

BUREAU OF OCEAN ENERGY MANAGEMENT

ENVIRONMENTAL STUDIES PROGRAM

# STRATEGIC

FRAMEWORK

JUNE 2020



**BOEM**

Bureau of Ocean Energy  
Management



## VISION STATEMENT:

BOEM's long-term vision is for the ESP to be **"first in class"** – the best research program possible in the context of BOEM's mission and constraints.

# BACKGROUND & Mandate

**BOEM's Environmental Studies Program (ESP)** is mandated by Section 20 of the Outer Continental Shelf Lands Act (OCSLA) to conduct studies that will provide the information needed to assess and manage impacts on the human, marine, and coastal environments from offshore energy and marine mineral development. Section 20 specifically calls for studies addressing impacts on marine biota that may result from chronic, low-level pollution or from large spills associated with Outer Continental Shelf (OCS) production, including onshore facilities. Section 20 also calls for studies to monitor human, marine, and coastal environments. These studies are to provide time series and data trend information for identifying significant changes in the quality and productivity of those environments and to identify the causes of these changes. The ESP has provided over \$1 billion for research to this end since its inception in 1973.

Fundamentally, BOEM's research mandate under OCSLA is to assess and understand how the bureau's decision-making impacts the environment, including the human environment, and how those impacts can be avoided or minimized. BOEM's environmental program integrates the ESP with environmental assessment and policy to ensure that environmental protection is a foremost concern and an indispensable requirement in BOEM's decision-making. The environmental program as a whole is a core component of BOEM, whose overall mission is to manage development of OCS energy and mineral resources in an environmentally and economically responsible way, and whose core values are responsible stewardship, decisions informed by science, and a commitment to integrity and ethics in all activities.

Although the ESP exists to provide studies for assessing and managing potential harm from OCS energy and minerals development, the program has from its inception addressed this charge with the understanding that many of the most important scientific questions and answers on environmental impacts depend on broad-based, long-term research rather than narrowly defined studies. Hence, the ESP refers to its studies as **"use inspired."** Also, both the research projects and the infrastructure investments to support them are considered **"studies"** for purposes of this strategic framework. BOEM receives advice from the National Academies of Sciences, Engineering, and Medicine (NASEM) and its standing Committee on Offshore Science and Assessment (COSA), funded by BOEM, to ensure it achieves this vision. COSA has provided input on the criteria used in developing and approving studies and the process leading to approval and provides feedback each year on specific study ideas.

**To this end, the ESP asks three key questions:** what does BOEM need to know, what strategic questions should be posed, and what criteria should be used to prioritize studies for addressing these questions?

# What BOEM Needs to Know

**Effects of Impacting Activities.** Information on environmental impacts from activities authorized by BOEM, how to prevent or lessen adverse impacts, and how to provide information needed for legal compliance, including, but not limited to, the following examples:

- Oil and other chemical releases into the sea or onshore, including both large and low-level, chronic discharges
- Air pollutant emissions
- Greenhouse gas emissions
- Sound in the sea
- Obstructions to migration or movement of biota
- Seabed disturbance
- Coastal lands disturbance
- Socioeconomic impacts of exploration and development

**Affected Resources.** Information on the status, trends, and resilience of potentially impacted natural and cultural resources and socioeconomic qualities, including the following:

- Distribution and abundance of species, particularly those that are highly regulated or particularly vulnerable to adverse change in status; important for subsistence, commercial, or recreational use; or invasive
- Biogeographic areas of particular ecological, cultural, or commercial importance or sensitivity
- Marine environmental quality and productivity
- Air quality
- Diversity and productivity of platform biota
- Presence and nature characteristics of shipwrecks and submerged cultural landscapes
- Subsistence use and resources relied on by native people for food and culture
- Quality of life indicators for coastal native and other people

**Monitoring.** Information from monitoring on the environmental impacts of BOEM's authorizations over the entire time during which those impacts will occur, including potential future decisions

**Cumulative Impacts.** Information to address the requirements of NEPA, OCSLA, and other statutes on the cumulative environmental impacts of BOEM's authorizations

**Compliance.** Information required to demonstrate that BOEM's decisions comply with all applicable environmental laws

# STRATEGIC SCIENCE Questions

BOEM will use the strategic questions below to guide development of the ESP research portfolio over the next 5 to 10 years, at all levels (**national, regional, and program**), and for both short- and long-term needs.

- How can BOEM **best assess cumulative effects** within the framework of environmental assessments?
- What are the **acute and chronic effects of sound** from BOEM-regulated activities on marine species and their environment?
- What are the **acute and chronic effects of exposure to hydrocarbons** or other chemicals on coastal and marine species and ecosystems?
- What is the **effect of habitat or landscape alteration** from BOEM-regulated activities on ecological and cultural resources?
- What are the **air emissions impacts of BOEM-regulated activities** to the human, coastal, and marine environment and compliance with the National Ambient Air Quality Standards (NAAQS) and Prevention of Significant Deterioration (PSD) increments?
- How will **future ocean conditions and dynamics amplify** or mask effects of BOEM-regulated OCS activities?
- How does BOEM ensure the **adequate study and integrated use of social sciences** in assessing the impacts of OCS activities on the human environment?
- How can BOEM better use **existing or emerging technology** to achieve more effective or efficient scientific results?
- What are the **best resources, measures, and systems** for long-term monitoring?

