



NORTH PACIFIC RESEARCH BOARD 2016 REQUEST FOR PROPOSALS

INTRODUCTION

The North Pacific Research Board (NPRB) was established by the U.S. Congress to recommend marine research to the U.S. Secretary of Commerce. Approved research projects are funded through a competitive grant program using a portion of the interest earned from the Environmental Improvement and Restoration Fund. These funds must be used to conduct research activities on, or relating to, fisheries and marine ecosystems in the North Pacific Ocean, Bering Sea, Gulf of Alaska, Aleutian Islands, and Arctic. NPRB strives to avoid duplication and prioritizes research that addresses pressing fishery management or marine ecosystem information needs. The intent is to build a clear understanding of marine ecosystems of Alaska to enhance effective management and sustainable use of marine resources.

The 2016 Annual Program RFP is similar in form and content to past NPRB requests for proposals. Research priorities are structured according to the 2005 NPRB Science Plan. Since 2011, the Board has applied a cyclical approach to funding in alternate years. The intent is to ensure sufficient funds are available within specific research categories to address the priorities described and to allow larger-scale scientific questions to be addressed. The anticipated 2016-2017 funding allocation is outlined in Table 1.

Table 1. Planned distribution of funds in 2016 and 2017

	2016 Cycle	2017 Cycle
1. General Research Priorities on Ecosystem Components	\$3,300,000	\$3,100,000
a. Oceanography and Lower Trophic Level Productivity	\$ 300,000	\$ 500,000
b. Fishes and Invertebrates (<i>\$500,000 proposal cap</i>)	\$1,400,000	\$1,200,000
c. Marine Mammals	\$200,000	\$800,000
d. Seabirds	\$500,000	\$100,000
e. Human Dimensions	\$600,000	\$400,000
f. Other Prominent Issues	\$300,000	\$100,000
2. Community Involvement	\$150,000	\$150,000
3. Cooperative Research with Industry	\$400,000	\$300,000
4. Technology Development and Novel Applications	\$400,000	\$300,000
5. Data Rescue	\$300,000	\$100,000
6. Focus Section	–	\$600,000
TOTAL	\$4,550,000	\$4,550,000

NPRB encourages collaborative research proposals that leverage external funding sources, utilize external logistical support, or enhance ongoing projects. These collaborations are encouraged in all RFP sections. NPRB also maintains a formal funding collaboration with the Oil Spill Recovery Institute (OSRI). Since 2008, OSRI has committed up to \$100,000 each year to support proposals that align with the OSRI mission to support research, education, and demonstration projects designed to respond to and understand the impact or potential impact of oil spills in Arctic and sub-Arctic marine ecosystems. Please refer to the OSRI science plan (<http://www.pws-osri.org/wp-content/uploads/2013/08/Science-Plan.pdf>).

**Proposals responding to this Request For Proposals are due at
4:00 PM Alaska Standard Time on Friday, December 4, 2015**

2016 REQUEST FOR PROPOSALS: RESEARCH PRIORITIES

Important Notes Regarding Funding Limits

The funding limit for individual proposals is equal to the category/subcategory target amount, unless otherwise stated. Target funding amounts are for the entire study, NOT per year.

Table 2. 2016 RFP - Research Priorities

Section and Subsection Categories	Target Funding
1. General Research Priorities on Ecosystem Components	\$3,300,000
a. Oceanography and Lower Trophic Levels	\$300,000
i. Processes driving primary and secondary production	
ii. North Pacific anomalous warming	
iii. Implications for reduced ice cover	
iv. Other oceanography and lower trophic level research	
b. Fishes and Invertebrates (\$500K individual proposal limit)	\$1,400,000
i. Stock assessment research and model development	
ii. Analyses and improvement of catchability and survey design	
iii. Investigations on data-poor species and depressed stocks	
iv. Forage species	
v. Responses of fish and crab stocks to environmental variability and climate change	
vi. Patterns in species movement and spatial distribution	
vii. Bycatch and incidental catch	
viii. Fish habitat	
ix. Other fish, invertebrate, and fish habitat research	
c. Marine Mammals	\$200,000
i. Depleted and declining marine mammal populations	
ii. Retrospective studies	
iii. Other marine mammal research	
d. Seabirds	\$500,000
i. Population status and identification of risks	
ii. Distribution, movement and migration patterns	
iii. Assessment and modeling of the effects of environmental conditions and prey resources on seabird populations	
iv. Other seabird research	
e. Humans	\$600,000
i. Human-ecosystem interactions	
ii. Social sciences applied to management, policy and communities	
iii. Local and traditional knowledge	
f. Other Prominent Issues	\$300,000
i. Pathogens and biotoxins	
ii. Contaminants	
iii. Invasive species	
iv. Influence of shipping and marine traffic	

v. Effects of mining	
vi. Other prominent issues research	
2. Community Involvement	\$150,000
3. Cooperative Research with Industry	\$400,000
a. Fishing Industry	
i. Gear modification	
ii. Fishery monitoring	
iii. Marine mammal – fisheries interactions	
iv. Mariculture and wild-hatchery interactions	
v. Other cooperative research with fishing industries	
b. Other Maritime Industries	
i. Impacts on species of special concern	
ii. Monitoring from platforms, infrastructure or vessels	
iii. Oil spill research in Arctic and subarctic marine ecosystems	
iv. Other cooperative research with maritime industries	
4. Technology Development and Novel Applications	\$400,000
a. Molecular and laboratory-based technology development	
b. Marine measurement technology development	
c. Marine tagging and marking technology development	
d. Improvements to catch or assessment data collection	
e. Other technology development research	
5. Data Rescue	\$300,000
TOTAL	\$4,550,000

2016 REQUEST FOR PROPOSALS

Applicants should consult the 2005 NPRB Science Plan for information on appropriate research priorities. Unless specific geography is noted for a particular research priority below, NPRB welcomes research conducted within any of the large marine ecosystems relevant to Alaska (i.e., Gulf of Alaska, Aleutian Islands, Bering Sea, Chukchi Sea, and Beaufort Sea). Proposals should demonstrate awareness of related ongoing projects. Please review past and current NPRB-funded projects (project.nprb.org) as well as components of NPRB-supported integrated ecosystem research that related to the Bering Sea (nprb.org/beringsea_ierp) and the Gulf of Alaska programs (nprb.org/gulfofalaska_ierp). Proposals should strive to avoid duplication and should seek to coordinate with existing research when appropriate. Cooperative research and collaboration is encouraged in all categories.

NPRB seeks proposals that are focused on one of the topics listed below.

1. General Research Priorities on Ecosystems Components	\$3,300,000
--	--------------------

a. <u>Oceanography and Lower Trophic Levels</u>	\$300,000
--	------------------

NPRB seeks oceanography and lower trophic level proposals that are focused on the topics below.

i. Processes driving primary and secondary production

NPRB welcomes research that examines processes that drive and maintain primary and secondary production. Particular areas of interest include the influence of the amount, composition, and timing of primary production on zooplankton production and composition, including taxa important as prey (e.g., euphausiids, copepods) to upper trophic levels, the importance of ice algal production to zooplankton growth and survival, and the ecological implications resulting from changes in community structure. This might include research on how the physical environment (e.g. temperature, water column structure, sea ice, advection, flow patterns) influences energy flow, energy storage, and growth in phytoplankton, ice algae, and zooplankton. Such studies could include investigation of rate processes (e.g., primary and secondary production, feeding, growth, reproduction, mortality) that can be used to better parameterize and validate biological models for predicting the ecosystem response to changing conditions. Also of interest are analyses that build on integrated ecosystem research and consider the influence of cold and warm phase dynamics and/or anomalous warming.

ii. North Pacific anomalous warming

Persistent anomalous warming in the waters off the coast of Alaska has occurred since autumn 2013 and is expected to remain throughout 2015. An area of the North Pacific has been as much as 5°C warmer than average. The 2015 anticipated El Nino event is predicted to perpetuate these warm conditions. Research is requested to characterize the anomalous conditions, examine their cause, and explore mechanisms and ecosystem responses related to this phenomenon. Research might access and leverage existing time series data from oceanographic moorings in the Gulf of Alaska and Bering Sea, the Argo array, fisheries and oceanographic surveys, remote sensing, and relevant ecosystem monitoring programs. Research might address the atmospheric and ocean processes in open-ocean and coastal regions and the connection of the ocean responses to climate processes (e.g., El Niño Southern Oscillation and the Pacific Decadal Oscillation).

iii. Implications for reduced ice cover

NPRB invites proposals that investigate the consequences of a reduced sea ice extent as well

as patterns and timing of seasonal sea ice retreat. Areas of interest include impacts on lower trophic levels and benthic and pelagic food webs, changing water column structure and chemistry, and ocean-atmosphere forcing.

iv. Other oceanography and lower trophic level research

NPRB recognizes the importance of novel research and welcomes proposals that focus on other oceanography and lower trophic level research priorities identified in Table 3-2 of the *NPRB Science Plan*, p. 48.

b. Fishes and Invertebrates

\$1,400,000

The funding limit for individual proposals under Fishes and Invertebrates is \$500,000.

