

## Environmental Studies Program: Ongoing Study

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| Title                      | Offshore Acoustic Bat Study along the California Coastline (PC-19-03)  |
| Administered by            | Pacific OCS Region   |
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| Procurement Type(s)        | Intra-agency Agreement   |
| Conducting Organization(s) | U.S. Geological Survey (USGS)  |
| Total BOEM Cost            | \$300,000  |
| Performance Period         | FY 2020–2023   |
| Final Report Due           | September 15, 2023   |
| Date Revised               | March 24, 2022   |
| 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 California coast 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 California.  |
| <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 California. |
| <i><u>Context</u></i>      | California OCS planning areas  |

**BOEM Information Need(s):** BOEM needs to understand the temporal and spatial distribution of bats offshore of the California coast 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, three-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 (Hawaii DLNR 2016). A systematic study of offshore acoustic bat activity along the California coastline 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 this region.

**Objectives:** The objectives of this study are to 1) enhance the understanding of seasonal offshore bat migration activities offshore of the California coast; 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 California coast:

1. What is the temporal and spatial distribution of bats offshore of the California coast?
2. What are the metrics to evaluate mortality risk associated with offshore wind energy development?

**Current Status:** The intra-agency agreement with USGS was awarded September 15, 2020. An amendment was awarded on September 7, 2021 that provided additional funds to USGS that were originally supposed to be directed to the U.S. Forest Service (USFS) in 2020. The USFS was not able to participate as a cooperator due to internal constraints, so USGS assumed all the obligations related to this study. USGS has been working with a variety of cooperators to deploy bat detectors along the California coast and on offshore rocks and islands.

**Publications Completed:** None

**Affiliated WWW Sites:** <https://marinecadastre.gov/espis/#/search/study/100316>

**References:**

- Griffin DR. 1940. Migrations of New England bats. Bulletin of the Museum of Comparative Zoology at Harvard College 86:217-246.
- Pelletier SK, Omland K, Watrous KS, Peterson TS. 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 TS, Pelletier SK, Giovanni M. 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.