



NORTH PACIFIC RESEARCH BOARD 2015 REQUEST FOR PROPOSALS

The North Pacific Research Board (NPRB) was created by Congress in 1997 to recommend marine research activities 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 U.S. Treasury Environmental Improvement and Restoration Fund. These funds must be used to conduct research activities on, or relating to, the fisheries or marine ecosystems in the North Pacific Ocean, Bering Sea, and Arctic Ocean (including any lesser related bodies of water). NPRB strives to avoid the duplication of other research activities and places priority on research designed to address pressing fishery management or marine ecosystem information needs. The long-term vision is to build a clear understanding of the marine ecosystems of Alaska that enables effective management and sustainable use of marine resources.

Since 2002, NPRB has released thirteen requests for proposals (RFPs) through the annual research program, which has funded 350 projects totaling \$57.8 million. Descriptions of the projects can be found at <http://project.nprb.org>; funded projects fall into seven broad themes and into three large marine ecosystems as shown in Table 1.

Table 1. NPRB Annual Research Program Funding Allocation (awarded in 2002-2014)

<u>Categories of Research</u>	<u>Total Funding</u>	<u>Percent Allocation</u>
Lower Trophic Level Productivity	\$8,876,170	15%
Fishes and Invertebrates	\$24,715,534	43%
Fish Habitat	\$4,977,629	9%
Marine Mammals	\$9,250,930	16%
Seabirds	\$5,465,702	9%
Humans	\$2,670,930	5%
Other Prominent Issues	\$1,875,238	3%
<u>Geographic Area</u>		
Gulf of Alaska	\$21,320,839	37%
Bering Sea/Aleutian Islands	\$31,390,000	54%
Arctic Ocean	\$5,121,293	9%

In addition to research funded through the annual research program, NPRB funds graduate student research awards, long-term monitoring projects, and integrated ecosystem research; these programs are not part of this RFP. Special for the 2015 annual RFP, applicants submitting proposals for research on Arctic topics, please see the Arctic note* on page 3. Visit the NPRB website (www.nprb.org) for more information about NPRB's full complement of science programs.

This notice constitutes the annual Request for Proposals (RFP) for projects commencing in 2015.

Full proposals responding to this RFP are due at
4:00 p.m. Alaska Standard Time on Friday, December 5, 2014

The 2015 RFP is similar in form and content to past NPRB requests for proposals. Research priorities are structured according to the 2005 *NPRB Science Plan*.

Other consistent elements of the 2015 RFP that were first introduced in the 2011 RFP include:

- (1) A separate focus section of research identified each year, designed to highlight pressing research needs for fisheries management or ecosystem understanding. The focus section for 2015 is Ecosystem Syntheses.
- (2) A cyclical approach to research spending in alternating years. To allow for consideration of more costly proposals, the board implemented and has biennially reaffirmed its commitment to a two-year cyclical approach that fluctuates the level of funding available in each category. As a result, some research priorities are not present in the RFP every year and others are not funded at the same level every year. The 2015–2016 cycle is outlined in Table 2.
- (3) A formal request for collaboration with other organizations.

New to the 2015 RFP is a topic section under the broader “Human Dimensions” sub-category, intended to support and integrate social science methods and approaches to support broader understanding of natural and socio-ecological systems and the implications of management and policy on human systems. The purpose of the expanded sub-category is to support social science research across a broad range of subject areas and disciplines, using quantitative and qualitative methodologies. While social science methods are formally requested within this topic, they are also welcome in response to other applicable research topics. Also included within the “Human Dimensions” sub-category are topics that have appeared in past RFPs related to 1) human interactions with marine systems, and 2) the collection, synthesis and application of local and traditional knowledge (LTK).

Table 2. Planned distribution of funds in 2015 and 2016

Note: This table reflects the plan for distribution of funds, not actual funding distribution.

	2015 Cycle	2016 Cycle
1. General Research Priorities on Ecosystem Components	\$3,550,000	\$3,100,000
a. Oceanography and Lower Trophic Levels	\$ 500,000	\$ 200,000
b. Fishes and Invertebrates	\$1,300,000	\$1,300,000
c. Marine Mammals	\$1,000,000	\$200,000
d. Seabirds	\$150,000	\$500,000
e. Human Dimensions	\$400,000	\$600,000
f. Other Prominent Issues	\$200,000	\$300,000
2. Community Involvement	\$150,000	\$150,000
3. Cooperative Research with Industry	\$400,000	\$300,000
4. Technology Development	\$400,000	\$300,000
5. Data Rescue	\$100,000	\$100,000
6. Focus Section	\$1,300,000	\$600,000
TOTAL	\$5,900,000	\$4,550,000

NPRB encourages collaborative research proposals that leverage other funding sources, enhance ongoing projects, or utilize external logistic support. Collaborations are formally requested in the “Cooperative Research with Industry” category but are encouraged in all sections of the RFP.

In addition, NPRB highlights a formal funding collaboration with the Oil Spill Recovery Institute (OSRI). Since 2008, OSRI has committed up to a total of \$100,000 per RFP to support projects that are submitted in response to the NPRB annual call that align with OSRI’s mission and goals. OSRI’s mission includes

the support of 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. OSRI's current research plan emphasizes the biological impacts on nearshore environments. Refer to OSRI's science plan for additional details (<http://www.pws-osri.org/wp-content/uploads/2013/08/Science-Plan.pdf>).

Proposals submitted in response to NPRB RFP categories that have overlapping interest with OSRI will go through a joint review process. To facilitate the process, the proposals will be distributed to the OSRI board and its advisory bodies in accordance with their standard operating procedures (<http://www.pws-osri.org>). All proposals, regardless of potential collaborative funding through OSRI, are subject to the individual proposal limit of the category to which they are submitted.

The topics of common interest are—

- Oceanography and Lower Trophic Levels: Nearshore sea ice environments
- Fishes and Invertebrates: Forage species
- Other Prominent Issues: Coastal contaminants
- Cooperative Research with Maritime Industries: Oil spill research in Arctic and subarctic marine systems
- Data Rescue

***Note Regarding Arctic Proposals Submitted in Response to this RFP**

Arctic projects funded through this RFP may be required to collaborate with NPRB's upcoming Arctic ecosystem research program; NPRB anticipates issuing a separate call for proposals for its Arctic program during the summer of 2015. Arctic research funded through the 2015 annual RFP may be subject to a modified data embargo policy which requires applicable data be shared with Arctic program collaborators in near real-time. Investigators funded through the annual program to do Arctic research may also be asked to participate in NPRB Arctic program meetings and to collaborate on interdisciplinary analyses; in these cases, supplemental funds will be made available.

2015 REQUEST FOR PROPOSALS: RESEARCH PRIORITIES

Target funding total of \$5.9 million

Table 3 summarizes the categories of research priorities and funding targets for the 2015 RFP. Detailed explanations of each research priority begin on page 6.

Important notes regarding funding:

- The funding limit for individual proposals is equal to the category or sub-category target-funding amount unless otherwise stated. Proposals that exceed the funding limit of the category to which they are submitted will not be processed.
- Target funding amounts are based on the full length of projects, not per year.

Table 3. 2015 Request for Proposals: Research Priorities

Section Categories, Sub-categories and Topics	Target Funding
1. General Research Priorities on Ecosystem Components	\$3,550,000
a. Oceanography and Lower Trophic Levels	\$500,000
i. Processes driving secondary production	
ii. Nearshore and landfast sea ice environments	
iii. Other oceanography and lower trophic level research	
b. Fishes and Invertebrates (<i>\$500,000 individual proposal limit</i>)	\$1,300,000
i. Stock assessment research and model development	
ii. Analyses and improvement of survey design and estimates of catchability	
iii. Forage species	
iv. Responses of fish and crab stocks to climate change	
v. Patterns in species movement and spatial distribution	
vi. Discard mortality rates	
vii. Other fish, invertebrate, and fish habitat research	
c. Marine Mammals (<i>\$500,000 individual proposal limit</i>)	\$1,000,000
i. Areas of particular biological importance for arctic marine mammals	
ii. Areas of biological importance for Steller sea lions	
iii. Declining and depleted marine mammal populations	
iv. Effects of changes in sea ice	
v. Relationships between marine mammals and salmon in the Bering Sea	
vi. Application of recently developed technology for marine mammal studies	
vii. Other marine mammal research	
d. Seabirds	\$150,000
i. Retrospective studies	
ii. Other seabird research	
e. Human Dimensions	\$400,000
i. Human-ecosystem relationships	
ii. Social sciences applied to understanding management, policy, and communities	

iii. Local and traditional knowledge	
f. Other Prominent Issues	\$200,000
i. Zoonotic infections and biotoxins	
ii. Coastal contaminants	
iii. Invasive species	
iv. Other prominent issue research	
2. Community Involvement (\$100,000 individual proposal limit)	\$150,000
3. Cooperative Research with Industry	\$400,000
a. Fishing Industry	
i. Gear modification	
ii. Fishery monitoring	
iii. Marine observations and research	
iv. Marine mammal-fisheries interaction	
v. Other cooperative research with fishing industry	
b. Other Maritime Industries	
i. Species of special concern	
ii. Monitoring from 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	
d. Other Technology Development Research	
5. Data Rescue	\$100,000
6. Focus Section: Ecosystem Syntheses	\$1,300,000
a. Aleutian Islands Ecosystem Synthesis	\$600,000
b. Gulf of Alaska IERP Synthesis	\$700,000
TOTAL	\$5,900,000

2015 REQUEST FOR PROPOSALS

Applicants should consult the 2005 *NPRB Science Plan* for information regarding the appropriate research needs in each category. Unless specific geography is noted for a particular research priority below, NPRB welcomes research conducted within any of the large marine ecosystems outlined in the *NPRB Science Plan* (i.e., Gulf of Alaska, Bering Sea/Aleutian Islands, Chukchi/Beaufort Seas). 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 make up the Bering Sea Project (nprb.org/beringsea_ierp) and the Gulf of Alaska Project (nprb.org/gulfofalaska_ierp). Proposals should strive to avoid duplication and should seek to coordinate with existing projects when appropriate. Cooperative research and collaboration is encouraged in all categories.