NPRB seeks fish and invertebrate proposals that are focused on the topics below. Also see Cooperative Research with Industry, for additional fisheries-related research topics.

i. Stock assessment research and model development

NPRB seeks proposals that support fisheries stock assessments from two broad approaches:

- 1) studies to estimate values of parameters critical to reliable assessments; and
- 2) studies to develop and apply quantitative assessment approaches and new methodologies.

Estimation of life history parameters to improve stock assessment:

NPRB is interested in estimations of life history parameters that strongly influence the results of stock assessments. Estimates of natural mortality, growth, size at maturity, maturity, recruitment, molt probability, fecundity, and other basic indicators of stock production/productivity are requested. NPRB is also interested in proposals that may provide insight into non-recovering stocks and potential mechanisms for recovery failure. Improved understanding of life history parameters, the factors influencing those metrics, and the uncertainty around those estimates would better inform management and the establishment of optimal quotas for healthy stocks. Research on the spatial and temporal variation in life history traits and their mechanistic origins is encouraged. Sensitivity analyses of population models to issues such as assumptions of spatial and temporal constancy are also encouraged.

Development and application of quantitative assessment approaches and new methodologies:

NPRB is also interested in proposals that advance the development and application of assessments, forward projections and retrospective modeling. NPRB welcomes research approaches that develop or apply methodologies for data-poor stocks (e.g., length-based methods, or biomass dynamics models) and those that evaluate the effectiveness (e.g., potential to overharvest or unnecessarily limit other fisheries) of setting allowable biological catch (ABC) and overfishing limit (OFL) levels for data-poor stocks. NPRB is also interested in proposals that contribute to the development of tools, applications, and software applications (e.g., ADMB, R).

ii. Analyses and improvement of catchability and survey design

NPRB is interested in data collection and data analysis designed to inform catchability estimates. NPRB is also interested in analyses that may further improve interpretation of survey data or survey design, such as gear selectivity (e.g., the probability of capture given interaction with the gear), environmental conditions, and other forms of sampling bias. NPRB also welcomes research approaches that link multiple sources or new forms of survey data (e.g., longline, pots, bottom trawls, midwater trawls, acoustic data) to improve understanding of surveyed systems. Relevant research may include: analyses of vertical distribution and the application of hydroacoustic approaches to understand distributions of semi-pelagic species (e.g., walleye pollock, rockfish); analyses of untrawlable habitat; investigations to characterize

the functional form and shape of selectivity (e.g., dome-shaped, asymptotic); means to account for uncertainty through direct estimation of selectivity parameters within models; analyses of trade-offs between assumptions of fixed selectivity and the application of more flexible (e.g., nonparametric) forms; survey analysis techniques for species that exhibit uneven distributions; and experiments on gear selectivity. NPRB also welcomes research on effective means to improve survey design and enable predictions and forecasts of species distributions based on oceanographic habitat (e.g., associated environmental and biological data).

NPRB welcomes research that develops or improves survey design, survey methods, archival tagging, or analytic approaches intended to address temporal or spatial variation in the availability of the population (e.g., Atka mackerel, Aleutian Islands Pacific cod, Pacific halibut, rockfish) where limitations to survey gear or sampling effort are known to exist due to patchy distributions and seasonality. NPRB also seeks studies that improve multispecies surveys and/or designs for dedicated species-specific surveys.

iii. Investigations on data-poor species and depressed stocks

NPRB is interested in research to investigate data-poor species, particularly elasmobranch (i.e., sharks and skates) and poorly sampled megafaunal assemblages. Data and analyses relevant to population trends, are encouraged. NPRB is also interested in species that are in decline or failing to recover (e.g., Pacific halibut, rockfish, eulachon, king crab spp., Chionoecetes spp.). Information and analyses related to migratory movement and stock structure are of interest.

iv. Forage species

NPRB seeks proposals that will improve understanding of the ecology of forage species in Alaska marine ecosystems. NPRB is interested in proposals that focus on ecological characteristics important to predators (e.g., determinants and variability of distribution and abundance, school density, recruitment, availability) and analysis of data on body condition in juvenile forage fish and linkages to environmental drivers. Research of interest would also include interactions between juvenile salmon and groundfish species, including overlap in pelagic and nearshore habitat use, prey and potential impacts on growth and survival. Research on current and future potential match-mismatch among forage fish dynamics and their prey is also of interest. Species of particular interest include: Pacific sand lance, Pacific herring, Arctic cod, capelin and other marine smelts, lanternfish, squid, and juvenile walleye pollock. *Successful proposals under this topic may be funded as an OSRI-NPRB collaboration.*

v. Responses of fish and crab stocks to environmental variability and climate change

NPRB is interested in studies that examine the responses of fish and invertebrate stocks to climate change (e.g., changes in bottom temperatures, larval survival, predator-prey relationships, food availability, benefits to competitive species, ocean acidification). NPRB seeks research that may improve predictions of climate change effects on fish and fisheries (e.g., how these factors impact early life survival, growth and physiology of target crab and groundfish species). Relevant research may include: evaluation of global climate change models (GCM) or downscaled climate variability scenarios accounting for recruitment, growth, spatial distribution; and evaluation of the robustness of different fisheries management strategies to environmental variability and climate change.

vi. Patterns in species movement and spatial distribution

NPRB welcomes research that improves knowledge of the movement patterns of the many

fish and invertebrate species whose habitats cross diverse environmental conditions and management boundaries. NPRB is interested in research that examines the spatial distribution and movement of species and the spatial structure in stocks. Relevant research may include: analyses of movement patterns on annual and seasonal timescales, shifts in distribution related to life history stages, advection and the influence of passive physical transport, responses to environmental drivers and climate, or responses related to prey availability and predator avoidance.

vii. Bycatch and incidental catch

NPRB seeks studies on all aspects of bycatch (as defined by the Magnuson-Stevens Fishery Conservation and Management Act). Particularly, NPRB is interested in research on bycatch and prohibited species caps for non-target species (e.g., Pacific halibut, Pacific salmon, rockfish) as well as mortality rate studies on “pinch point” species (e.g., sharks, skates, octopus) that potentially limit catch in other fisheries. NPRB encourages studies that explore the trade-offs and implications of bycatch management measures, including methodologies relevant to abundance-indexed management caps. Integrated studies which incorporate the biological, economic and social dimensions of bycatch management to advance decision making are encouraged. Examples of bycatch studies might include: characterizing the spatiotemporal distribution of bycaught species and the overlap with target species, methods to improve understanding of impacts associated with bycatch size composition on potential yield, management strategies to minimize the impacts of bycatch (e.g., abundance and or harvest control rule based limits), biological and socioeconomic tradeoffs in bycatch avoidance strategies, and socioeconomic tradeoffs in allocation decisions.

