2017 Annual Review / Recommendations

Research Priorities

MSA Mandate

"Each Council shall, in accordance with the provisions of this Act —

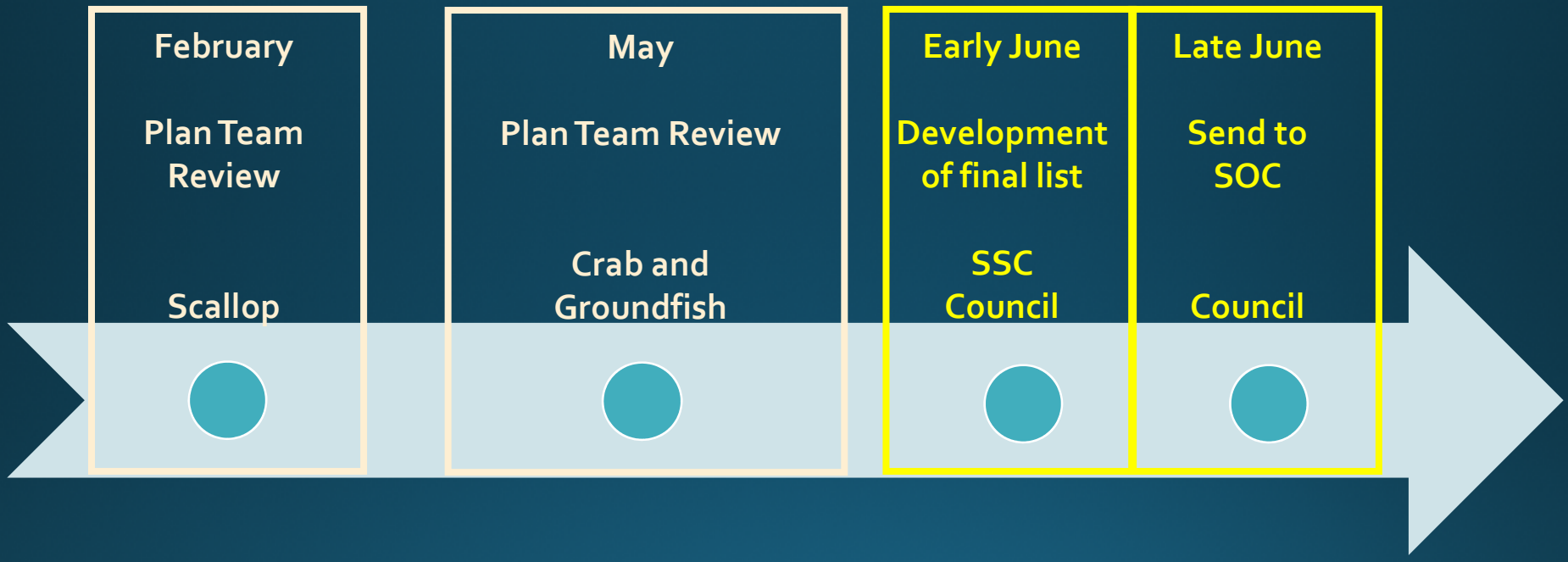
(7) develop, in conjunction with the scientific and statistical committee, multi-year research priorities for fisheries, fisheries interactions, habitats, and other areas of research that are necessary for management purposes, that shall—

(A) establish priorities for 5-year periods;

(B) be updated as necessary; and

(C) be submitted to the Secretary and the regional science centers of the National Marine Fisheries Service for their consideration in developing research priorities and budgets for the region of the Council; "

Annual research priority process



Categories / Definitions

CRITICAL ONGOING MONITORING: Information provided by monitoring activities in this category (1) provide an essential management function; (2) cannot likely be acquired through other means; or (3) are required by regulation. This is monitoring essential to maintaining our compliance with federal requirements, including National Standards, or necessary for the ongoing management of the fishery. Postponement would have a significant and immediate impact on management.

URGENT: Research that 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 one or two year project would meet the information need. Postponement would have a significant impact on management.

Revised Categories / Definitions

IMPORTANT (Near Term): Obtaining a new set of data or research result that is likely to aid in the evaluation of a near term or ongoing management goal. The research might involve ~~be~~ a several year ~~time-limited~~ program ~~or work that could continue indefinitely~~. Postponement will not have an immediate impact on fishery management; however, the information generated will likely inform near term (e.g., <5 year) Council actions.

STRATEGIC (Future Needs): Research that is valuable but is not associated with an immediate need or near-term (e.g., <5years) Council action.

Action

- Review existing/new research priorities
  - Edits and recommendations of SSC
- Other Issues:
  - Database changes
  - NPRB coordination

Materials

- Terms and Definitions
- List of Existing Research Priorities
  - Edited to reflect Plan Team recommendations
  - Edited to reflect SSC recommendations at this meeting
- Note on NPRB coordination

Review Research Priorities

Research ID	Title	Description	Council Priority	2017 SSC Priority	2017 Plan Team Priority	2017 Research Status
144	District-wide survey for demersal shelf rockfish in Southeast Alaska	Conduct a district-wide survey for demersal shelf rockfish in Southeast Alaska on a biennial or triennial basis. Survey information is becoming extremely dated.	C.O.M.	C.O.M.	GF: Important Crab: -- Scallop: --	Partially underway
145	Continuation of State and Federal annual and biennial surveys	Continuation of State and Federal annual and biennial surveys in the GOA, AI, and EBS, including crab pot surveys, is a critical aspect of fishery management off Alaska. It is important to give priority to these surveys, in light of recent federal budgets in which funding may not be sufficient to conduct these surveys. Loss of funding for days at sea for NOAA ships jeopardizes these programs. Budgetary concerns have resulted in cuts to not only days at sea, which increases uncertainty, but also sampling the deepest strata, which threatens the value of trawl surveys as a synoptic ecological survey. These surveys provide baseline distribution, abundance, and life history data that form the foundation for stock assessments and the development of ecosystem approaches to management. Although an ongoing need, these surveys are considered the highest priority research activity, contributing to assessment of commercial groundfish and crab fisheries off Alaska.	C.O.M.	C.O.M.	GF: C.O.M. Crab C.O.M. Scallop: --	Underway
146	Improve surveys in untrawlable habitat, particularly for rockfish, Atka mackerel, and sculpins	For groundfish in general, and rockfish and Atka mackerel in particular, continue and expand research on trawlable and untrawlable habitat to improve resource assessment surveys. For example, improved surveys, such as hydro-acoustic surveys, are needed to better assess pelagic rockfish species that are found in untrawlable habitat or are semi-pelagic species such as northern and dusky rockfish. A number of publications specific to untrawlable grounds and rockfish sampling have been published recently, but have not been incorporated directly into routine stock assessment routine survey designs.	Urgent	Urgent	GF: Important Crab: -- Scallop: --	Underway
147	Life history research on data poor or non-recovering crab stocks	Why certain stocks have declined and failed to recover as anticipated is a pressing issue (e.g., Pribilof Island blue king crab, Adak red king crab). Research into all life history components, including predation by groundfish on juvenile crab in nearshore areas, is needed to identify population bottlenecks, an aspect that is critically needed to develop and implement rebuilding plans.	Important	Important	GF: -- Crab Important Scallop: --	Partially underway
148	Spatial distribution and movement of crabs relative to life history events and fishing	There is a need to characterize the spatial distribution and movement of crab stocks. For example, information is needed to understand the distribution of male/female snow crab at time of mating, a better understanding of spatial stock dynamics and population connectivity for Tanner Crab east and west of 166, and to understand the distribution and movement of golden king crab in the Aleutian Islands in areas historically fished and not fished. There is a need to characterize the spatial distribution of male snow crab at time of mating relative to reproductive output of females in the middle domain of the EBS shelf. Additionally there is a need to investigate spatial stock dynamics and population connectivity for Tanner Crab (2 stocks).	Urgent	Important	GF: -- Crab Urgent Scallop: --	Partially underway

