

North Pacific Research Board: 2008 Request for Proposals

INTRODUCTION

The North Pacific Research Board (NPRB) was created by Congress in 1997 to recommend marine research activities to the Secretary of Commerce, funded through a competitive grant program using part of the interest earned from the Environmental Improvement and Restoration Fund. These funds must be used to conduct research activities on or relating to the fisheries or marine ecosystems in the North Pacific Ocean, Bering Sea, and Arctic Ocean (including any lesser related bodies of water). NPRB must strive to avoid duplicating other research activities and must place priority on research designed to address pressing fishery management or marine ecosystem information needs. The Board's long-term vision is to build a clear understanding of the marine ecosystems off Alaska that enables effective management and sustainable use of marine resources.

The Board, guided by its [Science Plan](#), has funded 172 projects totaling \$29 million as a result of six requests for proposals released since early 2002. Descriptions of the projects can be found at <http://project.nprb.org/> and fall into seven broad categories as shown in Table 1.

Table 1. NPRB-supported research initiated in 2002-2007.

<u>Categories of Research</u>	<u>Projects</u>	<u>Total Funding</u>	<u>Percent</u>
Ecosystem Studies	50	\$8,109,633	28
Fish and Invertebrates	43	\$7,121,466	25
Salmon	9	\$2,289,404	8
Fish Habitat	14	\$3,027,566	10
Marine Mammals	28	\$4,470,482	15
Seabirds	12	\$2,578,527	9
Humans	16	\$1,351,465	5

In addition, the Board recently has funded a \$14 million Bering Sea Integrated Ecosystem Research Program (BSIERP), which, in collaboration with NSF (Bering Ecosystem Study - BEST), will start in late 2007. More information on this project can be found at http://www.nprb.org/research/BSIERP/bsierp_intro.htm.

The subject of this current notice constitutes the regular 2008 RFP for projects commencing in 2008. It is similar in form and content to past NPRB requests for proposals, with research priorities structured around the 2005 Science Plan. It calls for **full proposals due November 30, 2007**. The table below summarizes the priorities and funding targets in this year's RFP. Explanation of the research priorities begins on p. 4. NPRB strongly encourages support for graduate students in its funded research.

2008 Request for Proposals: Research Priorities (Total: \$4.0 million)

PLEASE CAREFULLY READ THE EXPLANATORY PARAGRAPHS (starting on p.4) FOR THE RESEARCH PRIORITIES SUMMARIZED BELOW AND BE AWARE THAT ALL SECTIONS HAVE FIRM CAPS ON THE INDIVIDUAL PROPOSAL FUNDING AMOUNTS. CAPS ARE THE OVERALL CATEGORY AMOUNTS UNLESS OTHERWISE NOTED IN TEXT. PROPOSALS EXCEEDING THOSE CAPS WILL NOT BE PROCESSED. AMOUNTS ARE NOT PER YEAR, THEY ARE FOR THE ENTIRE STUDY.

Table 2. 2008 RFP Regular Research Priorities and target amounts totaling \$4.0 million.

1. General Research Priorities on Ecosystems Components	\$2,950,000
a. Oceanography and Lower Trophic Level Productivity	\$350,000
i. Coupling between shelf, nearshore and inland waters in the Alaska Coastal Current (ACC) as well as the importance of freshwater runoff	
ii. Population dynamics, distribution and abundance, productivity and trophic roles of appendicularians and pteropods	
iii. Oceanic zooplankton species in shelf food webs: on-shelf transport processes	
iv. Euphausiid biology	
b. Fish Habitat	\$350,000
Habitat Mapping in the Northern Bering Sea Research Area	
c. Fish and Invertebrates	\$1,100,000
i. Local impacts of fishing on prey availability for top trophic level consumers	
ii. Stock assessment and life history of sleeper and salmon sharks	
iii. Skate nurseries	
iv. Rockfish	
v. Efficacy of bycatch mitigation measures	
vi. Processes controlling recruitment dynamics for all crab species	
vii. Over-winter survival of Pacific Salmon species	
viii. Pacific Cod	
d. Marine Mammals	\$500,000
i. Ice Seals	
ii. Steller Sea Lions	
iii. Pacific Walrus in the Chukchi Sea	
iv. Polar Bears	
e. Seabirds	\$350,000
i. Seabird - ecosystem relationships	
ii. Indirect and long-term population effect of contaminants	
iii. Spectacled Eiders	
f. Humans	\$200,000
i. Analyses of current determinants of exvessel, wholesale, international, and retail demands for principal seafood products from the GOA and BSAI	
ii. Pre- and post-implementation studies of the benefits and costs associated with changes in management regimes	

iii. Prospective and retrospective analyses of changes in the spatial and temporal distribution of fishing effort	
g. Contaminants	\$100,000
2. Local and Traditional Knowledge	\$100,000
3. Collaboration with Oil Spill Recovery Institute (\$200,000 total)	\$100,000
a. Socio-economics: modeling community impacts	
b. Contaminant baseline assessment	
c. Forage fish and near-shore habitat associations	
4. Cooperative Research with Industry	\$400,000
a. Topics for Fishing Industry	
i. Gear modification	
ii. Fisheries Monitoring	
iii. Bycatch reduction	
iv. Ecosystem Monitoring and Research	
v. Whale Entanglement Avoidance and Deterrents	
vi. Habitat mapping	
b. Topics for Oil and Gas Industry	
i. Polar bears	
ii. Marine Mammal Acoustic studies	
iii. Shoreline change	
iv. Ice Seals	
v. Salmon distribution	
vi. Influence of oil and gas development on marine bird distribution, migration and habitat use in Beaufort Sea	
5. Community Involvement	\$100,000
6. Aleutian Islands	\$350,000
a. Nearshore Dynamics of the Aleutian Islands	
b. Ecosystem impacts of climate and ocean conditions in the Aleutian Islands	
c. Fishing effect interactions	
d. Advancing ecosystem approach to fisheries management	
e. Development of forecasting tools that incorporate ecosystem indicators	
f. Ecosystem indicators including retrospective studies	
TOTAL	\$4,000,000

Request for Proposals for 2008**1. General Research Priorities on Ecosystems Components \$2,950,000**

The following research priorities follow the structure of the Science Plan. Please consult the Science Plan for clarification of appropriate research to be conducted under each heading. Care should be taken to consult current NPRB-funded projects including components under the BEST/BSIERP program to avoid overlap and create synergies wherever possible.

a. Oceanography and Lower trophic level productivity \$350,000

The NPRB expects to fund projects under this general category across the topical areas listed below. Proposals responsive to these topics should address linkages of lower trophic level organisms to forage and commercial fish where appropriate and resultant information should prove useful to fisheries management. Applicants should also consult the recently funded Bering Sea Integrated Ecosystem Research Program / Bering Sea Ecosystem Study to avoid overlap.

- i. Coupling between shelf, nearshore and inland waters in the Alaska Coastal Current (ACC) as well as the importance of freshwater runoff

Significant volumes of freshwater (precipitation, snow and glacier melt) are discharged into the Gulf of Alaska, coastal embayments, and inland waters from coastal watersheds. Near the coast, surface waters are typically fresher and less dense than waters farther offshore. The Alaska Coastal Current (ACC), an along-shore current (the coast is to the right when looking downstream), is the dynamical response to this cross-shore density gradient. Water exchange between deep bottom water, the ACC, and coastal embayments might be the primary physical process influencing the abundance and distribution of plankton that provide food for schools of herring and other small fishes as well as out-migrating juvenile salmon. Yet we have a limited understanding of how much water is actually exchanged, at what frequency, and at what times during the year. Proposals in this category should aim at better understanding the relationship between shelf, nearshore and possibly inland waters (Southeast Alaska). They should provide an improved description of the mixing dynamics and the spatial and temporal variability of this coastal flow and its connections with the coastal region.

- ii. Population dynamics, distribution and abundance, productivity, and trophic roles of appendicularians and pteropods.