NPRB seeks studies on all aspects of discards. Examples of discard studies include discard mortality rates, strategies to reduce mortality rates, socioeconomic studies of regulatory alternatives, and the effects of discharge (in various forms) and discards (whole form) on potential consumers (e.g., fish, seabirds, marine mammals). Cooperative studies with industry are encouraged.

viii. Fish habitat

NPRB encourages studies focusing on fish habitat. These studies might include: characterization of habitats essential for spawning, nursery areas, feeding areas; characterization of the relationship of habitat characteristics to stock productivity (e.g., growth rates, fecundity); development of predictive models of habitat use and habitat quality; and development of predictive models of climate-driven shifts in distribution and changes in habitat quality.

ix. Other fish, invertebrate and fish habitat research

NPRB recognizes the importance of novel research and welcomes proposals that focus on other fish, invertebrate, and fish habitat research priorities identified in Tables 3-3 and 3-4 of the *NPRB Science Plan*, p. 62 and 79.

c. Marine Mammals

\$200,000

NPRB seeks marine mammal proposals that are focused on the topics below.

i. Depleted and declining marine mammal populations

NPRB continues to be interested in research that focuses on the causes of declines or lack of recovery in marine mammal populations in Alaska. Research conducted to date has failed to conclusively identify why these populations are declining or failing to recover. Populations of particular interest include: Steller sea lions in the western Aleutian Islands, northern fur seals on the Pribilof Islands, sea otters in the Aleutian Islands, Cook Inlet beluga whales, and North

Pacific right whales. Relevant research may include: competition, predation, environmental changes, contaminants, disease, and human disturbance. NPRB welcomes proposals that examine interactions between these processes. Researchers should strive to avoid duplication and should seek to coordinate with existing projects and build on previously completed projects.

ii. Retrospective studies

NPRB is interested in retrospective studies that make use of existing marine mammal data and archived samples. Priority will be given to proposals that use data or samples from marine mammal species in geographic areas of particular management concern. Proposals should describe the relevance of the anticipated study results to current science and management questions.

iii. Other marine mammal research

NPRB recognizes the importance of novel research and welcomes proposals that focus on other marine mammal research needs identified in Table 3-9 of the *NPRB Science Plan*, p. 94.

d. Seabirds

\$500,000

NPRB seeks seabird and other marine bird (e.g., sea ducks, shorebirds) proposals that are focused topics below. Also see Cooperative Research with Industry, for additional seabird-related research topics. *Successful proposals under this topic may be funded as an OSRI-NPRB collaboration.*

i. Population status and identification of risks

NPRB is interested in research to better understand population status and identify important risks to seabirds (e.g., spectacled eiders). Research might include efforts to: synthesize available climate information to determine threats to breeding colonies; identify species and sites most at risk to environmental impacts on breeding habitat (e.g., coastal erosion, flooding); and apply physiological assessments to assess and relate nutritional stress to population processes.

ii. Distribution, movement and migration patterns

NPRB seeks research on the distribution, movement, and migration of seabirds and marine birds. Specific research interests include studies of specific areas of productivity or foraging (e.g., polynyas of the north Bering Sea) to identify habitat characteristics associated with seabird distribution and abundance (and potential shifts in those characteristics); collection of data on the demography and metapopulation structure of seabird populations; studies of genetics and connectivity (e.g., dispersal statistics); and analyses of seasonal distribution patterns with respect to physical and biological characteristics and oceanographic conditions; and immediate responses to shifting conditions.

iii. Assessment and modeling of the effects of environmental conditions and prey resources on seabird populations

NPRB is seeking proposals to identify and quantify seabird and marine bird population responses to environmental drivers and conditions. NPRB is interested in research to integrate projections of coupled ocean/climate models (e.g., with respect to nutrient-phytoplankton-zooplankton variables) and population dynamics models (e.g., Leslie matrices) for various seabird species to explore climate and multi-stressor effects (e.g., prey availability, ocean acidification, hypoxia) on seabird populations. Research may also focus on the development of population dynamics models to integrate changes in habitat and food resources and quantitatively articulate and characterize mechanisms of change.

iv. Other seabird research

NPRB recognizes the importance of novel research and welcomes proposals that focus on other seabird on research priorities identified in Table 3-12 of the *2005 NPRB Science Plan*.

e. Human Dimensions

\$600,000

NPRB is committed to supporting the analysis of interactions between humans and the marine environment, the advancement of social science methods and approaches, and the integration of local and traditional knowledge. Applicants are strongly encouraged to communicate with stakeholders during proposal development and to meaningfully engage with stakeholders throughout the project. Such interactions (or planned interactions) should be described in the Stakeholder Involvement section of the proposal. While proposals that employ social science methods and analysis are specifically requested in response to this research priority, they are also welcome in response to other topics of this RFP. NPRB recommends potential respondents review the 2013 white paper commissioned on the state of social sciences in natural resource management (nprb.org/socialscience_paper).

i. Human-ecosystem relationships

NPRB seeks proposals that examine the complex interrelationships between people and marine ecosystems. Relevant research might include: measurement of community resilience and adaptation to ecosystem change (e.g., climate change, changes in marine resources); study of human responses to actual or potential management policies and the ecosystem impacts of such responses; further development of coupled or integrated models of human behavior (e.g., decision making) and ecological models of the marine ecosystem; study of the role the marine environment and resource availability to individual and community well-being (e.g., risks to food security).

ii. Social sciences applied to management, policy and communities

NPRB recognizes the relevance of a diverse suite of social science perspectives and methodologies to sustainable management and ecosystem understanding in the North Pacific. NPRB welcomes both discipline-specific social science research and interdisciplinary proposals to build an understanding of the human environment and implications of policy and management for people and communities. NPRB is also interested in proposals that advance understanding of the extent to which various types of knowledge (e.g., scientific, industry, traditional) are incorporated into regulatory and non-regulatory processes and policy development.

Relevant research may include: the social, cultural, economic and/or policy effects of various marine resource management regimes on people, communities, and/or industries dependent on, or affected by, North Pacific ecosystems; the role of culture, values, and voice in fisheries management processes; identification of data gaps and mechanisms for advancing long-term systematic collection of data to address these gaps (e.g., data on crew members in commercial fisheries).

NPRB particularly encourages research that develops new tools, models, and frameworks to understand and predict implications of policy and management decisions. Examples of such research include: research to examine the strengths and shortfalls of ecosystem-based, rights-based, and traditional management approaches and practical means to combine these to develop complementary and effective policies; methods to synthesize case-specific retrospective analyses to predict broad-scale impacts under various policy scenarios; development of frameworks to explore explicit trade-offs in policy alternatives and conflicting outcomes; assessment of how management decisions have affected individual or

community well-being; development of models to predict human and industry responses to potential shifts in management systems (e.g., spatial-temporal distribution of fishing effort, distributed economic impacts on fleet and communities); and the extension of existing bioeconomic models relevant to meet management objectives and entities responsible for resource management.

NPRB is also interested in research that explores the relationship between resource access (e.g., fishing and marine mammal harvest access privileges) and stewardship.

iii. Local and traditional knowledge

If new data are to be collected, written statements of expressed interest or formal collaboration from local communities or stakeholders are required for proposals submitted in response to this topic; letters should specify the exact nature of the collaboration or interest.

NPRB requests proposals that gather, synthesize and/or apply local and traditional knowledge (LTK) to provide a more complex or nuanced understanding of marine social-ecological systems and marine resources. NPRB also encourages proposals that demonstrate the utility or applicability of LTK to research priorities addressed elsewhere in the RFP. Applicants to this topic are required to communicate with communities during proposal development and to engage with communities throughout the project. Please describe such interactions in the Community and Stakeholder Involvement section of the proposal.

f. Other Prominent Issues

\$300,000

NPRB seeks proposals focused on the prominent issue topics described below.

i. Pathogens and biotoxins

Zoonotic infections in marine mammals and birds, as well as biotoxins of marine origin, are emerging as threats to humans and wildlife. NPRB is interested in proposals that investigate the presence of pathogens and/or antibodies in archived tissue, the seroprevalence in available blood specimens, or algal biotoxins in invertebrate or vertebrate marine subsistence species or in prey species important to marine mammals or birds, particularly those important to subsistence diets. NPRB welcomes proposals that study intermediate hosts, transport hosts, or the ecology of the pathogen. Relevant research may include: examination of the role of co-infection with more than one pathogen (e.g., *Brucella ceti* and *Brucella pinnipedialis*, *Coxiella burnetti*, *Toxoplasma gondi*, pathogenic *vibrios spp.*); understanding which species are present, how their abundance and pathogenicity are related to environmental variables, and how to inform existing predictive models; and studies that link human consumers and subsistence hunters with marine reservoirs of zoonotic disease.