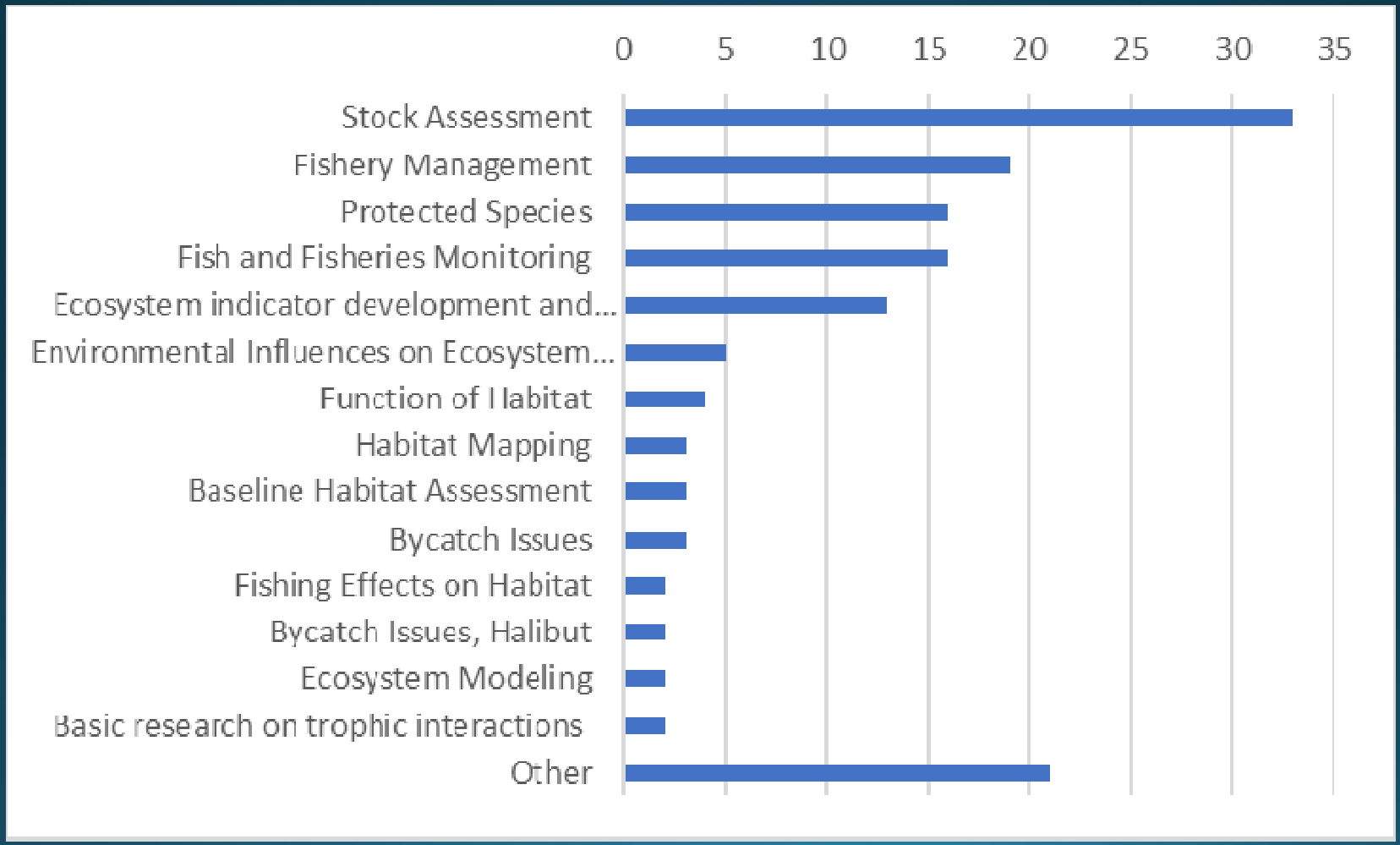
Spreadsheet

- Select projects
  - Newly added priorities
  - SSC differences
  - Halibut priorities