# Criteria for STUDY DEVELOPMENT & Approval

The following seven criteria (**Criteria**) are used in evaluating the priority of study topics during development and for determining whether profiles for the topics should be included in the ESP Studies Development Plan (**SDP**) or the National Studies List (**NSL**).



## 1. Need for Information in BOEM Decision-Making

All studies must contribute to BOEM's need to know as described above. This requirement is not meant to favor studies addressing specific impacts (e.g., **the impact of seismic airguns on commercial and recreational fish stocks**) over broader studies whose insights are indirect but important to understanding the impacts of BOEM's activities (e.g., **population distribution and abundance, ecosystem dynamics**). As noted above, ESP studies include both expenditures to address specific research questions and expenditures for "**infrastructure**," such as maintenance of museum collections and ocean observing systems, which support an array of research projects addressing BOEM information needs. All study profiles must articulate the study's relevance and importance to BOEM decision-making, and the level of need must be considered in setting priority. This criterion accounts for the urgency of information and is intended to provide for a reasonable level of support in each region and across BOEM's three programs: oil and gas, renewable energy, and marine minerals.



## 2. Contribution to Existing Knowledge

Studies must be designed to contribute significantly to existing knowledge, and profiles should describe how the proposed work will fill gaps in information or will improve, confirm, or challenge current understanding.



## 3. Research Concept, Design, and Methodology

All study profiles must provide a sound research concept (**including questions asked**), design, and methodology. This does not require a high level of detail such as would be provided in specific proposals to carry out the work, but the basic proposal concept, design, and methodology must be sound. Quality and innovation are important considerations evaluated in this criterion. Archiving data and curation of collected specimens are considered core components of this criterion.



## 4. Cost-Effectiveness

Studies must be cost-effective, and the expense of a study is relevant in comparing its value with other study opportunities. This does not mean that costly studies are disfavored if the expense is necessary for important knowledge or leveraged with other funders.

# Criteria for STUDY DEVELOPMENT & Approval



## 5. Leveraging Funds

Study proposals should explore opportunities for shared funding. These may involve transfer of funds from or to BOEM, contributions to a shared account, or coordination of separately funded work toward common objectives.



## 6. Partnerships

Study proposals should support collaboration with native people whenever appropriate and feasible and should explore any opportunities for public outreach and engagement, such as **"citizen science"** or involvement of aquariums or other non-profits. Partnering is encouraged with other federal agencies, academic organizations, other non-profits, or commercial enterprises to achieve shared mission needs.



## 7. Multi-Regional and Strategic Utility

Studies gain priority if they support multi-regional or strategic needs. Studies focusing primarily on a local impact or meeting a local need will still be considered, but if everything else is equal, a study serving broader values is of higher priority for funding than one that does not. Collaboration is encouraged for identifying such needs.

# Process for **STUDY PROFILE** Development, Approval, & Review

To achieve its mission, the ESP follows an annual process that begins with developing study ideas with reference to the Criteria and moves on to strategic peer review, senior management review, and approval by the BOEM Director.

## Studies Development Plan and National Studies List

The ESP maintains a three-year SDP, a strategic document that provides concise descriptions or “**profiles**” of proposed scientific studies determined to warrant priority under the Criteria. The ESP updates the SDP annually by adding a new future year and dropping the description of the year just passed. BOEM’s Director issues the NSL, which is drawn annually from the SDP for the upcoming fiscal year and specifies funding for that year for all new starts and continuing projects. The SDP includes a chapter for each BOEM region and program with an overview of needs, features, and key questions particular to the region and an assessment of how the profiles in the chapter and these questions meet the Criteria.

## Initial Study Profile Development

To prepare and manage the SDP and NSL, BOEM’s Division of Environmental Sciences (DES) annually requests ideas for studies from BOEM scientists in all regions and programs. Additionally, DES and other BOEM offices solicit ideas from diverse stakeholders and the public generally through public announcements. Within BOEM, study ideas often begin with informal discussions on study topics between ESP staff and the staff charged with environmental assessment and policy. These discussions are facilitated across regions and programs by annual conferences on the environment, information transfer conferences, and COSA meetings. After these various discussions, BOEM scientists may then step forward with draft study profiles to share with expert colleagues for discussion and feedback.

# Process for **STUDY PROFILE** Development, Approval, & Review

## Preparing the SDP and NSL

Informal work feeds into more formal processes in regions and programs for scientists to present, discuss, and prioritize studies under the Criteria with a view to their inclusion in the SDP and NSL, and for BOEM managers to approve submissions and specify priority and cost. The regional work typically is led by BOEM regional and program environmental study chiefs and submitted to DES for compilation in the first draft SDP. That draft usually includes more proposed studies than funding allows, and DES coordinates further review to develop a final NSL that is within budget for approval by the BOEM Director. The NSL is developed through the following steps based on review of the draft SDP:

- **BOEM Science and Technical Peer Review**

The review process begins with profile review and feedback to authors by science and technical review (STR) teams that are organized by areas of expertise (e.g., acoustics) and whose members are selected by their management from a roster maintained by DES of BOEM subject matter experts.

