

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

Title	Offshore Acoustic Bat Study along Western U.S. Continental and Hawaiian Island Coastlines
Administered by	Pacific OCS Region
BOEM Contact(s)	David Pereksta, <a href="mailto:david.pereksta@boem.gov">david.pereksta@boem.gov</a>
Procurement Type(s)	Contract, Inter-agency Agreement, or Cooperative Agreement
Approx. Cost	\$300 (in thousands)
Performance Period	FY 2019–2022
Date Revised	March 2, 2018
PICOC Summary	
<i><u>Problem</u></i>	A variety of bat species are known to seasonally occur offshore, but no systematic surveys have been conducted for them in the Pacific. These bat species are at risk from offshore energy development; particularly wind turbines.
<i><u>Intervention</u></i>	A systematic study of offshore acoustic bat activity along the western continental U.S. and Hawaiian coastlines, would help address key resource agency concerns in advance of anticipated coastal and offshore developments in this region.
<i><u>Comparison</u></i>	Collect new information regarding the temporal and spatial activities of migratory and non-migratory bat species in offshore and coastal areas of the Pacific.
<i><u>Outcome</u></i>	Provided federal/state resource agencies and developers with key metrics to evaluate mortality risk associated with offshore wind energy development. Such data would boost our ability to manage risks to bats associated with offshore development by providing critical baseline data regarding the spatial and temporal occurrence of rare and otherwise vulnerable bat species within these western regions.
<i><u>Context</u></i>	All Pacific OCS Planning Areas (U.S. West Coast and Hawaii)

**BOEM Information Need(s):** BOEM needs to understand the temporal and spatial distribution of bats offshore of the Pacific coast of the U.S. and Hawaii to evaluate the effects of offshore wind energy development on them.

**Background:** A variety of bat species are known to seasonally occur offshore and have been documented at distances of as much as 805 km (500 miles) from coastal shorelines (Pelletier et al. 2013, Griffin 1940). Direct studies of offshore bat activity have nevertheless occurred only at scattered locations within the New England, mid-Atlantic coast, and Great Lakes regions. These efforts, supported in part by the Department of Energy, involved a sustained, 3-year deployment of acoustic bat detectors in a variety of remote coastal and offshore settings, including offshore islands, navigational structures, IOOS buoys, and NOAA research vessels (Peterson et al. 2016). This study yielded a wealth of new information regarding the temporal and spatial activities of migratory and non-migratory bat species, and provided federal/state resource agencies and developers with key metrics to evaluate mortality risk associated with offshore wind energy

development. Long-distance migratory species such as hoary bats (*Lasiurus cinereus*), eastern red bats (*L. borealis*), and silver-haired bats (*Lasionycteris noctivagans*) comprise most mortality at terrestrial wind farms and are known to regularly occur offshore based on the abovementioned acoustic surveys in the northeast. In addition, the documented mortality of Hawaiian hoary bats (*L. c. semotus*) at terrestrial wind farms on the Hawaiian Islands is occurring at a rate far exceeding that projected in environmental analyses and incidental take permits issued for those projects, which has raised concerns regarding this species offshore of the Hawaiian Islands (Hawaii DLNR 2016). A systematic study of offshore acoustic bat activity along the western continental U.S. and Hawaiian coastlines would help address key resource agency concerns in advance of anticipated coastal and offshore developments in this region. Such data would boost our ability to manage risks to bats associated with offshore development by providing critical baseline data regarding the spatial and temporal occurrence of rare and otherwise vulnerable bat species within these western regions.

**Objectives:** The objectives of this study are to:

- 1) enhance the understanding of seasonal offshore bat migration activities offshore of the west coast of the U.S. and Hawaii;
- 2) increase monitoring of seasonal bat activities in the Pacific to produce regional datasets; and
- 3) evaluate mortality risk from offshore energy development

**Methods:** A sustained, multi-year deployment of acoustic bat detectors in a variety of remote coastal and offshore settings, including offshore islands, navigational structures, IOOS buoys, oil and gas platforms, and NOAA research vessels. The study will incorporate logistical and technical lessons gathered during the DOE study conducted in the New England, mid-Atlantic coast, and Great Lakes regions (Peterson et al. 2016) to support efficient and cost effective methods to gather these data in support of meeting renewable energy objectives. Previously forged agency/NGO partnerships will be utilized where appropriate.

**Specific Research Question(s):**

Relative to potential wind energy development off the Pacific coast of the U.S. and Hawaii:

- 1) What is the temporal and spatial distribution of bats offshore of the Pacific coast of the U.S. and Hawaii?
- 2) What are the metrics to evaluate mortality risk associated with offshore wind energy development?

**References:**

Griffin, D.R. 1940. Migrations of New England bats. Bulletin of the Museum of Comparative Zoology at Harvard College 86:217-246.

Pelletier, S.K., K. Omland, K.S. Watrous, and T.S. Peterson. 2013. Information Synthesis on the Potential for Bat Interactions with Offshore Wind Facilities – Final Report. U.S. Department of the Interior, Bureau of Ocean Energy Management. OCS Study BOEM 2013-01163. 119 p.

Peterson, T.S., S.K. Pelletier, and M. Giovanni. 2016. Long-term Bat Monitoring on Islands, Offshore Structures, and Coastal Sites in the Gulf of Maine, mid-Atlantic, and Great Lakes—Final Report.

The State of Hawaii Department of Land and Natural Resources Division of Forestry and Wildlife (Hawaii DLNR). 2016. Status of the issuance of incidental take licenses for endangered, threatened, proposed, and candidate species; and the condition of the endangered species trust fund for the period July 1, 2015 – June 30, 2016. Honolulu, Hawaii.

USFWS. 2016. <https://www.whitenosesyndrome.org/news/bat-white-nose-syndrome-confirmed-washington-state>