Appendicularians and pteropods are the main food items for juvenile pink salmon in the Gulf of Alaska, and limited data indicate they are abundant in the summer and fall in the Gulf of Alaska and the Bering Sea. Information on their population dynamics, distribution and abundance, productivity, and trophic roles in these regions is needed in order to understand the structure and functioning of lower trophic levels, and the production of fish species utilizing these organisms as food items.

- iii. Oceanic zooplankton species in shelf food webs: on-shelf transport processes

Spring meso-zooplankton in continental shelf regions of the Gulf of Alaska and the Bering Sea is heavily dominated (in terms of biomass) by oceanic species, mainly *Neocalanus* spp. These are important prey items for some fish and some seabirds, and variation in their abundance has consequences for higher trophic levels. These copepod species cannot complete a full life cycle on

the continental shelf and their early developmental stages are transported onto the shelf in the late winter or early spring each year. These seed populations significantly determine the stocks of mesozooplankton on the continental shelf each year. Issues affecting the timing and on-shelf transport of these oceanic populations onto the shelf of the GOA and the BS need to be addressed.

iv. Euphausiid biology

Although there has been considerable effort expended to determine the abundance and distribution of euphausiids in the Bering Sea and the Gulf of Alaska, much less information is available on their basic biology. Information on their rates of growth, reproduction and development, and overall productivity are needed on these important forage species.

b. Fish Habitat

\$350,000

NPRB is seeking proposals related to habitat mapping in the Northern Bering Sea Research Area. (per NPFMC action, June 2006 http://www.fakr.noaa.gov/npfmc/current_issues/BSHC/BSHC.htm). Research should be focused on field studies to assess habitat types, substrates, associated invertebrates, and habitat forming epifauna in the Northern Bering Sea Research Area. Applicants should consult NPRB project 615 for information on the recent Marine Habitat Mapping Technology Workshop for Alaska.

c. Fish and Invertebrates

\$1,100,000

The individual proposal funding cap under Fish and Invertebrates is \$250,000.

i. Local impacts of fishing on prey availability for top trophic level consumers

There is a continued need for studies that measure the impact of commercial fishing on the foraging success of top trophic level consumers. NPRB requests proposals that are designed to address this issue. Potential investigators should provide a description of the power of their analysis to differentiate responses of prey and predators to fishing and natural effects as well as a statement regarding the applicability of their results to other areas and seasons. *Care should be taken not to overlap with NPRB [Project 730](#).*

ii. Stock assessment and life history of sleeper and salmon sharks

Sharks form part of the ‘other species’ category used by the North Pacific Fishery Management Council. There is insufficient life history and stock assessment information for these species to be properly managed. The NPRB is seeking proposals that will research and develop improved stock assessments for those stocks that are difficult to assess with current methodology, and to fill gaps within our current understanding of their life history, as well as their distribution and abundance. Studies could include process studies to understand population fluctuations of sharks, but priority will be given to projects that address the concerns listed above.

iii. Skate nurseries

Skates are part of the “other species” category used by the North Pacific Fishery Management Council. There continues to be a need for basic life history information for these species, some of which are being addressed through current NPRB projects ([415](#), [510](#), [621](#), and [715](#)). This year the NPRB is also inviting proposals to identify the location and distribution of skate nursery areas

across the Bering Sea shelf and slope.

iv. Rockfish

NPRB is seeking proposals that will conduct direct observations (e.g., submersible and dive surveys) to compare rockfish densities between trawlable and non-trawlable habitats; improve surveys for minor rockfish species to verify range relative to standard surveys; or perform supplemental trawl survey biomass estimates to address patchy distribution.

v. Efficacy of bycatch mitigation measures

Research is needed on the efficacy of bycatch mitigation measures (e.g., PSCs, time/area closures) and their effects on populations of the bycatch and target species, effects of changes in abundance of bycatch species on bycatch rates, and methods for assessing the economic and social costs of bycatch.

vi. Processes controlling recruitment dynamics for all crab species

Proposals are requested that will improve understanding of processes controlling recruitment dynamics of crab, incorporate these processes into scenarios regarding temporal trends in recruitment, and perform a management strategy evaluation using variable recruitment scenarios. This is a very broad topic encompassing the need to identify and assess biological and environmental effects on egg production, egg hatching, and larval survival, as well as mechanisms controlling the abundance of juvenile crabs from settlement to recruitment into the fishery. Factors include larval transport, predation, competition, and habitat availability. Primary emphasis is on stocks currently declared overfished. *Care should be taken not to overlap with previously funded NPRB Projects on this topic.*

vii. Over-winter survival of Pacific salmon species

NPRB is requesting proposals to identify the physical and physiological factors that affect the marine survival of juvenile Pacific salmon over their first ocean winter in the Bering Sea.

viii. Pacific Cod

Genetic analysis has suggested that limited stock structure may exist across the range of Pacific cod in Alaska. Additional research is needed in two areas. The first is to address the potential for segregation of cod populations at scales significant to management, that is, within management areas, and this may best be accomplished with mark-recapture methods and/or archival tags to be able to look at final scale and water column use. The second is the identification of cod spawning areas in relation to potentially distinct population segments and an evaluation of potential impacts of fishing on those spawning aggregations. *Proposals should draw upon knowledge gained from other NPRB funded projects on this topic, particularly [618](#) and [620](#).*

d. Marine Mammals

\$500,000

i. Ice Seals

The four species of ice-associated seals which inhabit the Bering, Chukchi and Beaufort Seas

(ringed (*Phoca hispida*), bearded (*Erignathus barbatus*), ribbon (*Phoca fasciata*), and spotted seals (*Phoca largha*)) play an important role in the Arctic ecosystem. Ice seals are important prey items for polar bears (*Ursus maritimus*) and provide important subsistence resources for Native people in northern and western Alaska. While research on ringed seals has increased in recent years, relatively little is known about the population structure, distribution, trend abundance or life history traits of the other 3 species. Diet and foraging behaviors are also poorly understood. These species are highly sensitive to changing sea ice conditions and may be particularly vulnerable to climate change impacts. Research priorities for bearded, ribbon and spotted seals include assessment of population abundance and distribution, stock structure, habitat-use patterns and the physical and ecological characteristics of preferred habitat, foraging ecology and an evaluation of potential affects of climate change. Proposals may also address the unknown extent to which these seals interact with commercial fisheries. *Applicants should be aware that NPRB has funded research on ice seals, generally ringed seals, in the past. Any proposals for research of this type should be careful to avoid duplicating previous (312) and ongoing projects (515 and 631). See also ice seals under cooperative research.*

ii. Steller Sea Lions

The western stock of Steller sea lions declined by 80% between the 1970s and the late 1990s, resulting in the listing of the species as threatened under the Endangered Species Act in 1990. The western distinct population segment (DPS) was subsequently upgraded to Endangered in 1997. It has been suggested that due to regime shifts in the North Pacific Ocean the carrying capacity for Steller sea lions has been reduced, thus preventing the recovery of the western stock of Steller sea lions to pre-decline population levels. The NPRB is requesting proposals to investigate and evaluate whether or not the western DPS of Steller sea lions is at or near a new equilibrium in abundance, possibly through an analysis of vital rates and other population dynamic indices in comparison to similar indices for other mammal populations. Proposals could also address this question by including an analysis of historical and archaeological information regarding Steller sea lion abundance and concurrent changes in the ecosystem. Proposals are to use this information to focus on the current state of the Steller sea lion population, not on the factors which contributed to the decline of the population. Results of this research are expected to provide important information to management agencies. This topic has been noted as a top research priority by the Scientific and Statistical Committee of the North Pacific Fishery Management Council.

iii. Pacific Walrus in the Chukchi Sea

A recently completed at-sea survey of Pacific Walrus (*see NPRB project 632*) may shed new light on the status of this species' population; however, retreats of sea ice beyond effective foraging depths in the Chukchi Sea, along with recent sightings of orphaned calves and increases in numbers of cows and calves on haul-outs in Siberia suggests that changes are occurring to Pacific Walrus and their environment. In addition, oil and gas leasing is planned in important Pacific walrus habitats in the Chukchi Sea. The NPRB is requesting proposals for research to investigate the effects of changing environmental conditions, particularly sea ice and benthic habitats, and/or the effects of coastal and offshore human activities and disturbance on the distribution and population dynamics of Pacific walrus in the Chukchi Sea.