1. General Research Priorities on Ecosystems Components \$3,550,000

a. Oceanography and Lower Trophic Levels \$500,000

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

i. Processes driving secondary production

NPRB welcomes research that examines processes that drive and maintain secondary production at the base of the food web from one year to the next. Specifically, NPRB is interested in proposals that examine the relative influence of the amount, composition and timing of primary production on zooplankton production and community composition. NPRB is also interested in analyses of standing stocks and relative productivities of key zooplankton prey taxa (e.g., euphausiids, copepods). Additionally, NPRB is interested in research that examines ecosystem implications resulting from changes in community structure (e.g., a shift in the dominant calanoid copepod species). Also of interest are studies of Arctic zooplankton and proposals that investigate rate processes (e.g., feeding, growth, reproduction, mortality) of zooplankton to understand how the system currently functions and to better parameterize biological models for predicting the ecosystem response to changing conditions.

ii. Nearshore and landfast sea ice environments

NPRB welcomes proposals that investigate nearshore patterns of regional sea ice extent and patterns of seasonal retreat as well as those that study the mechanisms and processes that drive nearshore ice dynamics. NPRB requests research that describes possible changes in lower trophic levels that are occurring. NPRB is interested in proposals that examine the consequences of a changing environment for lower trophic level structure and energy flow. NPRB is also interested in research to determine appropriate techniques and scales to measure and monitor changes to nearshore sea ice and impacts of those changes on primary production. Relevant research may include: changes in nearshore ice dynamics that influence seasonal movements and the use of the nearshore environment by fish, marine mammals, birds and coastal residents; patterns and mechanisms that drive nearshore ice dynamics (e.g., formation, stability and degradation); changes in lower trophic level productivity regime due to diminishing perennial and seasonal ice cover; implications of a possible reduced ice-algae dominated system and shift to a longer open water season; potential expansion of North Pacific Ocean organisms northward. *Successful proposals under this topic may be funded as an OSRI-NPRB collaboration.*

iii. 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 needs identified in Table 3-2 of the *NPRB Science Plan*, p. 48.

b. Fishes and Invertebrates

\$1,300,000

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 category 3, 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. Proposals could also include stock assessment research on non-target species likely to reduce the harvest of target species (e.g., Pacific salmon, Pacific halibut). Priority will be given to studies of data-poor species, particularly those with catch-only data (e.g., North Pacific Fishery Management Council Tier 6 groundfish) and species that have not recovered (e.g., Tier 5 crab, Pribilof Islands blue king crab).

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. For example, estimates of natural mortality, growth, size at maturity, molt probability, fecundity, and other basic indicators of stock production/productivity may provide insight into non-recovering stocks and potential mechanisms for recovery failure. Estimates of life history parameters could also dramatically reduce uncertainty in optimal quotas for healthy stocks.

Development and application of quantitative assessment approaches and new methodologies: NPRB is also interested in proposals that advance the development and application of assessment, forward projection and retrospective modeling approaches. 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 for overharvest or unnecessarily limiting 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 for public-domain (i.e., open source) applications (e.g., ADMB, R).

ii. Analyses and improvement of survey design and estimates of catchability

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) 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; experiments on gear selectivity.

The distribution of many fish and invertebrate species are often highly variable, with known fluctuations associated with seasonal timing or reflective of specific life history traits, environmental conditions, or movement patterns. These patterns are often associated with specific stocks or geographic regions and may have implications for the availability of these populations to sampling effort, complicating accurate estimates of abundance. NPRB welcomes research that develops or improves survey design, survey methods, or analytic approaches intended to address temporal or spatial variation in the availability of the population (e.g., Atka mackerel, Aleutian Islands Pacific cod, rockfish) where limitations to survey gear or sampling effort are known to exist due to patchy distributions and seasonality. NPRB seeks studies that improve multispecies surveys and/or designs for dedicated species-specific surveys.

iii. 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). Species of particular interest include: sand lance, capelin and other marine smelts, lanternfish, squid, herring, Arctic cod, and juvenile walleye pollock. *Successful proposals under this topic may be funded as an OSRI-NPRB collaboration.*

iv. Responses of fish and crab stocks to 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 relationship changes, 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 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; evaluation of the robustness of different fisheries management strategies to environmental variability and climate change.

v. 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, responses to environmental drivers and climate, or responses related to prey availability and predator avoidance.

vi. Discard mortality rates

NPRB seeks studies that will provide estimates of discard mortality rates (DMRs). There are currently no estimates for DMRs for North Pacific groundfish stocks discarded at sea, resulting in an assumption of 100% mortality. Estimates of DMRs might improve fisheries management and provide incentive for improved handling and viability of discards. NPRB is interested in stocks whose incidental catch may restrict other fisheries (e.g., octopus, skates) and stocks of high economic value that are caught both incidentally and in directed commercial or recreational fisheries (e.g., sablefish, turbot, Pacific cod). NPRB would also consider proposals concerning DMR studies for halibut and crab.

vi. 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 needs identified in Tables 3-3 and 3-4 of the *NPRB Science Plan*, p. 62 and 79.

c. Marine Mammals

\$1,000,000

The funding limit for individual proposals under Marine Mammals is \$500,000.

NPRB seeks marine mammal proposals that are focused on the topics below. Also see category 3, Cooperative Research with Industry, for additional marine mammal-related research topics.

i. Areas of particular biological importance for arctic marine mammals

Several species of Arctic marine mammals (e.g., bowhead whales, beluga whales, ice-associated seals, walrus, polar bears) have been studied using satellite-linked transmitters to monitor their locations and movements. Aerial survey (including image assessment) data and passive acoustic data have also been collected to examine animal movements. NPRB is interested in studies that assemble and analyze existing data to describe marine mammal use of the Bering, Chukchi, and Beaufort Seas, and that identify areas of particular biological importance. NPRB will not support new tagging studies under this topic.

ii. Areas of biological importance for Steller sea lions

NPRB seeks proposals that assemble and analyze movement data to assist in the identification of areas of particular biological importance (e.g., for foraging, seasonal movements, reproduction) for Steller sea lions. Given the large number of telemetry studies and mark-recapture (i.e., branding) studies of Steller sea lions movements by multiple agencies and the effort to review the current designation of critical habitat for Steller sea lions by NOAA's National Marine Fisheries, NPRB is interested in a synthesis (including model development) of the existing movement data to characterize the spatial distribution and areas of biological importance for this specie. NPRB will not support new tagging studies under this topic.

iii. Declining and depleted 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 around 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. As with all proposals, researchers should strive to avoid duplication and should seek to coordinate with existing projects and build on previously completed projects.

iv. Effects of changes in sea ice

NPRB seeks proposals that investigate the effects of changes in sea ice (e.g., reduced thickness and areal extent of season sea ice, duration of ice cover in the northern Bering, Chukchi and Beaufort Seas) on marine mammals. Relevant research may include: implications for reduced sea ice as a platform for foraging, resting, and birthing for ice reliant species; implications for increased open water on species movements and accessibility to open water habitat; implications for related shifts in prey resources.

v. Relationships between marine mammals and salmon in the Bering Sea

NPRB is interested in quantifying the degree of marine mammal (e.g. seals, sea lions, beluga whales, orca whales) predation on Pacific salmon. NPRB is also interested in research that quantifies the importance of salmon as a food source to marine mammal populations. Relevant research may include: measurement of the availability of salmon as prey for sustaining marine mammal populations or measurement of marine mammal predation on salmon stocks.

vi. Application of recently developed technology for marine mammal studies

NPRB is interested in improved methods and the application of recently developed technologies for studying marine mammals. Relevant research may include: use of unmanned aerial systems for population surveys, improvement of tools and techniques for satellite or acoustic monitoring of individual or groups of marine mammals, and application of life-history tags for assessing causes of mortality for marine mammals, especially sea otters, northern fur seals, and Steller sea lions. NPRB will not support the development of new technologies under this topic.

vii. 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

\$150,000

NPRB seeks seabird proposals that are focused topics below. Also see category 3, Cooperative Research with Industry, for additional seabird-related research topics.

i. Retrospective studies

NPRB seeks proposals that take advantage of existing time series or archived samples to conduct retrospective analyses to further seabird research and address relevant management issues. *Successful proposals under this topic may be funded as an OSRI-NPRB collaboration.*

ii. Other seabird research

NPRB recognizes the importance of novel research and welcomes proposals that focus on other seabird ecology and management topics, with priority on research needs identified in Table 3-12 of the *NPRB Science Plan*, p. 110. For example, proposals complementing ongoing projects, proposals applying recently developed technologies, or focused experimental studies may be funded.

e. Human Dimensions

\$400,000

Recognizing that humans are an important component of the ecosystem, 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. The new *Human Dimensions* sub-category includes a topic dedicated to support and integrate social science theory, methods and approaches across subject areas to support broader understanding of natural and socio-ecological systems and the implications of management and policy on human systems. The sub-category also brings together elements of past NPRB RFPs (i.e., Humans, Local and Traditional Knowledge) that were previously separate.

