

## C8 2017 Research Priorities Review

### **Subtopic: Improved Coordination with North Pacific Research Board (NPRB)**

Rationale: There is a great deal of overlap in the research needs of the Council and the function of the NPRB in funding and tracking research projects. Improved coordination of research priorities between the two groups should further their respective missions.







The NPRB's establishment in 2001 (*43 U.S. Code § 1474d - Environmental Improvement and Restoration Fund*) was done to create a formal review body to recommend to the Secretary of Commerce funding for "pressing fishery management or marine ecosystem information needs" as they pertain to the North Pacific Ocean, Bering Sea, and Arctic Ocean. The Council's annual review of research priorities culminates in its communicating research needs to the Secretary of Commerce as well as funding agencies (including NPRB) and research institutions. Coordination between the Board and Council, therefore, is a necessary step in the process, but improvements are needed. Better coordination would add elements of follow-through to the Council's review process, for example, connecting research priorities to funded and possibly published projects. Additionally, coordination will allow the Board to better draw from the Council's research priorities, i.e., "pressing fishery management or marine ecosystem information needs" during the funding process.

At its June 2016 meeting in Kodiak, the Council supported moving forward to better align Council and Board activities. At this stage of the initiative, there have been several staff to staff discussions on avenues and methods for improving coordination. There are currently two approaches that staff are exploring for further development:

*First*, Council staff is exploring linkages between Council research needs and projects tracked through the NPRB database. This is being done by searching for matches from both sets, using keywords. Progress is challenging using this approach and could be improved by operating directly within the NPRB database. Match-ups are generally not one-to-one, in terms of the language in the titles and descriptions of the Council's research priorities and those of the NPRB project database. More often, several projects will match minor or tangential aspects of a given Council priority, and vice versa. As such, consolidation on both sides using subject area categories would likely make the integration more straight-forward. Council and Board staff will continue to work toward alignment. Examples of existing Council priorities and (sort of) matching NPRB projects are provided in Table 1.

*Second*, NPRB staff is examining methods for incorporating Council priorities into the Request for Proposals (RFP) cycle that typically begins in early fall and closes around mid-December each year. Like most other funding sources, the NPRB solicits proposals for research through RFPs that highlight specific subject areas that will likely receive priority attention during the funding review process. In the 2017 RFP ([http://www.nprb.org/assets/uploads/files/Annual\\_Program/RFPs/2017\\_RFP.pdf](http://www.nprb.org/assets/uploads/files/Annual_Program/RFPs/2017_RFP.pdf)), "themes" (Figure 1) that comprise the Board's Core Program are associated with funding caps, and within themes, general areas of interest and issues of particular interest are listed. An example is provided below (Table 2). Nearly every issue within the example theme below has at least one corresponding Council priority item (see current list under C8).

A future goal of this exercise is to be able to provide Council priorities either on the Council’s website or within the existing database with hyperlinks to corresponding NPRB projects, whether completed or in progress. The “research status” field currently in the Council’s database is vaguely informative. Direct linkages would add a level of detail missing in the current configuration. Clearly, the mismatch in details associated with priorities and projects on either side presents an obstacle. Council priorities could be generalized for the purpose of matching with NPRB projects, but that might obscure the specific issues the Council is interested in. At the June 2017 Council meeting, Council staff and NPRB staff will discuss near and short-term plans to further coordinate research issues.

<div>Pressing Fishery Management Needs</div> <div>↕</div> <div>Marine Ecosystem Information Needs</div>	 Oceanography & Lower Level Productivity	 Fish Habitat	 Fishes & Invertebrates	 Marine Mammals	 Seabirds	 Human Dimensions
	Nutrient Dynamics  Phytoplankton Ecology  Phytoplankton - Sea Ice Dynmaics  Zooplankton Ecology	Other Human Related Impacts  Fishing Effects  Habitat Mapping  Ecosystem Functions of Habitat	Stock Assessment Research & Development  Alternative Harvest Strategies  Socio-economic Considerations  Reducing Catch of Unwanted Species  Causes of Perturbations of Major Species  Ecosystem Change Implications on Fisheries Management	Other Human Related Impacts  Fisheries Interactions  Marine Habitat Use  Foraging Success  Population Dynamics  Long-term Climate Change	Other Human Related Impacts  Fisheries Interactions  Marine Habitat Use  Foraging Success  Population Dynamics  Long-term Climate Change	Fishery Management & Policy  Baseline Assessment Issues  Human Health & Marine Resources  Human Values & Resource Protection  Climate Variability & Change

**Figure 1.** NPRB categorizes research into themes that include ocean productivity, lower trophic levels, fishes & invertebrates, seabirds, marine mammals, and human-related issues. Each year the RFP changes slightly to account for funding cycles and special focus sections.