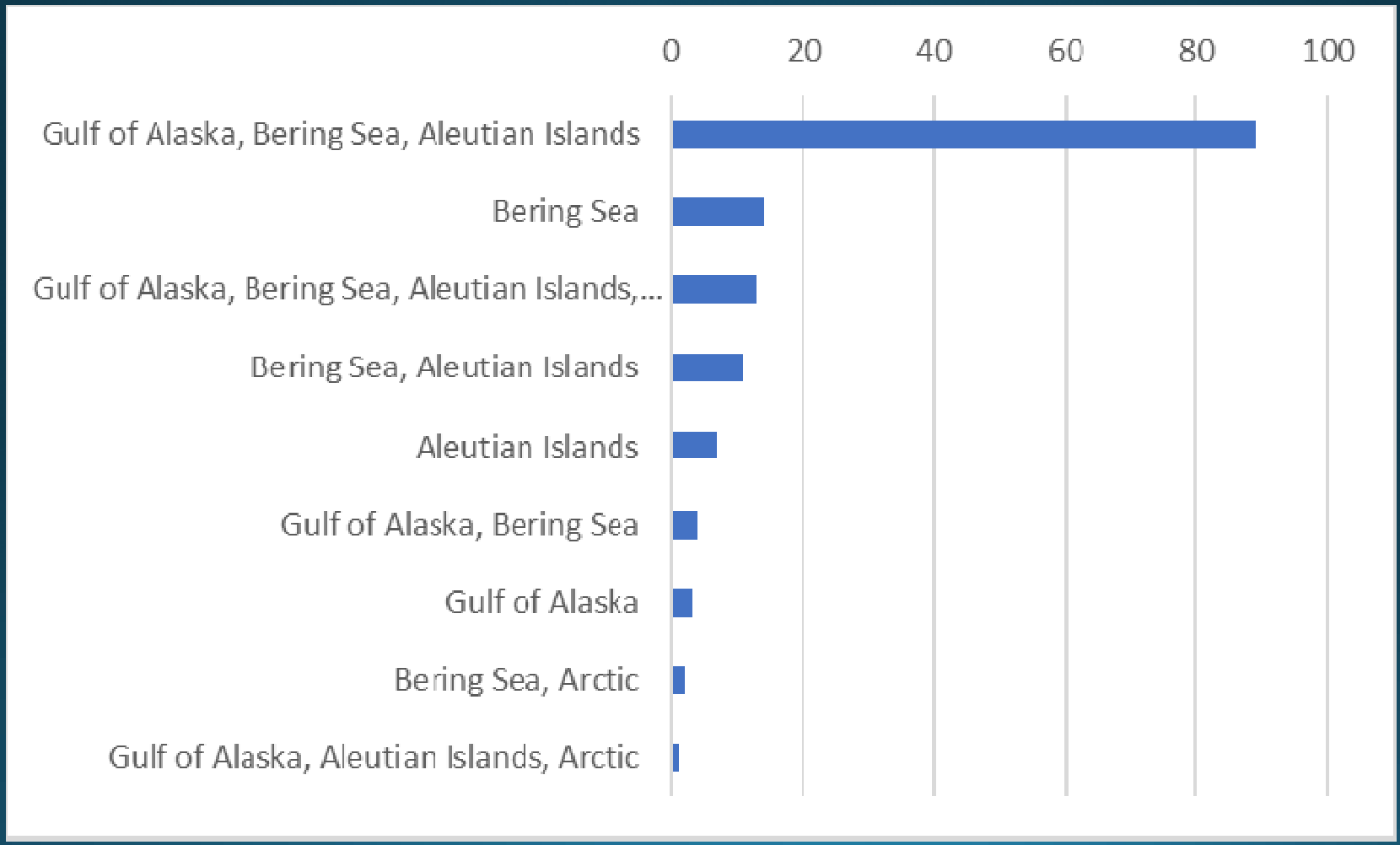
Review Proposed New Research Priorities

Research ID	Title	Description	Council Priority	Updated Plan Team Priority	2016 Plan Team Priority	Updated Research Status	2016 Research Status
571	Age validation for scallop shells	The combination of O18 (oxygen isotope) analysis and a benthic temperature model can be used to validate that the bands in cross sections of scallop shells are annuli and can be used to determine scallop age. This method is less time consuming that other methods that require recapture of scallops.	Pending (New Project)	GF: -- Crab: -- Scallop: Important	GF: -- Crab: -- Scallop: --	No action	No action
591	Development of a common assessment modeling platform for Bering Sea crab assessments	GMACS (Generalized Modeling for Alaskan Crab Stocks) is a statistical size-structured population modeling framework. It is designed to be flexible, scalable, and useful for both data-limited and data-rich situations. GMACS is intended to be the primary modeling platform used to conduct assessments of all crab stocks in the Bering Sea. GMACS was first used to provide management advice for Saint Matthews blue king crab in 2016, and work is ongoing for a Bristol Bay red king crab application. Additional functionality is needed for GMACS to be applied to snow and Tanner crab.	Pending (New Project)	GF: -- Crab C.O.M. Scallop: --	GF: -- Crab: -- Scallop: --	No action	No action
592	Maturity estimates for Bering Sea and Aleutian Island crab stocks	Application of Tier 3 control rules for crab requires reliable estimates of maturity to determine mature biomass. Maturity estimates of BSAI crab stocks are, in many cases, based on old studies using outdated methods. New studies to estimate both male and female maturity curves are needed for several stocks, with Aleutian Islands golden king crab considered a priority.	Pending (New Project)	GF: -- Crab Important Scallop: --	GF: -- Crab: -- Scallop: --	No action	No action