Applicants to this sub-category are strongly encouraged to communicate with stakeholders during proposal development and to engage with stakeholders throughout the project. Such interactions (or planned interactions) should be described in the Stakeholder Involvement section of the proposal.

i. Human-ecosystem relationships

NPRB seeks proposals that address the range of human impacts on marine ecosystems as well as the impacts of marine systems (or shifts in natural and managed systems, climate or ecosystem state and function) on humans (i.e., individuals, societies, communities, industries). NPRB is interested in studies examining the complex interrelationships between people and the environment. NPRB encourages research that takes advantage of a broad array of scientific disciplines and approaches. Relevant research may include: measurement of community resilience to ecosystem change (e.g., climate change, changes in marine resources), assessment of human/community well-being in the context of ecosystem based management, or evaluation and integration of multiple approaches to ecosystem valuation.

ii. Social sciences applied to understanding management, policy and communities

In recognition of the relevance of a diverse suite of social science perspectives and methodologies to sustainable management and ecosystem understanding of marine systems in the North Pacific, NPRB seeks proposals that integrate various social science methods to build 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 that stakeholders use to influence policy. NPRB supports the application of social science disciplines (e.g., anthropology, archaeology, behavioral science, demography, economics, geography, information science, law, management, political science, psychology, sociology), methods and theory to priority issues. NPRB welcomes both discipline-specific research as well as interdisciplinary proposals that utilize multiple methodologies or approaches towards a common research question. Relevant research may include: the social, cultural, and/or economic 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 the fisheries management process; identification of data gaps and mechanisms for advancing long-term, systematic collection of data to address these gaps. *NPRB recommends potential respondents review the 2013 white paper commissioned on the state of social sciences in natural resource management (nprb.org/socialscience_paper).*

NPRB encourages proposals that include collaboration between social science and natural science investigators as well as those proposals that integrate different data sets. Proposals will be evaluated on the extent to which the applicants clearly define the problem or question, define the theoretical approach and applicability to the research question, describe the data collection and methodology for analysis, and outline expected results. Study design should be clear, rigorous, and explicit. *While proposals that use social science methods and analysis are specifically requested in response to this topic, they are also welcome in response to other applicable topics of this RFP.*

iii. Local and traditional knowledge

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 welcomes 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. Describe such interactions in the Stakeholder Involvement and Outreach section of the proposal. *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.*

f. Other Prominent Issues

\$200,000

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

i. Zoonotic infections and biotoxins

Zoonotic infections in marine mammals and birds, as well as biotoxins of marine origin, are emerging as threats to subsistence food safety. Therefore, NPRB is interested in proposals that investigate the presence of pathogens and/or antibodies in archived tissue, the seroprevalence in available blood specimens, or the algal biotoxins in invertebrate or vertebrate marine subsistence species or in prey species of marine mammals or birds that are important in 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 gondii*); studies that link human consumers and subsistence hunters with marine reservoirs of zoonotic disease. Research on biotoxins and the organisms that produce the toxins should focus on recognized seafood safety issues and should be directly applicable to subsistence food gatherers, commercial harvesters, aquaculturists, and recreational fishers.

ii. Coastal 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 coastal 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 effluence, vessel discharges) to determine the sensitivity of potentially vulnerable key species to these substances; potential impacts on vital rates, particularly the effects of contaminants on the health and physiological responses of higher trophic level species, including subsistence species or commercially harvested species. 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 1) changing ocean conditions, 2) transport of marine debris (e.g., tsunami debris), and 3) 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. 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**

The funding limit for individual proposals under Community Involvement is \$100,000.

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. *While proposals that are initiated by local communities are specifically requested in this category, community-based organizations are also welcome to propose larger projects in response to other topics 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. *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.*

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

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 it is appropriate, formal cooperative plans are required for proposals submitted in response to this category. 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 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 and other products of research
- The scientific integrity, practicality and cost effectiveness of the experimental design

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 (including electronic monitoring such as electronic logbooks, vessel monitoring systems (VMS), video monitoring) and their potential to offer practical solutions related to: reporting of fishery effort and harvest volume; data on spatial-temporal exploitation by fishers/industry; 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 or to develop improved catch monitoring.

iii. Marine observations and research

NPRB welcomes proposals that take advantage of existing infrastructure to carry out marine observations. Relevant research may include: the use of fishing vessels and the expertise of fishermen to deploy oceanographic sensors or acoustic monitors, collect samples, or make cooperative biomass assessments and surveys.

iv. Marine mammal–fisheries interactions

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

v. Other Cooperative Research with Fishing Industry

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. 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 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).

iii. Oil spill research in Arctic and subarctic marine ecosystems

NPRB is interested in collaborative efforts that study the direct effects of oil on marine mammals, seabirds, fishes and invertebrates. NPRB requests proposals that work in conjunction with existing industry efforts to study: the weathering and persistence of oil in ice conditions; the bio-remediation 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 new technology development and novel application proposals that are 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 (e.g., eDNA, next generation sequencing) 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; 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, monitoring of patterns in lateral and vertical movements, or 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. 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

\$100,000

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 could be funded as an OSRI-NPRB collaboration.*

Unless the data are from a source that is not readily digitized, proposals submitted in response to the data rescue category 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 by the broader scientific community to address current research and management questions.

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 for integrating the rescued data into appropriate national data centers or databases

6. Focus Section: Ecosystem Syntheses

\$1,300,000

a. Aleutian Islands Ecosystem Synthesis

\$600,000

NPRB requests retrospective analyses and simulation modeling tools to update and quantitatively advance the scientific understanding of the Aleutian Islands (AI) marine ecosystem. The goal is to gather data series about the AI ecosystem to address relevant management and ecosystem questions highlighted in the documents described below. NPRB is particularly interested in proposals that seek to advance multispecies analyses of the data and those that allow for an evaluation of the costs and benefits of additional types of data collection and process studies. NPRB seeks proposals that are integrated across ecosystem components to update time series and to provide a new baseline for evaluating change and identifying information gaps. Proposals should synthesize existing data from the AI region related to marine ecosystem structure and function (e.g., physical oceanography, biological patterns), including human elements (e.g., sociological data, traditional knowledge).

Proposals must include a specific effort to identify research needs that will inform the design of future marine ecosystem studies in the AI region. Proposals must also include a list of 1) known data to be included in the synthesis effort, 2) location of data, 3) data format (e.g., digital, paper report), and 4) accessibility (i.e., an explanation of whether the data are open access or restricted but the proposers have been granted access for the project). Data rescue is expected to be a critical component of any funded project; therefore, a plan should be included for making rescued data accessible to the broader research community through the appropriate national data center or databases.

To the extent possible, applicants should leverage funds and avoid duplication of effort. NPRB will give priority to proposals that include partnerships with applicable key data holders. In cases where data holders are not otherwise part of the proposal (i.e., if the data holders are not the investigators or collaborators), *written statements of support and/or data-sharing agreements are required; letters should specify the exact nature of the agreement that will ensure data accessibility to carry out the proposed work.*

The [Aleutian Islands Fishery Ecosystem Plan](#), completed by the North Pacific Fishery Management Council (NPFMC) and National Marine Fisheries Service (NMFS) in 2007, summarized the current state of information for the region from a qualitative risk assessment point of view. In 2012 and 2013, the NPFMC issued an AI “[report card](#)” that identified a number of changes in the ecosystem. Also reference the [2014 Ecosystem Considerations](#) report developed by the NPFMC and NOAA - Alaska Fisheries Science Center, which reviews trends in the physical environment, ecosystem, and fisheries. Key findings include: decreases in pelagic foraging and apex predator guilds, longitudinal changes in species abundance, and changes in human community composition. Additionally, Steller sea lions have shown continued unexplained declines in the western AI relative to other regions.

The AI ecosystem is one of the least-studied marine ecosystems in Alaska. AI food webs are dominated by oceanic processes and characterized by substantially higher pelagic energy flow than the eastern Bering Sea (EBS), Gulf of Alaska (GOA), or Arctic Ocean ecosystems. The gradient of depth-defined habitats, species biomass, richness, and diversity across the Aleutian chain drives food web interactions. Both regional and local scale interactions combine to structure ecosystem energy flow. Winds over the region produce both oceanic upwelling and downwelling on opposite sides of the island chain. Winds, freshwater advection and ocean transport through Aleutian passes influence flow from the North Pacific into the Bering Sea and ultimately into the Arctic Ocean.