iv. Polar Bears

In 2007 a proposed rule was filed by the USFWS to list polar bears as threatened under the Endangered Species Act. This, and continuing climate change trends, has increased the level of scrutiny on the status and health of polar bear populations worldwide. The most serious

conservation issues facing U.S. polar bear populations are the potential effects of climate change on habitat and prey availability. Other serious issues include the effect of contaminants, the potential over-harvest of bears and the impact of human activities (e.g., oil and gas exploration and development) on polar bear habitat. The NPRB is requesting proposals for research to investigate the potential effects of changing environmental conditions (e.g., sea ice, snow cover, prey availability, and in particular seasonality of those factors), contaminants, and/or the effects of coastal and offshore human activities and disturbance of habitat on the distribution and population dynamics of polar bears. *Proponents should consider the potential for obtaining funding from NPRB, industry groups, and NGO funding sources; such cooperative funding is not required for submitting proposals under this topic, but it is strongly encouraged.*

e. Seabirds

\$350,000

i. Seabird – ecosystem relationships

Seabirds are integral members of marine ecosystems in the North Pacific, and may serve as sensitive and cost-effective indicators of their health and status. The NPRB funded a project (516) wherein an international panel of marine bird ecologists synthesized current knowledge of “seabirds as indicators”. More recently, NPRB supported a pilot study relating seabird phenology and salmon returns in Bristol Bay (531). Based on the results of this pilot study, NPRB is seeking proposals that further explore the concept of trophic equivalency and the use of seabirds as indicators of food web conditions that also affect and relate to other species of interest, especially fish.

ii. Indirect and long-term population effect of contaminants (plastic, oil, heavy metals, etc.)

The NPRB is seeking proposals that will investigate the indirect and long-term population effect of contaminants (plastic, oil, heavy metals, etc.). Comparative studies between seabird species feeding at different trophic levels, habitats, and with different life histories are encouraged.

iii. Spectacled Eiders

The NPRB is seeking proposals that will investigate the distribution and seasonal habitat usage of marine areas by Spectacled Eiders, with an emphasis on winter habitat such as open water polynyas near St. Lawrence and St. Mathew Islands. Projects may be able to link to BEST/BSIERP benthic and patch dynamics studies.

f. Humans

\$200,000

NPRB is requesting proposals that address any of the general research priorities for humans, as identified in Table 3-13 of the science plan. In general these include fishery management and policy, baseline assessment issues, human health and marine resources, human values and resource protection, and climate variability and change. Other human-related issues are also addressed under the LTK component of this RFP. ***Highest priority will be given to proposals that address Table 3-13 AND the following identified by the North Pacific Fishery Management Council:***

i. Analyses of current determinants of exvessel, wholesale, international, and retail demands for principal seafood products from the GOA and BSAI.

ii. Pre- and post-implementation studies of the benefits and costs, and distribution of benefits and costs associated with changes in management regimes (e.g., changes in product markets, characteristics of quota share markets, changes in distribution of ownership, changes in crew compensation, as a consequence of the introduction of dedicated access privileges in the halibut/sablefish, pollock, and crab fisheries). “Benefits and costs” include both economic and social dimensions.

iii. Prospective and retrospective analyses of changes in the spatial and temporal distribution of fishing effort in response to management actions (e.g., time/area closures, marine reserves, bycatch restrictions, co-ops, IFQs) including methods for assessing the economic and social costs.

g. Contaminants

\$100,000

The NPRB will consider proposals that address any of the research priorities identified in the science plan, including studies of sources, transport, effects, and accumulation of contaminants in subsistence, recreational, and commercial species, and other ecosystem components. However, efforts that address the following will be given priority consideration.

Projects should relate to community concerns and focus on marine species that are human dietary items. The Alaska DEC has started a bio-monitoring program for fish and proposals should not duplicate this effort. Monitoring for newly identified contaminants in important food sources for humans is a priority. Sampling design should include background levels of the contaminant(s) and examine input sources and levels. Sampling and analytical protocols should be peer reviewed.

A relevant program could be two-tiered:

Long Term:

- Develop sampling and analytical protocols for monitoring contaminant trends in the environment (e.g. plankton, seabird or fish eggs, marine mammals). The proposed monitoring should be efficient, robust and able to be used periodically to assess ecosystem contaminants levels.
 - The protocols developed should provide for samples to be taken each year but analyzed only periodically to determine if contaminant levels have changed.
 - The matrix measured should integrate spatially and temporally. Archival storage for samples should be described in the proposal.
 - Opportunities for community involvement in sampling are encouraged.

Point Source Contamination:

- Develop sampling and analytical protocols for monitoring point source contaminants the environment (e.g. marine mammals, fish, shellfish, birds). The proposed monitoring should be efficient, robust and responsive to the context of the contaminant event.

2. Local and Traditional Knowledge \$100,000

The Board is requesting proposals that address one or more of the research priorities identified elsewhere in this 2008 RFP (that are not related to or take place in the BSIERP study area, which has its own integral LTK component) and engage local and traditional knowledge (LTK) and its holders. Potential projects must be responsive to the LTK section of Chapter 4 of the NPRB science plan and contribute to the mission of the NPRB. In addition to the usual proposal evaluation criteria, LTK proposals will be assessed with regard to: (a) the depth to which they engage LTK throughout the project, including design and interpretation as well as the collection of data and information, and (b) the demonstrated commitment of community partners (where “community” may refer to a geographic, ethnic, occupational, or other group), for example as research team members or in letters of support.

3. Collaboration with Oil Spill Recovery Institute \$100,000 (\$100,000 NPRB; \$200,000 total)

An opportunity exists to conduct collaborative research in the Gulf of Alaska. This is the third year of collaboration between NPRB and the Oil Spill Recovery Institute (OSRI), and again this year, NPRB and OSRI have each committed up to \$100,000 for this collaboration, yielding a total of up to \$200,000. This section of the RFP is open to all organizations and individuals and is in no way restricted to those associated with OSRI or the Prince William Sound Science Center. The research topics have changed for this 2008 RFP and are as follow:

a. Socioeconomics: modeling community impacts - \$75,000

The coastal regions of Alaska have experienced and are experiencing considerable environmental and anthropogenic changes, such as impacts from oil spills, to marine and adjacent ecosystems, with potentially significant effects on natural resources available for commercial, recreational or subsistence harvest and other uses, as well as on the coastal economies, culture and social fabric. In order to anticipate and plan for these changes, coastal communities and resource planners in Alaska need to understand the size and directions of social, economic, and cultural responses to ecosystem changes. As a first step, a specific need is a model for estimating the community impacts of the changes and events that affect the natural resource base of marine resource dependent industries and activities. The model should focus on one or more communities with strong marine resource dependent economies, examining the effects of an oil spill along with other changes and influences on the marine environment and human uses thereof in the past two to three decades. The model may incorporate both traditional and emerging sectors, as well as consumptive and non-consumptive uses, and should be designed to allow its extension to other coastal communities in Alaska. Proposers should document their reasons behind the communities chosen, assumptions and decisions about the scope of analysis, and explain how they expect their results can be built upon to create the larger model. Existing models can be adapted. Individual proposal funding cap is \$75,000.

b. Contaminants baseline assessment - \$75,000

Subsistence usage of marine resources as a main source of protein is a significant part of the Alaska Native culture. Hence, food safety is of great importance and of continued concerns especially in light of changing ocean conditions. National programs such as the National Oceanic and Atmospheric Administration’s (NOAA) National Status and Trends (Benthic Surveillance and/or Mussel Watch Program) have limited spatial coverage to assess the range of potential contaminants in the Gulf of Alaska (including the Aleutian Islands). We are looking for proposals that will improve the spatial coverage of baseline contaminant assessment in the Gulf of Alaska. The proposed study should be compatible with an

existing contaminant program so that this one-time baseline assessment will inform the expansion of contaminants monitoring in the Gulf of Alaska.

