

Council Research Priorities Process¹

June 2021

In 2011, the SSC and Council established procedures for conducting “multi-year research priorities for fisheries, fisheries interactions, habitats, and other areas of research that are necessary for management purposes” in accordance with the Magnuson-Stevens Act (MSA). At that time, the North Pacific Fishery Management Council established that research priorities were to be annually reviewed at the Council’s June meeting. Prior to Council review, the Council’s Plan Teams (GOA and BSAI Groundfish, Crab, and Scallop) would review existing research priorities and make recommendations for modifications or additions to the list, as needed. From 2011 to 2018, the Council updated research priorities annually following the June meeting. In 2018, a new process for review of the research priorities was executed. This change stems from a proposal from a working group of SSC and Council members that was reviewed by the SSC in April 2018. In this proposal, the annual curation of the database would be conducted as normal, with consideration given to the Plan Team’s suggested changes. In addition, the subgroup requested that the SSC develop a Top 10 list of research priorities for 2018 from the priorities identified as Urgent or Important. This top priority list would be developed from a combination of sources. First, the Plan Teams would identify three to five top priorities relevant to their particular team that would be candidates for the top priority list. Second, the SSC would additionally consider any priorities not reviewed by any Plan Team, including those relevant to halibut, marine mammals, seabirds, and social science topics. The intent of this top priority list was to both reduce the review burden on the Council and to improve communication of these highly relevant priorities to external funding sources and the general public. In February 2019, the Council moved review of research priorities from an annual to triennial schedule. This change recognizes that the MSA does not require annual review and reflects the Council’s desire to streamline the overall review process.

The Council’s research priorities consist of a wide range of science-based needs and interests that support or improve the Council’s ability to provide stewardship over marine resources offshore Alaska and provide for the sustained participation of communities substantially engaged in or dependent on federally managed fisheries. A primary purpose of the NPFMC research priorities is identifying to agencies and funding partners which projects are considered to be most needed to inform the NPFMC management process. Specific research topics are organized online through a publicly accessible database that can be queried for changes in research status. It can also be downloaded completely for detailed information about all of the Council’s research needs.

Research topics are ranked through four priority categories: *Critical ongoing monitoring*, *Urgent, Important (near term)*, and *Strategic (future needs)*. These priority categories have [specific definitions](#) that emphasize correspondence of research to the Council’s time horizon of management concerns. Under the revised triennial schedule, the SSC and Council continue to develop and review a “Top 10” list of research priorities to highlight the most pressing research needed to inform the NPFMC management process. In February 2020, the SSC held a workshop to discuss research priorities. This workshop specifically focused on *Critical Ongoing Monitoring* and *Strategic* research. After this review, it became clear that the existing collection of research topics contained in the database ranged widely in the level of detail and specificity and a subgroup was formed to address potential streamlining of the process. While the SSC completed the review of *Critical Ongoing Monitoring* priorities, a review of *Strategic* research priorities was not

¹ This draft document was developed by the SSC’s Research Priorities Subgroup (Dana Hanselman [lead], Anne Hollowed, Sherri Dressel, Mike Downs, George Hunt) for SSC review at the June 2021 SSC meeting. An SSC member’s suggestion for an “Alternative Approach” is provided following the Subgroup draft.

All subsequent footnotes are highlighted and comprise comments that SSC members provided in their review of this draft in preparation for the SSC discussion at the June meeting.

completed at that time and will be addressed at the June 2021 meeting through the narrative summary in this report (see *Strategic Research*) and curation of *Strategic* priorities during the June 2021 meeting.

The SSC subgroup comprised to lead the Research Priorities discussion for the April 2021 SSC meeting provided a number of recommendations that were reviewed, addressed and applied for the triennial review that occurred at the April 2021 Council meeting. The following summarizes the SSC's recommendations on the review process for the next triennial review in 2024.