Although the EBS and AI ecosystems are often combined for management purposes, ecological relationships in groundfishes also differ greatly between the AI and the EBS. Atka mackerel, Pacific cod, and rockfish dominate the AI food web and support economically important fish species, marine mammals, and directed fisheries. Both the composition of the dominant species in the food web as well as their role in the ecosystem differ in the AI as compared to elsewhere in Alaska. Atka mackerel, myctophids, squids, and grenadiers are prominent players in Aleutian Islands, whereas only minor components of the EBS and GOA food webs.

These differences are primarily attributable to the proximity of pelagic oceanic habitats to shelf and nearshore habitats in the AI. The shelf systems of the AI are nearly opposite in configuration to the EBS shelf, which has few connections to the open ocean. Socioeconomically, the AI also differ from the surrounding ecosystems in several ways: the region has more geographically isolated villages, communities are highly dependent on nearshore marine environments, and there is limited exchange between communities. Interactions important to the AI area fall within five general categories: 1) climate and physical dynamics, 2) predator-prey interactions, 3) threatened or vulnerable species and populations, 4) fisheries, and 5) socioeconomic issues.

b. Gulf of Alaska Integrated Ecosystem Research Project (IERP) Synthesis \$700,000

NPRB seeks proposals for one or more projects that will provide a broad synthesis of information derived from data and results of NPRB's Gulf of Alaska Integrated Ecosystem Research Project. Such synthetic projects should address research questions that go beyond the scope of the original project or expand upon the integrated analyses that are underway to address the core hypotheses described below. For example, offshore fisheries surveys collected extensive data on salmon, which were not one of the five focal species addressed by the Gulf of Alaska Project. The original project also found that localized factors (e.g., wind events, freshwater inputs, flow through canyons, exchange with embayments) represent important drivers; the influence of these localized factors relative to larger-scale climate and oceanographic drivers could be further explored. Additional work that incorporates the results of the Gulf of Alaska Project into fisheries management strategies would also be valuable.

Research should leverage data and results from the original project but may also incorporate relevant information from other sources. *All proposals should include investigators from the Gulf of Alaska Project*; however, NPRB also encourages the inclusion of new participants and the integration of data collected outside of the original project. Information about the Gulf of Alaska Project, including contact information for project participants is available at: nprb.org/gulfofalaska_ierp.

NPRB conducts an integrated ecosystem research program as a means to better understand processes and interactions within the dynamic marine systems of Alaska. The intent of the program is to investigate key elements of ecosystem structures and functions and to identify linkages between physical and biological elements. In 2010, NPRB launched the Gulf of Alaska Integrated Ecosystem Research Project, which examined the processes influencing the recruitment of five commercially and ecologically important groundfish species. The research focused on factors that affect survival during the first year of life of the target species (Pacific cod, walleye pollock, Pacific ocean perch, sablefish, and arrowtooth flounder).

Researchers tested hypotheses about the most important ecological challenges that these fish face as they travel from offshore spawning areas to nearshore nursery areas. The hypotheses were:

- *The gauntlet:* The primary determinant of year-class strength for marine groundfishes in the Gulf of Alaska is early life survival. Early life survival is regulated in space and time by climate-driven variability in a biophysical gauntlet that includes offshore and nearshore habitat quality, larval and juvenile transport, and settlement into suitable demersal habitat.
- *Regional comparison:* The physical and biological mechanisms that determine annual survival of juvenile groundfishes and forage fishes differ in the eastern and western Gulf of Alaska regions.
- *Interactions:* Interactions among species (including predation and competition) are influenced by the abundance and distribution of individual species and by their habitat requirements, which vary with life stage and season.

Regional differences in juvenile fish survival were expected based on historic information. The region near Kodiak Island is characterized by a broad continental shelf, a high degree of oceanic variability, and large demersal fish biomass. In contrast, southeast Alaska is characterized by a relatively narrow shelf, lower demersal fish biomass, and higher species diversity. Retrospective analyses identified a biophysical breakpoint near 148° W longitude that was evident in examination of remotely-sensed sea surface temperature, sea surface salinity, photosynthetically active radiation, chlorophyll-a, indices of coastal upwelling, and fish bottom community catch per unit effort, species diversity, and species composition. Results of field sampling reflected regional differences that supported the identification of this biophysical breakpoint.

Oceanographic and fisheries data were collected during spring, summer, and fall of 2011 and 2013 across the Gulf of Alaska from southeast Alaska westward to the southern end of Kodiak Island. Samples were collected offshore over the continental shelf and slope as well as within several nearshore bays (nprb.org/gulfofalaska_ierp/region). Additional fisheries surveys were conducted offshore during summer 2010 and 2012. In an effort to examine the influence of broader-scale climate patterns, historic data were analyzed and information collected through these directed efforts was put into the context of a longer time series. Modeling was used to simulate the trajectories (e.g., basin-wide circulation, on-shore advection, localized retention) and environmental conditions (e.g., temperature, salinity, prey fields) that larval fishes are exposed to during the first year of life. Connectivity between offshore spawning locations and nearshore settlement habitats was also examined.



NORTH PACIFIC RESEARCH BOARD 2015 REQUEST FOR PROPOSALS: PROPOSAL SUBMISSION INSTRUCTIONS

All applicants should refer to nprb.org/2015rfp for a copy of proposal application materials. If you need further information, please contact the NPRB staff. Scientific questions should be directed to NPRB Science Director Matt Baker (matthew.baker@nprb.org | 907-644-6713). Other NPRB staff members are also available to provide general assistance: Carrie Eischens (carrie.eischens@nprb.org | 907-644-6712), Danielle Dickson (danielle.dickson@nprb.org | 907-644-6716), or Susan Dixon (susan.dixon@nprb.org | 907-644-6701). For technical assistance with the proposal submission system, please contact Igor Katrayev (igor.katrayev@nprb.org | 907-644-6711). *If the links to the template documents provided below do not work on your computer due to your network's security settings, you can find all templates at nprb.org/2015rfp.*

Proposal Submission Process and Deadlines

Proposals must be submitted by **Friday, December 5, 2014 at 4 p.m. Alaska Standard Time** using the submission system available at nprb.org/2015rfp. The system will be available for download beginning in mid-October 2014 and will close promptly at the submission deadline. During the submission process, you will create an account so that you may return to your in-progress proposal at any time prior to the deadline. If you have previously responded to an NPRB annual RFP, you may use your existing account.

The RFP submission system is organized with the following tabs. Prepare and submit the following information (described in more detail on the following pages):

1. Proposal Overview
2. Budget Overview
- 3.–12. Proposal Classification
13. Contact Information
14. Document Upload (*use provided templates where provided*)
 - Research Plan (*maximum 10 pages*)
 - Outreach Plan (*maximum 1 page*)
 - Timeline and Milestones (*maximum 1 page*)
 - Budget Summary
 - Budget Narrative(s)
 - Résumés/CVs (*maximum 2 pages per investigator*)
 - Current and Pending Support Form(s)
 - Results of Completed NPRB Projects
 - Letter(s) of Support (*if applicable; required for proposals submitted in response to: Ieiii - Local and Traditional Knowledge, 2 - Community Involvement, 3 - Cooperative Research with Industry, 6a - Aleutian Islands Synthesis*)
 - Memorandum(s) of Understanding (*if applicable*)
 - Permit(s) (*if applicable*)
15. Review & Submit
16. Signature Pages (*see below for information regarding submission of these pages*)

The submission system consists of a series of tabs requesting information from the list above. Section 14 requires the upload of multiple documents. Applicants must use templates for all sections for which they are supplied; proposals that do not use the templates will not proceed beyond the initial screening of proposals (see Proposal Review Process). Refer to links in the submission system and/or download the templates at nprb.org/2015rfp.

Your information will be saved as you move through the process. Prior to the deadline, any time before you submit, you will have the ability to edit the information you previously entered. We recommend that you submit your full proposal well ahead of the deadline. The system will be deactivated promptly at the time noted above; your session will be interrupted and you will not be able to finalize your submission. Incomplete submissions will not be processed.

If you have trouble submitting your proposal prior to the deadline, you may contact NPRB staff for assistance. However, staff may be constrained in the help they are able to provide in the final hours before the submission deadline. The ultimate responsibility for submitting proposals on time falls to the applicants.

Proposals must follow the guidelines and criteria specified herein and be submitted by
4:00 p.m. Alaska Standard Time on Friday, December 5, 2014

The signed *Proposal Summary Signature Page(s)* generated by the system (Section 16) must be received at the NPRB office **no more than one week after the proposal submission deadline** (i.e., 4:00 p.m. AKST on December 12, 2014). You may either email scanned versions to susan.dixon@nprb.org using the subject line "Signature Pages [reference number]" or you may mail them to:

North Pacific Research Board
ATTN: Susan Dixon
1007 West 3rd Avenue, Suite 100
Anchorage, AK 99501

If you choose to send via postal mail, please be advised that courier and express deliveries to Anchorage, Alaska normally require a minimum of two business days for delivery.

Proposal Confidentiality

Proposals shall be deemed 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 as part of our internal records. Unfunded proposals remain confidential; however, project title, author(s), funds requested, duration, and proposal summary pages may be made public.