In addition to overall concerns about the health of subsistence foods, one of the goals of the project is to provide background information that would be useful for assessing affects of future oil or fuel spills. Thus, proposals should demonstrate that the suite of analytes are consistent with lessons learned from past monitoring and sampling programs. At a minimum, the list of analytes that should be included in the proposed program are: parent and alkylated PAHs, POPs (including PCBs, DDTs, chlorinated pesticides-including toxaphene and lindane), and perfluorinated octane sulfates (PFOS).

Justification for site selection, including a discussion of known existing or potential sources of contamination (including areas at highest risk for oil spills), must be provided. It is not the intention of the RFP to support analysis of contaminants at sites that are already included in existing contaminant programs or where historical background information already exists. Merit will be provided for programs that make efforts to coordinate with other coastal contaminant measurement programs in the Gulf of Alaska. Individual proposal funding cap is \$75,000.

If shellfish are selected as monitoring organisms, the NPRB will provide an additional \$25,000 to add domoic acid to the assessment. Domoic acid (DA) is a newly recognized toxin produced by diatoms in the genus *Pseudonitzschia*. Domoic acid is known to occur in Alaskan coastal waters. DA vectors into all components of the marine food web including forage fish, benthic organisms and subsequently into the diets of top predators. Significant health effects in humans (original outbreak in Prince Edward Island, Canada) and marine mammals have been documented (CA-WA coasts). DA is a stable toxin and may persist in the environment. A baseline assessment of DA in shellfish would be valuable information for resource managers.

c. Forage fish and near-shore habitat association - \$50,000

Proposals are requested that will define relationships between the kinds and amounts of near-shore, shallow-water habitat (different geological features, floral assemblages, man-made structures, other, in water depth less than 30 meters) and the occurrence of selected fishes. Proposals should not include any new data collection but the intention should be to combine existing datasets to help increase our knowledge on forage fish habitat requirements and associations as well as to validate the use of shore zone and other mapping data. Previous shore zone mapping studies have produced detailed near-shore habitat maps, including features that may be critical rearing and reproductive habitat for demersal and pelagic species. If strong correlations can be demonstrated between habitat type and fish dependencies (any or all life stages), the information will assist resource managers in protecting stocks in specific near-shore regions. Proposals should demonstrate the ability to provide a quantitative and repeatable measure of habitat use by selected fishes, and statistical or other analyses must be sound. Individual proposal funding cap is \$50,000.

4. Cooperative Research with Industry

\$400,000

The Board is requesting proposals that address one or more of the research priorities identified below ***and engage the fishing and oil and gas industries or others as appropriate***. Potential projects must be responsive to the cooperative research section of Chapter 4 of the NPRB science plan and contribute to the mission of the NPRB. In addition to the usual proposal evaluation criteria, cooperative research proposals will be assessed with regard to: (a) the depth to which they directly engage the relevant industry throughout the project, including project identification, design, and interpretation as well as the collection of data and information;(b) the applicability of the proposal to addressing pressing conservation

and management needs identified for the applicable industry; (c) the extent to which the project will help to build a better understanding between science and industry, and greater confidence in the products of research and in the regulatory process; and (d) scientific integrity, practicality, and cost effectiveness of the experimental design and how the results will be applied to fishery management if such alteration is beneficial or required. Cooperative research priorities identified by industry are listed below and will be given highest priority. The NPRB also will consider other proposals relating to other priorities in its Science Plan as long as they have a strong cooperative research component.

a. Topics identified by fishing industry

i. Gear Modification

Gear modification studies are a traditional area for industry/scientist cooperative research. Such cooperative research studies can be very cost effective, and provide a good opportunity to bring practical industry experience and scientific methodologies together. Areas of interest include gear modifications to reduce habitat impacts, gear loss, interactions with non-target species of fish, avoid or minimize marine mammal or seabird interactions, and reduce the impacts of lost gear. Gear modifications are not limited to trawls and studies may include gear for rocky areas as well as improvements in survey method design.

ii. Fisheries Monitoring

Improvements in fishery monitoring require at-sea testing and evaluation. Cooperative research efforts can play a useful role in reducing costs and ensuring that projects are efficient, effective, and have industry buy-in. This can range from remote monitoring and video monitoring programs to modifications or refinement of observer program protocols and operations.

iii. Bycatch Reduction

Bycatch reduction projects are already underway, such as the salmon and halibut excluder projects. These are closely related to gear modification cooperative research projects. Other kinds of bycatch reduction could include cooperative research projects to look at bycatch in fixed gear or pots, studies to reduce crab mortalities in pot gear, or investigations into modification of fishing practices (time, depth, seasons, etc) to reduce bycatch while maintaining healthy catch rates for target species.

iv. Ecosystem Monitoring and Research

Ecosystem monitoring and research could include utilizing platforms of opportunity in the fleet to carry or deploy monitoring oceanographic sensors, cooperative biomass assessments and surveys, marine mammal/fishery interactions and methodologies to reduce such interactions, assist in deployment of acoustic monitors (right whales), evaluation of non-fisheries activities on fish behavior (seismic testing), and cooperative marine mammal or seabird monitoring.

v. Whale Entanglement Avoidance and Deterrents

The Central North Pacific humpback whale population is increasing and the risk of interactions with salmon net fisheries (gillnet and seine) in the Gulf of Alaska has also increased. NPRB is seeking proposals with a focus on cooperative testing of avoidance techniques with potential equipment development and evaluation to reduce entanglements.

vi. Habitat mapping

NPRB is seeking cooperative proposals that will undertake comprehensive surveys of habitat types in the Bering Sea canyons. Applicants should consult NPRB [project 615](#) for information on the recent Marine Habitat Mapping Technology Workshop for Alaska.

b. Topics identified by oil and gas industry

The Oil and Gas industry is supportive of cooperative research in long-term monitoring with an emphasis in the Beaufort Sea. Applicants should contact potential industry partners before preparing and submitting proposals. Areas of particular interest include:

- i. Polar bears: distribution, abundance, den emergence, den detection, and hearing ability (i.e., research related to disturbance) in the Beaufort Sea – see also polar bears under marine mammals.
- ii. Marine mammal acoustic studies with a focus on a better understanding of ambient sound in the Beaufort Sea.
- iii. Assessment and analysis of shoreline change over the past 30 years in the Beaufort Sea.
- iv. Basic and/or applied work on ice seals (especially ringed seals in the Beaufort Sea) – see also ice seals under marine mammals.
- v. Salmon distribution: evaluation and analysis of salmon distribution from catch data, including Local and Traditional Knowledge, in the Beaufort Sea.
- vi. Influence of outer continental shelf oil and gas exploration on marine bird distribution, migration and habitat use in the Beaufort Sea. These areas of exploration are utilized by several species of seabirds that generally move from wintering areas in the North Pacific Ocean to summer breeding, feeding, and molting areas in the Chukchi and Beaufort Seas and their associated coastal areas and loons which transition through coastal areas. Species of particular concern are the spectacled eider and Steller's eiders (both listed as threatened species under the Endangered Species Act), common eiders and long-tailed ducks (which appear to be in decline), and yellow-billed and red-throated loons. Little is known about the distribution, timing of migration, migration routes, and food habits of these species when they are at remote locations in the Arctic Ocean. In addition, changes in sea ice and marine community shifts may influence habitat use patterns of these birds. Basic biology and habitat needs are necessary for industry and natural resource agencies to conduct environmental planning and avoid habitat impacts for these birds.

5. Community Involvement**\$100,000**

The NPRB seeks proposals for small-scale research activities based in communities along the coast of the Gulf of Alaska, Aleutians, or Arctic Ocean. The intent is to provide community-based organizations and individuals with the chance to gain experience in conducting research projects and to address their research interests and priorities, consistent with the overall mission of the NPRB. This section of the RFP is not intended to discourage community-based organizations from applying for other and larger projects under any other section of the RFP. Instead, it provides an opportunity for those organizations to define priority research, to explain how that research is connected to the NPRB mission, and to describe how the

project would be conducted to meet scientific standards as well as community expectations. The NPRB intends to fund two or three projects under this item.