1. Procedure for review of each research category

1.1. Critical, ongoing monitoring research

Research priorities designated as *Critical Ongoing Monitoring* are the highest priority level for the North Pacific Fishery Management Council. These priorities create and maintain indispensable data that substantially contribute to our understanding and management of fish populations, fisheries, and the communities engaged in or dependent upon those fisheries. Discontinuation or diminishment of the research that provides these datasets would leave a significant gap in the science needed to support sustainable and successful fisheries management in the North Pacific. The North Pacific Fishery Management Council and its Scientific and Statistical Committee continue to provide the utmost support for these priorities. The SSC recommends retaining this [description](#) of *Critical Ongoing Monitoring* research on their website.

Going forward, the SSC recommends not highlighting and reviewing *Critical Ongoing Monitoring* research unless the SSC receives a proposal to move a research priority into this category or to remove research from this category. The SSC views these categories as the most important science products produced by the various agencies and partners for scientific management of fisheries. The SSC expects these research needs to persist indefinitely. The SSC would like an opportunity to comment if any of these activities were to be considered for discontinuation. While there are currently 17 individual priorities that the SSC categorizes under this heading, they fit broadly in four categories. The SSC recommends adding a *Critical Ongoing Monitoring* priority in the database describing Fishery monitoring and catch accounting, as the SSC considers this to be a fifth *Critical Ongoing Monitoring* category. The five category descriptions follow.

1.1.1. Fishery Monitoring and Catch Accounting

In-season catch monitoring is a vital element of the NPFMC sustainable and equitable management portfolio. Critical data collections include: a) the amount, distribution, species composition, size, age, maturity and genetics of both the targeted catch and PSC catch (including genetics for chum and Chinook salmon); b) seabird catch; and c) marine mammal encounters and mortalities. The SSC proposes to add this as a *Critical Ongoing Monitoring* priority as fishery-dependent monitoring is an ongoing need and is considered among the highest priority research activities, contributing to assessment of commercial groundfish, crab, and scallop fisheries of Alaska. These activities ensure the NPFMC has the basis for completing stock assessments in compliance with NS-1, NS-2, NS-3 and NS-9.

1.1.1.1. Groundfish, crab and scallop surveys

Regularly conducted surveys by federal and state agencies provide baseline distribution, abundance, stock structure and life history data that form the foundation for stock assessments and the development of ecosystem approaches to management. The scope of these surveys are broad including the GOA, AI, NBS and EBS. Critical elements of this theme include estimates of abundance, age, length, genetics and maturity data. Although an ongoing need, these surveys are among the highest priority research activities, contributing to assessment of commercial groundfish, crab, and scallop fisheries of Alaska. These surveys ensure the NPFMC has the basis for completing stock assessments in compliance with NS-1, NS-2, NS-3 and NS-9.

1.1.1.2. Ecosystem, oceanographic and protected resource time series

Federal, tribal and state agencies maintain time series of surveys and moorings that collect core biological and oceanographic data. Collections under this theme include but are not limited to biophysical data from

moorings, diet data, zooplankton, beach seine surveys and age-0 fish surveys. These are a necessary part of the survey portfolio to support integrated ecosystem assessment under rapidly changing environmental conditions. Marine mammal and seabird surveys need to be routinely conducted to assess spatial changes, vital rates, and interactions with fisheries. These surveys provide the basis for the NPFMCs responsibilities regarding the Marine Mammal Protection Act and the Endangered Species Act as well as adherence to existing recovery plans. Recognizing the potential scope of this category, the SSC recognizes that prioritization within this category is needed to elevate the importance of ecosystem surveys that have the greatest potential to influence management decisions.

1.1.1.3. Ecosystem Indicators

Maintenance of ecosystem and environmental indicators derived from data collected on surveys, moorings and satellites and from modeled sources (e.g., high resolution ocean models) in the North Pacific provide context for interpretation of changes in the distribution, production, and trends of managed species as well the basis for interpreting and forecasting encounter rates with prohibited species and other incidental species. Indicators such as temperature, currents, predator/prey dynamics, and pH will be needed both to advise current tactical science decisions and conduct long term strategic planning. Continued monitoring of these indicators through the Ecosystem Status Reports and Ecosystem and Socioeconomic Profiles and research toward incorporating these data into assessments is highly encouraged. As noted above, the SSC recognizes that prioritization within this category is needed to elevate the importance of ecosystem indicators that have the greatest potential to influence management decisions.

