



North Pacific Fishery Management Council

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Bering Sea Fishery Ecosystem Plan Team

REPORT

March 18 and 21, 2022, [Webconference](#)¹

Plan Team Members in attendance²:

Kerim Aydin, co-Chair (AFSC REEM)
Mike Dalton (AFSC ESSR)
Anne Marie Eich (NMFS AKR)
Diana Evans, co-Chair (NPFMC)
Davin Holen (Alaska Sea Grant)
Jim Ianelli (AFSC SSMA)
Danielle Dickson (NPRB)

Heather Renner (USFWS)
Elizabeth Siddon (AFSC ABL)
Phyllis Stabeno (NOAA PMEL)
Ian Stewart (IPHC)
Stephani Zador (AFSC REFM)
Jared Weems (ADFG)

Members absent: Brad Harris (APU)

Others in attendance included (list is not exhaustive):

Agency: Karla Bush (ADFG), Sara Cleaver (NPFMC), Sherri Dressel (ADFG), Bridget Ferris (AFSC REEM), Kate Haapala (NPFMC), Kat Meyer (WDFW), Ivonne Ortiz (University of Washington), Sean Rohan (AFSC), Diana Stram (NPFMC), Andy Whitehouse (University of Washington), Sarah Wise (AFSC ESSR)

Public: Stephanie Madsen, Heather Mann, Steve Marx, Theresa Peterson, Brendan Raymond-Yakoubian, Jaylene Wheeler, Paul Wilkins, Megan Williams

The co-Chairs opened the meeting with a review of the agenda, followed by introductions and a quick roundtable of relevant ecosystem-based fishery management (EBFM) initiatives or discussions occurring in each Team member's agency or professional sphere. Opportunities for public comment were provided informally throughout the meeting, and members of the public contributed during the breakout sessions. At this meeting, the Team focused on their tasks of providing strategic guidance for monitoring Bering Sea ecosystem status through the development of a Bering Sea Ecosystem Health Report, and managing FEP action modules.

Bering Sea Ecosystem Health Report

The FEP Team spent much of the meeting working on further developing the new Bering Sea Ecosystem Health Report, which is intended to provide a strategic focus on multi-year trends and whether the Council is achieving ecosystem objectives for the Bering Sea as identified in the FEP. The Team is conscious of avoiding duplication with the existing ecosystem products such as the annual Ecosystem

¹Bering Sea Fishery Ecosystem Plan Team meeting eAgenda: <https://meetings.npfmc.org/Meeting/Details/285>

² ABL – Auke Bay Laboratories, ADFG – Alaska Department of Fish and Game, AFSC – NMFS Alaska Fisheries Science Center, AKR – Alaska Regional Office, APU – Alaska Pacific University, ESSR – Economic and Social Sciences Research Program, HEP – Habitat and Ecological Processes Research Program, IPHC – International Pacific Halibut Commission, NMML – National Marine Mammal Laboratory, NPRB – North Pacific Research Board, PMEL – Pacific Marine Environmental Laboratory, REEM – Resource Ecology and Ecosystem Modeling Program, REFM – Resource Ecology and Fisheries Management Division, SSMA – Status of Stock and Multispecies Assessment Program, USFWS – U.S. Fish and Wildlife Service

Status Report, which specifically provides tactical advice in the context of the Council's annual management action to set harvest specifications (a graphic distinguishing these products was developed for the Council at the [May 2021 meeting](#)). The Bering Sea Ecosystem Health Report will be a synthesis structured around the 6 ecosystem goals and 17 ecosystem objectives identified in the BS FEP, and the Team has split up into 5 subgroups (goals 5 and 6 lend themselves to merging) to develop the different sections. Initial work on identifying candidate indicators for each objective was begun in May 2021. The Team initially intended to have a pilot report ready this spring, but the Team's fall 2021 workshop was delayed.

Dr. Kerim Aydin presented a prototype section based on Goal 2, which looks at ecological processes. Each indicator would include a description of the indicators and what it informs, as well as their status and trends, and a graphical depiction. Using this example as well as working in breakout rooms, the Team continued to develop the report concept, including such questions as how many indicators should be included for each objective; whether the indicators should be categorized with respect to geographical, temporal, or variability scales; and how to ensure that indicators are not duplicative with the ESR. The Team will also consider how to acknowledge interconnectedness with neighboring ecosystems while still focusing on the Bering Sea, and how to highlight ideal indicators for which data may not yet be available.