593	Develop collections for the core biological and oceanographic data (e.g., biophysical moorings, benthic production, larval surveys) necessary to support crab stock assessment.	Support collection of the core data and process studies needed to support integrated ecosystem assessments on spatial and temporal scales relevant to crab stocks. Core data include inputs for single- or multi-species management strategy evaluations, food web, and coupled biophysical end-to-end ecosystem models (e.g. biophysical moorings, benthic production, larval surveys, larval drift). Develop and maintain indices of cold pool extent and the timing/extent of the spring bloom for the EBS. For this, maintenance of moorings, especially M-2, is essential. If recent changes in ice cover and temperatures in the Bering Sea persist, these may have profound effects on crab production and distribution.	Pending (New Project)	GF: -- Crab Important Scallop: --	GF: -- Crab: -- Scallop: --	No action	No action
594	Effects of trawling and other anthropogenic benthic-contact activities on crab habitat	The effects on habitat, and subsequent risks to growth and survival of the crab stocks that utilize those habitats, from trawling and other anthropogenic activities that impact the benthos need to be quantified in terms of scale and severity of immediate impact, as well as chronic effects and potential for recovery.	Pending (New Project)	GF: -- Crab Important Scallop: --	GF: -- Crab: -- Scallop: --	No action	No action

Subject Area



FMP Areas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Gulf of Alaska, Bering Sea, Aleutian Islands
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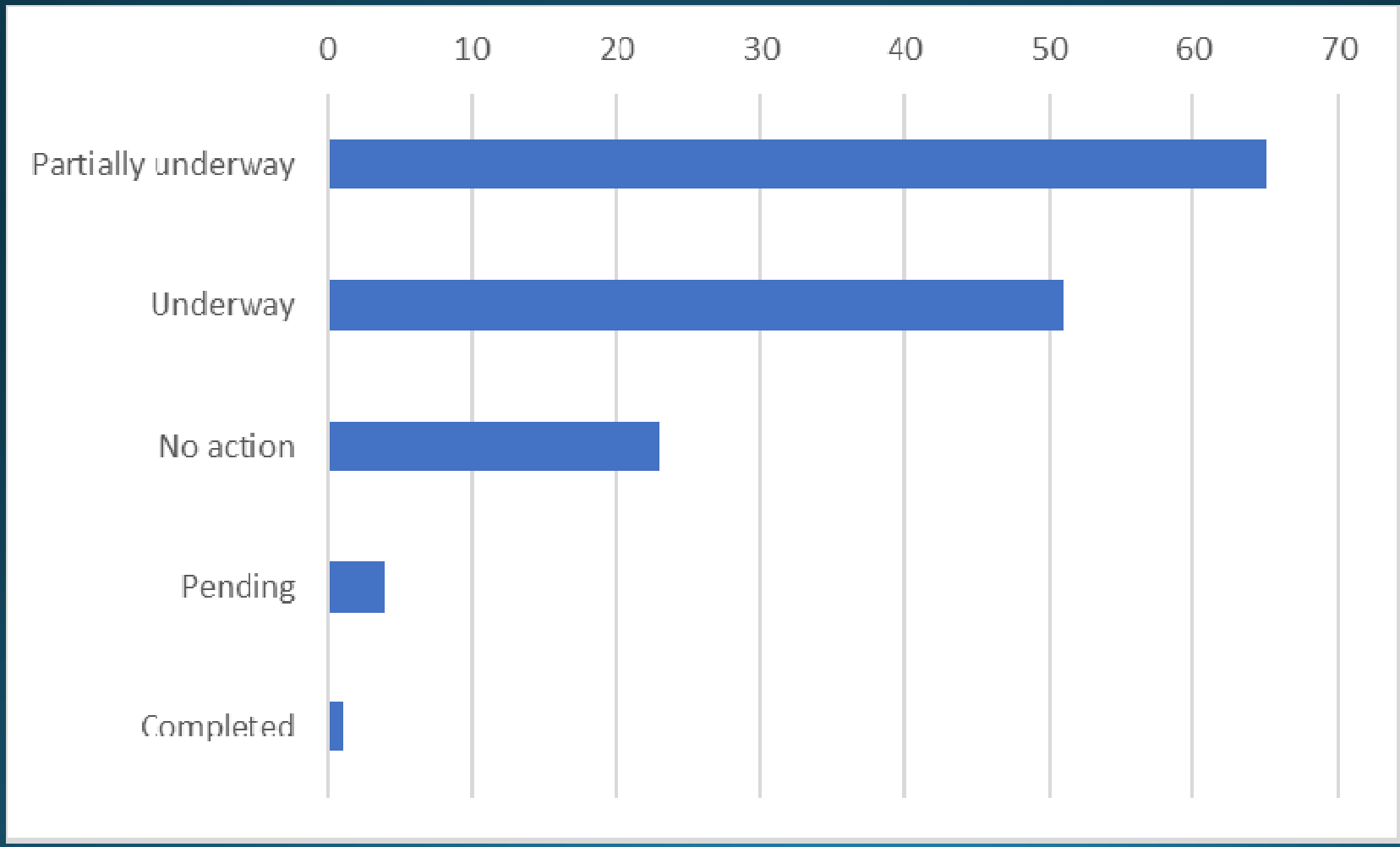
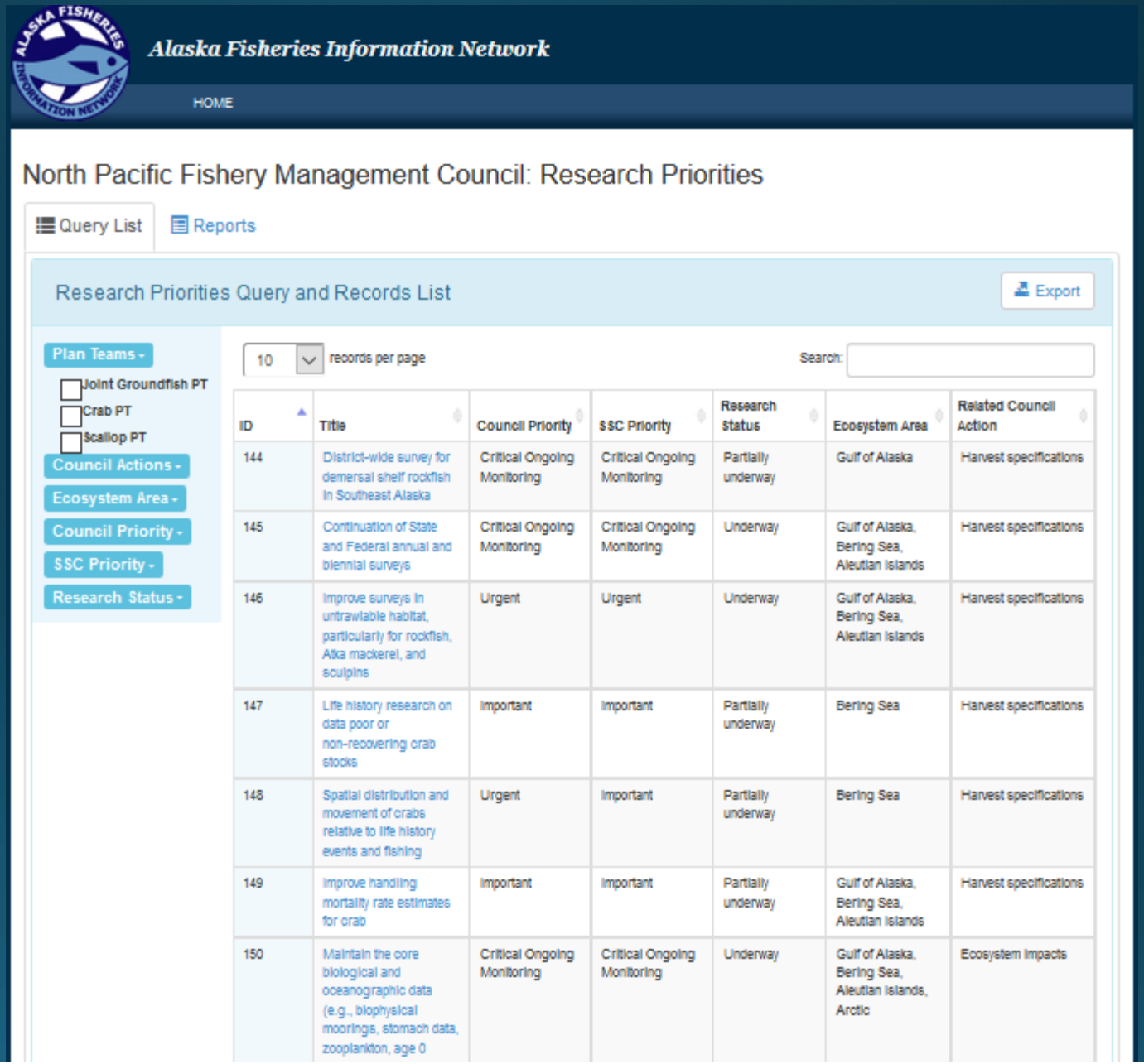
Gulf of Alaska, Aleutian Islands, Arctic