1.1.1.4. Fishery performance, socio-economic analyses, and human dimensions

The SSC needs research on data collected from the fisheries, the communities they affect, and how to incorporate local knowledge (LK), traditional knowledge (TK), and subsistence information into the management process. This is needed to better assess impacts of management decisions on stakeholders. The SSC particularly is interested in monitoring time series data on the community engagement in and dependence on federally managed commercial fisheries, linkages between commercial and subsistence fisheries, policy effects on communities, and understanding fishery performance as it relates to population dynamics.

2. Strategic research²

The North Pacific Fisheries Management Council has a long history of advancing proactive planning to prepare for analytical advancements in sampling and modeling as well as aligning the Council's goals and objectives with national and global policy changes. The following narrative identifies a suite of key *Strategic* research activities that are consistent with the evolving landscape of fisheries management in the Gulf of Alaska, Bering Sea Aleutian Islands, and the high Arctic. During each triennial review, the subgroup recommends that the SSC review additions, deletions, and changes to *Strategic* priorities as recommended by the Plan Teams and edit these changes as necessary. The SSC should then revise the following narrative, if necessary, based on the changes made. The database in 2021 has 33 priorities listed as *Strategic*. These 33 priorities, while diverse, can be grouped into four broad categories.

2.1. Climate and ocean change

The rapidly changing climate and environmental conditions in the North Pacific demand the development³ of tools and strategies to prepare and respond to both expected and unexpected environmental change. Priorities in this category are almost all *underway* or *partially underway*. Development of data

² **SSC member comment:** This is a placeholder comment so I don't forget, but it may be addressed further on in document: If we (SSC) are truly committed to Strategic (ie longer-time scale vision), then we should be promoting some things in this category into the "top ten" (or similar) on a regular basis; if we aren't doing it, who will?

³ **SSC member comment:** Another "random" thought/question (not tied to this section: While we are only reviewing research priorities every three years, do we (or should we if we don't) have an annual update on who is doing what research for the urgent or top ten list? Seems like we would like to know that progress is being made or not.

streams and models that can inform or predict changes in the abundance and distribution of managed stocks are of utmost importance. Additionally, ensuring that our harvest control rules and regulations can be climate adaptive is critical.

This research category supports the work to identify and map climate and environment change drivers and their likely response within fishery management, and specifically work on management options that provide a management response. Research and planning efforts currently underway include: the Climate Change Taskforce; NMFS Climate Science Strategy Regional Action Plans for the EBS and GOA; NOAA's Climate Program Office Modeling, Analysis, Predictions and Projections (MAPP) and Coastal and Ocean Climate Applications (COCA) research projects in the GOA and EBS; and the North Pacific Research Board Arctic IERP. Collectively these research teams are expected to develop climate informed decision support tools that will support groundfish and crab specifications through contributions to risk tables, and predictive tools to evaluate the potential risks and tradeoffs of different management responses related to potential scenarios.

Ocean acidification, similar to climate change, will require strategic research on what stocks will be the most affected, and developing tools to test and respond to those effects. Research is underway to answer some of these questions for specific species, but the more complicated research goal is to understand how those effects ripple out through the ecosystem. Similarly, the effects of anthropogenic pollutants (e.g., microplastics) on the ecosystem is a project listed that has yet to be started.

2.2. Baseline research

Priorities in this category are longer term priorities to help inform fundamental stock assessment processes. Several priorities propose using genetics to better define stock structure for groundfish and crabs. Collection of additional maturity data for managed species will greatly improve the estimates of stock status of some stocks that have few or no maturity estimates and potentially advance stocks up the tier system. Development of new stock assessment models for some stocks (e.g., scallops) is another project that will take long-term investment. Continued development of advanced and more effective stock assessment methods (e.g., NOAA's nascent Fisheries Integrated Modeling System) will be important for implementation of climate-linked management.

2.3. Marine mammals

The priorities related to marine mammals include long-term goals like developing stock assessment models, and management strategy evaluations for Steller sea lions are mostly listed as *No action* and are viewed as important research for long term planning.

