

North Pacific Research Board Request for Proposals for Research Commencing in 2006

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 (EIRF). 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 North Pacific, Bering Sea, and Arctic Ocean ecosystems that enables effective management and sustainable use of marine resources. The Board will support high quality research that will improve understanding of the marine ecosystem dynamics and use of the resources; the ability to manage and protect the healthy, sustainable fish and wildlife populations that comprise those marine ecosystems, and provide long-term, sustained benefits to local communities and the nation; and the ability to forecast and respond to effects of changes, through integration of various research activities, including long-term monitoring.

The Board has funded over ninety projects totaling \$17 million as a result of four requests for proposals released from early 2002 through mid-2005. The projects are described under research at www.nprb.org and fall into seven broad categories of research as shown in Table 1.

Table 1. NPRB-supported research initiated in 2002-2005.

<u>Categories of Research</u>	<u>Projects</u>	<u>Total Funding</u>	<u>Percent</u>
Oceanic and Estuarine Salmon	9	\$2,291,138	13
Other Fisheries-Related Research	22	\$2,663,531	15
Fish Habitat	12	\$3,144,893	18
Marine Mammals	16	\$2,778,155	16
Seabirds	9	\$1,972,083	11
General Ocean and Ecosystem Studies	19	\$3,704,446	22
Education, Outreach and Synthesis	5	\$668,824	4

NPRB has completed its [Science Plan](#) with guidance from the National Research Council. NPRB has supported research on the ecosystems components identified above, but intends to address the main challenge presented by NRC to field a successful integrated ecosystem research program that cuts across scientific disciplines and begins to answer critical questions regarding marine ecosystems and how they are influenced by human use of resources and natural variability, including climate change.

RESEARCH PRIORITIES FOR 2006 RFP

This year’s request for proposals (RFP) is structured around five main components with funding targets as shown in Table 2.

Table 2. Research priorities and funding targets for 2006 RFP totaling \$5.15 million.	
<u>Research Priorities</u>	<u>Target Amount</u>
1. Bering Sea Integrated Ecosystem Research Program “Response of the Bering Sea Ecosystem to Climate Change”	\$1.2 million
2. General Research Priorities on Ecosystems Components	\$3.25 million
a. Ocean Monitoring	\$300,000
b. Lower Trophic Level Productivity	\$300,000
c. Fish Habitat	\$550,000
i. <i>Recovery and resilience of fish habitat</i>	\$250,000
ii. <i>Marine habitat mapping technology workshop</i>	\$150,000
iii. <i>Other fish habitat research</i>	\$150,000
d. Fish and Invertebrates	\$1,150,000
i. <i>Migration patterns and spatial connectivity</i>	
ii. <i>Seasonal diets of exploited fish stocks</i>	
iii. <i>Life history, ecology and fluctuations in BSAI crab stocks</i>	
iv. <i>Reduction of bycatch and bycatch rates</i>	
v. <i>Stock assessment and life history of rockfish, sharks, Skates, squid, sculpins and octopus</i>	
vi. <i>Other fish and invertebrate research</i>	\$150,000
e. Marine Mammals	\$600,000
i. <i>Distribution and abundance of ice seals and walrus</i>	
ii. <i>Distribution and abundance of Northern Right Whales</i>	
iii. <i>Other marine mammal research</i>	
f. Seabirds	\$300,000
i. <i>Distribution and abundance of seabirds at sea</i>	
ii. <i>Determination of demographic parameters</i>	
iii. <i>Human impacts during migration and overwintering</i>	
g. Humans	\$50,000
3. Collaboration with Oil Spill Research Institute: Forage Fish	\$100,000
4. Local and Traditional Knowledge	\$300,000
a. Pilot project for community-based observation system	\$150,000
b. LTK studies related to other RFP priorities	\$150,000
5. Other Prominent Issues – Contaminants	\$300,000
TOTAL	<u>\$ 5.15 million</u>

Integrated ecosystem research planning is furthest ahead for the Bering Sea. Consequently, this year's RFP focuses significant funding on moving that integrated program toward fruition, with an overall theme of "Response of the Bering Sea Ecosystem to Climate Change." The IERP for the Bering Sea is being developed further by an interagency working group and will be fleshed out through a series of workshops in 2006.

The Board recognizes, however, that considerable research is still required on the basic components of the marine ecosystems off Alaska in addition to the focused ecosystem programs. Therefore, projects will be considered for funding that do not necessarily dovetail with a particular integrated ecosystem research program, but still are meritorious and relate to priorities identified in NPRB's science plan.