Through the course of the meeting, the Team recognized that Goal 1 (fish stocks and food web) and Goal 2 are further developed than the other sections of the report, as data to support those sections are more easily available. The Team aims to have subgroup meetings in May and a pilot report for Goals 1 and 2 by fall 2022, whereas the content for the remaining goals is likely to be more of a draft at that point. This schedule may provide a good opportunity, however, for active engagement and collaboration with stakeholders on how to characterize the information in those and all sections. The May subgroup meetings will also include the opportunity for interested agency and public staff to continue providing input to the report development. The Team will prepare a short overview of what the report is and its purpose, to provide a consistent message for outreach and communication. A more detailed Team workplan for the next phase of report development is appended.

BS FEP Action Modules

Local Knowledge/Traditional Knowledge/ Subsistence Taskforce

Dr. Kate Haapala and Dr. Sarah Wise, co-Chairs of the LTKS action module Taskforce, provided a report on the progress of the Taskforce over the past year. The Taskforce co-Chairs shared their Draft Protocol for Identifying, Analyzing, and Incorporating Local Knowledge, Traditional Knowledge, and Subsistence Information in the North Pacific, which includes seven guidelines. Team members asked questions about the protocol as well as its application to the development of the Bering Sea Ecosystem Health Report. Team members noted the graphic describing interconnected communities and organizations in Norton Sound, and suggested that it be expanded to the larger Bering Sea region as a tool to help ensure comprehensive engagement. The protocol is specified exclusively for the Bering Sea, and it may be useful as part of the final presentation to the Council, for the Taskforce to consider what next steps are required for it to apply also to other regions such as the GOA.

The Team also reflected on its Bering Sea Ecosystem Health Report process, particular as relates to Goal 4, and whether there is opportunity for the LTKS Taskforce to provide input especially on food security and subsistence objectives. The Taskforce co-Chairs noted that the Team is not meeting until the fall, but could potentially provide review in that timeframe.

Climate Change Taskforce

Dr. Diana Stram, co-Chair of the action module taskforce for evaluating the impacts of climate change (CCTF), provided an overview of ongoing progress of the CCTF at their 2022 meetings. The CCTF is

developing a report for the Council in April, to synthesize the Council's current state of climate readiness. The Team asked clarifying questions about the current synthesis as the part of the bi/triennial climate report discussed at the May 2021 meeting, of which it will be the first phase. Once this aspect is complete, the CCTF will switch their attention to assessing tools for increasing climate readiness and resilience into the future. There was also a question about the stakeholder-developed ecosystem matrix that was presented to the CCTF, feedback on which will be in their minutes.

The Team has not yet reviewed a draft of the climate readiness report, however based on the discussion, it seems to provide a narrative that will work well with the metrics to be included in the Bering Sea Ecosystem Health Report to assess the climate-related objectives. The Team and the Taskforce co-Chairs will continue to coordinate to ensure that the reports are complementary and not duplicative, and the timing looks promising for the groups to work iteratively over the next few months.

Overall comments

The FEP Team appreciated the progress made by both Taskforces since the workplan discussions last May, and especially the fact that both Taskforces have developed draft workproducts. It was noted that perhaps at the next FEP Team meeting, it would be useful to ask the Taskforces for feedback on how this pilot action module concept has worked, and any lessons learned or ideas for improvement.

Other business

Last year, the Team held a wide-ranging discussion about what the next directions for the FEP should be, as well as the value of shifting limited resources to consider EBFM projects in other regions, such as the Aleutian Islands or the GOA. Recognizing that the work of the two tasked BS FEP action modules are still underway, as is the development of the Team's Bering Sea Ecosystem Health Report, the Team reiterated its comments from last year. At this point in time, the Team does not see an urgency to considering new Bering Sea action modules. Diana Evans noted that the Ecosystem Committee will be reviewing a paper on GOA ecosystem research at the upcoming meeting; the Team references its [minutes from May 2021](#), noting that it would make sense to take into account the timing of the GOA-CLIM project, and provide opportunity for public scoping and input, in any discussion of initiating a GOA FEP.

FEP Team / BS Ecosystem Health Report

March 2022

Purpose: Strategic report to evaluate whether the Council is achieving its ecosystem goals and objectives as identified in the BS FEP, and the extent to which that status is attributable to Council management versus external factors.

Format: In keeping with inform but don't overwhelm, aiming for a relatively short synthesis for actual report, organized by ecosystem goals and associated ecosystem objectives. Particularly in first iteration, though, may need supplementary material or appendix to describe the process the Team undertook to produce the report.

Timeframe: Partial pilot report in Fall 2022 to begin dialogue; some sections will need longer for initial development. Once a format is finalized, subsequent updates intended every 2-3 years.