Research Status



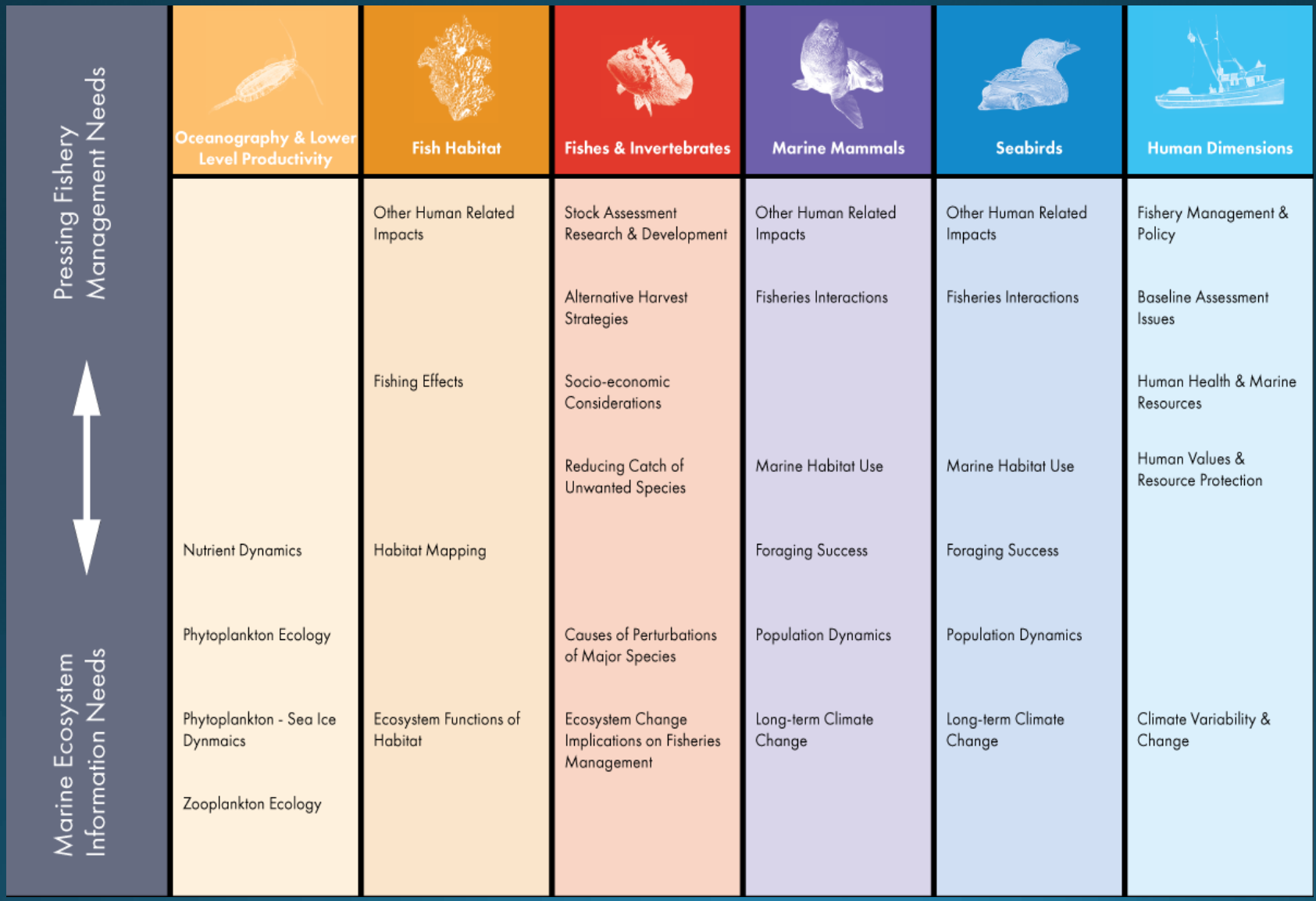
Database Changes

Added Separate SSC and Council Recommendations



ID	Title	Council Priority	SSC Priority	Research Status	Ecosystem Area	Related Council Action
144	District-wide survey for demersal shelf rockfish in Southeast Alaska	Critical Ongoing Monitoring	Critical Ongoing Monitoring	Partially underway	Gulf of Alaska	Harvest specifications
145	Continuation of State and Federal annual and biennial surveys	Critical Ongoing Monitoring	Critical Ongoing Monitoring	Underway	Gulf of Alaska, Bering Sea, Aleutian Islands	Harvest specifications
146	Improve surveys in untrawlable habitat, particularly for rockfish, Atka mackerel, and sculpins	Urgent	Urgent	Underway	Gulf of Alaska, Bering Sea, Aleutian Islands	Harvest specifications
147	Life history research on data poor or non-recovering crab stocks	Important	Important	Partially underway	Bering Sea	Harvest specifications
148	Spatial distribution and movement of crabs relative to life history events and fishing	Urgent	Important	Partially underway	Bering Sea	Harvest specifications
149	Improve handling mortality rate estimates for crab	Important	Important	Partially underway	Gulf of Alaska, Bering Sea, Aleutian Islands	Harvest specifications
150	Maintain the core biological and oceanographic data (e.g., biophysical moorings, stomach data, zooplankton, age 0	Critical Ongoing Monitoring	Critical Ongoing Monitoring	Underway	Gulf of Alaska, Bering Sea, Aleutian Islands, Arctic	Ecosystem Impacts

Coordination with NPRB



Coordination with NPRB

Council			NPRB Projects
Research ID	Title	Priority	
226	Continue to evaluate the socio-economic effects from fishery policy changes on coastal communities.	C.O.M.	**0318** Development of comprehensive baseline commercial fishing community engagement and dependency profiles for the Bering Sea, Aleutian Islands, and Western Gulf of Alaska regions **0528** Socioeconomic baseline information for the Pribilof Islands **0529** Valuation of habitat closures **1412** Patterns and Trends in Salmon Fishing on the Yukon River, Alaska **1520** Adapting to Environmental Change: Shifts in Values, Beliefs and Practices in Three Aleutian Island Communities
154	Pacific cod stock assessment for the Aleutian Islands	Urgent	**0815** Pacific cod (Gadus macrocephalus) migration and distribution related to spawning in the eastern Bering Sea: a mark-recapture experiment on a large geographic scale **0817** A landscape genetics approach to Pacific cod (Gadus macrocephalus) population structure in the Bering Sea and Aleutian Islands; investigation of ecological barriers to connectivity between potentially distinct population components **1105** Age validation of Pacific cod using high resolution stable isotope signatures in otoliths **1505** Size-at-age of Pacific cod (Gadus macrocephalus) in the Eastern Bering Sea **1507** Experimental estimation of catchability of the combined bottom trawl and acoustic survey for walleye pollock (Gadus chalcogrammus) in the Eastern Bering Sea.
385	Study Pacific halibut PSC, bycatch, and discard behavior in fisheries	Urgent	**0712** Bycatch characterization in the Pacific halibut fishery : A field test of electronic monitoring technology **0710** Potential trawl impacts upon ecological processes controlling habitat quality in juvenile flatfish nurseries **1525** Automated Fish Measuring System addressing monitoring needs for reducing halibut bycatch mortality in trawl fisheries **1607** Reducing the prohibited species catch of Pacific halibut: A prospective analysis of fleet behavior in the North Pacific groundfish fisheries. **1510** Survival of Pacific halibut released from Bering Sea flatfish trawl catches through expedited sorting: applying advanced tags to observe survival rates and relating outcomes to viability assessments
165	Conduct routine surveys of subsistence in the northern Bering Sea and Arctic Ocean	Urgent	**1013** Little Diomede Hunters and Elders Ecological Knowledge, Management Strategies, and Usage of Walruses (Odobenus rosmarus) in Bering Strait **1113** Algal toxins in Alaskan marine mammal populations: Assessing current and emerging exposure threats **1316** Long Term Observations on Sea Ice by the Community of Barrow Project Jukebox **1412** Patterns and Trends in Salmon Fishing on the Yukon River, Alaska

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Foundation, Pollock Conservation Cooperative Research Center, and the NOAA National Centers for Coastal Ocean Science. No additional reporting requirements are associated with funding under this collaboration, however interim and final reports will be shared with the collaborating funding institution, and any publication must also recognize that institution as a funding source.