The Board also is interested in advancing collaborations with other funding entities such as the Oil Spill Research Institute, and developing its local and traditional knowledge (LTK) program, based on recommendations presented by a newly formed LTK committee. The Board continues this year to encourage proposals which include collection and use of local and traditional knowledge and proposals that involve cooperative research with industry.

1. Bering Sea Integrated Ecosystem Research Program **(\$1.2 million)**
"Response of the Bering Sea Ecosystem to Climate Change"

The North Pacific Research Board is developing an integrated ecosystem research program (IERP) for the Bering Sea. Developing one or more such programs for each marine region off Alaska was one of the strongest recommendations offered by the NRC in providing guidance on writing of the NPRB science plan and in subsequent review of the finished document. Commenting on the final draft plan in early 2005, the NRC stated that the IERP concept is critical and without it, "...the NPRB will at best be a collection of loosely related projects, not a well-integrated program." The NRC believes that encouraging multidisciplinary, ecosystem-wide research may provide one of the most important, long-term legacies of the Board.

The NPRB began developing its IERP for the Bering Sea this past spring by convening an interagency working group with funding interests in the region. It represents nine major organizations: Alaska Fisheries Science Center, Alaska Ocean Observing System, NPRB, National Science Foundation, Pacific Marine Environmental Laboratory, University of Alaska Fairbanks, U.S. Fish and Wildlife Service, U.S. Arctic Research Commission, and U.S. Geological Survey. Each organization has distinct missions and areas of interest, but all currently support and/or perform research in the Bering Sea. Working group members agreed that one of the most critical issues facing managers and resource users is how the Bering Sea and its living marine resources may be impacted by changes in climate, mediated to a great extent by the anticipated continued reduction in or eventual loss of seasonal sea ice cover over the next 30 years.

A warming and change in the boundary between arctic and subarctic ecosystems have the potential to make important changes to the Bering Sea ecosystem and affect the livelihood/culture of those that depend on living marine resources. As changes occur in distributions, abundances, and species composition, the ecosystem will change and pressing fisheries management needs will surface. Unraveling the causes of these changes is the ultimate challenge. Understanding their impacts will be of utmost importance in striving for balanced regulations that provide for

sustainable harvest of some living marine resources while protecting other components of the ecosystem, including threatened and endangered species. Of particular importance will be predictions regarding trends in abundance and distribution of commercial and subsistence species, and recovery to healthy population levels of ESA-protected species.

This Bering Sea Integrated Ecosystem Research Program will be more fully developed over the next 6-8 months, but in the interim for purposes of this RFP, the NPRB is seeking retrospective and modeling proposals that address one or more of the following six general research questions:

- a. *Are the distributions (range, spawning and breeding locations) and abundances of species in the Bering Sea ecosystem changing in response to climate change? If so, how?*
- b. *Are the physical and chemical attributes of the ecosystem changing in response to climate change? If so, how?*
- c. *Is lower trophic level production (quantity and form) changing in response to climate change? If so, how?*
- d. *What are the principal processes controlling energy pathways in the Bering Sea? What is the role of climate change in these processes?*
- e. *What are the linkages between climate change and vital rates of living marine resources in the Bering Sea?*
- f. *What are the economic and sociological impacts of a changing ecosystem on the coastal communities and resource users of the Bering Sea?*

Proposals must address one or more of the above themes, with a particular emphasis on how sea ice cover, where present, may mediate these climate-related changes. Retrospective studies that examine the effects of climate and regime shifts on ecosystem processes should include (where available) long-time series of instrumental data, data mining from historic documents, local and traditional knowledge from long-time residents, and archeological and other paleo-environmental records. All these sources can be viewed as complementary records of ecosystem change, providing insights into processes and ecosystem links at different spatio-temporal scales and resolutions.

Modeling studies should focus on the ability to predict process change within the Bering Sea ecosystem as a result of climate change and should be based on existing data. Models should also be able to help evaluate the utility of current monitoring programs and data, and thus identify data gaps that may focus future annual requests for proposals and expenditure of funds on collecting data and conducting analyses to ensure effective ways to improve understanding of the Bering Sea ecosystem. Principal investigators involved in successful proposals for modeling studies will be required to confer with and be responsive to the modeling oversight group that will be developing over the next six months, on the Board's behalf, design criteria and standards for statistical robustness of the models and validation of results.