2.4. Fishery performance, socio-economic analyses, and human dimensions

Priorities in this category for the most part have not been started and the prioritization of these projects will be informed by the relatively new Social Science Planning Team (SSPT) processes. In the economics realm, these include databases of product inventories and non-market valuation of ecosystem services.⁴ In the multidisciplinary social sciences realm, in the near future it is anticipated that these will include LK/TK/subsistence information access, development, and application efforts and case studies of fishery and community participation sustainability issues.

3. Urgent research

Urgent research is essential for compliance with federal requirements, including National Standards, or that has been identified by management as necessary to aid decision-making. It is expected that a short-term project (2-3 year time frame) would meet the information need and that postponement would have a significant impact on management. During each triennial review, the subgroup recommends that the SSC

⁴ **SSC member comment:** If these have been lingering for a decade are they really a priority? Not that they shouldn't be; how do we promote action on these and a timeline to getting them jumpstarted?

review additions, deletions, and changes to *Urgent* priorities as recommended by the Plan Teams and edit these changes as necessary. *Urgent* priorities represent the primary category the SSC would focus on for potential⁵ inclusion in the Top 10 list. Because the Plan Teams and SSC have already reviewed all of the priorities in the database, the subgroup recommended that the SSC should focus on new *Urgent* priorities and priorities that have been previously identified as *Urgent* but have not been started as additional candidates for the Top 10 list.

4. Important research

During each triennial review, the subgroup recommends that the SSC review additions, deletions, and changes to *Important* priorities as recommended by the Plan Teams and edit these changes as necessary. While research priorities that the SSC has previously reviewed and classified as *Important* are unlikely to be included in a Top 10 list⁶, new priorities emerging from the Plan Teams might be considered for the Top 10 list.

5. Roles of Plan Teams, Social Science Planning Team, and FEP

5.1. Groundfish, Crab, and Scallop Plan Teams

During each triennial review, members of the Plan Teams should review *Critical Ongoing Monitoring, Strategic, Urgent, and Important* database priorities and recommend additions, deletions, and edits as appropriate. In addition, each should recommend their top 3-5 priorities for consideration in the triennial Top 10 list.

5.2. Social Science Planning Team

A substantial proportion of the Top 10 list in both 2018 and 2021 were related to human dimensions, economics and socio-economics. The SSPT thus far has not been separately recommending new research priorities so these priorities have emerged primarily from SSC members. However, as the SSPT matures and data gaps are identified, the SSC would appreciate if the SSPT would review and forward research priorities related to socioeconomic and human dimensions research for the next triennial review, as well as identify their top 3-5 priorities for consideration in the Top 10 list.

5.3. Bering Sea Fishery Ecosystem Plan

The Bering Sea Fishery Ecosystem Plan (FEP) has its own list of research priorities and the SSC requests that the FEP forward research priorities on a triennial basis and identify 3-5 priorities for consideration in the Top 10 list. FEP priorities by the nature of the Plan tend to be long-term, *Strategic* priorities. Unless *Urgent* priorities are identified, FEP priorities will be added to the database as *Strategic*.

5.4. On-ramps

There are multiple on-ramps for the public to submit research priorities for consideration to the database and to the Top 10 list. The SSC will review new research priorities forwarded by the Groundfish, Crab, Scallop Plan Teams, and Social Science Planning Team. In addition, the SSC would welcome Council staff to provide on-ramps for other groups to forward their priorities such as the Alaska Scientific Review Group for marine mammals, as well as a framework for stakeholders to propose research priorities that do not fit under the Plan or Planning Teams. For instance, the FEP task forces may be possible on-ramp. The SSC benefits greatly from the knowledge, discernment, and prioritization of priorities that occurs during the Plan Teams, SSPT, and potential other groups, so asks that on-ramps to these groups be the primary source of new research priority and “Top 10” recommendations.

⁵ **SSC member comment:** Seems like if they are determined to be "urgent" and the timeline is 2-3 years, then we should delete "potential" and just automatically put them on the top ten list.