If a proposal is recommended for funding by NPRB and approved by the U.S. Secretary of Commerce, the full *Research Plan, Outreach Plan, Timelines and Milestones, Résumés/CVs* and *Letters of Support* documents will be available to the public on the NPRB website. *Budget Summaries, Budget Narratives, and Current and Pending Support Forms* will remain confidential.

Proposals submitted in response to the joint NPRB-OSRI research priorities will go through a special joint-review process. As such, proposals will be distributed to the OSRI board and its advisory bodies in accordance with OSRI's standard operating procedures (<http://www.pws-osri.org>).

Proposal Contents

(1) Proposal Overview

Title: Include the *long title*, as well as a suggested *short title* of up to 60 characters.

Project period: Please provide a start and end date (i.e., month and year) for your project. Projects are not permitted to start before July 1, 2015. Project duration should include all time needed for analysis, writing of final report, completion of communication and outreach activities, preparation of data and metadata files for transfer to NPRB, and attendance at the Alaska Marine Science Symposium the January following substantial project completion.

Total Budget: Provide the total amount of funds being requested from NPRB and the total funding amount of other support (match or in-kind contribution) provided.

Abstract: In 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.

Stakeholder Involvement & Outreach Overview: Inclusion of stakeholders in project planning and incorporation of local and traditional knowledge throughout the proposed research is strongly encouraged. In 250 words, articulate your plan for community and stakeholder engagement during: (1) proposal development; (2) research and analysis; and (3) project closeout. Applicants should specify the extent to which stakeholder groups were included in development of the project plan; which communities, if any, they plan to interact with during their research; and how results will be brought back to stakeholders when the project is completed. Researchers are reminded that local community knowledge of, and interest in, natural resources extends beyond the physical boundaries of communities themselves. Researchers are expected to advise members of affected communities as well as other 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. Proposals for research involving specific Alaska Native communities or human health issues must have a letter of support from the appropriate community or tribal governing bodies. If you determine that community and stakeholder involvement does not apply to your proposal, use this section to briefly explain why.

All proposals must include a plan for communicating research results and/or processes to non-scientific audiences. In an additional 250 words, provide an overview of your outreach plan. Outreach activities should be aligned with the research objectives and target at least one key audience identified in the NPRB Science Plan. Details regarding specific deliverables and target audiences should be uploaded in Section 15 using the *Outreach Plan* template.

Links to Previously funded NPRB Projects: Confirm that you have reviewed the NPRB Project Browser (project.nprb.org) for projects that relate to your proposed research and that there are no significant duplications of effort. Provide text explaining any connections between your proposed work and any current or past NPRB projects. If there are no connections between your proposed research and past/current NPRB funded projects, please state that in the appropriate place during proposal submission.

(2) Budget Overview

For each organization involved in the proposal, indicate the total amount of funding being requested from NPRB and/or that the organization is providing as other support (matching or in-kind).

(3) Proposal Classification: Primary Research Priority

Identify the primary research priority from the 2015 RFP under which your proposal will compete. In Section 15 you will upload your *Research Plan* which will include a description of how your proposal addresses the primary research priority selected here. Your proposal will only be considered under the primary research priority selected in the submission system. Proposals that are not responsive to the primary research priority selected will not proceed beyond the initial screening of proposals (see Proposal Review Process).

(4) Proposal Classification: Graduate Students

Identify the number of graduate students you intend to include in your project or indicate if you do not intend to include graduate students as part of your project. Include the degree level (e.g. MSc, PhD) and duration (e.g., four years) of the degree. Graduate student participation in NPRB projects is strongly encouraged; however, this listing will not affect the evaluation of your proposal and is intended for informational purposes only. Including graduate students in your research does not fulfill the outreach requirement unless the student is actively conducting outreach and sharing results with non-scientific audiences.

(5) Proposal Classification: Species

Provide the common or scientific species name(s) of the focal subject(s).

(6) Proposal Classification: Large Marine Ecosystem (LME)

Indicate the LME(s) in which your study takes place. Consult the NPRB Science Plan, p.11, Figure 2-1 for LME boundary definitions.

- Arctic Ocean (Chukchi and Beaufort Seas)
- Bering Sea and Aleutian Islands
- Gulf of Alaska

(7) Proposal Classification: Places

As appropriate, list fine-scale geographic locations in which your study will take place.

(8) Proposal Classification: Topic Area

Identify the issue area of your proposed research based on Tables 3.1 through 3.13 in the NPRB Science Plan, p. 39–120 (e.g., Fisheries Interactions, Marine Habitat Use, Population Dynamics)

(9) Proposal Classification: Research Theme

Identify one or more of the following major research themes (from the NPRB Science Plan p. 35–38) addressed by your study:

- Lower Trophic Level Productivity
- Fish Habitats
- Fishes and Invertebrates
- Marine Mammals
- Seabirds
- Humans
- Other Prominent Issues

(10) Proposal Classification: Keywords

Describe your project with 3–10 keywords. Do not include any words that are already identified other sections of the *Proposal Classification*.

(11) Proposal Classification: Research Approach

Identify which research approach(es) will be used in your study:

- Monitoring
- Process Study
- Retrospective Analysis
- Modeling

(12) *Reviewer Expertise*: From the list provided, identify a minimum of five criteria that best describe the expertise needed to properly review your proposal. Completing this section as accurately as possible will help ensure appropriate peer review of your proposal.

(13) Contact Information

Provide contact information (name, organization/institutional affiliation, mailing address, email, phone number) for the individual(s) at each organization who will fulfill the following roles as defined below. A *Principal Investigator* and *Administrative Grant Manager* must be identified for each organization requesting funding. As noted in the list that follows, additional information (*Results of Completed NPRB Projects, Résumés/CVs, Current and Pending Support*) is also required for individuals fulfilling certain roles.

Suggesting potential reviewers is optional; if you choose to submit names of possible reviewers, the submission will not be disclosed. Do not suggest colleagues from the institution(s) that will participate in the research. For more information, read NPRB's Conflict of Interest Policy (www.NPRB.org/COI_policy).

Proposal Applicant (required): Person submitting the proposal. Full contact information is required, but no *Résumé/CV* or *Current & Pending Support Form* is required for this role. There is only one proposal applicant for the proposal.

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(s) (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 (including institutional affiliation) for each. In addition, *Results of Completed NPRB Projects, Résumé/CV*, and a *Current & Pending Support Form* must be submitted for each principal investigator.

Co-Investigator(s) (if applicable): Researcher(s) responsible for carrying out part of the scientific content of the proposal. Submission of full contact information (including institutional affiliation), *Results of Completed NPRB Projects, Résumé/CV*, and a *Current & Pending Support Form* for each co-investigator is required.

Collaborator(s) (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. Individuals in this role need only submit full contact information (including institutional affiliation); no other forms are required.

Administrative Grant Manager(s) (required): Person(s) responsible for the financial administration of the grant, who can provide legally binding authorization (e.g., Office of Sponsored Programs). One

administrative grants manager is required for each organization requesting funds. Full contact information is required; no other forms must be submitted.

Potential Reviewer(s) (optional; maximum of three): Person(s) not associated with this project 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. No résumé is required. Please refer to (http://www.nprb.org/proposals/documents/NPRB_coi_policy_final.pdf).

Unacceptable Reviewer(s) (optional): If you prefer that a specific individual not review your proposal for a reason other than conflict of interest, please provide their name. No reason need be provided. We will make every effort possible to ensure that identified individuals are not contacted for an anonymous technical evaluation of your proposal.

(14) Document Upload

Upload proposal documents in this section. Use templates for all documents for which they are supplied. Refer to links in the submission system and/or download the templates at nprb.org/2015rfp.

- *Research Plan* ([template provided](#)): Upload a *Research Plan* that does not exceed ten pages, including tables, figures and references. The plan must retain the font style, font size and margin width of the template as specified below. Please note that all proposals received will be reformatted to these specifications. Plans that exceed the 10 page maximum will not proceed beyond the initial screening of proposals (see Proposal Review Process) and the applicant will be notified in writing of the disqualification. Specifically, the plan must:
 - Be a Microsoft Word file (i.e., .doc or .docx)
 - Be formatted to 8.5 x 11 inches, portrait orientation only
 - Have one-inch margins at the top, bottom and sides
 - Have continuous line numbers from beginning to end
 - Be single-spaced, including tables, figure captions and citations
 - Use Times New Roman 11-point font, including tables, figure captions and citations. Figure captions must be part of the document (i.e., captions should not be embedded in the figure)
 - Have tables created within the document
 - Have appropriate resolution of graphics. All submitted proposals will be converted to PDF; this conversion may impact the quality of graphics. Color graphics are allowed; however, in the event they are reproduced without color, all graphics must be sufficiently descriptive in black-and-white.

Following the template provided, your *Research Plan* should include the following elements:

Project Responsiveness to NPRB Research Priorities or Identified Project Need: Identify the specific research priority identified in the RFP to which you are responding and describe how your proposal addresses this priority. If you are responding to an “Other” research priority subsection, identify and justify the need for your proposed research within the context of NPRB’s mission. If you identified secondary research priorities, describe those connections here as well. The priority discussed here must match the one identified in *Proposal Classification*. In case of discrepancies, the priority identified in the *Proposal Classification* section will be the category under which the proposal competes.