6. Aleutian Islands

\$350,000

The Aleutian Archipelago consists of hundreds of small, volcanic islands, separated by oceanic passes that connect the waters of the North Pacific with the Bering Sea. The Aleutian Islands region has a complicated mixture of substrates, including a significant proportion of hard substrates (pebbles, cobbles, boulders, and rock). Cold-water corals and sponge communities are a dominant feature of benthic communities on the steep rocky slopes of the Aleutian Islands and provide important habitat for a variety of fish and invertebrate species.

The North Pacific Fishery Management Council has chosen the Aleutian Islands as the pilot ecosystem area for its first Alaskan [Fishery Ecosystem Plan](#) (FEP) in an effort to move forward with an ecosystem approach to fishery management. The Aleutian Islands area is an ideal candidate as it is ecologically and historically unique in several aspects. Many Council management actions in the past have focused on the area's important resources, such as Steller sea lions, seabirds, benthic habitats that support coral and sponges, and other special resources of public interest (such as deep sea coral gardens). The Aleutian Islands have also been at the center of allocation issues related to the Aleutian Islands pollock and Pacific cod fisheries. Far less is understood about the ecological interactions in the Aleutians than in the eastern Bering Sea, yet the two areas are managed under one the Federal fishery management plan. The Council recognizes that the Aleutian Islands contain unique and valuable ecological qualities that should be preserved, and wishes to build upon past actions by considering fishery interactions and cumulative impacts within this ecosystem more explicitly. Applying an ecosystem approach to fisheries management through the implementation of a FEP may promote this goal.

Through the process of developing the FEP for the Aleutian Islands, research gaps have been identified. The NPRB is seeking proposals that address gaps in the Aleutian Islands for the following six categories:

a. Nearshore Dynamics of the Aleutian Islands

The Aleutian Islands are the exposed mountain tops of the submarine, volcanic range extending between North America and Asia. The large populations of marine birds and mammals which breed and rear young here require adequate prey within energetically efficient foraging distances of breeding sites. The steep-sloped submarine mountains are generally surrounded by deep water, particularly south of the islands, so the nearshore, shallow water fringe is relatively narrow. Nevertheless, this zone is ecologically very important. The shallowest portions of the narrow shelf are dominated by kelp forests and associated biota, and the outer edge of the shelf and upper portions of the slope are inhabited by large populations of marine fish (e.g., Pacific Ocean Perch, Atka Mackerel). Extensive work has been done along the Aleutians to document species abundance, distribution and life history parameters. However, relatively little study has been devoted to ecosystem processes that link the nearshore and pelagic zones. Furthermore, basic physical drivers (e.g., passes, major slope currents) are not well understood except at very broad scales, but are known to be important and predictable "hotspots" for many marine birds and mammals. NPRB will consider proposals that address ecosystem processes in the nearshore marine waters of the Aleutian Islands, including integrated analysis of patterns of change in physical and biological elements for use in predictive models addressing how the nearshore and pelagic systems interact and how the nearshore system is likely to change due to climate effects.

b. Ecosystem impacts of climate and ocean conditions and trends in the Aleutian Islandsc. Fishing effect interactions

Differences between spatial stock structure and the spatial scale of fishery management may impact managed species in undesirable ways. NPRB will support proposals that research the extent of spatial dispersal for commercial stocks, determine larval distribution and drift of key species in the Aleutian Island ecosystem, or address the level of conservation obtained from various management scenarios.

Commercial fisheries may impact subsistence uses. Studies relating to the local and traditional knowledge of subsistence use patterns and how they may have been impacted by commercial fisheries are requested. To this end it would be useful to support a compilation and evaluation of local and traditional knowledge from residents of Atka and Adak.

NPRB held a Bering Sea indicator workshop in 2006 ([Project 502](#)). From this workshop followed a series of recommendations on how to proceed with research on indicators. The following categories were developed as result and should specifically be focused for the Aleutian Islands.

d. Advancing ecosystem approach to fisheries management.

This includes development of suitable indicators and indicator species (including developing ecosystem reference points, optimum yield (OY) cap considerations, and improvements of current ecosystem models.

e. Development of forecasting tools with indicators.

Development of forecasting tools that incorporate ecosystem indicators into single or multi-species stock assessments to conduct management strategy evaluations under differing assumptions regarding climate and market demands. Standardization of "future scenarios" will help to promote comparability of model outputs. Process-oriented research focused on local impacts of fishing on prey availability for top trophic level consumers will also be informative.

f. Ecosystem indicators including retrospective studies.

Research is still needed into the assessment and determination of appropriate ecosystem indicators. Current models are designed for gradual changes based on observed ecosystem states, yet many biological system show threshold responses. Research could focus on evaluating current indicators (false positives, etc. see 502 report) and/or a 'risk assessment' approach to determine indicators for shifts into alternate states, i.e. regime shifts. Indicators for critical ecosystem processes should be developed and evaluated including retrospective studies. An objective review of ecosystem responses to existing climate indicators could be done. The use of remotely sensed high resolution wind stress measurements (i.e. QuikSCAT) and sea surface heights (SSH) (TOPEX/POSIDEN) could be used to improve existing ecosystem indicators such as upwelling indices and to develop new circulation indicators. The development and testing of new biological indicators are also encouraged.

PROPOSAL APPLICATION MATERIALS

All applicants should refer to http://www.nprb.org/research/2008_RFP.htm for a copy of proposal application materials. Please contact the NPRB office by phone at (907) 644-6700, or by email to NPRB's assistant program managers, Carolyn Rosner (Carolyn.Rosner@nprb.org) and Carrie Eischens (Carrie.Eischens@nprb.org) if you need further information.

Please note that if the links to the template documents provided below do not work on your computer due to your internal security settings, you may find all templates at the above mentioned website.

PROPOSAL SUBMISSION AND DEADLINE

Proposals must be submitted online at http://www.nprb.org/research/2008_RFP.htm). Applicants will need to prepare the following information and documents (described in more detail below). Sections 1-7 (except for names of potential reviewers) will be sent out for technical reviews.

1. Proposal summary (abstract of max 250 words)
2. Proposal classification
3. Contact information for the Principal Investigator, Co-Investigators, Collaborators, Grant Managers, and potential Reviewers
4. Research Plan (max 12 pages, *use provided template*)
5. Budget Information and Budget Narrative (*use provided templates*)
6. Résumés (max 2 pages per principal investigator)
7. Previously Funded NPRB Projects
8. Current and Pending Support (*use provided template*)
9. Community Involvement
10. Letters of support
11. Other Requirements

Online submission for proposals will be available between 1 November and 30 November 2007. During the submission process you will create an account to which you can return at a later date if needed. Returning applicants can use their existing accounts. You will be asked to fill in a variety of forms with information from the list above as well as to upload files (research plan, CV's, etc.). **Templates** for the research plan, budget summary, budget narrative and the current and pending support form will be provided (blue links in the appropriate sections below) and **must be used**. Download these templates, fill them in and upload them again in the appropriate places. Your information will be saved as you move through this process and you will have the ability to update any information you have provided at any time before your final submission.

A link to a generated complete summary page(s) will appear as soon as you have provided the following information: full address and contact information for each agency or entity that will be legally bound to perform the research if funded, name of the principal investigators and co-investigators that will be associated with the project and their agency/organization affiliation and email address, and the 250 word summary. Please print this page(s) and have it signed by the appropriate legal representatives of each institution participating in this research. Once you have finalized your submission you will be assigned a reference number. Insert this number in the appropriate place on the signed summary page and mail it to:

**North Pacific Research Board
1007 West 3rd Avenue, Suite 100
Anchorage, AK 99501**

It is acceptable for each authorized representative to sign a different sheet of paper and send it in separately. The proposal Applicant should sign the overall summary sheet.