Proposals should be for 1-2 year studies. It is the intent of the Board to devote up to \$200,000 to each of the research questions. Development of climate models is not being supported at this time.

2. General Research Priorities on Ecosystems Components (\$3.25 million)

In addition to the Bering Sea integrated research program described above, the NPRB is requesting proposals that address the following general components of the marine ecosystem, particularly as they relate to research priorities identified in the science plan. Funding targets for each component are shown in parentheses.

a. Ocean Monitoring (\$300,000)

Proposals are requested to design and implement collection of marine observations to monitor changes in ocean characteristics, including sea ice, and marine life, particularly upper trophic level, within one or all of the three Alaska large marine ecosystems. Priority will be given to monitoring those parameters deemed critical to the determination of ecosystem status. When appropriate, application of new technologies and methodologies will be considered.

b. Lower Trophic Level Productivity (\$300,000)

Proposals are requested that address the four general research needs for lower trophic level productivity in the NPRB Science Plan: Nutrient dynamics, phytoplankton ecology, phytoplankton-sea ice dynamics, and zooplankton ecology. The science plan recognizes that the coupled nutrient-phytoplankton-zooplankton (NPZ) sequence fuels the upper ocean ecosystem. The NPRB will consider supporting research that examines the physical (air-sea interactions, transport, upwelling, processes at fronts, etc.), chemical (micronutrient limitations, remineralization by benthic processes, etc.) and biological processes that drive primary and secondary production at the base of the food web. Knowledge of such processes will be needed to improve understanding of ecosystem dynamics and the ability to forecast how climate change might impact the transfer of energy through the lower trophic levels. Further examples of potential research needs are identified in the section on lower trophic level productivity in the science plan and Table 3-2 therein.

c. Fish Habitat (\$550,000)

i. Recovery and resilience of fish habitat (\$250,000)

The Magnuson-Stevens Fishery Conservation and Management Act challenges managers to assess and mitigate impacts of fishing on fish habitat. Based on the fact that fish habitat has been and continues to be impacted by natural changes and anthropogenic activities, proposals should focus on quantifying the recovery and resilience of different fish habitats on several spatio-temporal scales.

ii. Marine habitat mapping technology workshop (\$150,000)

Documentation of the presence and extent of sensitive substrates, and studies of factors affecting marine habitat including physical forcing, variations in energy flux, and overwintering conditions, are essential to ensure sustainable natural resources and to maintain critical ecosystem functions. Proposals are being requested that will produce a synthesis of the available marine habitat mapping technologies and their applicability given different research needs. This approach should include a workshop with regional, national and international experts in marine habitat mapping technology, and result in a published, peer reviewed synthesis of work to date. It should

also include recommendations for cost-effective monitoring programs to directly address different marine habitat related research needs. Expected completion will be within two years of the award.

iii. Other Fish Habitat Research (\$150,000)

Proposals are requested that address categories of habitat research identified in the science plan, except those listed above. These include general topics related to other human-related impacts, fishing effects on habitat, or on ecosystem functions of habitat as identified in Table 3-3 in the science plan.

d. Fish and Invertebrates (\$1,150,000)

Proposals are requested for the five topical areas below. Depending on the quality of proposals received and funding support requested, not all of the topics will necessarily be funded. For example, three proposals for \$300,000 each and one additional for \$100,000 on one or two topical areas could absorb all the specific fish and invertebrate research funds for this RFP.

Regarding salmon, the NPRB has funded project 504 which will provide an analysis of ongoing salmon programs in June 2006. The Board also has supported several other salmon projects including development and evaluation of hypotheses for fluctuations in Kvichak sockeye populations. Other funding is available from the Northern Fund and the Arctic-Yukon-Kuskokwim Sustainable Salmon Initiative. Therefore, the Board will not accept salmon-related proposals this year under this fish and invertebrates research priority.

i. Migration patterns and spatial connectivity of fish and invertebrate stocks, especially in winter

Habitat needs, population dynamics and diet often differ spatially within species (e.g. pollock in the Bering Sea), yet these differences are poorly understood and stocks are managed and generally modeled as a single unit. NPRB is requesting proposals that will describe migration patterns and spatial connectivity of fish stocks, especially during winter. Individual proposals may not exceed \$300,000.

