

Joint Industry Programme on E&P Sound and Marine Life - Phase IV

Request for Proposals Number: JIP IV-2021-001

Title: Application of Risk Assessment Framework Based on the Data-Driven Population Consequences of (Acoustic) Disturbance (PCAD/PCoD) Model

Release Date: July 23, 2021

Introduction

This Request for Proposals (RFP) seeks proposals to further advance the development and application of the Population Consequence of (Acoustic) Disturbance (PCAD/PCoD) framework as a practical risk assessment tool. We seek the best scientific approaches to advance our understanding of what can be determined from data on the best studied species to the broader marine mammal community and the reliability, data needs and opportunities for industry to use the PCAD/PCoD framework effectively. Key focus areas for this RFP are to develop practical risk assessment tool(s) that the E&P industry can use to focus risk management on higher risk issues associated with industry activities that produce sound in the marine environment. Other focus areas not described in this RFP will be also considered as well, as long as they are of relevance to the Exploration & Production (E&P) Industry.

The research called for in this RFP is required to meet the information needs of the above JIP, specifically **Research Category 3 Behavioural Reactions and Biological Significance** - see www.soundandmarinelife.org website.

The Proposals being requested must address the Objectives, Project Description, Project Components and Project Deliverables detailed below.

Organisations submitting Proposals should also adhere to the Application Procedure and Critical Dates set out below.

Application Procedure

To respond to this RFP, please follow the relevant instructions given on the Funding page of the JIP website. Proposals should refer to the above RFP number and should be submitted electronically to info@soundandmarinelife.org.

Those organisations submitting Proposals should refer to the outline contract on the JIP website. This sets out the terms & conditions (which may from time to time be amended) under which any contract will be carried out under the management of the International Association of Oil & Gas Producers (IOGP) acting as agent for the participants in JIP. In particular, attention is drawn to the specific term relating to management of health, safety, security and environment aspects of a contract. All IOGP contracts have such a section, but the specific wording that will appear in this section depends on the type of activity (desk-top study, field work, etc.) to be conducted. Please also note the guiding principles on the *Policy on the use of live animals in experiments* on the website.

Critical Dates

Proposals are due by: October 17, 2021.

We will confirm receipt of proposals. If you have not received confirmation of receipt of your proposal within 1 week of the above deadline, please contact Felicite Robertson at IOGP (Tel +44 (0) 20 3763 9700; e-mail info@soundandmarinelife.org). The review of proposals will conclude within 2 months of the submission deadline, after which applicants will be notified by the JIP.

This project is classified as a medium-sized project with an expected duration of 1-2 years.

Background and objectives

The Population Consequences of (Acoustic) Disturbance (PCAD/PCoD) is a conceptual framework linking animal behavioral responses to sound, these behavioral reactions to life functions, life functions to vital rates, and changes in vital rates to population level change through a series of transfer functions. The JIP has been pursuing research on PCAD/PCoD since the original conceptual framework was proposed in 2006. Following a workshop to determine how the biological significance of a behavioral response can be incorporated into industry risk management practices and future program research, four studies were conducted: 1) a literature review to find data sets that may be useful in developing transfer functions, 2) a population modeling project which concluded that most large whale populations appear to be most sensitive to changes in adult female survival and secondarily to juvenile survival and growth, 3) a study looked at modeling approaches to implement PCAD concepts, 4) an in-depth study on using an existing comprehensive data set on elephant seals, and a bioenergetics approach was developed with energy as the currency linking effects between disturbance and biological effects. Following these efforts, a project was conducted aimed at developing PCoD frameworks for a number of functional marine mammal species groups (income vs. capital breeders). These frameworks, tying behavioral level effects to potential population effects, are then used to assess the effect of different levels of disturbance on various populations of marine mammals.

This RFP is a new JIP effort and calls for project proposals with a specific focus on advancing the practical application of the PCAD/PCoD framework. The ultimate goal of the JIP research is to develop practical risk assessment tool(s) that the E&P industry can use to focus risk management on higher risk issues associated with industry activities that produce sound in the marine environment. The data driven bioenergetics approach has been the preferred approach because it is less prone to subjective opinions that rely on expert opinions on severity of animal behavior response to disturbances. Most recent efforts have been focused on developing a risk screening tool that can be applied to industry risk assessment process, which was implemented in the form of a synthesis paper summarizing key learnings over the past decade.

Description of Proposals being Requested:

The IOGP E&P Sound and Marine Life JIP is requesting proposals which address one or more of the following aspects:

- Apply the risk screening tool/approach developed under JIP Phase III to a location/case study with less abundance of data, identify gaps and improve the risk assessment approach. Objectives are to enhance our ability to optimize planning of industry activities, by quantifying population levels effects of when data is available, or by extrapolating results across animal species based on functional groups with uncertainties characterized. This can be in the form of a case study by taking advantage of available animal tracking data and bioenergetic data. Refinement and improvement of the risk screening approach in regions with less abundant data is needed for future broader application of the tool.
- Validate and improve PCAD model developed for income breeders using abundance of existing data for animal species such as harbour porpoises. A Stochastic Dynamic Programming (SDP) model was developed for harbour porpoises under JIP Phase III. The available SDP model, or a similar data driven model, can be applied in a case study, i.e., conducting a site specific analysis for the North Sea.

Desirable Features of Proposals:

Responses to this RFP should address each of the following (see also **RFP Response Format** page of website):

- A detailed scope of work to prepare and provide the deliverables detailed below.
- A description of the hypotheses being tested including a summary of technical work that leads to the approach being taken.
- A detailed work plan to show how the terms of the contract will be met.
- Timeframe for completion of project and significant milestone events during the project.
- A detailed cost estimate in US dollars, which includes:
 - Support for travel in order to interface with related company representatives or others with expertise in this subject area;
 - Assumptions to support the cost estimate; and
 - Any contingencies to address unknowns.
- A list of personnel to be involved in the project and their qualifications, and their proposed role in this project.
- Researcher experience in this area and previous work.
- Where appropriate to the project, a discussion on how you manage animal care and use in your proposed work (*see also Application Procedure above*)
- An overall proposal summary (one paragraph).

Project Deliverables:

Project deliverables shall include:

- a) Periodic Progress Reports that summarize the work conducted, tasks planned for the coming reporting period, amount spent (vs. budget), and forecasts of spending for the duration of the project. The format and frequency of reports will be determined following contract award.
- b) Draft and Final Reports that:
 - document the results and findings of the research project aimed at providing answers to the key research questions.
 - Outline learnings and suggestions for applicability of these findings in E&P activity risk assessment processes.
 - Suggestions for follow-up studies

- c) Papers or posters at professional conferences and important marine mammal biology conferences at the discretion of the Principal Investigator.
- d) A publication with the key findings of the study in a peer-reviewed journal.

Terms & Conditions:

By submitting a proposal to JIP, the potential contractor accepts the terms and conditions set out in this RFP. This RFP does not commit the JIP, through IOGP, to contract for any supply or service and the JIP shall not be deemed to have accepted any proposal submitted by any potential contractor unless and until a duly executed written agreement is in place and then only for such scope as specifically identified in the written agreement. The potential contractor acknowledges that IOGP and the JIP participants may accept or reject any proposal for any reason whatsoever. The JIP may decide to fund a study in part or as a whole.

Those responding to this RFP are advised that the JIP will not pay for any costs incurred in preparation of a response to this invitation, including without limitation costs and expenses of attending meetings and worksite visits related to this RFP. All correspondence and documentation associated with this invitation will be in English. Submissions and information will not be shared with other potential contractors.