ii. Contaminants

NPRB seeks studies related to contaminant flux and loads and studies of the transport of contaminants with demonstrated bioeffects to other ecosystem components. NPRB is specifically interested in research that addresses the potential toxic effects of contaminants on human health, especially in rural areas of Alaska where subsistence harvests provide a significant food source. Relevant research may include: the toxicity of oil, dispersants and other industry-associated discharges (e.g., mining effluents, vessel discharges) to determine the sensitivity of potentially vulnerable key species to these substances; resiliency in sub-arctic and Arctic regions related to potential oil contamination; the variability in the consequences to marine life to oil exposure based on the pathway of exposure (e.g., ingestion,

absorption, and inhalation); potential impacts on vital rates; the effects of contaminants on the health and physiological responses of higher trophic level species, including subsistence species or commercially harvested species; and modeling exercises to quantitatively assess impacts of hypothetical coastal and oceanic oil spills. NPRB encourages research that builds on past research and projects that utilize new technology. *Successful proposals under this topic may be funded as an OSRI-NPRB collaboration.*

iii. Invasive species

NPRB seeks proposals that focus on ecological and/or economic impacts of marine invasive species in Alaska. Known occurrence of invasive species include several species with high potential for economic impact and/or for further threat of expansion as a result of changing ocean conditions, transport of marine debris, and increasing ship traffic, particularly in the Arctic. NPRB is also interested in proposals that include risk assessments for new species invasions, given future climate and associated changes in human activities (e.g., marine shipping, ballast water discharges). NPRB welcomes proposals that include the design of eradication/control plans (e.g., native species biological control) and/or a pilot program to test efficacy of removal. *NPRB recommends potential respondents review the status report published by the Alaska Department of Fish and Game (http://www.adfg.alaska.gov/static/species/nonnative/invasive/pdfs/invasivespp_report.pdf) that lists the occurrences of marine invasive species in Alaska.*

iv. Influence of shipping and marine traffic

International shipping and marine traffic is an issue of concern, particularly in remote areas in the Aleutian Islands and the Bering Strait. As the Arctic environment experiences increased periods of open water, international shipping routes through the Arctic (and secondarily through the Bering Sea, Aleutian Islands and Gulf of Alaska) may increase substantially. Research as to potential impacts to species and the environment are sought. Issues of interest might include noise pollution, marine safety, spills, interference with subsistence activities, transport of invasive species, and disturbances related to eco-tourism and marine traffic. Synthesis of previously collected data is encouraged.

v. Effects of mining

NPRB is interested in studies on the potential effects of mining and mining discharge on fisheries habitat with an emphasis on salmonids and anadromous fish stocks, including both estuarine and marine habitats. Studies should focus on potential discharge components (and concentration levels) with the associated effect and risk.

Proposals could include a retrospective study of the efficacy of post-mining remediation and restoration of salmonid habitat and runs. Proposals might include pre- and post- evaluation of habitat, species composition, run timing and distribution as well as other relevant biologic information necessary to evaluate the efficacy of remediation and restoration efforts.

vi. Other prominent issue research

NPRB recognizes the importance of novel research and welcomes proposals that focus on other prominent issues related to NPRB's mission.

2. Community Involvement

\$150,000

Written statements of expressed interest or formal collaboration from local communities or stakeholders are required for proposals submitted in this category; letters should specify the exact nature of the collaboration or interest.

NPRB seeks proposals for small-scale research projects addressing questions that originate in Alaska coastal communities. The intent of this category is to provide individuals and community-based organizations with an avenue to pursue their specific interests and priorities that are aligned with the NPRB mission. Studies to predict potential storm surge extent, changes in coastal morphology and ocean circulation to illustrate future coastal conditions are encouraged. While proposals that are initiated by local communities are specifically requested in this category, community-based organizations are also welcome to propose projects under other research categories in this RFP. Proposals must include a description of how the project will meet scientific standards and as well as how the researchers will fulfill community expectations.

3. Cooperative Research with Industry **\$400,000**

Written statements of formal collaboration from industry partners are required for proposals submitted in this category; letters should specify the exact nature of the collaboration.

NPRB seeks proposals that include collaboration with maritime industries while also addressing the research topics identified below. While NPRB encourages collaboration in other proposals where appropriate, formal cooperative plans are required for proposals submitted in response to this category. NPRB also encourages proposals to include financial support from industry partner(s).

In addition to the standard evaluation criteria, cooperative research proposals will be assessed with regard to:

- The degree to which the research directly engages the industry partner throughout the project, including during project identification, design and interpretation, and data collection
- How well the proposal addresses pressing management needs for the applicable industry
- The extent to which the project will improve shared understanding between science and industry, including strengthened confidence in the regulatory process
- The scientific integrity, practicality and cost effectiveness of the experimental design
- The extent to which proposals take advantage of existing infrastructure to carry out marine observations (e.g., the use of fishing vessels and expertise of fishermen to deploy oceanographic sensors or acoustic monitors, collect samples, or develop cooperative biomass assessments and surveys).

a. Fishing Industry

i. Gear modification

NPRB is interested in proposals that address modifications to fishing gear and techniques that: reduce habitat impacts; limit gear loss; decrease interactions with non-target species of fish and invertebrates; improve avoidance or minimize interactions with marine mammal or seabirds; improve catchability and selectivity; and reduce or minimize bycatch and discard mortality.

ii. Fishery monitoring

NPRB seeks cooperative proposals to develop or further refine electronic monitoring (EM) or other fisheries monitoring techniques. The need for accurate and cost-effective fishery monitoring is increasing as management decisions depend more on real- or near-time data. NPRB is interested in feasibility assessments that take into account the costs associated with deployment and enforcement of various forms of EM technology, particularly with respect to incorporating these methods on groundfish, halibut, crab, scallop, and guided and unguided recreational fishing vessels. NPRB encourages research that explores means to enhance fishery-dependent data collection and to improve survey indices during fishing activities (e.g., use of automated image analysis to facilitate high-resolution data that will strengthen

observer efforts to monitor fishing activity, use of automated image analysis as a means to develop sources that provide contrast to or augment standard survey data collection). Relevant research might evaluate various forms of remote monitoring (e.g., vessel monitoring systems (VMS)) and in situ (e.g., electronic monitoring such as electronic logbooks, video monitoring) and their potential to offer practical solutions related to: reports on fishery effort and harvest volume; data on spatial-temporal exploitation by fishers/industry; and biological data from harvest, including assessment of mortality rates from non-target species. NPRB is also interested in analyses of other methods to monitor fishery interactions, to develop improved catch monitoring, and develop risk assessments to help define monitoring needs, performance standards and stratification options.

iii. Marine mammal–fisheries interactions

NPRB is interested in the development of strategies and approaches to understand and potentially reduce directed depredation and interactions by marine mammals on fishery or aquaculture/mariculture operations and resources. Relevant research may include: whale depredation on longline gear harvest; whale feeding on salmon fry released from aquaculture operations; sea otter interactions with invertebrate fisheries such as crab, geoduck, urchin and sea cucumber fisheries; and effective means to reduce interaction between marine mammals and net fisheries.

iv. Mariculture and wild-hatchery interactions

NPRB is interested in research on mariculture issues, including various aspects of the development of invertebrates and seaweeds for mariculture, sea ranching, and stock enhancement. Studies might focus on the survival of hatchery-reared individuals in the wild, on genetic surveys of populations to aid in broodstock development for hatchery culture, on multi-trophic aquaculture systems, and on ecological and genetic interactions between hatchery-reared and wild individuals. NPRB would encourage researchers to examine ongoing projects and avoid duplication (e.g., Alaska Department of Fish and Game projects on hatchery-wild stock interactions).

v. Other cooperative research with fishing industries

NPRB recognizes the importance of novel research and welcomes proposals that incorporate cooperative research with the fishing industry with other research needs related to NPRB’s mission. Proposals should be responsive to the cooperative research section of Chapter 4 of the *NPRB Science Plan*, p. 148-149.

b. Other Maritime Industries

NPRB seeks proposals featuring cooperation with maritime industries (e.g., oil and gas, shipping, mining, tourism) that are focused on the topics below. For all topics in this sub-category, priority will be given to studies that take place where industry activities currently occur or where they are anticipated to occur in the near future. NPRB encourages applicants to use data previously collected by industry.

i. Impacts on species of special concern

NPRB is interested in studies of species of special concern in areas where maritime industry activities currently take place. NPRB seeks proposals to study species of special concern that leverage the expertise and data collected by marine industries operating in Alaska waters. Species of particular interest include: salmon and other subsistence fish species, sea ducks, all federal- or state-listed threatened or endangered marine species, other declining or at-risk marine species. NPRB is also interested in marine mammal and seabird species that are directly impacted by sea ice declines.