ii. Seasonal diets of exploited fish stocks

Multispecies, ecosystem, and predator/prey models rely heavily on parameters estimated from food habits data. Systematic collection and timely analysis of fish food habits information is an ongoing, high-priority activity necessary to provide an up-to-date state of the North Pacific marine ecosystems. Proposals are invited that address this fishery management need and thus further our understanding of the food webs and dynamics in the Bering Sea, Aleutian Islands and Gulf of Alaska marine ecosystems. Individual proposals may not exceed \$300,000.

iii. Life history, ecology and fluctuations in BSAI crab stocks

King, Tanner and snow crab are a major resource in the Bering Sea and Aleutians and yet there is much uncertainty about their current stock assessments. The NPRB is seeking proposals to develop and improve current stock assessment methodologies, and understanding of life history, ecology, and fluctuations in crab stocks. Individual proposals should not exceed \$300,000.

iv. Reduction of bycatch and bycatch rates

Bycatch caps are constraining in many groundfish fisheries. Research is needed to develop techniques/technologies that will assist fisherman in their efforts to reduce bycatch rates so as to more fully harvest directed fishing allocations without exceeding current cap levels. Individual proposals should not exceed \$300,000.

v. Stock assessment and life history of rockfish, sharks, skates, squid, sculpins, and octopus

Research and development are needed to improve stock assessment for those stocks that are difficult to assess with current methodology such as rockfish and the “other species” category used by the North Pacific Fishery Management Council (that category is defined to include sharks, skates, squid, sculpins, and octopus). The NPRB is also inviting proposals to fill life history data gaps for these species assemblages. Individual proposals should not exceed \$300,000.

vi. Other fish and invertebrate general research priorities (\$150,000)

NPRB is requesting proposals that address any of the research priorities identified in the science plan in Table 3-4, other than the priorities identified above. In general, they include forage fish, alternative harvest strategies, socio-economic considerations, causes of perturbations of major species, and implications of ecosystem change on fishery management.

e. Marine Mammals (\$600,000)

i. Distribution and abundance of ice seals and walrus

ii. Distribution and abundance of North Pacific Right Whales

iii. Other marine mammal general research priorities

In addition to the specific topics above, the NPRB is requesting proposals that address any of the six general research priorities for marine mammals identified in the science plan in Table 3.9. In general the research priorities include other human related impacts, fisheries interactions, marine habitat use, foraging success, population dynamics, and long-term climate change. Please note, however, that even in this category, priority will be given to proposals on ice-seals, walrus and North-Pacific Right Whales.

f. Seabirds (\$300,000)

Proposals directed toward the study of seabirds should be focused on one of the four topics listed below. Individual proposals may not exceed \$200,000. *Depending on the quality of proposals received and funding support requested, not all of the topics below will necessarily be funded. For example, one proposal for \$200,000 and in one area and an additional one for \$100,000 in another topical area could absorb all the seabird research funds for this RFP.*

i. Distribution and abundance of seabirds at sea

While seabirds are abundant in Alaskan waters, and they often serve as useful indicators of changes in marine ecosystems, most of our knowledge about seabirds is based on observations at colonies. In contrast, most interactions between seabirds and humans occur at sea, away from colonies. Unfortunately, our knowledge of the distribution of seabirds at sea is either outdated, localized, or remains otherwise poorly documented. We are inviting proposals to address these data gaps with a coordinated observer program that takes advantage of other research efforts and ships of opportunity. Collaboration with the North Pacific Pelagic Seabird Database (<http://www.absc.usgs.gov/research/NPPSD/>) is expected, including the use of data recording and survey methods endorsed by the NPPSD. Individual proposals may not exceed \$200,000.

ii. Determination of demographic parameters, especially survival rates

Millions of seabirds, including a variety of common species (e.g. storm-petrels, fulmars, cormorants, kittiwakes, murre, auklets, puffins), nest in Alaska and are monitored at selected colonies. While monitoring programs routinely include population counts and estimates of breeding success, we still lack basic demographic information on many species and/or in many locations. We are especially lacking information on adult annual survival of even our most commonly monitored species in most locations. It is thus unclear how and if activities such as fishing, contaminants, and changing ocean conditions will affect seabirds on a population level. Proposals are invited to fill data gaps on demographics of key species, and especially on adult survival rates. Individual proposals may not exceed \$200,000.

iii. Human impacts during migration and on overwintering grounds

Seabirds are exposed to many anthropogenic stressors, including subsistence harvest, by-catch in fishing gear, marine pollution, introduced predators, and degradation of breeding and/or marine habitats, to name a few. Because seabirds are most easily observed at their colonies, most of what is known about these impacts on seabirds comes from their time spent at colonies. In many instances, however, population regulation occurs outside the breeding season, a time for which little is known about the ecology of most species, or their vulnerability to human activities. The NPRB will support proposals that work to determine migration patterns and/or the location of wintering grounds for seabirds in combination with efforts to assess the influence of human activities on seabird populations during this time. Individual proposals may not exceed \$200,000.

g. Humans **(\$50,000)**

NPRB is requesting proposals that address any of the following five 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.