- **National Academy of Sciences Review**

The STR team review is then followed by an independent review process established in coordination with BOEM through NASEM.

- › Several study profiles or topics combining related profiles are selected by BOEM, with advice from each BOEM region and program and NASEM, and are presented to COSA by BOEM subject matter experts.
- › If necessary, NASEM will invite additional experts to participate in the COSA meeting to provide input and advice on selected study profiles or topics. All feedback is the independent opinion of the members during the sessions and does not constitute a consensus review or a formal written review. Following the COSA meeting, ESP revises the draft SDP as merited by comments received from COSA members and other NASEM experts. The NASEM review does not include specific budgets.

- **BOEM Senior Management Review**

After review by COSA, BOEM publishes the SDP on the **Environmental Studies Planning web page** and notifies the public with a note to stakeholders. The SDP informs the draft NSL, and BOEM's environmental staff engage in discussions on how to reduce the number or cost of studies to conform to available funds. BOEM regional directors and program managers then meet to discuss the draft NSL; every effort is made to achieve consensus.

# Process for **STUDY PROFILE** Development, Approval, & Review

- **Approval by the BOEM Director**

After the senior management meeting, DES revises the draft NSL to reflect the discussion for presentation to the Director. Consensus is expected. If there is no consensus, however, DES will revise the draft to reflect the views of the Chief Environmental Officer, and any members of senior management whose views differ may present their views separately. The Director decides on and approves the final content of the NSL, and that decision is transmitted to staff for implementation and public communication.

- **Additional Peer Review of “Influential” and “Highly Influential Studies”**

Once the NSL has been finalized, ESP management and staff will evaluate the NSL to identify **“influential”** or **“highly influential”** studies, per the Office of Management and Budget guidelines. If a determination of **“influential”** or **“highly influential”** is made, the BOEM lead for the research effort will consult with the BOEM Scientific Integrity Officer to develop a peer review plan. Peer reviews could be internal or external to a study and may be conducted by ESP, BOEM, Department of Interior scientists, or NASEM or other contracted expert panel. Further information about the ESP peer review policy can be found at <https://www.boem.gov/environment/environmental-studies/guidelines-boems-quality-information-peer-review>.

When study profiles are approved for the NSL list for a given year, they are processed for funds disbursement and execution of studies by qualified organizations and individuals through interagency agreements, cooperative agreements, or competitive contracts.

## Transparency in Study Profile Preparation and Approval

BOEM is committed to an open review process with the utmost scientific integrity. BOEM managers and scientists (**including profile authors and reviewers**) have access to a file containing all scientific and technical review comments from STR teams, responses from authors, and justifications provided for study rankings by BOEM senior management.

## Review of the ESP Strategic Framework

BOEM will review the ESP strategic framework at least once every five years and revise it as warranted for improvement. The review will include a **“look back”** to assess the effectiveness of completed study work in meeting BOEM’s needs.

# ESP Science Strategy

## Short-Term

### Scientific Study (Study Profile)



Need for Information in  
BOEM Decision-making

Contribution to Existing  
Knowledge

Research Concept, Design  
and Methodology

Leveraging Funds

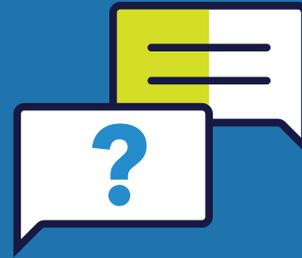
Cost Effectiveness

Partnerships

Multi-Regional and  
Strategic Utility

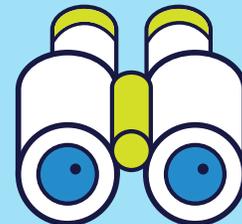
## Medium-Term

### Strategic Science Questions (SDP)



## Long-Term

### Long-Term Science Vision





## The Department of the Interior Mission

The Department of the Interior protects and manages the Nation's natural resources and cultural heritage; provides scientific and other information about those resources; and honors its trust responsibilities or special commitments to American Indians, Alaska Natives, and affiliated island communities.



## The Bureau of Ocean Energy Management

The mission of the Bureau of Ocean Energy Management is to manage development of U.S. Outer Continental Shelf energy and mineral resources in an environmentally and economically responsible way.

## The BOEM Environmental Studies Program

The mission of the Environmental Studies Program (ESP) is to provide the information needed to predict, assess, and manage impacts from offshore energy and marine mineral exploration, development, and production activities on human, marine, and coastal environments. The proposal, selection, research, review, collaboration, production, and dissemination of each of BOEM's Environmental Studies follows the DOI Code of Scientific and Scholarly Conduct, in support of a culture of scientific and professional integrity, as set out in the DOI Departmental Manual (305 DM 3).

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