ii. Monitoring from platforms, infrastructure or vessels

NPRB seeks proposals that use maritime industry infrastructure to measure, or vessels to deploy instruments to measure, changes in the environment. Relevant research may include: atmospheric parameters (e.g., air temperature, humidity, wind speed and direction, precipitation, solar radiation, longwave radiation) or oceanographic parameters (e.g., sea-surface height, temperature, salinity, currents, nutrients, acoustics, fluorescence, wave height, ice cover, pH, aragonite, carbonates, and other measurements relevant to ocean acidification).

iii. Oil spill research in Arctic and subarctic marine ecosystems

NPRB requests proposals that work in conjunction with existing industry efforts to study: technology to detect spills in Arctic and sub-arctic marine environments; models to predict the fate of oil and effectiveness of various spill response options; the release, weathering and persistence of oil in cold water marine systems and ice conditions; the bioremediation of oil; and the effects and persistence of dispersants. NPRB is also interested in assessment of coastal environments and their risk of oil exposure in case of a spill. NPRB welcomes proposals that seek standardization of scientific methodology and protocols to be used during a response. *Successful proposals under this topic may be funded as an OSRI-NPRB collaboration.*

iv. Other cooperative research with maritime industries

NPRB recognizes the importance of novel research and welcomes proposals that incorporate cooperative research with maritime industries with other research needs related to NPRB's mission. Proposals should be responsive to the cooperative research section of Chapter 4 of the *NPRB Science Plan*, p. 148-149.

4. Technology Development and Novel Applications \$400,000

NPRB seeks technology development and novel application proposals focused on the topics below.

a. Molecular and Laboratory-Based Technology Development

NPRB seeks proposals that apply modern molecular techniques to research in novel ways. NPRB is interested in studies that use DNA-based technology to detect cryptic organisms, assess species diversity, or assess adaptive potential. NPRB is also interested in the use of DNA-based technology for identification of invasive species, phenotypically undifferentiated life-history stages, prey species in diet studies, or parasites/pathogens that affect survival or product quality. NPRB encourages proposals that include the analysis of chemical and biochemical profiles that provide methods to age individuals to assess physiological condition or to infer individual dispersal histories.

b. Marine Measurement Technology Development

NPRB is interested in studies that improve or develop new technologies to measure physical, chemical and biological variables in the marine environment. Both sensor technologies and their platforms (e.g., ROVs, AUVs, gliders) need continued evaluation in the face of advances in engineering technology. NPRB is interested in proposals focusing on the development of marine sensor technologies that address marine-environmental information needs in resource management. Relevant research may include: turbidity or pCO₂ sensors, fluorometers, and acoustic technologies for Alaska marine environments; development of instrumentation for rapid and accurate measurement of primary production and photosynthetic activity to ground truth satellite and *in situ* measurements of chlorophyll and to better estimate production rates; field

testing of devices (e.g., optical plankton counters deployed on nets) to speed the processing of zooplankton samples to estimate abundances.

c. Marine Tagging and Marking Technology Development

NPRB is interested in technological developments in a variety of tagging approaches, including deployment and recovery strategies. Proposal may include tags used on marine mammals, seabirds, fish and invertebrate species. Relevant research may include archival, satellite and acoustic tagging, or chemical or genetic marking. NPRB is interested in modification of existing technology for novel applications or scaling technology for effective deployment in species or populations where this technology has not yet been applied. NPRB is also interested in the development of tag and deployment technologies that would enable or improve monitoring of species distribution and seasonal migration, range size and patterns of range expansion/contraction, patterns in lateral and vertical movements, and life history parameters. NPRB also welcomes new technologies that facilitate analyses and estimates of population size and mortality through mark-recapture or the use animals as a means to monitor environmental conditions.

d. Improvements to Catch or Assessment Data Collection

NPRB is interested in new technologies to collect data and report harvests and accurately assess survey hauls through more automated and data intensive processes, to more accurately and efficiently collect, store and transfer information. Research ideas might include the development of an app or other means to report recreational and subsistence harvests or the development of automated images analysis for extracting fishery dependent data and survey information.

e. Other Technology Development Research

NPRB recognizes the importance of novel research and welcomes proposals that focus on other technology development needs related to NPRB's mission.

5. Data Rescue

\$300,000

NPRB seeks proposals to rescue datasets that are at risk of being lost and/or that are in formats not accessible to other researchers (e.g., gray literature reports, paper files, field notes, documented local and traditional knowledge). To develop a realistic long-range view of past biological ocean conditions, NPRB also requests proposals to identify and access previously collected data from early historic or pre-historic sources (e.g., early fishing records, whaling records, middens, tree ring, sediment records). Proposals may also include subsequent analyses of these data. *Successful proposals under this category may be funded as an OSRI-NPRB collaboration.*

Unless the data are from a source that is not readily digitized, proposals should include a plan for digitizing and submitting datasets to national data centers, such as the National Oceanographic Data Center (NODC) or Alaska Ocean Observing System (AOOS) for storage and for use and access by the broader scientific community.

In addition to responding to the standard evaluation criteria, data rescue proposals must:

- Describe the nature and state of the data to be rescued (e.g., location, format, content, completeness of data records)
- Ensure that the data are not already part of an accessible database
- Describe the utility of the dataset to currently relevant science and management questions
- Include a plan and schedule for integrating the rescued data into appropriate national data centers



**NORTH PACIFIC RESEARCH
BOARD
2016 REQUEST FOR PROPSALS: PROPOSAL SUBMISSION INSTRUCTIONS**

DEADLINE: 4 pm Alaska Standard Time, Friday, December 4, 2015

Full instructions for submission are outlined below. If you have additional questions after reading these directions, please contact appropriate NPRB staff. Scientific questions should be directed to NPRB Science Director Matt Baker (matthew.baker@nprb.org | 907-644-6713). General assistance can be provided by Jo-Ann Mellish (joann.mellish@nprb.org | 907-644-6712), and Susan Dixon (susan.dixon@nprb.org | 907-644-6701). For technical assistance contact Igor Katrayev (igor.katrayev@nprb.org | 907-644-6711).

Proposal Submission

NPRB has initiated an online submission system for the 2016 RFP. The system may be accessed at <http://grants.nprb.org/rfp/2016>. During the submission process, you will create an account so that you may return to your in-progress proposal at any time prior to submission and/or the deadline.

The 2016 RFP online submission system is organized with the following pages:

1. Title & Period
2. Abstract
3. Research Classification and Keywords
4. Research Priorities
5. Research Plan (Project Objectives, Project Design & Approach, Project Management, Community & Stakeholder Involvement, Timeline & Milestones, Figures, Tables, Equations, References)
6. Outreach Plan
7. Links to Previous NPRB Projects
8. Management or Ecosystem Implication
9. Reviewer Expertise
10. Researchers & Contact Information
11. Budget
12. Documents
13. Review & Submit
14. Signatures (note this page only appears after submission)

Additional information on each section is provided below in **Proposal Contents** and repeated online in the Instructions bar located at the top of each page. Applicants **must use the templates provided** for Timelines & Milestones, Researchers and Contact Information, Budget and Signatures sections. Proposals that do not use templates will not proceed past the initial proposal review process. Templates can be downloaded from within the system or at <http://www.nprb.org/annual-research-program/request-for-proposals/templates/>. Any PDF files uploaded must be unlocked to facilitate integration with the proposal document for review purposes.

You will have the ability to edit the information entered at any point prior to submission. We recommend

that any large quantities of text be created and edited in a standard application such as Word, to be cut and pasted into the appropriate text box in the online submission system. Any changes made within the online system will be saved automatically. Incomplete submissions will not be processed.

We highly recommend that you submit your proposal well ahead of the deadline.

The online system will be deactivated at 4 pm AKST, Friday, December 4, 2015.

Proposal Confidentiality

Proposals are confidential until the U.S. Secretary of Commerce approves them for funding. All proposals that are submitted but not funded are retained at the NPRB office for internal records. Proposals may also be reviewed by Board and advisory bodies of the Oil Spill Research Institute in accordance with OSRI's standard operating procedures (<http://www.pws-osri.org>). The **Research Plan, Outreach Plan, Timelines and Milestones, CVs and Letters of Support** for funded projects will be available to the public on the NPRB website. **Budget Summaries, Budget Narratives, and Current and Pending Support** information will remain confidential. **Title & Period, PIs, Funds Requested and Summary** pages of unfunded proposals may be made public.