II. Program Description

Proposed research may fall under any of the categories described below. While studies may address components of multiple categories, the proposal will only be considered for the category under which it was submitted. Each category is described in general topics of interest with additional issues of particular interest. All topics and issues are of equal priority. Proposals may integrate aspects of more than one category in their overall approach. NPRB also encourages proposals on novel research topics not explicitly mentioned within each category.

Oceanography and Lower Trophic Level Productivity

The individual proposal funding cap for this category is $500,000.

General topics of interest:

- ocean-atmosphere forcing
- physical oceanography (e.g., water column structure, temperature, sea ice, advection)
- chemical oceanography (e.g., nutrients, ocean acidification)
- biological oceanography (e.g., process rates and linkages of microbes, phytoplankton, and zooplankton)
- other oceanography and lower trophic level research, including modeling

Issues of particular interest:

- response to anomalous warming or changing seasonality
- nutrient and carbon cycling in a broad ecological context

Fishes and Invertebrates

The individual proposal funding cap for this category is $500,000.

General topics of interest:

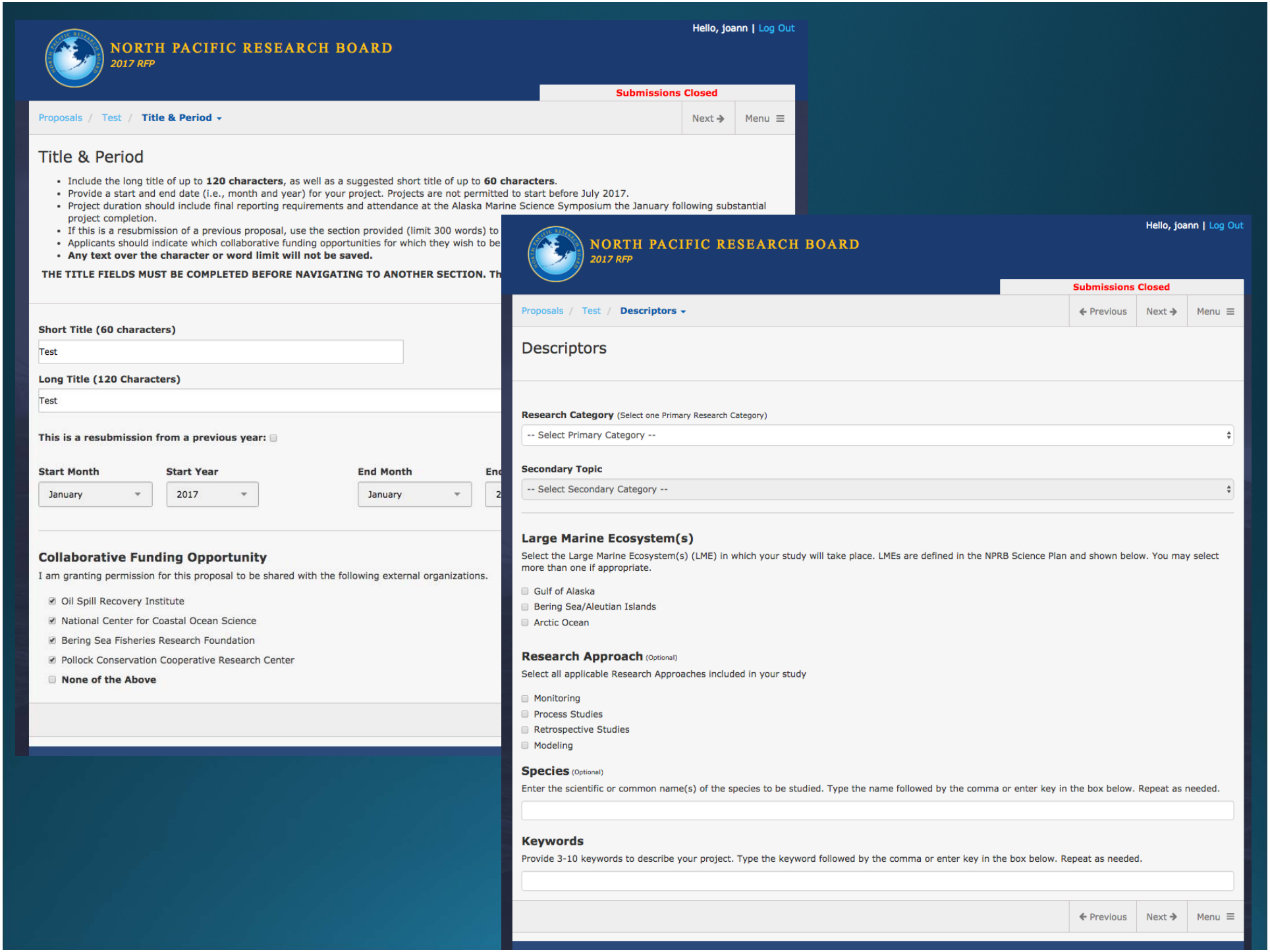
- development and application of new assessment approaches
- estimation of life history parameters that impact stock assessments (e.g., age, growth, maturity, fecundity, natural mortality, environmental drivers, recruitment)
- spatial and temporal variation in stock distribution patterns (e.g., life history stages, environmental drivers, prey availability and/or predator avoidance)
- analyses of survey design and data (e.g., gear selectivity and species distribution/availability, influences of environment or habitat, linking multiple data sources, estimating parameter uncertainty)
- ecology and physiology of forage species (e.g., recruitment, growth, environmental linkages, and factors influencing availability to predators)
- bycatch and incidental catch (e.g., spatiotemporal distribution, ecological effects, discard mortality, and implications of management measures)
- characterization of habitat essential for spawning, nursery and feeding areas
- development of predictive models of habitat use and quality, including climate-driven shifts in

REQUEST FOR PROPOSALS | 2017

habitat quality and availability
- other fishes and invertebrates research

Issues of particular interest:

- above topics of interest applied to data-poor stocks
- survey catchability
- discard mortality rates
- implementation of short-term climate forecasts (e.g., less than 5 years) for assessing changes in marine resources
- research on non-recovering stocks and mechanisms for recovery failure
- improvements to spatial resolution of stock assessments
- role of Arctic lagoons in fish and invertebrate population dynamics in the context of ecosystem change


NORTH PACIFIC RESEARCH BOARD
2017 RFP
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Submissions Closed
Proposals / Test / Title & Period
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Title & Period
Include the long title of up to 120 characters, as well as a suggested short title of up to 60 characters.
Provide a start and end date (i.e., month and year) for your project. Projects are not permitted to start before July 2017.
Project duration should include final reporting requirements and attendance at the Alaska Marine Science Symposium the January following substantial project completion.
If this is a resubmission of a previous proposal, use the section provided (limit 300 words) to
Applicants should indicate which collaborative funding opportunities for which they wish to be
Any text over the character or word limit will not be saved.
THE TITLE FIELDS MUST BE COMPLETED BEFORE NAVIGATING TO ANOTHER SECTION. Th
Short Title (60 characters)
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Long Title (120 Characters)
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This is a resubmission from a previous year:
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Start Year
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End Month
January
Collaborative Funding Opportunity
I am granting permission for this proposal to be shared with the following external organizations.
Oil Spill Recovery Institute
National Center for Coastal Ocean Science
Bering Sea Fisheries Research Foundation
Pollock Conservation Cooperative Research Center
None of the Above
NORTH PACIFIC RESEARCH BOARD
2017 RFP
Hello, joann | Log Out
Submissions Closed
Proposals / Test / Descriptors
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Descriptors
Research Category (Select one Primary Research Category)
-- Select Primary Category --
Secondary Topic
-- Select Secondary Category --
Large Marine Ecosystem(s)
Select the Large Marine Ecosystem(s) (LME) in which your study will take place. LMEs are defined in the NPRB Science Plan and shown below. You may select more than one if appropriate.
Gulf of Alaska
Bering Sea/Aleutian Islands
Arctic Ocean
Research Approach (Optional)
Select all applicable Research Approaches included in your study
Monitoring
Process Studies
Retrospective Studies
Modeling
Species (Optional)
Enter the scientific or common name(s) of the species to be studied. Type the name followed by the comma or enter key in the box below. Repeat as needed.
Keywords
Provide 3-10 keywords to describe your project. Type the keyword followed by the comma or enter key in the box below. Repeat as needed.
Previous
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Menu