Statement of societal relevance: Briefly describe how the research addresses pressing fishery management or ecosystem information needs. Include an explanation of how the research provides long-term sustained benefits to local communities and/or to the general public.

Project Objectives: Provide a numbered, annotated list of your project objectives. Project objectives must be achievable and specific.

Research Design and Conceptual Approach: State what the project will accomplish and why it is important. Use this section to expand on the objectives listed above to demonstrate 1) an understanding of the problem being addressed; 2) the present state of knowledge in the field; 3) the project's relationship to previous work and work in progress by the principal/co-investigator(s); and 4) the measurable benefits that will result from the proposed research. If this project builds upon project(s) previously funded by NPRB, describe progress to date and the objective(s) of the next funding period. Describe the conceptual or statistical model underlying your experimental work. Present a list of clear hypotheses. Describe and justify the experimental design, methodology, and the statistical and analytical approach, including assumptions, sample size required (and power analysis where appropriate), model validation, and relevant information needed to determine the utility and technical feasibility of accomplishing your research, analyzing the data, and achieving the expected outcome. Figures, equations and tables are part of the 10-page limit and may be embedded in the text of the research plan or at the end of the document. All text in figure and tables must be Times New Roman 11-point font (i.e., figure captions and table labels must be part of the Word document, not be embedded in the figure).

Project Management: Describe the organization and management of the project as well as the experience and qualifications of the principal and co-investigator(s). Individuals with full-time equivalent (FTE) positions must indicate standing time availability as authorized by their supervisor. Applicants must seek to avoid duplication of other research efforts; demonstrate how PIs/Co-PIs will coordinate and collaborate with other projects and leverage their proposals with support from other sources. If more than one investigator is involved, the applicant must clearly identify which one will be responsible for the overall work (the designated lead principal investigator), as well as the specific responsibilities of each PI/Co-PI involved in the project. If available, permit applications or granted permit numbers should be provided. Permitting requirements are the responsibility of the applicants; NPRB does not financially support the permit application process.

References: List all references in a format appropriate for a major journal such as *ICES Journal of Marine Science*, or *Deep Sea Research II*. Avoid using long strings of references for the same statement.

- **Outreach Plan ([template provided](#)):** Upload an *Outreach Plan* that does not exceed one page. Describe in detail your plan to translate technical scientific information into user-friendly terms and to package it for maximum accessibility, exposure and impact. Identify the specific outreach deliverables and describe 1) how they are aligned with the research objectives and 2) how they target at least one key audience identified in the NPRB Science Plan p. 151–152. Your outreach plan must include at least one audience beyond marine researchers. For each of the planned deliverables, identify the appropriate audience(s) and describe 1) who is responsible for the deliverable, 2) how and when the deliverable will be developed, and 3) how it will be implemented or delivered to the audience identified. The *Budget Summary* 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. NPRB reserves the option to work closely with the principal investigators to pool outreach resources from funded projects, where appropriate, to achieve a broader impact.

Acceptable outreach deliverables include:

- **Community Presentations:** meetings/presentation of findings to general audiences, typically in close proximity to where data was gathered or in communities directly affected by the research question
- **Documentary/Film/Videos:** video(s) produced/distributed in conjunction with the project
- **Exhibits/Demonstrations:** public displays that illustrate the research/principles visually rather than by simple verbal explanation

- Fact Sheets: information flyers, pamphlets, handbills or the like
 - K-12 Education: teacher workshops, curriculum development, school presentations, etc
 - News Media: popular media coverage-newspaper, radio, television, blog, etc; includes interviews with PIs or stories about the project/research/findings
 - Website: dedicated site developed for the project or with extensive project-specific content
 - Workshop Participation: applied workshops with resource managers or industry, etc
 - Other: please identify. Please note that 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 Resources for Investigators section of the NPRB website nprb.org/annual_program/outreach for resources for fulfilling the outreach requirement.
- *Timeline and Milestones* ([template provided](#)): Upload a *Timeline and Milestones* spreadsheet that does not exceed one page. Applicants must demonstrate that they can achieve an outcome and product within the requested award period, including: data analysis and submission, metadata and data submission, and timely completion of all reports. Detail the project's timeline and associated measurable milestones (e.g., objectives achieved, outreach conducted, accomplishments, and deliverables) that will be used to track and evaluate project performance through the entire award period. You may describe any products or results that may be used to measure your success (e.g., report, published paper, management implementation) and how you plan to disseminate the research results. The timeline should also include attendance of at least one project representative at the Alaska Marine Science Symposium (AMSS) during each year of the project and in the year following the substantial completion of the project. Please account for participation at AMSS in the *Budget Summary* and *Budget Narrative*. Please ensure that your project end date incorporates attendance at this final symposium. Projects may not start before July 1, 2015.
 - *Budget Summary* ([template provided](#)): Funding amounts specified are for the full duration of the project (i.e., not per-year funding). The total budget requested in the *Budget Summary* must match the budget in Section 2 *Budget Overview*; if discrepancies exist, the lesser amount will be assumed correct. Check your final budget before submission to ensure that the addition of indirect costs as a percentage does not cause your total budget to exceed the limit for individual proposal funding cap for the research priority to which the proposal is submitted. Your budget must include costs of:
 - Preparing all required reports
 - Publication of results in appropriate scientific journals
 - Providing metadata and data records to NPRB
 - Outreach materials and distribution (minimum of \$2,000)
 - Travel costs for at least one project representative to attend the Alaska Marine Science Symposium (amss.nprb.org) in Anchorage for each year of the project and in the year following the substantial completion of the project to present final results. Travel to and presentations at AMSS do not fulfill the outreach requirement.

Complete one sheet of the *Budget Summary* template for each institution/organization requesting funds; add additional sheets to the template as needed. The template also includes a summary page that automatically combines all information for up to four different organizations. Year 1 consists of the first 12 months of the project beginning from the start date identified in Section 1 *Proposal Summary*. Each organization requesting funds must designate one principal investigator to be entered on the *Budget Summary* worksheet for the corresponding organization. Include details by 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
- *Budget Narrative* ([template provided](#)): Each institution requesting funds and/or providing other support for the project must provide a detailed description of costs listed under each budget category in the *Budget Summary* file. Proposers are encouraged to include supporting spreadsheets if applicable. The *Budget Narrative* should include information regarding:

International Travel: Please indicate whether the project will require international travel. International travel will not impact the review process; however, if a proposal is funded, approval of international travel will require a special application that may take up to three months to process. It will be the funded investigator's responsibility to initiate the foreign travel request process once the proposal has received funding. The Fly America Act (49 USC § 40118) regulations apply to all travel. The implementing regulations of the Fly America Act are found at 41 CFR §§ 301-10.131 through 301-10.143 (http://www.gsa.gov/portal/content/103191?utm_source=OGP&utm_medium=print-radio&utm_term=open skies&utm_campaign=shortcuts).

Outreach: Describe the cost breakdown of outreach funds. Also include the cost breakdown of outreach activities under the appropriate category (as outlined in the *Budget Summary* section), 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. *If qualified outreach activities are not conducted during the course of the project, the funds set aside for those activities will be withheld by NPRB.*

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: For any equipment costing \$20,000 or more, please attach a quote from a vendor.

Other support: Applications must reflect the total budget necessary to accomplish the project, including contributions from federal or non-federal grants, base organizational budgets, and/or donations. Cost-sharing is not required, but is encouraged. If a proposal that includes cost-share 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 the Environmental Improvement and Restoration Fund (EIRF) that supports NPRB awards is not appropriated, the U.S. Department of Commerce has made a finding that EIRF funds should be considered to be federal funding because an authorization act created the "fund" in the U.S. Treasury.

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. Note that the indirect rate indicated at the time of proposal submission is the indirect rate that will apply through the duration of the project should the proposal receive funding.