**Table 1. Examples of NPRB projects that overlap the subject area of some of the Council's existing research priorities – listed by Council Priority. Details on the enumerated NPRB projects can be found on the NPRB website:**

<http://projects.nprb.org/>

Council		Priority	NPRB Projects
Research ID	Title		
226	Continue to evaluate the socio-economic effects from fishery policy changes on coastal communities.	C.O.M.	<b>0318</b> Development of comprehensive baseline commercial fishing community engagement and dependency profiles for the Bering Sea, Aleutian Islands, and Western Gulf of Alaska regions <b>0528</b> Socioeconomic baseline information for the Pribilof Islands <b>0529</b> Valuation of habitat closures <b>1412</b> Patterns and Trends in Salmon Fishing on the Yukon River, Alaska <b>1520</b> 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	<b>0815</b> Pacific cod ( <i>Gadus macrocephalus</i> ) migration and distribution related to spawning in the eastern Bering Sea: a mark-recapture experiment on a large geographic scale <b>0817</b> A landscape genetics approach to Pacific cod ( <i>Gadus macrocephalus</i> ) population structure in the Bering Sea and Aleutian Islands; investigation of ecological barriers to connectivity between potentially distinct population components <b>1105</b> Age validation of Pacific cod using high resolution stable isotope signatures in otoliths <b>1505</b> Size-at-age of Pacific cod ( <i>Gadus macrocephalus</i> ) in the Eastern Bering Sea <b>1507</b> Experimental estimation of catchability of the combined bottom trawl and acoustic survey for walleye pollock ( <i>Gadus chalcogrammus</i> ) in the Eastern Bering Sea.
385	Study Pacific halibut PSC, bycatch, and discard behavior in fisheries	Urgent	<b>0712</b> Bycatch characterization in the Pacific halibut fishery : A field test of electronic monitoring technology <b>0710</b> Potential trawl impacts upon ecological processes controlling habitat quality in juvenile flatfish nurseries <b>1525</b> Automated Fish Measuring System addressing monitoring needs for reducing halibut bycatch mortality in trawl fisheries <b>1607</b> Reducing the prohibited species catch of Pacific halibut: A prospective analysis of fleet behavior in the North Pacific groundfish fisheries. <b>1510</b> 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	<b>1013</b> Little Diomedea Hunters and Elders Ecological Knowledge, Management Strategies, and Usage of Walrus (Odobenus rosmarus) in Bering Strait <b>1113</b> Algal toxins in Alaskan marine mammal populations: Assessing current and emerging exposure threats <b>1316</b> Long Term Observations on Sea Ice by the Community of Barrow Project Jukebox <b>1412</b> Patterns and Trends in Salmon Fishing on the Yukon River, Alaska
172	Develop and validate aging methods for crabs.	Urgent	None
381	Effects of changes to the observer program	Urgent	<b>1320</b> Feasibility study for automated image processing to identify and capture serial catch events and obtain length measurements of catch in the commercial small vessel (<60 LOA) hook and line small fishery using stereo cameras.
363	Area-specific variability in scallop population processes	Important	<b>1307</b> Analysis of Benthic Communities on Alaskan Weathervane Scallop Beds
212	Develop methods to estimate sea lion abundance	Important	<b>1120</b> Augmenting Steller Sea Lion Surveys in the Western Aleutians With Unmanned Aircraft <b>1620</b> Developing VitaLink: autonomous remote satellite tag data recovery stations
231	Retrospective analysis of the impact of Chinook salmon PSC avoidance measures on the BSAI pollock fishery	Important	<b>1008</b> Characterization of the salmon bycatch in the Bering Sea and Aleutian Islands (BSAI) pollock fisheries and its effects
223	Develop and evaluate global climate change models (GCM) or downscaled climate variability scenarios to assess impacts to recruitment, growth, and spatial distributions.	Strategic	<b>1006</b> Assessing age-0 walleye pollock distributions for cohort strength and response to climate change <b>1402</b> Impacts of climate change on red king crab larval advection in Bristol Bay: implications for recruitment variability <b>1403</b> 'Pacification' of the Arctic: Climate change impacts on the eggs and larvae of Alaskan gadids <b>1423</b> Defining critical periods for Yukon and Kuskokwim river Chinook salmon

**Table 2. Detail from the 2017 NPRB Request for Proposals.**

### **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 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