Database and Search Capacity

ID	Title	Council/SSC Priority	Research Status	Ecosystem Area	Related Council Action
144	District-wide survey for demersal shelf rockfish in Southeast Alaska	Critical Ongoing Monitoring	No action	Gulf of Alaska	Harvest specifications
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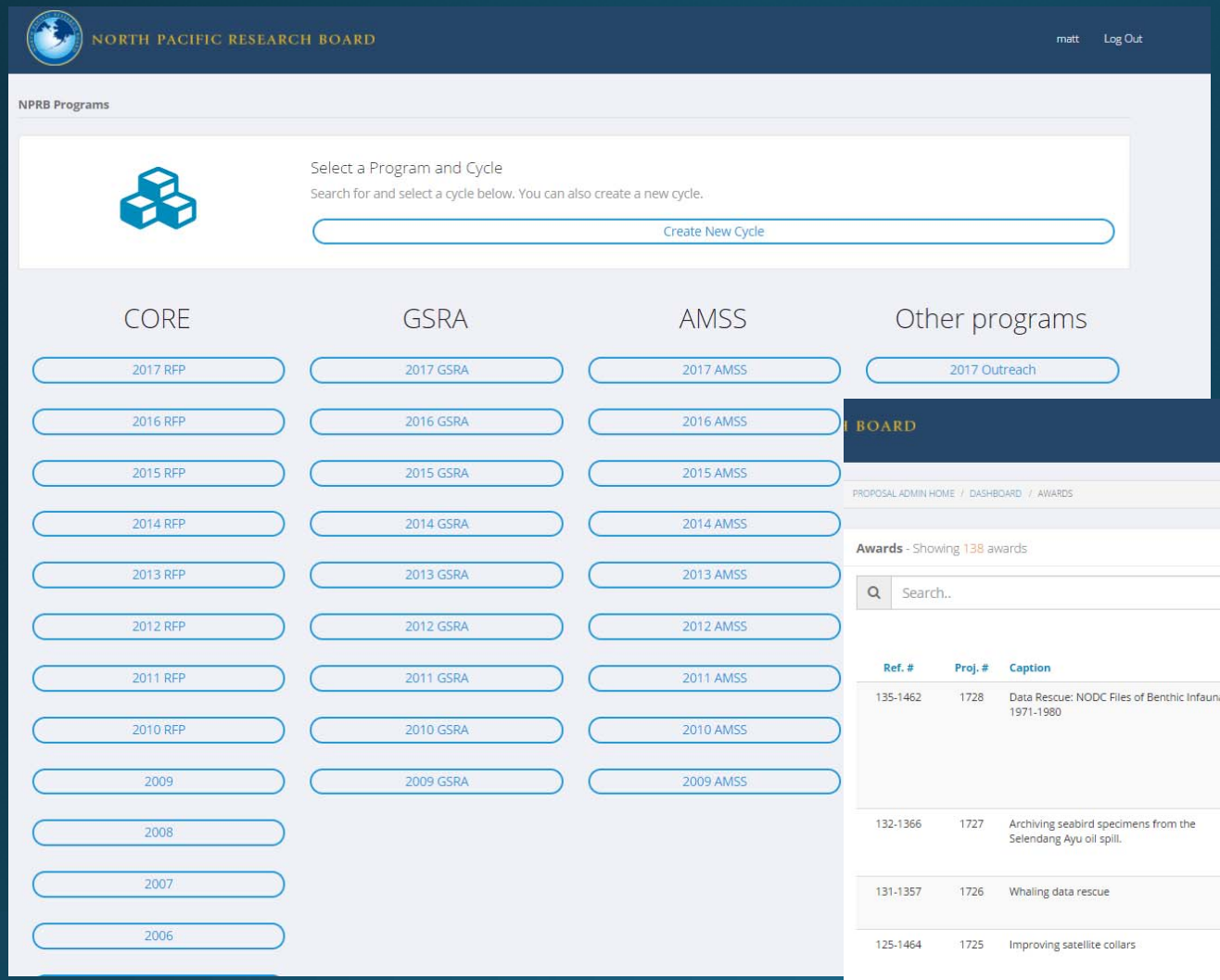
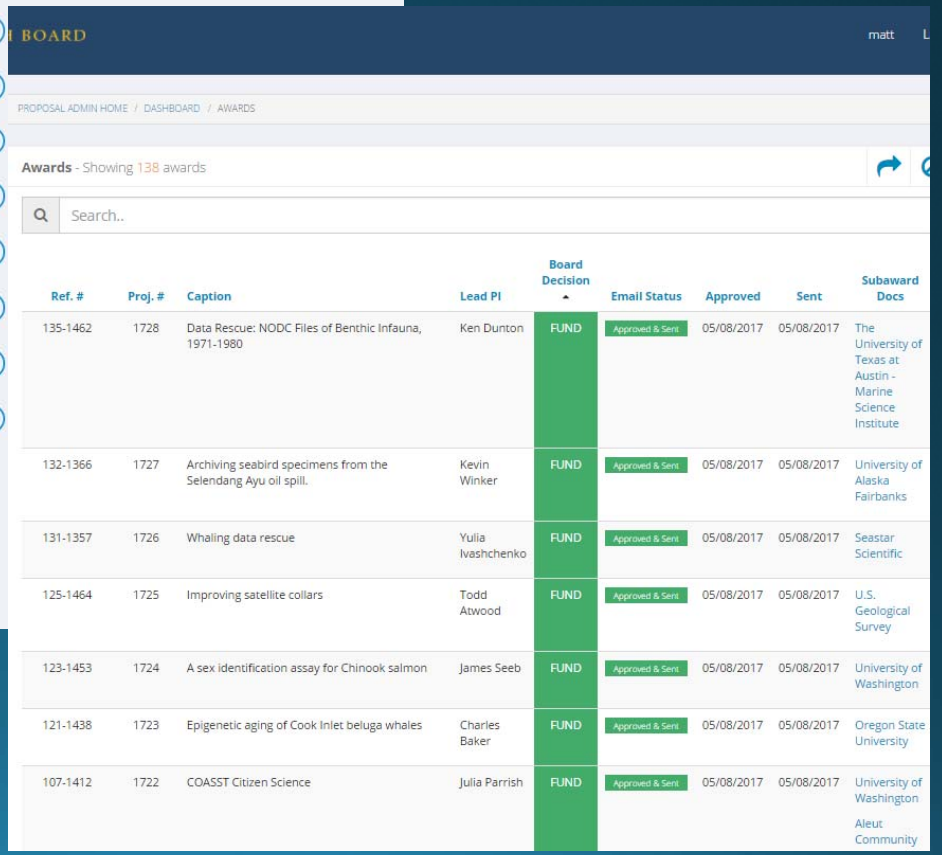
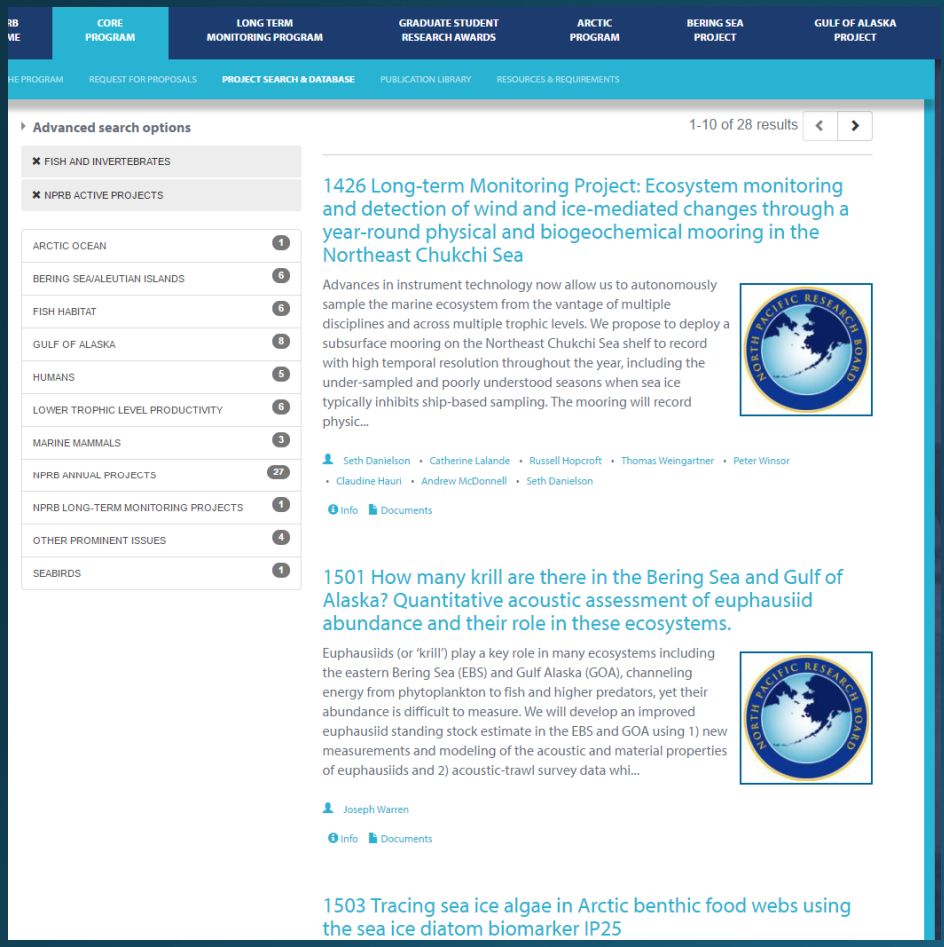
146	Improve surveys in untrawlable habitat, particularly for rockfish, Atka mackerel, and sculpins	Urgent	Partially underway	Gulf of Alaska, Bering Sea, Aleutian Islands	Harvest specifications
147	Life history research on data poor or non-recovering crab stocks	Important	No action	Bering Sea	Harvest specifications
148	Spatial distribution and movement of crabs relative to life history events and fishing	Urgent	Partially underway	Bering Sea	Harvest specifications
149	Improve handling mortality rate estimates for crab	Important	Partially underway	Gulf of Alaska, Bering Sea, Aleutian Islands	Harvest specifications
150	Maintain the core biological and oceanographic data (e.g., biophysical moorings, stomach data, zooplankton, age 0 surveys) ...	Critical Ongoing Monitoring	Underway	Gulf of Alaska, Bering Sea, Aleutian Islands, Arctic	Ecosystem impacts