Proposals must follow the guidelines and criteria specified herein and **must be submitted online by 4 p.m., Alaska time, 30 November 2007. In the interest of fairness, no proposals received after the deadline will be considered for funding. The signed summary page generated by the system at the end of the application process must be received at the NPRB office no more than one week after this deadline, i.e. 4 p.m., Alaska time, 7 December 2007. Please note that courier and express deliveries to Anchorage, Alaska, normally require a minimum of two days for delivery.**

Confidentiality of Proposals

If a proposal is submitted, but not funded, only the following information will be released to the public: Proposal title, names of principal and co-investigators, funding amount requested, duration, and the proposal summary page which is generally limited to 250 words or less. If a proposal is approved for funding by NPRB and the Secretary of Commerce, then the full proposal (without salary information) will be released to the public. Proposals submitted in response to the joint NPRB-OSRI collaboration will go through a special joint review process and will be distributed to the OSRI Board and its advisory bodies in accordance with their standard operating procedures.

I. Proposal Package

The full proposal package consists of ten elements:

1. Proposal Summary Page

The proposal summary page will be created automatically based on the information you provide during the online submission process. It will include a **title, project period, names of applicant organization and principal/co-investigators, a summary of work** (250 words or less), **requested funds and other support**, and a place for the signature of an official authorized to legally bind the submitting organization. This page is not confidential and will be made available to the public. Ensure that you have not included any social security numbers in any of the fields. The proposal summary page is not a numbered page and thus does not count towards the 12 page limit of the Research Plan.

1. Proposal classification

During your submission, you will be asked to provide the following:

- a. *Keywords*: Describe your project with 5-10 keywords (do not include any words that would apply to items b-c below).
- b. *Ecosystem Components*: Indicate one or more of following ecosystem components addressed in your study: Atmosphere/Ocean, Lower Trophic Level, Fish and Invertebrates, Habitat, Seabirds, Marine Mammals, Humans, Ecosystem Indicators, Modeling, and/or Ecosystem Studies.
- c. *Large Marine Ecosystem(s) (LME)*: Note the LME(s) in which your study takes place: Arctic Ocean, Bering Sea and Aleutian Islands, and/or Gulf of Alaska (consult the Science Plan for LME boundary definitions).
- d. *Research Priority*: Identify ONE primary research priority from the 2008 RFP which your proposal will compete under. In Section C of the research plan you may identify up to three secondary research priorities to show the broader responsiveness of your proposals to the RFP, but staff will not move your proposal from the primary category you indicated above.

- e. *Topical Area*: Identify the topical area of your proposed research based on Tables 3-2 through 3.13 in the Science Plan.
 - f. *Reviewer Expertise Criteria*: Towards the end of your submission you will be provided a form where you will need to fill in criteria that best describe the expertise needed to properly review your proposal.
2. Contact information for the Applicant, the Principal Investigator from each organization, Co-investigators, Collaborators, Administrative Grant Managers, and potential Reviewers (reviewer names will not be disclosed, but please read the [conflict of interest form](#) before proposing reviewers).
 3. Research Plan ([use template](#), 12-page maximum including references, figures and tables; continuous line numbers; upload your plan as a **WORD document – other formats will not be accepted**).

The main body of the proposal will be your research plan, **limited to 12 consecutively numbered pages** formatted as follows: All pages must have **1-inch margins** at the top, bottom and sides. Text must be single-spaced, and the font and size must be **Times New Roman 11 point**. No page in the proposal and supporting material may be formatted to any size other than 8.5x11 inches. Color graphics are allowed, but may be reproduced in black and white and should thus be sufficiently descriptive. Note that proposals will be converted to PDFs and this may impact the quality of your graphics. Please ensure an appropriate resolution is used. The research plan (and only the research plan) **must have continuous line numbers** from beginning to end to facilitate review.¹

Failure to comply with any of the formatting specifications above will result in automatic dismissal of your proposal.

Following the provided template, your research plan will have the following elements:

- A. Project Title. Include the **long title**, and suggested a **short title** of up to 60 characters.
- B. Proposal Summary. Briefly explain the project goal and value, and why NPRB funds should be used, in language understandable by individuals not familiar with the specific subject area, such as Congress and the public. The 250-word summary from the Proposal Summary Page would suffice.
- C. Project Responsiveness to NPRB Research Priorities or Identified Project Needs. Identify the specific research priority identified in this year's RFP to which you are responding **and describe how your proposal addresses this priority** (Note that the priority discussed here **must match** the one selected during the online submission process). You may identify up to three secondary research priorities also addressed by your proposed research to show its broader applicability, but note that your proposal will only be considered and compete for funding under the primary research priority.
- D. Soundness of Project Design and Conceptual Approach. State what the project will accomplish and why it is important. Demonstrate an understanding of the problem being addressed, the present state of knowledge in the field, the project's relation to previous work and work in progress by the principal/co-investigator(s), and the measurable benefits which will result from the proposed research. If this builds on a project previously funded by NPRB, describe your

¹ In Microsoft Word, on the **File** menu, click **Page Setup**, and then click **Layout** tab. In **Preview**, apply to **Whole Document**. Click **Line Numbers**, and then select the **Add Line Numbering** check box. In the **From text** box, must be **Auto**. In **Numbering**, click **Continuous**.

progress to date and the objective of the next funding period. Describe the conceptual or statistical model underlying your experimental work. Present a clear hypothesis and describe the experimental design (and associated power analysis) and the analytical approach, including assumptions required, sample size, other relevant information needed to determine the utility and technical feasibility of accomplishing your research, and the expected outcome.

- E. Timeline and Milestones. Applicants must demonstrate they can achieve an outcome and product within the requested award period, **including data analysis and submission of final reports**. Provide a clear table detailing your timelines and associated measurable milestones (accomplishments and deliverables) that will be used to track and evaluate your project performance through the entire award period. You may additionally describe the product or result that may be used to measure your success (e.g., report, published paper, management implementation, etc.) and how you plan to disseminate the research results.
- F. Project Management. Describe the organization and management of the project and the experience and qualifications of the principal and co-investigator(s). Demonstrate how they will coordinate and collaborate with other projects, and leverage their proposals with support from other sources. Applicants must seek to avoid duplication of other research efforts. If there is more than one investigator involved, the applicant must clearly identify which one will be responsible for the overall work (the designed principal investigator) and whether there is only one binding contract envisioned, or separate ones for each co-investigator. Principal and co-investigators are those that accept responsibility to ensure that the grant is properly administered and completed. Collaborators obligate themselves to work with a project and complete specific tasks, but are not responsible overall for successful completion of the project.
- G. Figures and Tables
Figures and Tables are part of the 12-page limit and should be embedded in the text of the research plan.
- H. References
References are part of the 12-page limit. Avoid using long strings of references for the same statements. List all references used in the Research Plan in a format appropriate for a major journal such as *Fisheries Oceanography*, *Transactions of the American Fisheries Society*, *ICES Journal of Marine Science*, etc.

(Note: This is the end of what should be part of the 12 page limit. Line numbers are not required beyond this part of the proposal package.)

4. Budget Information and Budget Narrative (use templates: [Budget Summary](#) and [Budget Narrative](#))

Budget Summary

Amounts specified in the research topics above are for the full duration of the project, and are not to be interpreted as ‘per year’ funding. Fill in the template and upload the completed Excel workbook using the online submission system. The **Budget Summary** is a series of spreadsheets (one for each institution/organization requesting funds) that detail by year (where year 1 is the first 12 months starting at your proposed start date) the following mandatory budget categories: salaries, fringe benefits, travel, equipment, supplies, contracts/consultants, other expenditures, indirect costs (F&A), and other support/cost sharing with other programs. The template Budget Summary includes a summary page that automatically combines all information for up to four different organizations. You may revise this template to include more institutions if necessary. Please note that each organization requesting funds

must designate the **Principal Investigator or one co-Investigator** to be responsible for that component of the project. **You must ensure that your total budget requested matches the one entered online. If discrepancies are found between the two, your proposal will be rejected.**

Your budget must include costs of preparing all required reports and publication of results in appropriate scientific journals and a minimum of \$2,000 for education and outreach (see below). The education and outreach funds should not be treated simply as a “placeholder” in the budget. In the Budget Narrative, describe as well as you can, how you intend to use these funds, and include them under the appropriate budget category. If you do not know how to best use these funds state that you will develop an education and outreach strategy for your project, should it get funded, with the NPRB education and outreach coordinator.