Relationship to other EBFM products: see graphics at end of this document.

Subgroups based on 5 FEP ecosystem goals, associated ecosystem objectives:

1. Fish stocks, food web structure and function
 - Jim Ianelli, Ian Stewart, Ebett Siddon
2. Ecological processes, trophic levels, diversity
 - Kerim Aydin
 - Other agency expertise: Andy Whitehouse (UW)
3. Habitat, seabirds/mammals
 - Heather Renner, Anne Marie Eich, Danielle Dickson, Brad Harris
4. Fisheries (subsistence, commercial, recreational) and non-consumptive uses
 - Davin Holen, Mike Dalton, Jared Weems
 - Other agency expertise: Sara Cleaver (NPFMC), Kate Haapala (LKTKS), Sarah Wise (LKTKS)
 - Interested public: Brenden Raymond-Yakoubian (CCTF member), Jaylene Wheeler (Kawerak)
- 5/6. Avoid long-term adverse effects / legacy of healthy ecosystems (ecosystem tipping points, non-fishery activity impacts, climate change)
 - Stephani Zador, Diana Evans, Phyllis Stabeno
 - Other agency expertise: Ivonne Ortiz (UW), Kirstin Holsman (CCTF), Diana Stram (CCTF)
 - Interested public: Stephanie Madsen (APA)

Tasks for ecosystem goal subgroups, March - August 2022:

- Schedule subgroup workshops in May (goals 1 and 2 together, others separate); either Kerim or Diana will try to attend each as well
- Subgroups 1 and 2: develop the following using Goal 2 prototype as starting point:
 - **List of useful indicators** for each objective (should have already)

- **Prioritize** which indicators to move forward for pilot. May 2021 goal was 1-3 per objective; what is reasonable? Preferably choose metrics that are measurable/thresholded in some way, so possible to show status.
- **Data** for the chosen indicators
- Write **description of indicator**; what it is indicating, where the data comes from. What is quality of information. If also being used eg in ESR, explain how it is used differently (strategically to inform long-term mgmt objectives vs tactically for annual specs) in this report. Define scale (geographic: regional/local, temporal: seasonal/annual/3-5 year/10 year, variability: means-medians/extremes)?
- Write **status and trend for each indicator**. What should be the timeframe? (definitely multi-year view not annual) Additional insight/context to interpret status and trend (eg, relate to management changes)?
- **Graphics** - what would work best? Visual for each indicator, or cumulative graphic for the objective? We talked about trying to rephrase either the 6 ecosystem goals or the 17 ecosystem objectives as questions – is the Council meeting that goal or objective (e.g. yes/no, yes as a proportion (e.g. yes for 75% of managed species), some other gradient system)
- What is the best (**ideal**) **indicator** / amalgam of indicators for each objective, even if not currently available?
- **Other questions** to consider:
 - Any questions raised by your discussions that should be brought back to the Team?
 - Are there opportunities to identify joint or similar management goals with other resource agencies or organizations, to explore collaboration?
 - Are there important linkage with interconnected ecosystems, related to your indicators - if so, how address?
 - Are there any topics that would lend themselves to further exploration in a seminar? Danielle offered the IARPC conversations as a potential venue.
- Subgroups 3, 4, 5: continue to develop report content as much as possible
 - For indicators that have been identified and for which data is or might be available, follow steps as for Goals 1 and 2; also ‘other questions’
 - As needed, solicit additional expertise to contribute to the report
 - Consider opportunities, avenues, and timing for engagement to help frame and develop the report for each objective
 - Goal should be to get as far as is reasonable for each objective. Is it possible to include some indicators at this stage based on available information, even if incomplete? In May, outline what is feasible for first pilot.

Additional products needed (from March 2022 meeting):