- *Résumés/CVs*: The résumés or CVs of all principal/co-investigators involved in the proposal must be provided. Each individual's *Résumé/CV* should be uploaded separately; do not combine them into a single document. This information is not required for collaborators. Each résumé/CV is limited to two pages and must include:
 - Contact information including mailing address, work phone number and email address
 - A list of professional and academic credentials
 - A description of current activities relevant to the proposed project
 - A list of up to five most recent/relevant publications most closely related to the proposed project and up to five other significant publications, as appropriate. Please highlight publications that are based on research supported by NPRB funds.
 - An alphabetical list of all persons (including organizational affiliations) with whom the PI/Co-PI has collaborated on a project or publication within the last four years. Also include all thesis advisors and graduate students supervised. If none, this should be indicated.
- *Current and Pending Support Form(s)* ([template provided](#)): For each principal/co-investigators involved in the proposal, disclose 1) any current or pending financial resources that are intended to support research related or similar to the research included in the proposal, or 2) that would consume the time of the proposer. The proposer must also disclose if they have submitted the current proposal to other funding sources. Each individual's *Current and Pending Support Form* should be uploaded separately; do not combine them into a single document. This information is not required for collaborators.
- *Results of Completed NPRB Projects* ([template provided](#)): For each principal/co-investigators involved in this proposal, use the provided template to provide information about all completed NPRB funded projects the individual has been involved in (as a principle/co-investigator).. Related projects that are continuations of the same effort/objectives may be combined for this report. If the principal/co-investigators has not been involved as a principal/co-investigators in any completed NPRB project, please state this at the top of the page. Upload one Results of Previous NPRB Projects document for each individual separately; do not submit a single, combined document.
- *Letter(s) of Support, Memorandum(s) of Understanding, Permit(s)*: Upload any relevant letters of support, memorandum of understanding or permits. Letters are required for proposals submitted in response to specific categories: 1eiii - Local and Traditional Knowledge, 2 - Community Involvement, 3 - Cooperative Research with Industry, 6a - Aleutian Islands Synthesis. Letters should be specific about the role of collaborators and indicate how the results will be of use or benefit. Provide letters of support from:
 - Collaborating agencies
 - Relevant management agencies
 - Industry partners for cooperative research activities
 - Individuals or organizations providing facilities or infrastructure support
 - Communities (including Alaska Native communities and tribal governing bodies)
 - Others potentially impacted by project activities or benefiting from the projects results

Upload letters of support or send hard copies to the NPRB office. Any hard copies submitted directly to NPRB before the submission deadline will be uploaded to your proposal package after the proposal has been successfully submitted. Letters of support received after December 12, 2014 will not be included in the proposal package for review. If uploading PDF documents, please ensure they are unprotected so that they may be merged for the review process.

(15) Review & Submit

Carefully review the information you have provided, returning to individual sections to make any necessary changes. The “Check” function in this section of the submission system allows you to ensure that all necessary information and documents have been entered into the system. Review all information that is part of your proposal package before you submit. After you have submitted the proposal, you can still view your information but can no longer make any changes. Contact NPRB staff if you require changes after submission, but before the deadline. No changes can be made after the deadline.

(16) Signature Pages

The proposal summary signature pages will be created automatically based on the information you provide during the online submission process. It will include:

- Title
- Project period
- Names of applicant organization and principal/co-investigators
- Abstract
- Stakeholder Involvement & Outreach Overview
- Links to Previously Funded NPRB Projects
- Requested funds and other support
- Space for a signature of an official authorized to legally bind the submitting organization

One *Proposal Summary Signature Page* will be generated for each institution involved in the project; in addition, one overall *Signature Page* will be generated. Please print these pages and have them signed by the authorized legal representatives of each institution participating in the proposed research. The signature from an authorized representative certifies that the proposal in its entirety, including the budget, has been submitted according to the organization’s standard proposal approval process. The proposal applicant should sign the overall signature page that lists all institutions. The individual *Proposal Summary Signature Pages* may be sent to NPRB separately.



**NORTH PACIFIC RESEARCH BOARD
2015 REQUEST FOR PROPOSALS
GENERAL CONDITIONS, TIMELINE AND PROPOSAL REVIEW PROCESS**

This section outlines general conditions that all respondents to the 2015 Request for Proposals (RFP) must adhere to and comply with should their proposal be awarded funding. In addition, this section also outlines the 2015 RFP timeline and the complete NPRB proposal review policy.

GENERAL CONDITIONS

The 2015 RFP is simply 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, number of projects or available funds. There is no guarantee sufficient funds will be available to make awards for all acceptable projects. NPRB may choose to reject all proposals. 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 be registered in the Central Contractor Registration (CCR) system (www.ccr.gov) before any award can be made. Recipient organizations required by OMB Circular A-133 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. Responding proposals are firm offers and shall remain open for the NPRB to accept any time before July 1, 2015 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.
3. The applicant is responsible for obtaining all federal, state, and local governmental permits and approvals for projects or activities to be funded under this announcement. This includes, for example:
 - 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 (Circ. A-110.47(d)).

4. 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.
5. 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 (http://www.gso.uri.edu/unols/saf_stand/contents.htm).
6. NPRB's [Subaward Compliance Policy \(nprb.org/subaward_compliance_policy\)](http://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; it is 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.
7. 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.

For all funded organizations, the indirect rate (i.e., overhead) claimed at the time of proposal submission will apply throughout the duration of the project. Organizations cannot increase their indirect rate during the course of the project. *See page 28 for further instructions regarding allowable indirect costs.*
8. 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.*
9. 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.*
10. 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 \(nprb.org/data_policy\)](http://nprb.org/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. Among other requirements, this policy specifies the storage media and format(s), month and location for reporting, and other relevant information that may be required by the circumstances of the project.

11. 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.

TENTATIVE SCHEDULE

The schedule is subject to change, *except* for the proposal deadline, which is definitive. The tentative schedule is as follows:

<u>Schedule Item</u>	<u>Tentative Timeline</u>
Release of RFP	October 3, 2014
Online Submission System Opens	October 10, 2014
Deadline for Proposals	December 5, 2014, 4:00 p.m. AKST
Deadline for Signature Pages and Letters of Support	December 12, 2013, 4:00 p.m. AKST
Technical Peer Evaluations	January - March 2015
Science Panel Review	March - April 2015
NPRB Review and Selection	mid-May 2015
Initial Notification to PIs	late May 2015
Submission to Secretary of Commerce	late May 2015
Grant Agreements to PIs	June - July 2015
Research Commences	no earlier than July 1, 2015

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 email for the project. Applicants may *not* request a project start date before July 1, 2015. 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, 2015**.

PROPOSAL REVIEW PROCESS

Initial Screening of Proposals

Upon receipt of proposals, NPRB staff will screen proposals for conformance with requirements set forth in this notice. This review will assess whether the proposed research is responsive to the applicant-selected research priority.

- Proposals identified as having questionable responsiveness will be reviewed by an ad hoc committee of NPRB Science Panel members who will determine which of these proposals, if any, to carry forward. If the ad hoc committee cannot agree on whether a proposal is responsive to the selected RFP priority, it will be fully reviewed.
- Proposals that fall within the research priority identified by the proposer will be fully reviewed as described below.

Independent Technical Evaluations

Proposals that pass the initial screening will undergo independent, anonymous, technical peer review. The goal of this step is to receive three independent technical reviews for each proposal. Regional, national

and international experts review proposals in accordance with NPRB's [Conflict of Interest Policy \(nprb.org/COI_policy\)](http://nprb.org/COI_policy). Reviewers will be asked to provide comments and qualitative assessments of the technical aspects for each proposal in each of the categories indicated below, as well as an overall summation. Percentages indicate the weight that the subsequent review by the NPRB Science Panel will give to the criteria. Reviewers will be asked to score each section, as well as the overall summation, into one of five categories: **poor, fair, good, very good, or excellent.**

The technical review criteria are:

- *Soundness of Project Design/Conceptual Approach (60%)*
Reviewers assign the following approximate weights to components within this criterion: 10% for background/need; 10% for statement of problem/question; 20% for study design; 20% for analysis.
 - Are the project objectives clearly stated and explain what the project will accomplish and why it is important?
 - Have the applicants demonstrated a clear understanding of the problem being addressed, the present state of knowledge in the field, the project's relation to other work, including their own, and the measurable benefits that will result from the proposed work?
 - Is there sufficient information to evaluate the project technically?
 - What are the strengths and/or weaknesses of the design relative to securing productive results?
 - Is there a clear hypothesis to be tested and well-defined expected outcomes?
 - Is there a clear description of a detailed experimental design with associated power analysis as appropriate, including assumptions required, sample size, and other relevant information needed to determine the utility and technical feasibility of accomplishing the research?
 - Is there a list of data sources or requirements?
- *Project Management (15%)*
Evaluate the organization and management of the project, and the project's principal/co-investigator(s) and other personnel in terms of related experience, qualifications, and prior performance. Applicants must demonstrate how they will coordinate and collaborate with other projects and leverage their proposal with support from other sources. Have investigators demonstrated adequate resources and partnerships to complete the proposed work? Applicants must seek to avoid duplication of other research efforts. If there is more than one investigator involved, has the applicant clearly identified the distribution of responsibility for the overall workload (i.e., the responsibilities of each PI or Co-PI involved in the project)?
- *Outreach (5%)*
 - Is the outreach plan clearly defined?
 - Are the outreach activities/materials and distribution plan appropriately aimed at NPRB target audiences?
 - Does the proposal address community involvement throughout the project and communication of results to non-scientific audiences?
 - Are the costs itemized in the budget narrative and are they realistic for the proposed activities?
- *Timeline and Milestones (10%)*
 - Is there a clear table detailing appropriate timelines and associated measurable milestones, objectives, accomplishments, and deliverables that can be used to track and evaluate project performance through the entire award period?

- Is there a description of the product or result that may be used to measure project success (e.g., report, published paper, management implementation) and how the research results will be disseminated?
- *Project Costs (10%)*
The justification for, and allocation of, the budget in terms of the work to be performed will also be evaluated. Is the project cost unreasonably high or low?