Proposal Contents

1. **Title & Period.** Include the long title, as well as a short title of up to **60 characters**. Provide a start and end date (i.e., month and year) for your project. Projects are not permitted to start before July 1, 2016, however, a start date of September 1, 2016, or later is strongly recommended to allow sufficient time for project set up. Project duration should include final reporting requirements and attendance at the Alaska Marine Science Symposium the January following substantial project completion.
2. **Abstract (300 words).** Briefly explain the goal and value of the proposed project and how your research is relevant to the mission of NPRB. Use language understandable by individuals not familiar with the specific subject area, such as members of Congress and the general public.
3. **Research Classification & Keywords.** List the focal species of your project. You will be requested to identify the Large Marine Ecosystem in which your study will take place (i.e., Gulf of Alaska, Bering Sea/Aleutian Islands, Arctic Ocean). Additional specific place names are *optional*. Select the relevant boxes under the subheadings of Topical Area, Ecosystem Component and Research Approach. Provide 3-10 keywords.
4. **Research Priorities.** Identify the primary research priority from the 2016 RFP under which your proposal will compete. Proposals that are not responsive to the primary research priority selected will not proceed beyond the initial screening of proposals (see Proposal Review Process). The addition of other research priorities relevant to the proposal is *optional*.
5. **Research Plan.**
 - a. **Project Objectives (60 words each).** Objectives should be concise, lie within the scope of the project, and provide a discrete intended outcome. Multiple objectives can be included using the "Add Objective" button at the bottom of the page. The order of Objectives can be changed using the drag-and-drop feature.
 - b. **Project Design and Approach (4000 words).** Project background, concept, experimental design and methods should be detailed in this section. Proposals will be evaluated on their understanding of the problem being addressed, the present state of knowledge in the field, the project's relationship to previous work and ongoing work by the principal/co-investigator(s), and the measurable benefits that will result from the proposed research. Full review criteria and process are detailed in the **General Conditions** section following the submission instructions. Present a list of clear hypotheses as appropriate. Describe how your

research addresses the priority identified. Include the statistical and analytical approach, including assumptions, sample size required, and model validation. A power analysis is strongly recommended where applicable.

It is highly recommended that you prepare your text in Word or a similar application to be cut and pasted into this section. Figures and Tables should not be embedded in this section, but uploaded in their separate sections (5f, g).

- c. **Project Management (unlimited).** Describe how the expertise of the PI and other personnel relates to the successful completion of the project. Explain the coordination and collaboration plan within your project and with other projects as applicable. Define the anticipated dissemination of your research results. All permits are the responsibility of the applicant. Provide relevant permit numbers or application identifiers in this section. Full permit copies may be uploaded in the **Documents** section.
 - d. **Community and Stakeholder Involvement (300 words).** Inclusion of stakeholders in project planning and incorporation of local and traditional knowledge throughout the proposed research is strongly encouraged. Applicants should specify which stakeholder groups were included in development of the project plan, which communities they plan to interact with during their research, and how results will be brought back to stakeholders when the project is completed. Researchers are expected to advise members of affected communities and stakeholders (e.g., commercial fishing industry personnel) of the study purpose, goals, and research time frame. If applicable, researchers should also explain how the project responds to urgent challenges facing stakeholders. If community and stakeholder involvement does not apply to your proposal, use this section to briefly explain why. Please note that this section will be included with the Abstract in the Project Summary page that is generated when the proposal is submitted. **Proposals for research involving specific Alaska Native communities must include a letter of support from the appropriate community or tribal governing bodies.**
 - e. **Timeline & Milestones (required template).** An Excel template is auto-generated for your proposal based on dates and Objectives from the online system. Download the template to add information as necessary, such as the individual responsible for completion and additional specific milestones (e.g., data analysis, data submission, reports). The timeline should also include attendance of at least one project representative at the Alaska Marine Science Symposium following substantial project completion. Upload the completed form from your personal computer using the “Choose file” button at the bottom of the page.
 - f. **Figures (maximum 4).** Up to four optional figures may be uploaded, with captions of **50 words** or less. Figures may be in .bmp, .jpg or .png format. Figures **should not** be embedded in the Project Design and Approach.
 - g. **Tables (maximum 2).** Up to two optional tables may be uploaded. Tables should be in Word format and uploaded as separate files. There is no length restriction on individual tables. Include table captions (up to 250 words) within the document. Tables **should not** be embedded in the Project Design and Approach.
 - h. **Equations (unlimited).** Equations in .gif, .jpg and .png format may be uploaded here. Details on how to convert equations to images (e.g., Microsoft Equation Editor, LaTeX) are available on the submission system page. The number of equations is unlimited. Equations **should not** be embedded in the Project Design and Approach.
 - i. **References (unlimited).** List all sources of information cited in your proposal in a format appropriate for a major journal such as *ICES Journal of Marine Science*.
- 6. Outreach Plan (unlimited).** Proposers are required to develop an Education/Outreach (E&O) plan for communicating research results and/or processes to non-scientific audiences. Outreach activities

should be aligned with the research objectives and target at least one key audience identified in the NPRB Science Plan such as: marine researchers and resource management agencies; commercial and subsistence users; teachers and students; general public. Products may include stakeholder presentations, fact sheets, webpages, blogs, audio/video. **NPRB does not consider university student research, publications in peer-reviewed journals, or presentations at scientific conferences to be activities that fulfill the outreach requirement.** Refer to the outreach tools section of the NPRB website (<http://www.nprb.org>), for additional E&O ideas. This section should also be used to describe how you will assess the effectiveness of your E&O efforts.

NPRB reserves the option to work closely with the principal investigators to pool outreach resources from funded projects, where appropriate.

Proposal budgets must include a minimum of \$2,000 for outreach activities, including materials and delivery/distribution. Use the **Budget Narrative** to provide a detailed breakdown of how the money will be spent. Should your plan involve another funding institution that is already earmarking E&O funds and the plan aligns with NPRB mission and vision, NPRB will allow the E&O funding requirement to be waived. In your plan description, please indicate this third-party funding.

Select the intended audience(s) from the checklist (e.g., Alaska Community Stakeholders, Fisheries Management, Formal Educators, Industry Stakeholders, Interested Public, Policy Makers, Scientific Community, Students).

Using the Education & Outreach products section, outline the types and quantities of education and outreach products you intend to produce. This may include, but is not limited to: stakeholder presentations, fact sheets, webpages, blogs, audio/video, etc. The description of each deliverable is limited to **40 words**.

There is a final section on this page for the description of your assessment goals. Unlimited assessment goals may be included.

- 7. Links to Previous NPRB Projects (unlimited).** Describe any connections between your proposed study with current or past NPRB projects, outlining how your work is not a duplication of effort. Please also state if there are no connections. The project browser may be a useful tool for this section (project.nprb.org).
- 8. Management or Ecosystem Implication (unlimited).** Describe how the research addresses pressing fishery management or ecosystem information needs.
- 9. Reviewer Expertise (minimum 5).** This section will guide you through a series of pages to identify the relevant fields of expertise applicable to review your proposal. The categories of identification include check-box options within the following areas: Physical Science, Biological Science, Socio-Economic, Professional Activity, Ecosystems, Ecosystem Components, Geographic Region, Technology, Lab Methods, Method, Type, Physical Science Specialty Areas, Management/Policy/Social. **You must select a minimum of 5 identifiers.**
- 10. Researchers & Contact Information (templates required).** Provide contact information for the individuals at each organization associated with this proposal. Each proposal must identify a Proposal Applicant, Lead PI, Administrative Grant Manager, and three potential Reviewers. CVs should be two pages in length, and may be uploaded in .doc, .rtf or .pdf format. Current and Pending Support information must be presented in the provided Excel template. Results of Completed NPRB Projects should be provided in the Word template. These documents should be uploaded on this page with the contact information for each person as applicable. **Please note that you will need to use the “Save” button at the bottom of this page after any documents uploads or edits to information.**

All contact categories include:

Proposal Applicant (required). There is only one proposal applicant for the proposal. Full contact information is required.

Lead Principal Investigator (required). Person with overall responsibility for the project, should it be funded. The lead principal investigator will have oversight in terms of scientific content, project management and project completion. There can be only one lead principal investigator for the entire proposal. This person must also be listed as a Principal Investigator and provide the information listed below.