⁶ **SSC member comment:** Why? or Why not? We need to discuss what should be included in the top 10. Should all levels be able to be part of the top ten?

6. Research Top 10

The SSC believes that an effective way to highlight the most pressing research needs is to produce a “Top 10” list. At each triennial review, the starting point of the Top 10 should be the previous Top 10 list and the SSC will evaluate whether they should remain on the Top 10 or be replaced by new priorities proposed by the Plan Teams and other bodies, or whether existing research priorities should be elevated to the “Top 10” list. For existing priorities, the subgroup recommended that the SSC should focus primarily on research identified by the Plan Teams and SSC as *Urgent* (2-3 year time frame), but is either *no action* or *partially underway*. Partially underway priorities may represent priorities that have started (e.g., a pilot project) but are in need of further funding to fully achieve. The SSC also will include a “year-added” field on the Top 10 list so that it is known how long a priority has remained on the list if there is rollover from previous reviews.

7. Process

The move to triennial review has reduced the total workload involved in updating Council research priorities, but further efficiency can be achieved by having the SSC focus on changes to research priorities that are developed and recommended by an SSC subgroup well in advance of the SSC review meeting. The SSC chairs will, therefore, appoint a subgroup of SSC members representing a wide range of expertise to prepare for the triennial review. The following processes and deliverables are suggested to prepare for triennial review cycles.

In advance of the Council meeting at which research priorities will be approved:

1. In the year before the triennial review:
 - Council staff coordinate review of research priorities by FMP Plan Teams, BSFEP Team, SSPT.⁷ This includes updating the following information:
 - i. research status,
 - ii. priority ranking,
 - iii. changes to titles and descriptions,
 - iv. new priorities,
 - v. completed priorities and report availability,
 - vi. consolidations,
 - vii. deletions,
 - viii. recommendations for Top 10,
 - ix. any other project-specific comments, as possible.
 - Council staff review non-Plan Team on-ramps⁸ where research ideas for topics not generally subject to Plan Team review are identified (e.g., marine mammals, seabirds, salmon). Presentations to the SSC and Council occur several times a year within these subject areas. The presenters and other contributors can be contacted for suggestions on research priorities, and often include suggestions for research as a part of their presentations. Committee meetings can also be a source of research priority suggestions.

⁷ **SSC member comment:** Earlier there is mention of other potential (e.g., Industry groups) but they are not listed here. I would suggest that the SSC and the Council have a time before the actual meeting to be able to review/submit their own priorities, just as PTs do. Then the SSC has all the priorities and doesn't get caught up with creating new ones "on the fly" when we should just be picking the top ten. If these non PT groups are wanted to be able to provide input there needs to be a mention of it now. Or we just focus on PTs being able to review/submit priorities and these other entities must work through the PTs (SSC and council included)..

⁸ **SSC member reply:** This is getting "messy" I might suggest we keep this "simple". The onramps will be all plan teams, the AP, the SSC, and the Council. And as it says in the note below any/all public generated topics can come through any of these. Then we just make sure if folks want to provide input they show up to any of these.

Staff reply: I see your point. This is responsive to a recommendation from the April SSC report (3rd bullet under "additional recommendations" in D7). The SSC has been solely responsible for reviewing /tracking projects focused on protected resources and wanted additional input. No plan teams review that type of research and the subgroup wanted a review step for it prior to SSC review.

- Recommendations on research provided by members of the public to Council advisory groups (Plan Teams, Committees, etc.⁹) should be considered and responded to at the meeting within the group's operating protocols. If the advisory group agrees with a research recommendation from the public, it should be communicated as one of that group's recommendations to the SSC. If the group does not adopt the recommendation, the member of the public should be advised of the opportunity to make their recommendation during public testimony to the SSC or Council.
- Council will review and approve a 3-year outlook of emerging management issues to be used in characterizing the relevance of research topics to Council needs
- 2. At least 2 meetings before, select SSC members for the research priorities subgroup based on area of expertise
 - Divide/distribute among SSC subgroup members
 - i. the previous "top-ten" research priority list,
 - ii. recommended additions, deletions, and changes from Plan Teams and others
 - iii. Council-approved 3-year outlook of emerging management issues
 - Discuss tasking among subgroup members
 - Establish deliverables for subsequent subgroup meetings
- 3. At least 1 meeting before, convene subgroup to review
 - Subgroup member recommendations for responding to the changes suggested by the Plan Teams and others
 - Draft Top 10 list **including rationale** for review/approval at meeting
 - Relevance of recommendations to the Council's 3-year outlook of emerging management issues
 - Draft summary statements, statistics for overall list
 - Any other draft recommendations

