
47	Investigate monkfish discard mortality rate estimates across gear types.	Improve stock assessments	Strategic (future needs)	underway	Monkfish	Monkfish	Fisheries management	unknown	The assumed rate is currently set at 100%. Outside of NEFSC expertise. RSA
50	Research to address potential implications of spat collection, seeding and relocation of scallops for enhancement purposes in light of below average recruitment, anomalous slow growth, and unknown impacts of diseases and parasites.		Important (near term)	underway	Sea scallop	Scallops	Fisheries management	RSA	Is a 2021/2022 Scallop RSA priority; see RSA announcement for details. CFF has been funded to do some of this work. Outside of NEFSC expertise.
54	Identify spawning components on a spatial and temporal scale for Atlantic herring and define whether localized depletion has negative impacts on spawning capacity.	Progress on acoustics and stock mixing herring research priorities would help with this priority.	Important (near term)	unknown	Atlantic herring	Atlantic herring	Fishery performance & monitoring	unknown	NEFSC contributed data to related GMRI study.
58	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	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,
64	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, monkfish, herring and skates.	Minimize bycatch	Urgent (essential)	underway	Northeast multispecies, Monkfish, Atlantic herring, Skates	Groundfish, Monkfish, Atlantic herring, Skates	Bycatch, Gear	RSA	Many projects, e.g., BREP 2018 award creating bycatch avoidance model for rec fishery; small-mesh belly panel to reduce flatfish. Four S-K projects on lobster trap bycatch & haddock trawls. 2013 S-K project on reducing sturgeon
65	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	Bycatch	unknown	MADMF is interested in additional experimental fisheries to evaluate gear selectivity. No NEFSC work other than

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78	All fisheries: (1) the vessels, firms, organizations, and communities involved; (2) capacity use and fixed costs; (3) stakeholders besides directed fishery participants; (4) dealers and processors (e.g., dependence on fishery, location, costs, earnings, employment); and (5) 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.	Urgent (essential)	underway	Multiple	Multiple	Human dimensions	unknown	Priority added in 2019. See also the needs identified in the Groundfish Catch Share Program Review (Swasey et al., 2020). Topic came up in the 2019 interviews of Council members (Williams et al 2020). Some work underway by NEFSC.
83	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 Fishing Effects (SASI) model, specifically the discrimination of impacts between different types of trawls, and facilitate the design of gear-restriction vs. closure area management approaches.	Strategic (future needs)	unknown	Northeast multispecies	Groundfish	Habitat	unknown	Fishing Effects (SASI) model was updated in 2018-2019 but did not tackle this issue. Outside of NEFSC expertise.
85	Evaluate habitat recovery following impact by fishing gear (scallop dredges or trawls, clam dredge, fixed gears), 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 account for effort, season,	Strategic (future needs)	underway	Sea scallop	Scallops	Habitat	unknown	Re corals, potential to document trawling impacts using existing database of images and/or use these to document baseline conditions in new DSC closures. Estimating effects on
96	Ichthyoplankton monitoring	Data is needed to assess changes in	Important	underway	Multiple	Multiple	Ecosystems,	unknown	Priority added in 2020. Failures to
98	Investigate effectiveness of seasonal and year-round spatial management (e.g., sms exemption areas and seasons) to achieve goals such as: improved yield, mortality reduction, spawning protection, bycatch avoidance/reduction, and ecosystem protection and improvement.	Investigate potential means to improve access to healthy stocks while minimizing impacts to stocks needing conservation. Information is needed to develop ecosystem management tools and approaches. A MSE-like study may	Important (near term)	unknown, underway	Multiple, Northeast multispecies, Small-mesh multispecies	Multiple, Groundfish, Small-mesh multispecies	Ecosystems, Fisheries management	unknown	SMAST finished EFP on this, SMS PDT has not seen results yet. It is related to the MADMF study in SMA 1, presented to NEFMC RSC, in which there was no evidence of reduced discard rates by opening the season early. Bycatch was
100	Develop and enhance industry-based oceanographic data collection (e.g., physical, primary productivity, habitat metrics, including seasonal variation in these metrics).	Information is needed to develop ecosystem management tools and approaches.	Strategic (future needs)	underway	Multiple	Multiple	Ecosystems	NEFSC	Possible application for industry data trust (RODA project). Study Fleet and eMOLT programs collecting some data.
101	Better understand species responses to climate change (e.g. distribution, productivity, recruitment) and how these changes may affect fisheries (e.g., South Atlantic stocks moving north).	Information is needed to build resiliency into FMPs and surveys, and to account for possible new interactions between fisheries and fish species. It could potentially explain why some species are	Urgent (essential)	underway	Multiple	Multiple	Ecosystems, Habitat, Climate change, Human dimensions	unknown	Priority added in 2019. Ongoing climate vulnerability assessment work, Rutgers modeling work. NHRA linkage. NEFSC work in Northeast groundfish and Climate Program Office programs. This
104	Evaluate the fishability of offshore windfarms and aquaculture cites (fixed or floating), related fishing displacement and how this affects spatial management of fisheries.	Information is needed to allow the Council to accurately articulate concerns about these projects.	Urgent (essential)	underway	Habitat	Multiple	Wind energy, Fishery performance & monitoring,	unknown	Priority added in 2019. Ongoing work: RODA project, ASMFC pilot on lobster VMS. NEFSC planning work.
105	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	Important (near term)	underway	Multiple	Multiple	Ecosystems, Habitat, Wind energy, Climate	unknown	Priority added in 2019. Work underway at NMFS Sandy Hook Lab for the Mid-Atlantic. To date, 3 habitat suitability
106	Evaluate impact of offshore wind development and aquaculture (e.g., the effects of noise from pile driving, seismic testing) on behavior and reproductive success of managed fish and shellfish species (e.g., scallops).	Information is needed to assess impacts of offshore development on marine fishery resources. Could include: impacts on scallop larval settlement, growth, reproduction, fishing opportunities, etc.	Urgent (essential)	underway	Habitat, Sea scallop	Multiple, Scallops	Wind energy, Habitat, Population dynamics, Fisheries	unknown	Priority added in 2019. Was 2019 Scallop RSA priority. NEFSC work (BOEM-funded): Behavioral effects of sound sources from offshore renewable energy construction on the