Principal Investigator (required). Person(s) responsible for the scientific content of the proposal and for completion of the project, should it be funded. The proposal must include at least one principal investigator for each organization requesting funds, and must provide full contact information for each. Results of Completed NPRB Projects, Résumé/CV, and a Current & Pending Support Form must be submitted for each PI.

Co-Investigator (if applicable): Researcher(s) responsible for carrying out part of the scientific content of the proposal. **Co-Is typically receive funds** from NPRB for their involvement in the project. Submission of full contact information, Results of Completed NPRB Projects, Résumé/CV, and a Current & Pending Support Form for each Co-I is required.

Collaborator (if applicable): Person(s) committed to work on a project and complete specific tasks, but who are not responsible for successful completion of the project. **Collaborators do not receive funds** from NPRB for their involvement in the project. Full contact information is required.

Contractor (if applicable): Person(s) not identified as a PI or CO-I committed to work on a project for a specific task, but who are not responsible for successful completion of the project. Where the Contractor is an identified individual, a CV is required. A Letter of Support is required if the Contractor is not a specific individual but a larger entity or firm.

Administrative Grant Manager (required): Person(s) responsible for the financial administration of the grant, who can provide legally binding authorization (e.g., Office of Sponsored Programs) for each organization requesting funds. Full contact information is required.

Potential Reviewer (required; 3 minimum). Person(s) not associated with this project or institutions included in any of the groups above, but with sufficient expertise and credentials to review the proposal in an objective manner. Please provide full contact information. Individuals who meet any of the following criteria are **not eligible** as Reviewers:

1. The Reviewer is a member of an organization that has written a letter of support.
2. The Reviewer has a significant financial interest in the proposal.
3. The Reviewer is employed at the same institution or agency as a PI or co-PI.
4. The Reviewer is part of a collaboration with a PI or Co-PI on a project, book, article, report and/or paper within the last 24 months.

The full NPRB Conflict of Interest Policy can be found on the NPRB website.

Unacceptable Reviewer (optional): Please identify any individual(s) that you would prefer not to review your proposal.

11. **Budget (required templates).** Funding amounts specified are for the full duration of the project, not per-year funding. NPRB awards are structured as reimbursable funds with quarterly invoicing. Complete one sheet of the **Budget Summary** template for each institution/organization requesting funds. Add additional sheets to the template as needed. The template includes a

summary page that combines all information for up to four different organizations. **Use the “Save” button at the bottom of this page after any documents uploads or edits to information.**

Year 1 consists of the first 12 months of the project beginning from the start date of your project. Each organization requesting funds must designate one PI to be entered on the Budget Summary worksheet for the corresponding organization.

Include details by project year for the mandatory budget categories:

- Salaries
- Fringe benefits
- Travel
- Equipment
- Supplies
- Contracts/consultants
- Other expenditures
- Indirect costs (F&A)
- Other support/cost sharing with other programs

A **Budget Narrative (required template)** must be prepared for each institution requesting funds and/or providing other support for the project. This includes a detailed description of costs listed under each budget category in the **Budget Summary** file. If discrepancies exist between the **Budget Summary** and the **Budget Narrative**, the **Budget Summary** will be the guiding document. Funded projects will be required to modify the **Budget Narrative** to match the **Budget Summary** prior to subaward distribution. Proposers are encouraged to include supporting spreadsheets where applicable.

Include information regarding:

International Travel: International travel requires federal approval, which may take three months to process. It will be the funded investigator’s responsibility to initiate the foreign travel request process with NPRB staff once the proposal has received funding. Fly America Act (49 USC § 40118) regulations apply to all travel.

Outreach: Describe the cost breakdown of outreach funds (minimum \$2,000). Also include the cost breakdown of outreach activities under the appropriate category, making special note that they are part of the outreach budget. It is not sufficient to list \$2,000 without itemizing costs for the proposed activities.

Ship Time: Please be explicit whether your budget includes ship time; if it does not, indicate how required ship time (if any) will be covered by other guaranteed funds.

Cost Quotes: Vendor quotes are required for any equipment costing \$20,000 or more.

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. Other support is not required, but encouraged. Please be advised NPRB awards are federal funds.

Indirect Costs: The **Budget Summary** may include an amount for indirect costs if the applicant has an established rate for indirect cost 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% of the total proposed direct cost amount in the application, whichever is less. If applicable, a copy of the current, approved indirect-cost agreement with the federal government must be included.

- 12. Documents.** All documents that have been uploaded during the submission process are listed here. These include the required Timeline and Milestones, Budget Summary, Budget Narrative, CVs, Current and Pending, and Results of Completed NPRB projects. Optional documents include the Tables, Figures and Equations. Use this location to include Letters of Support, MOUs or Permits. **Please name all uploaded files in the following manner: PI name_document name.xxx (e.g., Smith_Letter of support.doc). PDF files must be unprotected to allow for merging with the remainder of your proposal for review purposes.**
- 13. Review & Submit.** This page will guide you through any missing documents or input fields. You can select any of the red links to take you directly to the page that has missing or incomplete information. **The system will not allow you to submit until all of the error messages have been resolved. We highly recommend you use the “Download PDF Summary” button to preview your proposal prior to using the “Submit” button. You will not be able to edit any information after you have submitted your proposal.**
- 14. Signatures.** The system will generate an overall proposal signature page and one signature page for each institution requesting funds. The signature on this page from an authorized organizational representative certifies that the proposal, in its entirety, has been submitted according to your organization’s standard proposal approval process. **The proposal APPLICANT should sign the overall signature page, which lists all institutions in the proposal.**

If you download the signature page(s) after you have submitted your proposal, the pages will include a reference number unique to your proposal. Please refer to this number in any proposal-related correspondence with NPRB. If you choose to download the pages before formally submitting your proposal, the pages will not contain a reference number.

Signature pages will be accepted for one week after the closure of the proposal submission system. All pages must be uploaded by 4 pm Alaska Standard Time, Friday December 11, 2015.



NORTH PACIFIC RESEARCH BOARD 2016 REQUEST FOR PROPOSALS: GENERAL CONDITIONS, TIMELINE AND PROPOSAL REVIEW PROCESS

This section outlines general conditions that all respondents to the 2016 Request for Proposals (RFP) must adhere to and comply with should their proposal be awarded funding. In addition, this section also outlines the 2016 RFP timeline and the complete proposal review process.

GENERAL CONDITIONS

The 2016 RFP is a solicitation of offers and should not be construed as an expectation of award. The North Pacific Research Board (NPRB) is not obligated to award any specific project, number of projects or available funds. No oral statement by any person can supersede or modify the terms of this RFP.

In accordance with federal statutes and regulations, no person shall be excluded from participation in, denied the benefits of, or be subjected to discrimination under this program on grounds of race, color, age, sex, national origin, religion, marital status, pregnancy, parenthood, or disability.

1. All federal, state, private, and foreign organizations are eligible to respond to this request for proposals. Recipient organizations must have a DUNS number (<http://fedgov.dnb.com/webform>) and must have an active registration in www.sam.gov, before any award can be made. Recipient organizations required to have a single or program-specific audit will be required to submit a copy of their most recent single or program-specific audit for review before any award is made.
2. Recipient organizations will be required to comply with all federal, state and local laws and regulations, including, but not limited to: Department of Commerce Financial Assistance Standard Terms and Conditions (01/05), and NOAA Administrative Standard Award Conditions (10/2010 and 12/2014). Recipients will also comply with all applicable federal, state, and local laws and regulations including, but not limited to: Title 49 of the United States Code 40118 (commonly referred to as the "Fly America Act"), OMB Circular A-110, OMB Circular A-133, and the applicable federal cost principles found in OMB Circular A-21, OMB Circular A-87, OMB Circular A-122, or FAR 48 CFR Part 31. Grant Awards may also be subject to the Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards (Uniform Guidance), which is codified at 2.C.F.R Part 200. In effect as of December 26, 2014, this final guidance is a streamlining of the Federal government's guidance on administrative requirements, cost principles, and audit requirements for Federal awards. It supersedes requirements contained in OMB Circulars, A-21, A-87, A-102, A-110, and A-133.
3. Responding proposals are firm offers and shall remain open for the NPRB to accept any time before July 1, 2016, 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 fully executed agreement. A proposal accepted for funding does not obligate NPRB to provide additional future funding.