3. Collaboration with the Oil Spill Research Institute: Forage Fish **(\$100,000)**

An opportunity exists to conduct collaborative research on the role of forage fish in the Northern Gulf of Alaska and Prince William Sound with the Oil Spill Recovery Institute (OSRI). NPRB and OSRI have each committed \$100,000 for this collaboration. Proposals to this joint RFP

between OSRI and the NPRB would be directed at more fully understanding the role of forage fish in the northern Gulf and Prince William Sound ecosystems, physical and biological factors that cause fluctuations in forage fish population size and/or range, and field operations that would aid in developing strategies for filling information gaps, testing various techniques for assessment, and examining food web relationships.

Some important questions include: how resilient is this ecosystem to changes in physical forcing and to alterations in upper trophic level community composition; e.g., what are the relative roles of bottom-up and top-down forcing in shaping this ecosystem? What are the major atmospheric and oceanic mechanisms including exchanges between Prince William Sound and the adjacent shelf and slope that affect northern GOA ecosystem structure and function? How do fluctuations of strength and eddy behavior of the Alaska Coastal Current, together with its role as a source of nutrients, impact ecosystem dynamics, including recruitment of commercially fished species, distribution and abundance of forage fish species, and therefore populations of upper trophic fish, seabird and marine mammal species? How does habitat quality and interspecific competition influence commercial and forage species production and distribution? Are the criteria for “good habitat” similar for all forage species? Which habitats are used by different life stages of forage fish in Prince William Sound and the northern Gulf of Alaska? What are the short and long-term effects of oil spills on forage fish and how should these be assessed? Is there the potential for competition among forage fish species? Are there interannual variations in habitat quality and fish production? What are the potential effects of variations in fish production to other trophic levels, e.g., seabirds and marine mammals? Projects can be up to two years with total joint OSRI-NPRB support of \$200,000. (Note: Proposals responding to this collaboration will go through a special review process conducted jointly by the NPRB and OSRI.)

4. Local and Traditional Knowledge **(\$300,000)**

a. Pilot Project for Community-based Observation System **(\$150,000)**

One of the LTK strategies identified in the Science Plan is that of recording observations made by fishermen, hunters, and others familiar with and in frequent contact with the marine environment. Owing to the large geographic range of Alaska, it is impractical for any one agency or institution to monitor the status and health of marine ecosystems in Alaska. The NPRB recognizes that there should be a role for communities in the gathering and reporting of biological data for the purpose of monitoring change in the environment and for tracking the frequency and scope of unusual events such as bird die-offs, changes in animal abundance, etc. The NPRB seeks proposals to initiate a community-based observation system that will ultimately lead to a monitoring network in Alaska. The proposal should be linked to research priorities identified in the NPRB science plan and should contain a strong LTK component.

b. LTK Studies Related to Other RFP Priorities **(\$150,000)**

NPRB’s Local and Traditional Knowledge Committee met in late June 2005 and will be helping the Board develop its LTK program. The LTK Committee reviewed the six ways identified in the science plan that LTK can contribute to the NPRB’s mission:

- Generating research hypotheses
- Documenting existing LTK
- Recording observations

- Fostering collaborative analysis
- Collaborating on specific projects
- Exploratory research

The Committee believes that each of these approaches has potential for implementing a long-term LTK program. Because the Committee was established just recently and has had only this initial meeting, rather than attempting to fully identify priority approaches and topics at this stage, it recommended that the 2006 RFP contain a general call for LTK proposals, with specific criteria for evaluation. This course of action would provide an opportunity for proposers to exercise initiative and creativity in developing project ideas that use LTK effectively to help achieve the overall mission of the NPRB using any of the approaches identified above.

Based on the Committee recommendations, the Board is requesting proposals that address one or more of the research priorities identified elsewhere in this 2006 RFP and engage local and traditional knowledge (LTK) and its holders in projects that are 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.