Include travel costs for at least one representative of the project to attend the annual January science symposium in Anchorage for each year during the period of the project, **plus the annual symposium in the January following the completion of the project**, to present your results. Please ensure that your project end date incorporates attendance at this final symposium.

Budget Narrative

Guided by the example in the template for the **Budget Narrative**, each institution requesting funds must provide a detailed description of costs listed under each budget category in the budget summary above. You may include associated spreadsheets and other supporting material if applicable.

Clearly state whether or not your project will require any **international travel**. Inclusion of international travel will not impact the review process, but approval of international travel after the approval of the proposal will require a special application that may take up to 3 months to process. Please note that the Fly America Act will apply.

Please be explicit whether your budget includes ship time, or, if it does not, how ship time and costs will be covered by other guaranteed funds.

Other support. Applications must reflect the total budget necessary to accomplish the project, including contributions from federal or non-federal grants, base organizational budgets, and/or donations. Cost-sharing is not required for this program but is encouraged. If an applicant chooses to cost-share and if that application is selected for funding, the applicant will be bound by the percentage of the cost share reflected in the grant award. Please be advised that although EIRF-based (Environmental Improvement and Restoration Fund) funds are not appropriated, the U.S. Department of Commerce has made a finding that EIRF funds should be considered to be federal funding since an authorization act creates the “fund” in the U.S. Treasury.

Indirect Costs (sometimes referred to as overhead or F&A). The budget summary may include an amount for indirect costs if the applicant has an established indirect cost rate with the Federal government. The total dollar amount of the indirect costs proposed in an application under this program must not exceed the indirect cost rate negotiated and approved by a cognizant Federal agency prior to the proposed effective date of the award, or 100 percent of the total proposed direct cost dollar amount in the application, whichever is less. If applicable, a copy of the current, approved, negotiated indirect cost agreement with the Federal government must be included. It will be retained in the office and not distributed to reviewers.

Please ensure that your budget has been approved according to your organization’s standard proposal approval process. Also, please check your final budget before submission to ensure that the addition of

*indirect costs as a percentage or some other revision to your budget does not cause your total budget to exceed the individual proposal funding cap for the research priority addressed. **If your proposal exceeds the cap by even \$1, it will be returned without further processing.***

5. Resumes (limited to 2 pages per principal investigator)

The resumes of all principal/co-investigators and other senior personnel involved in the proposal must be provided (collaborators do not need to submit their resumes). Each resume is limited to two consecutively numbered pages and must include the following information:

- a. A list of professional and academic credentials, mailing address, and other contact information including work phone and email address.
- b. A description of current activities relevant to the proposed project.
- c. A list of up to five of your most recent/relevant publications most closely related to the proposed project and up to five other significant publications as appropriate. Please highlight publications that are based on research supported by NPRB funds.
- d. A list of all persons (including organizational affiliations) in alphabetical order with whom you have collaborated on a project or publication within the last four years. If none, this should be indicated.

6. Previous NPRB-funded Projects

If any principal investigator or co-investigator identified on the project has received NPRB funding in the past five years, information on the award(s) is required. A brief summary of each previously funded project should be no more than 200 words and include the following information: the NPRB project number, amount and period of support, the title of the project, a summary of the results of the completed work, a summary of education and outreach efforts, and a list of publications resulting from the NPRB award. The summary should also indicate if the metadata and data for the previous NPRB project have been submitted and the date of completion for this task. If the current proposal is for renewed or continued support, a description of the relation of the completed work to the proposed work is required. Upload summaries of previously funded NPRB projects in the appropriate place during proposal submission.

7. Current and Pending Support Form (use the [provided template](#))

Upload Word documents using the online submission system. For each principal/co-investigator and other senior personnel involved in the proposal, use the provided template to disclose any current and pending financial resources that are intended to support research related or similar to that included in the proposal, or that would consume the time of the proposer(s). Each proposal must have a section describing sources of current and pending funding, and an explicit statement of present collaborations and commitments. The proposer must also disclose if they have submitted the proposal to other funding sources or if other funds are being used to support the research funded by the Board.

8. Community Involvement

While not necessarily required for most research priorities, researchers should recognize that local community knowledge of, and interest in, natural resources extend beyond physical boundaries of the communities themselves to harvest areas and beyond. Furthermore, researchers should advise communities and people involved or affected by the studies of the purpose, goals, and time-frame of the research and its potential positive and negative implications. Inclusion of local and traditional knowledge

and wisdom is encouraged. Proposals for research on specific Alaska Native communities or health issues must have a letter of support from appropriate community and tribal governing bodies (see section 9 below).

9. Letters of Support

Letters of support from relevant management agencies, communities, including Alaska Native communities and tribal governing bodies (if applicable) or others potentially impacted by project activities (e.g. seabird colony work at times of subsistence activities) or benefiting from the projects results should be provided. Letters should be specific about role of collaborators and indicate how the results will be of use or benefit. Upload these letters in the appropriate place during proposal submission.

10. Other Requirements

Applicants should ensure that the following are included in their proposal where appropriate:

Outreach and Education: The principal/co-investigator(s) shall cooperate with the NPRB and its education and outreach manager in developing materials for interpretation of the project and research results to the public, and **must include a minimum of \$2,000 for such activities in each proposal budget** (see Budget above) as well as describe them in the Budget Narrative.

Education and outreach activities should target as many of the audiences identified in the *North Pacific Research Board Science Plan* (2005) as possible, or at least one other audience besides marine researchers:

- Marine researchers
- Marine resource management agencies
- Commercial and subsistence users
- Teachers and students in Alaska and beyond
- General public

The purpose of education and outreach is to communicate ocean science to non-scientific audiences, translating detailed scientific information into understandable terms and packaging it for maximum accessibility, exposure and impact. Strategies for education should include different products and mechanisms for each of the audiences, capitalizing on existing partnerships and responding to new opportunities. For example, some principal investigators work with museums on interpretive programs or exhibits about their research topics. Others mentor students, take teachers along on research cruises, or work with teachers to develop curricula. Others have produced popular publications, or have written articles for popular journals, such as *Smithsonian*.

NPRB does not consider scientific posters or oral scientific presentations at scientific conferences as education and outreach activities. For ideas about activities or products that reach diverse audiences, please refer to *Education and Public Outreach: A Guide for Scientists*, produced by the NSF-funded Centers for Ocean Science Education Excellence and published by The Oceanography Society – posted as a PDF on the NPRB website: www.nprb.org.

For more details about the target audiences and strategies for NPRB education and outreach, please refer to the *North Pacific Research Board Science Plan* (pp. 150-153).

Permits that may be required as part of the project should be documented in the proposal and, if available, permit applications or granted permit numbers should be provided.

Graduate students: List the number of graduate students and post-docs you intend to make part of your project. Include the level (M.Sc., Ph.D.), duration, and level of support they would receive. Also list whether you intend to have none. Whether or not you are planning to have students or post-docs on your project, while strongly encouraged, will not affect the evaluation of your proposal and is intended for informational purposes only.

PROPOSAL REVIEW PROCESS

Initial Screening of Applications. Upon receipt, the NPRB staff will screen applications for conformance with requirements set forth in this notice. This review will consider not only whether the proposal meets the format and structure requirements in this RFP, but also whether it is responsive to NPRB's enabling legislation and criteria and adequately addresses one or more of the research priorities and program needs listed in this notice. If necessary, the Executive Director will request an ad hoc committee of available Science Panel members to help in the initial screening. **Those proposals that are found to not comply with the requirements of the RFP will be rejected without further processing.**

Consultation with Interested Parties. NPRB may consult with NOAA and other Federal and State agencies, the North Pacific Fishery Management Council, and other entities, as appropriate, who may be affected by or have knowledge of a specific proposal or its subject matter.