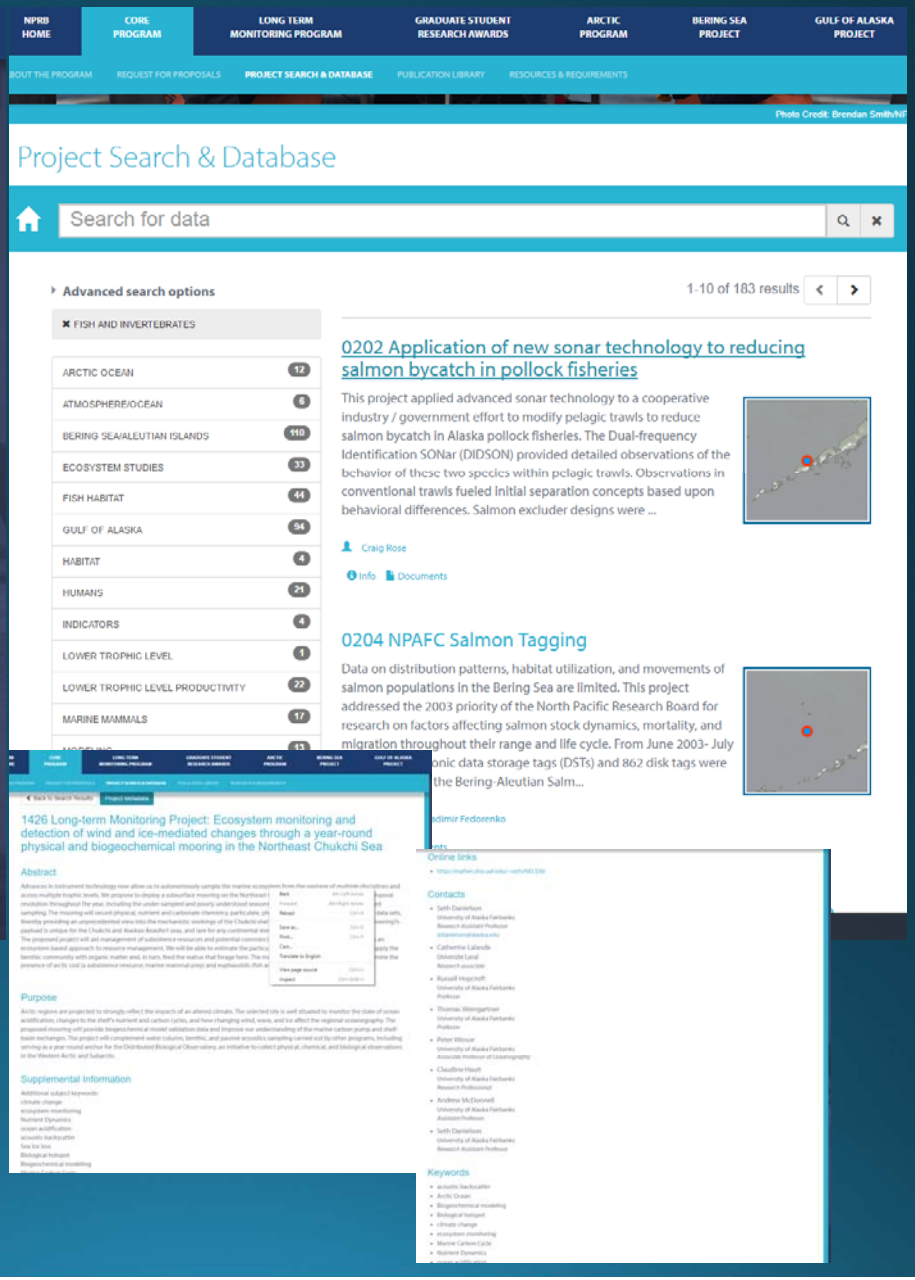
Database and Search Capacity





Database and Search Capacity





Database and Search Capacity

Online links

- http://mather.sfos.uaf.edu/~seth/NECEM/

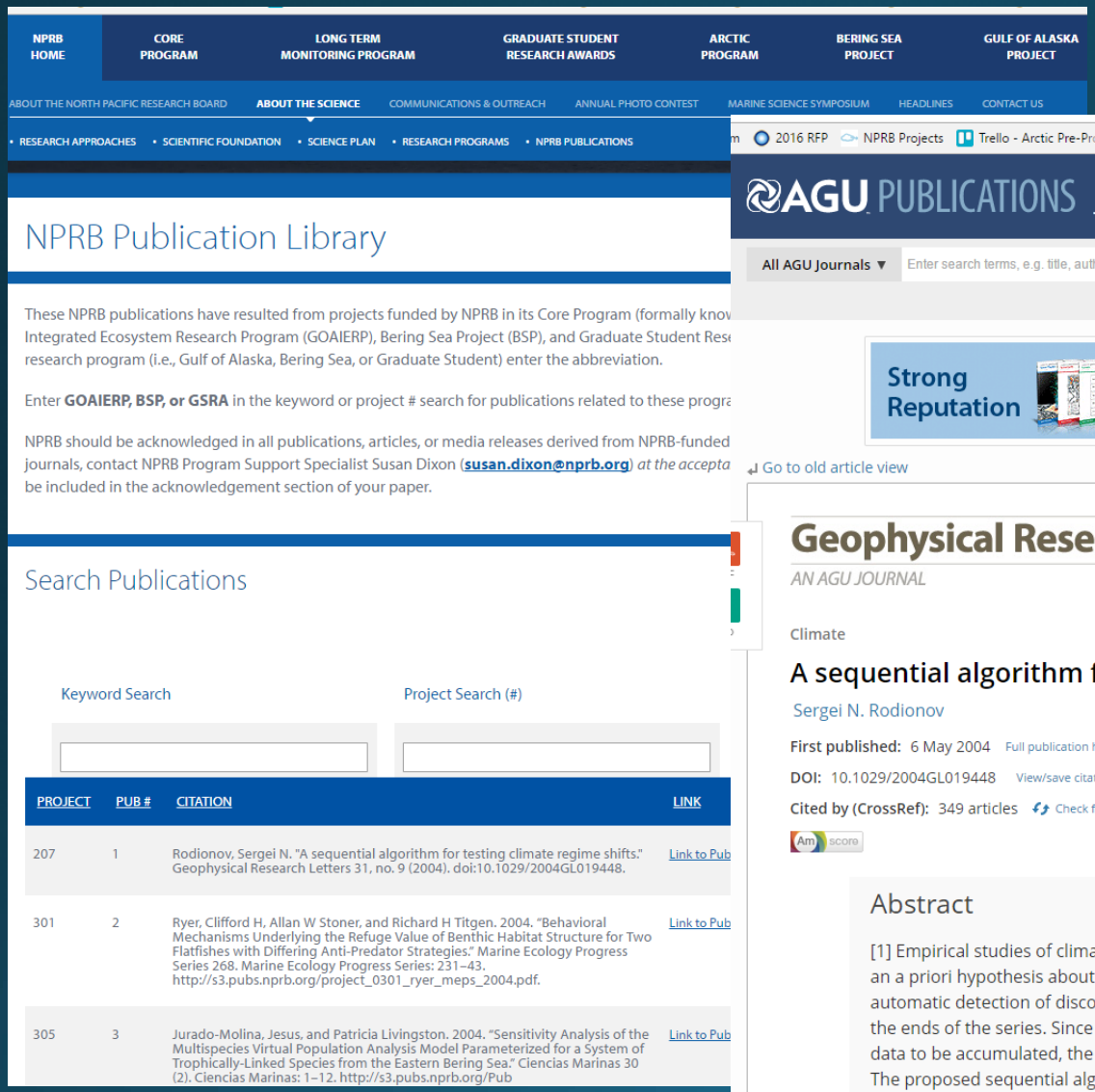
Contacts

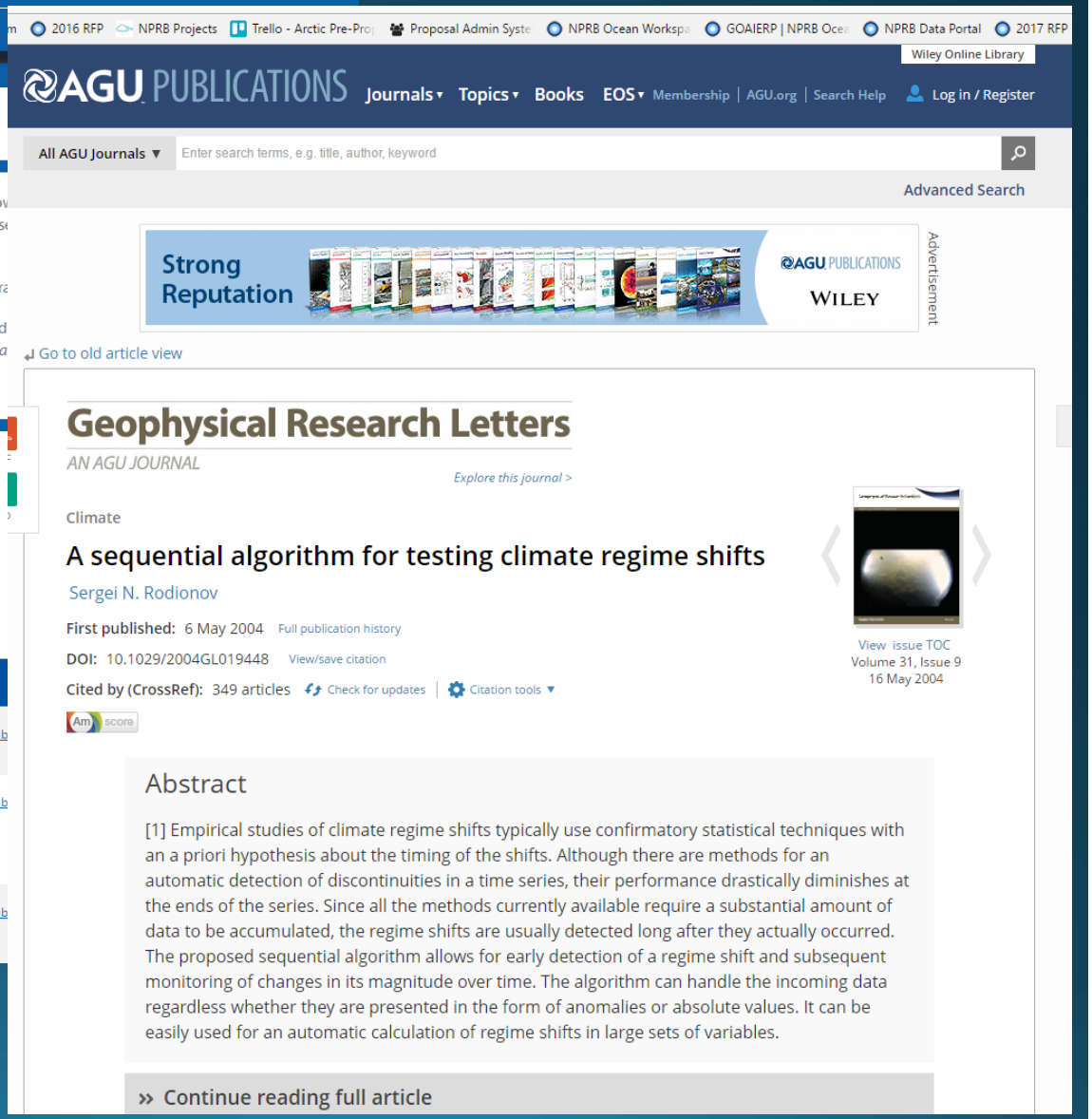
- Seth Danielson
  University of Alaska Fairbanks
  Research Assistant Professor
  sldanielson@alaska.edu
- Catherine Lalande
  Universite Laval
  Research associate
- Russell Hopcroft
  University of Alaska Fairbanks
  Professor
- Thomas Weingartner
  University of Alaska Fairbanks
  Professor
- Peter Winsor
  University of Alaska Fairbanks
  Associate Professor of Oceanography
- Claudine Hauri
  University of Alaska Fairbanks
  Research Professional
- Andrew McDonnell
  University of Alaska Fairbanks
  Assistant Professor
- Seth Danielson
  University of Alaska Fairbanks
  Research Assistant Professor

Keywords

- acoustic backscatter
- Arctic Ocean
- Biogeochemical modeling
- Biological hotspot
- climate change
- ecosystem monitoring
- Marine Carbon Cycle
- Nutrient Dynamics
- ocean acidification

Database and Search Capacity





Proposed Approach

- NPFMC to link project-specific info in the research status field of the research priorities spreadsheet and detail progress (e.g., new, underway, completed, ongoing)
- NPFMC to develop hierarchical structure to group research priorities in broad headings

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- NPRB to include link to identified NPFMC priorities within RFP and link to AKFIN website to enable researchers to determine relevance to specific Council priorities
- NPRB to add information in the NPRB proposal submission system to allow researchers to link their proposal to specific NPFMC priorities
- NPRB to develop a keyword function in the project catalogue to assign projects according to their association to specific NPFMC priorities
- NPRB to develop database and interface to support queries for results

Relevance to Fishery Management and Ecosystem Understanding

- Habitat studies
- Inform stock assessment
- Incidental catch and reduce bycatch and waste
- Impacts on protected species
- Improve data and monitoring
- Inform multispecies dynamics and ecosystem interactions
- Inform management, policy, access, and resource utilization

NPFMC/SSC 9 General Priorities

- Reduce and Avoid Impacts to Habitat
- Prevent Overfishing
- Manage Incidental Catch and Reduce Bycatch and Waste
- Reduce and Avoid Impacts to Seabirds and Marine Mammals
- Improve Data Quality, Monitoring and Enforcement
- Preserve Food Web
- *Promote Sustainable Fisheries and Communities**
- Promote Equitable and Efficient Use of Fishery Resources
- Increase Alaska Native & Community Consultation

Action

- Review existing/new research priorities
  - Edits and recommendations of SSC
- Other Issues:
  - Database changes
  - NPRB coordination

Questions / Discussion