4. 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 (e.g., Section 404 or Section 10 permits issued by the U.S. 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). All experiments must be conducted in compliance with the law, and only pursuant to mandatory permitting duly granted by the appropriate federal and state agencies. Requirements for special permits, such as those required for taking marine mammals, should be clearly described and indicate whether the permit is in possession or not. Failure to comply may result in the cessation or termination of the project and may lead to other action that could preclude the issuance of future awards to the applicant. As a condition of funding, all award recipients must make available, upon request, access to any books, documents, papers, and records that are directly pertinent to a specific program for the purpose of making audits, examinations, excerpts, and transcriptions.
5. 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.
6. Projects that require at-sea study 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). Those standards also apply to chartered non-institution vessels (http://www.gso.uri.edu/unols/saf_stand/contents.htm).
7. NPRB's Subaward Compliance Policy (nprb.org/subaward_compliance_policy), will be part of all awards made as a result of this RFP. The policy was finalized in March 2009 based on federal law that governs award agreements and on comments received in response to an interim compliance policy from the National Oceanic and Atmospheric Administration's (NOAA) Federal Law Assistance Division, the National Science Foundation, and grants managers from five major research institutions.
8. 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 semiannual progress reports 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 NPRB. Failure to submit timely reports or to respond to peer review comments on final reports, or to meet project objectives due to problems in program management, may result in withheld payments.

The indirect rate (i.e., overhead) claimed at the time of proposal submission will apply throughout the duration of the project. NPRB awards are structured as reimbursable funds with quarterly invoicing.

9. All institutions awarded funding must agree to NPRB's standard "Applicable Law, Jurisdiction and Venue" clause unless prohibited by law. The clause reads: *This Agreement shall be governed by the laws of the State of Alaska except to the extent preempted by United States federal law. Jurisdiction for the resolution of any dispute between the parties shall be the state or federal trial courts of Alaska. Venue for the trial of any case shall be Anchorage, Alaska.*

10. All institutions awarded funding must agree to NPRB’s standard “Hold Harmless and Indemnification” clause unless prohibited by law. The clause reads: *Each party to this Agreement agrees to defend, indemnify and hold harmless the other party from and against any and all claims, liabilities, losses, expenses, fees (including attorneys’ fees), and damages arising from or pertaining to the performance of this Agreement, but only in proportion to and to the extent such claims, liabilities, losses, expenses, fees (including attorneys’ fees), and damages are caused by or result from the negligent or intentional acts or omission of the indemnifying party, its officers, agents or employees.*
11. Successful applicants will be required to provide metadata and data records to NPRB at the completion of their project in accordance with the NPRB Metadata and Data policy. Submission of metadata and data records constitutes part of the final project reporting requirements. Failure to submit such records may result in withheld payments of final project costs.

Full execution of newly approved projects may be delayed if investigators have not fulfilled all their reporting requirements, including metadata and data delivery, for projects previously funded by NPRB.

2016 RFP TIMELINE

The schedule is subject to change, *except* for the proposal deadline.

<u>Schedule Item</u>	<u>Timeline</u>
Release of RFP	October 5, 2015
Online Submission System Opens	October 12, 2015
Deadline for Proposals	December 4, 2015, 4:00 p.m. AKST
Deadline for Signature Pages	December 11, 2015, 4:00 p.m. AKST
Peer Review	January – March 2016
Science Panel Review	March 2016
Advisory Panel Review	April 2016
NPRB Board Review and Selection	May 2016
Notification to PIs	May 2016
Submission to Secretary of Commerce	May 2016
Grant Agreements	June – July 2016
Research Commences	no earlier than July 1, 2016

The exact funding awarded to a project will be determined in pre-award negotiations between the applicant and NPRB. Projects should not commence until a fully executed sub-award agreement or Memorandum of Understanding (MOU) is received and NPRB has issued a Release of Funds.

Applicants may *not* request a project start date before July 1, 2016. It is highly recommended that researchers select a start date of September 1 to ensure sufficient time for award processing. If your project includes funds for a NOAA agency, a formal MOU must be in place and fully executed between NPRB and NOAA before the agency will allow work to begin on the project. This will generally result in a later start date of approximately September 1, 2016.

PROPOSAL REVIEW PROCESS

Proposals are screened for responsiveness to the current RFP. An *ad hoc* committee of Science Panel members may be convened for additional consultation for complex proposal issues. Proposals that do not meet RFP requirements or responsiveness standards will be disqualified. Notification and rationale for disqualification are provided to the applicant.

Peer review

Proposals that pass initial screening by NPRB staff are forwarded to independent peer review experts, with the goal of three evaluations per proposal. Staff invite regional, national and international peer reviewers following the NPRB Conflict of Interest Policy. The review format includes both comment and qualitative assessments in each of five categories, plus a summary section. Each section is ranked as poor, fair, good, very good and excellent. The specific weighting recommendations for each category are:

Project design (60% total):

10% for background and need

10% for statement of problem or question

20% for study design

20% for analysis

Education and outreach (5%)

Timeline and milestones (10%)

Project management (15%)

Project costs (10%)

Science Panel Review

Two Science Panel members with relevant expertise are assigned to each proposal, as either a primary or secondary reviewer. These members follow the same review protocol as the peer reviews for their expert assessment of the proposal, in addition to their role in summarizing and presenting the peer reviews for that proposal. The primary will present this summary and their evaluation of the proposal to the Science Panel. The secondary will add any relevant points. The Science Panel will evaluate proposals in two distinct rounds of review.

Each proposal will be assigned into one of the following Tiers in the first round of review:

Tier 1. Very Good/Excellent. Proposals with minor non-science related issues (e.g., budget or permitting) may be assigned a conditional status. The Science Panel will clearly identify the conditions to be met if the proposal is selected for funding.

Tier 2. Good/Very Good. Proposals with minor non-science related issues (e.g., budget or permitting) or science related issues may be assigned a conditional status. The Science Panel will clearly identify the conditions to be met if the proposal is selected for funding.

Tier 3. Poor/Fair. Tier 3 proposals require substantial revision, are the least likely to succeed, and are not candidates for funding. The Science Panel may forgo detailed discussion of proposals that will not be competitive based on peer reviews and Science Panel assessment. However,

Science Panel members retain the option to revisit these proposals at any time prior to final recommendations to the Board.

The second round of review will focus on proposals initially ranked as Tier 1. These proposals may be moved to a Tier 2, remain at the Tier 1 level, or in select cases be highlighted for consideration above and beyond the Tier 1 designation. The proposals with outstanding characteristics would be assigned Tier E:

Tier E. Exceptional. Proposals deemed as exceptional science with an additional element of time sensitivity (urgency), technical robustness or specific responsiveness to the RFP.

Advisory Panel Review

The Advisory Panel will review proposals for special stakeholder, public interest, or community and other societal relevance. The Advisory Panel will be provided full proposal materials and Science Panel summaries for Tier E, 1 and 2 proposals. The Advisory Panel will provide a short summary of the attributes of a subset of these proposals that they wish to highlight as having significant stakeholder, community or other societal relevance for Board consideration.

Board Review

The Board will consider technical evaluations, Science Panel recommendations and Advisory Panel input. The Board will not consider Tier 3 proposals. Scientific merit will be the primary criterion, however to allow for a balanced portfolio and the flexibility to respond to current issues, other factors may be considered, such as:

1. Pressing fisheries management needs
2. Ecosystem information needs
3. Other projects currently funded on a similar topic
4. Overlap with other ongoing programs
5. Competitiveness relative to other proposals of equal merit within a topical area
6. Category target funding amounts published in the RFP
7. Previous performance of applicants.

Any conditional proposals selected by the Board will include all Science Panel conditions. The Board reserves the right to include additional conditions. Proposals that receive conditional funding by the Board will be asked to submit a revised proposal which specifically addresses all concerns. Staff will review the revised statements of work and determine whether to go ahead with funding or not. Members of the Science Panel or Board Executive Committee may be consulted during this process. The Board will document their decision, including rationale for any deviation from Science Panel recommendations.

Peer reviews, Science Panel summaries and Board recommendations will be provided to the applicant. 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 staff, and review by NPRB and Department of Commerce officials.

Consultation with Interested Parties

Throughout the proposal review process, the Board and staff 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.

Secretary of Commerce Review

All recommendations of the Board are subject to final approval by the Secretary of Commerce, who must ensure that the project recommendations are consistent with the terms of the NPRB grant award, federal law and the enabling legislation. Projects recommended for funding by the Board may be denied approval upon the review of the Secretary of Commerce.