

Environmental Studies Program: Studies Development Plan | FY 2019–2021

Title	Compendium on Oil Spill Science
Administered by	Headquarters
BOEM Contact(s)	Jennifer Bucatari, jennifer.bucatari@boem.gov
Procurement Type(s)	Contract
Approx. Cost	\$300 (in thousands)
Performance Period	FY 2019–2020
Date Revised	December 7, 2017
PICOC Summary	
<i><u>Problem</u></i>	Lack of a recently completed (since <i>Deepwater Horizon</i>) synthesis available that reviews and summarizes known impacts from oil spills. Such a synthesis is crucial as a reference for our NEPA analyses.
<i><u>Intervention</u></i>	Compile and synthesize current scientific understanding of chemical, biological, physical, and socio/cultural impacts related to residual and acute impacts associated with OCS and state water spills and remediation efforts.
<i><u>Comparison</u></i>	The results of this synthesis would compare an environment impacted by an oil spill to the non-spill baseline.
<i><u>Outcome</u></i>	This synthesis will be used in NEPA documents, as well as to identify information needs for guiding future study questions. The understanding of a post-spill environment, short term and long-term impacts is crucial for quantifying the potential spill impacts for a defensible NEPA analysis that supports agency decision making.
<i><u>Context</u></i>	US State marine and OCS waters

BOEM Information Need(s): BOEM needs to synthesize the results from interrelated and complex spill impact studies in order to:

1. continue compliance with environmental regulations, specifically to analyze potential impacts for our proposed actions in our Five Year EIS analyses and to discuss impacts from reasonably foreseeable spills as required by CEQ;
2. support its responsibility to manage public resources in an environmentally sound manner;
3. refine our knowledge of long-term, cumulative impacts that are important for making current and future management decisions and for relaying these impacts accurately and succinctly in our NEPA documents

Background: From 1964–2015, approximately 5.2 million barrels (MMbbl) of oil have been spilled from outer continental shelf (OCS) operations. In addition, production and transportation of oil in state waters has resulted in spills with applicable effects along the OCS. Following most spills, a rush of scientific research occurs which investigates the impacts of the oil and the spill response on the oceanic ecosystems in order to

improve our understanding of the dynamics of such events and their environmental and public health implications.

To date a wide range of research topics have been explored over a variety of potential impact areas and response methodologies. There is a great deal of historical, along with new DWH related, research. In addition, other spills have resulted in similar research efforts. BOEM considers all relevant research during the process for leasing and development of oil and natural gas on the OCS. Considering the wide range of research topics to be reviewed following a spill, including impacts from spill response, there are considerable challenges associated with reviewing, analyzing, and applying these data in our NEPA analyses. Existing syntheses are either too vague with respect to resource impacts (Oil in the Sea III) or are regionally or spill focused (Gulf of Mexico Research Initiative; National Academies of Sciences, Engineering, and Medicine efforts). This effort will synthesize all available oil spill research (1964–2017) and enable BOEM to better meet our responsibilities of managing offshore energy while considering the potential impacts in an efficient and holistic manner.

Objectives:

- Compile and synthesize current scientific understanding of chemical, biological, physical, and socio/cultural impacts related to residual and acute impacts (from existing literature, databases, etc) associated with OCS and state marine water spills and remediation efforts.
- Following this compilation, identify information needs in science regarding spill and response impacts.
- Share the synthesized information with BOEM subject matter experts (SMEs) to encourage discussion on results and information needs.

Methods: The contractor will conduct a survey of all published literature and data related to chemical, biological, physical, and socio/cultural impacts related to OCS and state water spills and associated response activities. The contractor will summarize findings from studies by region and then by resource area. A synthesis of all relevant information is expected, with provided boundaries for clarity, and with quantitative techniques to synthesize findings, if possible. The contractor will synthesize these data into a compendium with regional sections and, within them, highlight the different resource areas that BOEM considers in our NEPA analyses. Each section will summarize the research and any information needs as best known at the time of the publication.

This project will include the submission of an Endnote database with all cited works for use by the BOEM SMEs. In addition, this database will hold copies of all published works cited in the compendium (when available), serving as a local copy for BOEM analysts to discover and access any relevant literature. The contractor will organize webinars (per resource area) to provide BOEM SMEs the opportunity to discuss the compendium results, identify information needs, and develop future study needs.

Specific Research Question(s): What are the known impacts from oil spills in a range of sizes and ecosystems? What information is unknown about oil spill and oil spill response impacts?