The NPRB envisions funding one meritorious project for approximately \$150,000 over a 1-2 year period. As with other proposals, funding will be contingent on favorable peer reviews, science panel recommendations and budgetary constraints. The inclusion of an LTK opportunity in this RFP does not guarantee that any such projects will be funded.

5. Other Prominent Issues – Contaminants (\$300,000)

The waters off Alaska are generally perceived as pristine, especially relative to more populated, industrialized areas elsewhere. Contaminant levels vary across the Arctic, being low in some regions, but higher in others. Oceanic and atmospheric transport mechanisms bring contaminants long distances to the marine ecosystem off Alaska. Contaminants can also originate locally from increased mining, fishing, and other industrialized activities within the region, from past and present military operations and installations, from outfalls and run-off in more populated areas, and from sewage releases by cruise ships. Studies on shipping risk assessment, as well as sources, transport, effects, and accumulation of contaminants in subsistence, recreational, and commercial species, and other ecosystem components are encouraged and should address important and timely issues in these areas. Workshops to further define research needs and priorities in this category will also be considered.

RESEARCH PROGRAM STRUCTURE

Total Funding and Duration. Approximately \$5.15 million may be made available for projects commencing in 2006. Applicants must demonstrate they can achieve an outcome and product within the requested award period, **including data analysis and submission of final reports.** 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.

Eligibility Criteria. All Federal, State, private, and foreign organizations are eligible.

Community Involvement. Researchers should recognize that local community knowledge of, and interest in, natural resources extends 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.

Outreach and Education. The principal investigator(s) shall cooperate with the NPRB and its education and outreach coordinator in developing materials for interpretation of the project and research results to the public, and also must include a minimum of \$2,000 for such activities in each proposal budget. Applicants also should include in their travel budget the costs for at least one representative of the project to come to the annual January science symposium in Anchorage for each year during the contracted period of the project, plus the annual symposium in the January following the end of the contract period to present their results.

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 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 will be released to the public. Proposals submitted in response to the joint NPRB-OSRI collaboration on forage fish 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.

Statement of Non-discrimination. NPRB conducts all programs and activities free from discrimination based on race, color, national origin, age, sex, religion, marital status, pregnancy, parenthood, or disability, in accordance with federal law.

PROPOSAL PACKAGE

General Instructions

All applicants should refer to http://www.nprb.org/research/res_2006.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 program manager, Francis Wiese (Francis.Wiese@nprb.org) if you need further information or clarifications.

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 necessary documents and templates [here](#).

PROPOSAL SUBMISSION AND DEADLINE

Submission

Proposals may be submitted online (preferred) or via mail (see below for details). In either instance, you will need to prepare the following information and documents (see *mail submission* for details). Sections 1-9 will be sent out for technical reviews.

1. Research Priority from the RFP in which you want your proposal to compete
2. Proposal summary (max 250 words, [template available for mail submissions](#))
3. Budget Information and Budget Narrative (use [template for Budget Summary](#))
4. Contact information for all Primary Investigators, Collaborators, Grant Managers, and potential Reviewers
5. Five to ten keywords that describe your project
6. List of Ecosystem Components your study addresses
7. Large Marine Ecosystem(s) (LME) in which your study takes place
8. Research Plan (max 12 pages, [use provided template](#))
9. Résumés (max 2 pages per person)
10. Current and Pending Support ([use provided template](#))
11. Peer Reviewer Criteria
12. Letters of support from Alaska Native community and tribal governing bodies (if required)
13. [Data Management and Quality Assurance/Quality Control \("QA/QC"\) Statement](#) (if your proposal is funded, this document will be required at the completion of the project)

Online submission (preferred)

Online submission is the preferred method of submission and will be available at http://www.nprb.org/research/res_2006.htm between 1 November and 9 December, 2005. During the submission process you will create an account to which you can return at a later date if needed. 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 forms such as research plan, budget summary, and current support will be provided. 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.

Once submission is complete, a link to a generated summary page(s) will appear. This page will contain full address and contact information for each agency or entity that will be legally bound to perform the research if funded, names of each principal investigator that will be associated with the project and their agency/organization affiliation and email address, the 250 word summary and a place for a legally binding signature. Please print this page, have it signed by the appropriate representatives of each institution participating in this research and mail it to:

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

This signed paper original of the proposal summary page(s) must be delivered to the Anchorage office of NPRB by 5 p.m., Alaska time, Friday, December 9, 2005 even for those proposals submitted electronically online. In the interest of fairness, no proposals – including this signed page – received after the deadline will be considered for funding in this RFP cycle. Please note that courier and express deliveries to Anchorage, Alaska, normally require a minimum of two days for delivery.