Science Panel Review

NPRB staff will assign two science panel members (a primary and a secondary) with relevant expertise to each proposal. Science panel members generally conduct their own independent reviews following the same technical review guidelines above. These are completed and made available to all panel members in advance of the science panel meeting. Science panel members will adhere to NPRB's [Conflict of Interest Policy](#) throughout the meeting. The primary and secondary science panel reviewers will summarize the proposal for the entire panel, go over the evaluations by the outside technical reviewers, and, based upon that input and their own evaluation, give their overall assessment to the group. The entire panel then discusses the proposal and its evaluations further and determines, by consensus, a tier ranking as follows:

Tier 1

Proposals that are considered highly meritorious based on the combined peer and science panel reviews (based on the criteria outlined above) will be designated Tier 1 proposals. Highly meritorious will be defined as proposals that generally score an average of Very Good to Excellent and *do not require any scientific alterations* to the proposed work to go forward (although suggestions for improvements may be made). The Science Panel may decide to go back over the Tier 1 list to determine if there are any scientific nuances amongst them that may be relevant to the Board when making their final funding decisions. Such criteria will be only science-based (i.e., not as it relates to the RFP category funding caps) and may include relative comparisons between highly ranked proposals such as: more technically robust, more specifically on target with what the RFP was looking for, or more time sensitive in terms of increasing scientific knowledge base. Accordingly, proposals placed in this category may be separated into Tier 1a or Tier 1b.

Proposals that are highly meritorious as defined above but have *minor non-science related issues* (e.g., budget or permitting) that once fixed would place the proposal in the Tier 1a or Tier 1b category, will be categorized as Tier 1a Conditional or Tier 1b Conditional proposals respectively. If the science panel chooses not to distinguish between Tier 1a and Tier 1b (see above), these conditional proposals will simply be referred to as Tier 1 Conditional. In such instances, the Science Panel will clearly identify the conditions they believe need to be met before the proposal goes forward.

Tier 2

A Tier 2 ranking will be given to proposals that are good scientifically, but not exceptional. Additionally, proposals that have *minor science issues* of a simple or straightforward nature, for example simple changes to sample size or study design, will be categorized as Tier 2 Conditional. A Tier 2 proposal that has non-science issues will also be placed in the Tier 2 Conditional category. For conditionally ranked proposals, the science panel will clearly identify the conditions they believe need to be met before the proposal goes forward.

Tier 3

Proposals that are found to have major flaws, or those that are simply not competitive scientifically even with minor changes, and should not be funded are designated *Tier 3* proposals.

These will generally be proposals with some Poor and Fair ratings or those that are mixed, depending on the issues. Tier 3 proposals are those that require substantial revision to be competitive and, thus, will not be funded.

NPRB receives over 100 proposals in response to its annual RFPs. To allow the science panel sufficient time to discuss the most competitive, a triage system may be used. The science panel may forgo detailed discussion of proposals that are not competitive based on peer reviews and initial science panel member assessments. Science panel members retain the option of discussing any of the proposals during the meeting before crafting final recommendations for the board.

Reconciling differences between independent technical and science panel reviews

Ideally, five technical reviewers (three peer and two science panel) evaluate each proposal. With so many reviews, evaluations may vary, sometimes greatly. When science panel and the outside reviewers disagree (in either direction), the proposal and all reviews are discussed at length. The final scientific authority lies with the science panel, who will document discrepancies and discussions in support of their final recommendations to the board. The board will also have access to all of the technical reviews as well as the science panel summary for every proposal before they make funding decisions.

Science panel recommendations

Staff, primary and secondary panel members will take notes on the discussion of their assigned proposals. Following the meeting, the primary reviewer, in consultation with the secondary and any other panel member identified during the discussions, is responsible for drafting a summary paragraph for the specific proposal for the board. This paragraph will follow a pre-determined template (see Appendix 1), and will be submitted to the NPRB staff within a few days of the science panel meeting. Staff will compile all paragraphs and submit Tier 1 and Tier 2 summary paragraphs to the advisory panel (see below) and all summary paragraphs to the board as soon as possible thereafter.

Advisory Panel Input

The advisory panel reviews proposals to highlight those proposals that have special stakeholder, community, and other societal relevance and public interest value. The advisory panel receives full proposal materials and the science panel summary paragraphs for all proposals that the science panel has determined to be responsive to the RFP and to have scientific merit (Tier 1 and Tier 2). The advisory panel will review these proposals and provide a short summary for those that they consider to have significant stakeholder, community, or other societal relevance. These summaries are forwarded to the board for consideration. The advisory panel does not rank proposals, provide comment on the scientific merit of proposals, or comment on the alignment of proposals with category budgets. NPRB's [Conflict of Interest Policy](#) will apply with respect to the advisory panel's review of proposals.

Relevance Considerations used by the Advisory Panel include:

- Leverage—Does the proposal leverage understanding of larger issues or is it especially useful in resource management issues?
- Timing—Does the proposal respond to urgent challenges facing stakeholders or take advantage of an opportune timing event?
- Community involvement—Does the proposal have a strong community involvement section? Does it create new, enduring resources for community members or employ novel methods worthy of note?
- Stakeholder involvement—Are stakeholders and community members an integral part of the project? Is their role in data collection, project planning, or execution noteworthy?
- Value—Does the proposal leverage additional funds or is it a particularly good value for stakeholder benefit?

- Outreach and education—Is the education and outreach component noteworthy? Will outreach and/or educational communications reach relevant communities and stakeholders?

Board Review

The chair and/or vice-chair of the science panel will attend board meetings to present the science panel summary paragraphs and to answer technical questions. Similarly, the chair and/or vice-chair of the advisory panel will attend board meetings to present the advisory panel recommendations to the board. NPRB will consider technical evaluations, science panel recommendations, and advisory panel input, using scientific merit as defined by the science panel rankings as its primary criterion. There are likely to be many more highly ranked proposals than funds available. To allow for a balanced portfolio and the flexibility to respond to current issues, other factors may be considered at the time of final funding decisions. Such factors include, but are not limited to:

- Pressing fisheries management needs
- Ecosystem information needs
- Other projects currently funded on a similar topic
- Overlap with other ongoing programs
- Competitiveness relative to other proposals of equal merit within a topical area
- Category target funding amounts published in the RFP
- Previous performance of applicants (evaluation of previous NPRB-funded projects will involve project management, adherence to project budgets, timelines, and reporting requirements, as well as achievement of previously funded project objectives).

While these factors will be considered, scientific merit remains the primary consideration for proposal funding. Thus, the board will accept science panel recommendations regarding Tier 3 proposals and will not consider those proposals for funding. Further, if the board decides to fund a Tier 1 Conditional or Tier 2 Conditional proposal, the board will carry forward all science panel conditions. The board reserves the right to apply additional conditions on any proposal recommended for funding. Proposers that receive conditional funding by the board will be asked to submit a revised proposal that specifically addresses all concerns raised during the review and decision-making process. Unless otherwise noted by the board, staff will review the revised statements of work vis-à-vis the conditional requests and determine whether or not the conditions have been met and to proceed with funding. If staff are uncomfortable making this final determination, they may consult a subset of the science panel or the executive committee of the board.

The board will document their decision-making process, which along with all technical reviews, science panel summary paragraphs, and advisory panel comment (where applicable) will be provided as written feedback to the applicants.

Public comment will not be taken during the proposal review and decision-making process. The exact award period will depend upon the requested duration of funding, the decision of NPRB regarding funding amount, the results of post-selection negotiations between the applicant and NPRB staff, and review by NPRB and U.S. Department of Commerce officials.

Secretary of Commerce Review

By law, all recommendations of the North Pacific Research Board are subject to final approval by the U.S. 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 may be denied approval upon review by the Secretary of Commerce. As noted in General Condition 3 (page 31), the applicants are responsible for obtaining all federal, state, and local permits. Approval of the project by the Secretary of Commerce does not preclude the requirement to obtain such permits.

APPENDIX 1. SCIENCE PANEL SUMMARY TEMPLATE

The primary science panel reviewer, in consultation with the secondary reviewer and any other science panel members identified during the panel discussion, should submit to NPRB a science panel summary that contains the following elements:

- **2-3 sentences summarizing the proposal**
 - The proposal aims to...
 - The research will focus on...
 - The goals are to...

- **2-3 sentences summarizing the external reviews**
 - In general, the technical reviewer found this proposal to be...

- **2-3 sentences on SP discussion**
 - The Science Panel discussed the external reviews and their individual reviews and concluded that...
 - *Provide additional information from the discussion if there were discrepancies between the external and the SP review scores*

- **Recommendations**
 - Fund as is Tier 1a, Tier 1b, or Tier 1a or 1b Conditional
 - Fund as Tier 2 or Tier 2 Conditional
 - Do Not Fund, Tier 3

Based on the discussion described above,

- The science panel recommends FUNDING this proposal in **Tier 1a**.
- The science panel recommends FUNDING this proposal in **Tier 1b**.
- The science panel recommends CONDITIONAL FUNDING in **Tier 1a or 1b Conditional**. If approved by the board, applicants should submit a revised statement of work that addresses the following issues: *{list non-science issues here}*
- The science panel recommends that this proposal COULD BE FUNDED in **Tier 2**.
- The science panel recommends that this proposal COULD BE CONDITIONALLY FUNDED in **Tier 2 conditional**. If approved by the board, applicants should submit a revised statement of work that addresses the following issues: *{list science and, if applicable, also non-science issues here}*
- The science panel places this proposal in **Tier 3** and recommends NOT FUNDING this proposal based on the concerns raised above.