Independent Technical Evaluations. All proposals will undergo independent, anonymous, technical peer review, conducted by regional, national and international experts. They will be asked to provide comments and qualitative assessments of the technical aspects for each proposal, as indicated below (percentages indicate the weight that the subsequent review by the NPRB Science Panel will give to the criteria), and an overall summation. The overall summation will include five tiers: poor, fair, good, very good and excellent, recognizing that poor and fair proposals will have little chance of being funded, good and very good proposals may be funded or placed in the second tier, and excellent proposals would most likely be recommended for funding:

- a. Project Responsiveness to NPRB Research Priorities (5%): Has the applicant made a compelling argument that the project clearly responds to the primary research priority? Does the project have the potential to make significant contributions to other research priorities?
- b. Soundness of Project Design/Conceptual Approach (60%): Is there a clear statement of what the project will accomplish and why it is important? Have the applicants demonstrated a clear understanding of the problem being addressed, the present state of knowledge in the field, the project's relation to other work, including their own, and the measurable benefits which will result from the proposed work? Is there sufficient information to evaluate the project technically? What are the strengths and/or weaknesses of the technical design relative to securing productive results? Is there a clear hypothesis to be tested or objectives to be addressed and the expected outcome? Is there a clear description of a detailed experimental design with associated power analysis as appropriate, including assumptions required, sample size, and other relevant information needed to determine the utility and technical feasibility of accomplishing the research? Is there a list of data sources or requirements? The Science Panel will give the following approximate weights to components within this criterion: 10% for background and need; 10% for statement of problem or question; 20% for study design; and 20% for analysis.
- c. Timeline and Milestones (10%). Is there a clear table detailing timelines and associated measurable milestones, accomplishments and deliverables that can be used to track and evaluate project performance through the entire award period? Is there a description of the product or result that may

be used to measure project success (e.g., report, published paper, management implementation, etc.) and how the research results will be disseminated?

- d. Project Management (15%): The organization and management of the project, and the project's principal/co-investigator(s) and other personnel in terms of related experience and qualifications will be evaluated. Applicants must demonstrate how they will coordinate and collaborate with other projects and leverage their proposals with support from other sources. Applicants must seek to avoid duplication of other research efforts.
- e. Project Costs (10%): The justification and allocation of the budget in terms of the work to be performed will be evaluated. Is the project cost unreasonably high or low?

Science Panel Review. All proposals and their accompanying technical evaluations will be submitted to the NPRB Science Panel for review and evaluation based on the above criteria and weightings.

Board Review. The North Pacific Research Board will review responsive proposals, consider technical evaluations, Science Panel recommendations, and other factors as appropriate, and decide which proposals to fund. Public comment will not be taken from current applicants when the Board makes final funding decisions next spring. The exact award period will depend upon the requested duration of funding, the decision of the NPRB on funding amount, the results of post-selection negotiations between the applicant and NPRB officials, and review by NPRB and Department of Commerce officials.

Secretary of Commerce Review. By law, all recommendations of the Board are subject to final approval by the Secretary of Commerce, who must ensure that there is no duplication with other projects funded by NOAA or other Federal organizations, and that the projects selected for funding are those that best meet the objectives of this solicitation. The review will include a determination of compliance with federal regulations, including the National Environmental Policy Act, and may result in additional requirements as a condition for funding (see General Condition 2 below).

D. Tentative Schedule

The tentative schedule is as follows (except for the proposal deadline, the schedule is subject to change):

	<u>Tentative Schedule</u>
Release of RFP	October 3, 2007
Deadline for Proposals	November 30, 2007
Deadline for Signature Pages	December 7, 2007
Technical Evaluations	December 2007 – March 2008
Science Panel Review	Early April 2008
NPRB Selection	Late April 2008
Submission to NMFS	May 2008
Final Notification of PIs	May 2008
Grant Agreements to PIs	May-June 2008
Commence Research	June 1, 2008 (earliest)

The exact amounts of funds awarded to a project will be determined in pre-award negotiations between the applicant and NPRB. Projects should not be initiated in expectation of Federal funding until a Notice of Award document is received. Applicants should not request a project start date before **June 1, 2008**.

GENERAL CONDITIONS

This RFP is only a solicitation of offers and should not be construed as an expectation of award, or as any reasonable basis for detrimental reliance. NPRB is not obligated to award any specific project or any available funds. There is no guarantee sufficient funds will be available to make awards for all acceptable projects, and NPRB may choose to reject all proposals. No oral statement by any person can supersede or modify the terms of this RFP.

1. All Federal, State, private, and foreign organizations are eligible. Recipient organizations must have a DUNS number and be registered in Central Contractor Registration (www.ccr.gov) before any award can be made.
2. Responding proposals are firm offers and shall remain open for the NPRB to accept anytime before June 1, 2008 in accordance with a standard NPRB agreement for the performance of the work proposed. A proposal is accepted only when NPRB sends the applicant written approval and has a completed agreement. A proposal accepted for funding does not obligate NPRB to provide additional future funding.
3. The applicant is responsible for obtaining all Federal, State, and local governmental permits and approvals for projects or activities to be funded under this announcement. This includes, as applicable, certification under state Coastal Zone Management Plans, section 404 or section 10 permits issued by the Army Corps of Engineers; experimental fishing or other permits under federal fishery management plans; scientific permits under the Endangered Species Act and/or the Marine Mammal Protection Act; and assistance to the Federal government in developing analysis to meet the requirements of the National Environmental Policy Act. All experiments must be conducted in compliance with law, and only pursuant to mandatory permitting duly granted by the appropriate federal and state agencies. Requirements for special permits, for example, those required for taking marine mammals, should be clearly described and whether the permit is in possession or not. The Secretary of Commerce may withhold final approval or stipulate additional conditions on projects to ensure compliance with the above.
4. Projects that require at-sea research using research vessels must comply with all research vessel safety standards in accordance with the guidelines for the operation of oceanographic research vessels owned, operated or chartered by members of the University-National Oceanographic Laboratory System (UNOLS), to ensure that research at sea is conducted to the highest practicable standards of safety and prudence. Those standards also apply to chartered non-institution vessels. (See: http://www.gso.uri.edu/unols/saf_stand/contents.htm.)
5. Funded participants are wholly responsible for the conduct of research, submission of required reports, and preparation of the results for publication. Participants will be required to submit a semiannual report not exceeding two pages and a final report to be posted on the NPRB website and in other databases. Final reports may be submitted for peer review at the discretion of the NPRB. Failure to submit timely reports or to respond to peer review comments on final reports may result in withheld payments. Every effort should be made to submit research results for publication by an appropriate scientific journal within one year of the completion of study. The NPRB Executive Director may in his sole discretion grant written exceptions if requested timely. All manuscripts shall acknowledge that funds were provided by the NPRB through the U.S. Department of Commerce, NOAA, NMFS.
6. Successful applicants will be required to report their metadata and data to an agreed-upon system (NODC or USGS information infrastructure) within two years of each field season. A project specific data management and information transfer plan to be worked out with the NPRB after

funding decisions have been made will be required. Among other requirements, the plan will specify the storage media and format(s), month and location for reporting, and other relevant information that may be required by the circumstances of the project.

7. Researchers applying to do research involving human subjects are expected to demonstrate compliance with regional protocols for researcher/community interactions or the specific human subjects screening done by most academic institutions and agencies. The purpose is to ensure that privacy is protected, data are collected in a suitable manner, data are maintained in a secure environment, and results of any study are made available to participants if they indicate their interest.
8. In accordance with federal statutes and regulations, no person on grounds of race, color, age, sex, national origin, religion, marital status, pregnancy, parenthood, or disability shall be excluded from participation in, denied the benefits of, or be subjected to discrimination under this program.