Mail submission

If your internet connection prevents you from reliably uploading files, you may submit your proposal via mail to the address indicated above. **A signed paper original of the complete proposal package must be delivered to the Anchorage office of NPRB by 5 p.m., Alaska time, Friday, December 9, 2005. Please include a CD with your package and/or email electronic versions of all your documents to ramona.brown@nprb.org.**

Proposals should be one-sided, paper-clipped (not stapled) in the upper left-hand corner, but otherwise unbound, and have 1-inch margins at the top, bottom and sides. The font and size must be Times New Roman 11 point. No page in the proposal and supporting material may be physically larger than 8.5x11 inches and no accordion or fold-out sheets are allowed. Any page that is larger than 8.5x11 inches and cannot be run through a standard letter size copier will be discarded. Color graphics are allowed, but may be reproduced in black and white and should be sufficiently descriptive.

Standard indirect cost statements cover sheets, and transmittal letters may be included, but should not be integrated into the proposal materials. These materials will be held on file and not sent with proposals to technical review.

The proposal package should consist of:

1. Proposal Summary Page ([use 1 page template](#))

The proposal summary page includes a title, project period, names of applicant and principal investigators, legislative criteria and research priorities addressed by proposed research, a summary of work (250 words or less), requested and matching funding by year, and 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. Do not add your social security number.

Applicants **must** identify **one primary** research priority and subcategory (if applicable) in which

they want their proposal to compete. You **may** identify **one secondary** research priority and subcategory as appropriate. This is a critical decision because the Board may balance research among categories and the applicant **must** choose a category in which to group the proposal.

The completed proposal summary page must list the full address and contact information for each agency or entity that will be legally bound to perform the research if funded. The applicant must also provide the names of each principal investigator that will be associated with the project and their agency/organization affiliation and email address. (Full contact information for all PIs must be provided in their resumes in Section 3.) The proposal summary page is not a numbered page in the proposal package.

2. Proposal classification

- a. *Keywords*: Describe your project with 5-10 keywords (do not include any words that would apply to items b-d 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. *Geographic Location*: If applicable, list a more regional geographic location in which your study will take place, such as Kodiak, Bogoslof Islands, Bristol Bay, Cook Inlet, etc.
- e. *Reviewer Expertise Criteria*: Download the provided form (http://www.nprb.org/research/res_2006.htm) to indicate what expertise you consider a reviewer of your proposal should possess.

3. Research Plan ([use template](#), 12-page maximum; continuous line numbers; submit paper and electronic version as a WORD document).

The main body of the proposal must be a research plan, limited to 12 consecutively numbered pages formatted as described above. The page limit is inclusive of figures, tables, and literature citations. The research plan (and only the research plan) must have continuous line numbers from beginning to end to facilitate review.¹

- A. Project Title. Include the long title, and provide a suggested 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. State what the project will accomplish and why it is important. Identify the specific research

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**.

priority identified in this years RFP (and subcategory if appropriate) to which you are responding and describe how your proposal addresses these priorities. Applicants must identify one primary and may identify one secondary research priority addressed by their proposed research, but may discuss how the proposal also addresses other research priorities.

- D. Soundness of Project Design and Conceptual Approach. 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 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 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. Project Management. Describe the organization and management of the project and the experience and qualifications of the principal 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. Describe the schedule you will follow and include measurable milestones that can be used to track and evaluate your project performance through the entire award period. Describe the product or result that may be used to measure your success (e.g., report, published paper, etc.) and how you plan to disseminate the research results. If there is more than one principal investigator involved, the applicant must clearly identify which one will be responsible for the overall work and whether there is only one binding contract envisioned, or separate ones for each principal investigator. Principal 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. If applicable, list and provide contact information for all collaborators in this project.
- F. Project Costs. Generally describe and justify the budget and any matching requirements. Indicate if additional funds are needed for ship time or whether it is already incorporated in the budget or matching funds. In addition, if you are employed by a government agency that has a legislative mandate for the type of work you propose, explain whether the agency has supported this type of research in the past five years and why the proposed costs are not now being covered by your agency's budget. Additional budget detail and spreadsheets are included in Section 4.

(Note: Line numbers are not required beyond this part of the proposal package.)