At the meeting

1. Review staff report:
 - a. Present Council research priorities from the last triennial review, with an overview of any changes the Council made from the SSC recommendation, and why
 - b. Brief overview of the additions, deletions, and changes recommended by Plan Teams and other bodies¹⁰
2. Review subgroup report, and revise/approve as appropriate:
 - a. Top 10 list, include a rationale for why those are Top 10
 - b. Subgroup's recommended revisions to the *Critical Ongoing Monitoring* summary based on any priority additions or deletions, as needed
 - c. Subgroup's recommended revisions to the *Strategic* summary narrative based on any priority additions or deletions, as needed
 - d. Subgroup's recommended changes to the database as necessary
 - e. Consider revisions or improvements to the SSC research priority review process¹¹ (at a later meeting)

⁹ **SSC member comment:** FMP Plan Teams, BSFEP Team, SSPT, and Ecosystem Committee

¹⁰ **SSC member comment:** I think it would be much more efficient to have each Chair get 5 minutes to present their "case" of why their priorities should be on the top ten list. Then we get them all together and it would be much easier for us to then prioritize.

¹¹ **SSC member comment:** It is difficult to set research priorities and evaluate the process at the same time. Would reviewing how things went and suggesting revisions to this process better be done at the following SSC meeting?

SSC Member Suggestion for Alternative Approach to Research Priorities

This alternative approach to research priorities is designed to focus our evaluation of research activities on those that will have the largest impact to the Council's mission of managing federal fisheries consistent with the MSA, and where our emphasis on them will have the greatest impact in terms of attracting or guiding prioritization or directing funding by NOAA, Sea Grant, NPRB and other stakeholders. This is where the Council's distinctive voice and perspective can have the most impact (without being a funder), with a level of effort from the Council and SSC that is commensurate with that impact

Suggested Elements of the Process

- Maintain only a Top 10 (or so) list
 - This will focus us on the priorities that are of greatest significance, and give more weight and urgency to our voice
 - We will need to develop standards of scope so we don't end up with "All surveys" and "Economic data collection"
- Focus on knowledge gaps that would produce significant changes in the metrics we use to monitor FMP or national standard performance (including those facilitated by reducing uncertainty or buffers)
- Develop a clear statement for attaining prioritization that reflects the distinctive needs and influence of the Council and its mandate to manage federal fisheries consistent with the national standards.
 - This rubric will make clear how closing the knowledge gap will improve
 - This will allow non-experts in the priority's knowledge area to understand its impact, and compare it to impacts of other priorities, which is not now really possible.
- Populating the initial Top 10
 - Develop 150 word abstracts for the current "Top 10" (perhaps request from the nominating plan teams)
 - This provides description, justification, and associated benefit to the Council's mission for these priorities
- Triennial review
 - Plan teams can update abstracts, including arguments for expected changes in performance metrics, for existing Top 10
 - SSC will evaluate existing priorities for progress or shifting importance in the context of other work.
 - Abstracts of current priorities and proposed replacement priorities will be provided to the entire SSC prior to the review meeting
 - With sufficient information about the benefits of all top priority projects, the SSC can have a discussion of the credibility and importance of the suite of benefits claimed, and make tradeoffs when all members can participate from an informed position.
- Plan teams may propose replacement priorities by developing a 150 word abstracts including expected benefits that may be compared with those of the existing priorities.
 - The SSC will give deference to Plan Teams suggesting replacement priorities from the same Plan Team
 - Meeting minutes will clarify why the Top 10 were selected, and others were not, but not attempt to carry forward unselected priorities.