

## Environmental Studies Program: Ongoing Study

Title	Oil Spill Effects Literature Synthesis: Crude Oil, Diesel, and Condensate Spills 500–20,000 bbls (AK-19-08)
Administered by	Alaska Regional Office
BOEM Contact(s)	Dr. Heather Crowley, <a href="mailto:heather.crowley@boem.gov">heather.crowley@boem.gov</a>
Conducting Organizations(s)	Research Planning, Inc.
Total BOEM Cost	\$199,915
Performance Period	FY 2019–2021
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PICOC Summary	
<i>Problem</i>	BOEM NEPA analysts require reference information regarding the potential effects of moderately-sized spills on the physical, biological, social, or economic resources on the OCS. However, much of the literature regarding smaller spills of 500 to 20,000 barrels is buried in the gray literature or conference proceedings and not easily accessible to the analysts.
<i>Intervention</i>	A literature search focusing on small to medium size spills between 500 to 20,000 bbl in volume and their impacts on these environments would be very helpful to BOEM analysts for future National Environmental Policy Act (NEPA) analyses of the Outer Continental Shelf (OCS).
<i>Comparison</i>	Scaling of impacts from much larger oil spills may not provide an accurate representation to support analysis of effects from smaller spills.
<i>Outcome</i>	The project will identify available literature that defines the locations and impacts to human, physical, and biological environments of small to medium size spills.
<i>Context</i>	All OCS Planning Areas

**BOEM Information Need(s):** The Bureau of Ocean Energy Management (BOEM) needs information about oil spills, including particular oil types and volumes, and their impacts under specific environmental variables to allow NEPA analysts to make refined evaluations regarding potential impacts from large ( $\geq 500$  bbl) spills of crude oil, diesel, or condensate.

**Background:** The relationship between BOEM Outer Continental Shelf (OCS) activity and oil spills is a common question; and public concern about oil spills is heightened due to the potential impacts on sensitive resources. However, many of the most well studied oil spills (e.g., *Exxon Valdez* and *Deepwater Horizon*) are orders of magnitude larger than the median OCS spill sizes which are used for NEPA impact assessment. Analysts must use these impacts and scale them to spills of much smaller volumes and duration. Much of the literature regarding smaller spills of 500 to 20,000 barrels is

buried in the gray literature or conference proceedings. Further, as new BOEM analysts begin their careers, the use of the older literature, although still valuable, is being lost to the archives.

**Objectives:**

- Synthesize documentation regarding impacts to various biological, social, or economic resources from spills of crude oil, diesel, or condensate ranging from 500–20,000 bbl in volume.
- Provide a systematic synthesis for use in impact assessment.

**Methods:** Researchers will conduct a careful literature compilation of all relevant information on spills of crude oil, diesel, or condensate of 500–20,000 bbl in size since approximately 1970. Sources consulted will include not only formally published scientific literature but also so-called “gray literature”, information available from the Internet, and information developed through limited appropriate personal contacts. After conducting an extensive and thorough review of the peer-reviewed and gray literature, researchers will prepare an annotated bibliography of information regarding effects and impacts of spills of crude oil, diesel, or condensate ranging from 500–20,000 bbl in size. Products will include a written synthesis of impacts and degree of recovery from spills of crude oil, diesel, or condensate 500–20,000 bbl in size discussing environmental and physical variables derived through the extensive review.

**Specific Research Question(s):** What is the range of environmental effects from spills of crude oil, diesel, or condensate ranging from 500–20,000 bbl in size?

**Current Status:** Completed.

**Publications Completed:**

Michel, J. (Editor) 2021. Oil Spill Effects Literature Study of Spills of 500–20,000 Barrels of Crude Oil, Condensate, or Diesel. US Department of the Interior, Bureau of Ocean Energy Management, Anchorage, AK. OCS Study BOEM 2021-048. 216 pp.

**Affiliated WWW Sites:** <http://www.boem.gov/akstudies/>

<https://marinecadastre.gov/espis/#/search/study/100260>