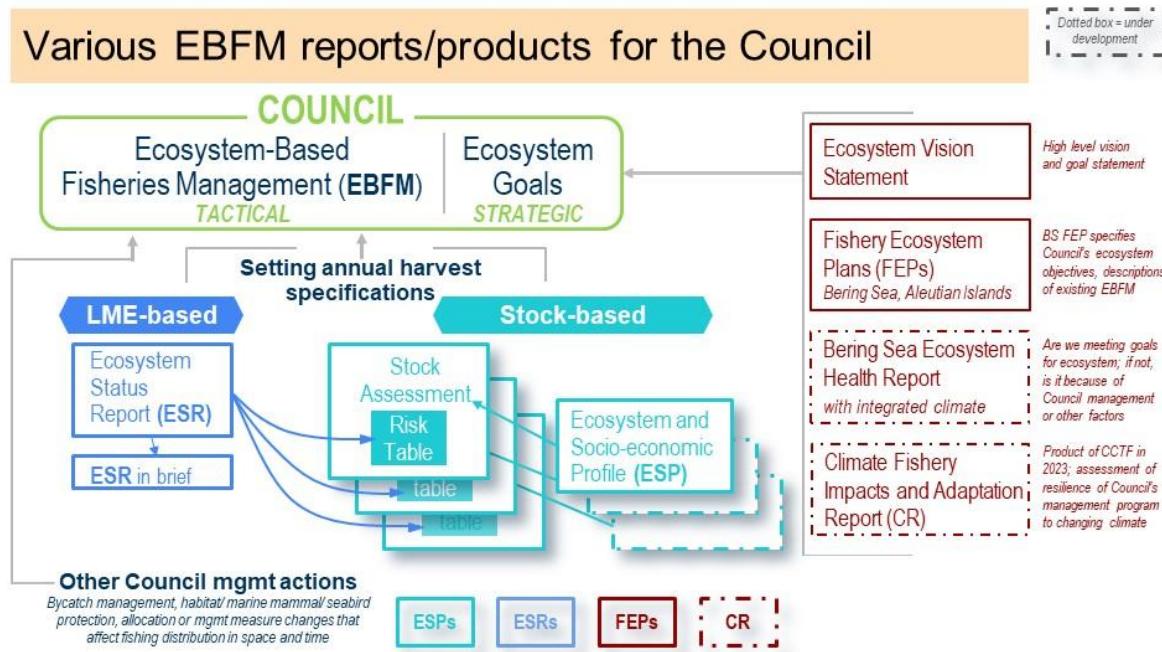
- short intro on what report is and why doing it. PPT slides with recording? Use as a consistent mechanism to solicit input from external sources. Start from Kerim’s June 2021 Council ppt. Content can also be adapted for intro to report. Ideas from 3/18/22 group 4 notes:
 - Include basic format of product
 - What are bounds for useful data? Time series? Criteria? Best practices?

- Are we asking them for a narrative or are we writing the narrative?
- Include how it will be used
- How will data providers be credited & be able to participate?
- Timeline of management changes (FMP/reg change, gear change, assessment, monitoring, CAS) over length of time series, to provide context for environmental indicators (idea from 3/18/22 goal 5 breakout)
- Common data policy for all groups to follow

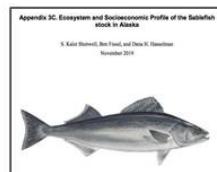
Potential audiences/users of report (notes from May 2021):

- **Council members** - strategic planning, mgmt planning; strategic changes to structure of decision making
- **Ecosystem Committee** - help meet their responsibilities
- **Plan Team/SSC members/assessment authors** - harvest specs, interactions with the assessment risk tables
- **Fishery managers** - harvest limit decisions
- **Fishery user groups** - status of their fishery in larger ecosystem context; communication tool
- **Managers of other resource entities, co-management partners, NBS climate resilience area entities (tribal and federal)**
- **Interactions with other stakeholders/user groups** - common basis for starting conversations
- **NP science community at large** - one stop shop for understanding BS, esp research arms of various tribal/regional organizations
- **Funding agencies/research applicants** - justification for Council-relevant research
- **NMFS HQ, intl groups** doing EBFM/ecosystem status research
- **Congress/political community** - allocates funding, including ocean planning
- **Coast Guard, health and safety organizations** – moving towards EBM rather than EBFM

Graphics showing relationship of BSEHR to other ecosystem products



Distinguishing ESR, ESP, BSEHR



	Ecosystem Status Report	Ecosystem and Socio-economic Profile	Bering Sea Ecosystem Health Report
Purpose ?	Tactical - harvest specs* * in past, this was the single catch-all report for all ecosystem considerations data	Tactical - harvest specs	Strategic – is Council achieving ecosystem goals
When issued 📅	Oct-Dec	Oct-Dec (partial or full)	April (bi- or triennially)
Scope 🌏	Aggregated - Indicators that pertain to many stocks at once	Species/Stock-specific – indicators that have an impact on this specific stock	Aggregated - Synthesizing across ecosystem area /activities
Spatial 🖍️	Large Marine Ecosystem (EBS, GOA, AI)	Large Marine Ecosystem/ FMP (EBS, GOA, AI)	LME -- Basin-scale
Temporal ⏳	Annual trend updates	Mixed	Longer term trends