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

The resumes of all principal 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:

1. A list of professional and academic credentials, mailing address, and other contact information including work phone and email address.
2. A list of up to five of your most recent 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.
3. 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.

4. Budget Information

Download the [Budget Summary template](#), fill in the appropriate sections, and include all sheets in your proposal package. It includes the following mandatory budget categories: salaries, fringe benefits; travel, equipment, supplies, contracts/consultants, and other expenditures, and indirect (facilities & administration) and matching/in kind cost sharing with other programs. You must include a separate spreadsheet for each institution seeking funds, and a summary spreadsheet for all institutions. A budget narrative and associated spreadsheets are required. Note that your budget must include costs of preparing all required reports and publication of results in an appropriate scientific journal, and \$2,000 for education and outreach. Applicants also should include in their travel budget, the costs for at least one representative of the project to come to the annual January science symposium in Anchorage for each year during the contracted period of the project, plus the annual symposium in the January following the end of the contract period to present their results. Additional budget detail should be provided as appropriate for each of the major budget categories.

Matching Requirements. Applications must reflect the total budget necessary to accomplish the project, including contributions and/or donations. Cost-sharing is not required for this program. 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 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. The budget form 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.

5. Possible Peer Reviewers

On a single and separate page, provide the names and contact information (including current phone numbers and email addresses) for up to three persons qualified to review your proposal.

Please be aware of the NPRB [policy on conflicts of interest](#) as it relates to technical reviewers. Also, if appropriate, indicate who you would suggest should not be allowed to review your proposal.

6. Current and Pending Support Form

For each principal 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.

7. Letters of Support from Native Communities and Tribal Governing Bodies

Proposals that deal with research on specific Alaska Native communities or health issues must have letters of support from the appropriate community and tribal governing bodies.

8. Data Management and Quality Assurance/Quality Control (“QA/QC”) Statement

Documentation and a description of the NPRB’s current Data Management and Quality Assurance/Quality Control (“QA/QC”) Statement are available at the link below. Stipulations therein will be required if your proposal is funded.

http://doc.nprb.org/web/06_prjs/package/datamngmt-qa_jun15-05.pdf.

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. 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 by the Executive Director and the ad hoc committee 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 and national 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%): Does the project clearly respond to the legislated criteria and research priorities? Applicants must identify the primary research priority and subcategory in which they want their proposal to compete. They may identify a secondary research priority and subcategory as appropriate.
- b. Soundness of Project Design/Conceptual Approach (60%): Applications will be evaluated on the applicant's comprehension of the problem(s); the overall concept proposed for resolution; whether the applicant provided sufficient information to evaluate the project technically; and, if so, the strengths and/or weaknesses of the technical design relative to securing productive results. Particular attention will be given to the inclusion of a clear statement of hypothesis to be tested or objectives to be addressed, the presence of a detailed experimental design with associated power analysis as appropriate, and 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. Project Management (25%): The organization and management of the project, and the project's principal 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. How the applicant plans to disseminate the research results also will be considered.
- d. Project Costs (10%): The justification and allocation of the budget in terms of the work to be performed will be evaluated. Unreasonably high or low project costs will be taken into account.

Science Panel Review. All proposals and their accompanying technical evaluations will be submitted to the NPRB Science Panel for review and scoring 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 for research funds when the Board makes final funding decisions next spring.

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 7, 2005
Deadline for Proposals	December 9, 2005
Technical Evaluations	December 2005 – February 2006
Science Panel Review	Early March 2006
NPRB Selection	Late March 2006
Submission to NMFS	April 2006
Final Notification of PIs	April 2006
Grant Agreements to PIs	April–May 2006
Possible Commence Research	May 1, 2006

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 **May 1, 2006**, though **June 1** may be more realistic.

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 supercede or modify the terms of this RFP.

1. Responding proposals are firm offers and shall remain open for the NPRB to accept anytime before May 1, 2006 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 contract. A proposal accepted for funding does not obligate NPRB to provide additional future funding.
2. 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 environmental impact statements 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.

3. 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.)
4. 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 web site 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.
5. Successful applicants will be required to report their data to an agreed-upon system (NODC or USGS information infrastructure), in accordance with specifications in the project's [data management and information transfer plan](#). A project specific data management and information transfer plan will be developed by the NPRB and the applicant, and, among other requirements, will specify the storage media and format(s), month and location for reporting, and other relevant information, such as metadata, that may be required by the circumstances of the project.
6. 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.
7. 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.