



# **Environmental Sciences Pacific Region Overview**

**OCS Scientific Committee Meeting  
May 13, 2014**

**Ann Scarborough Bull, Ph.D.  
Chief, Environmental Sciences Section**



**Supporting Development of  
Wind and Wave Energy**



**Supporting and Monitoring  
Conventional Energy**

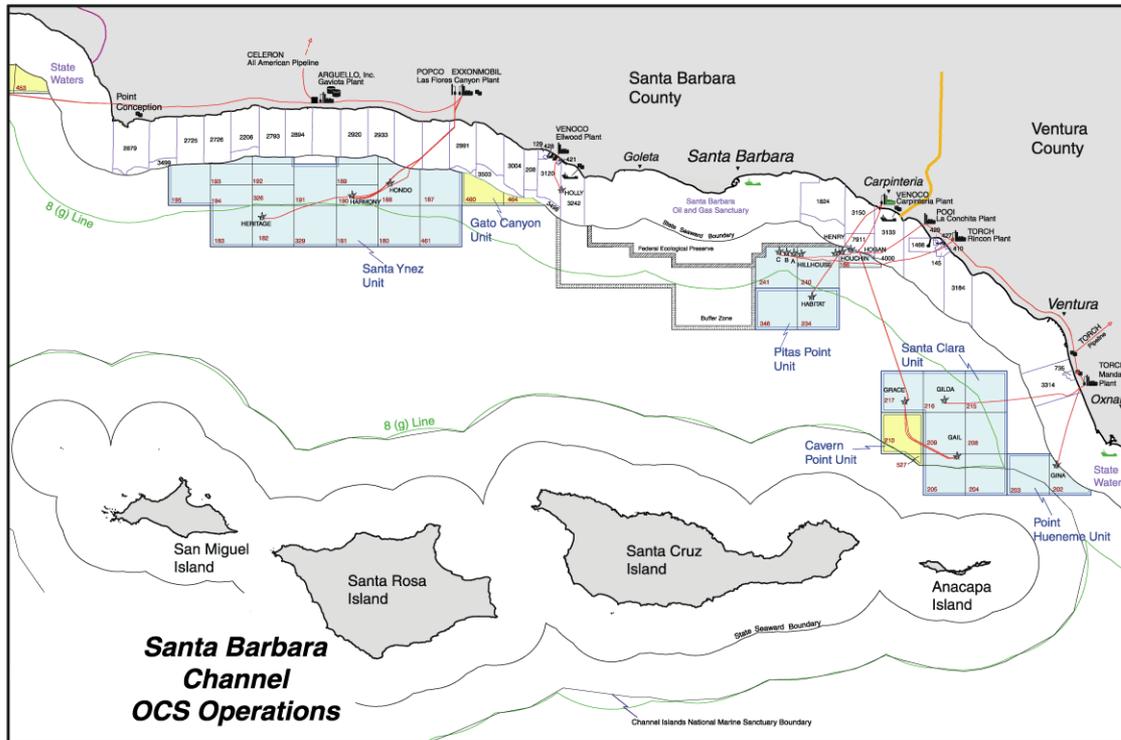




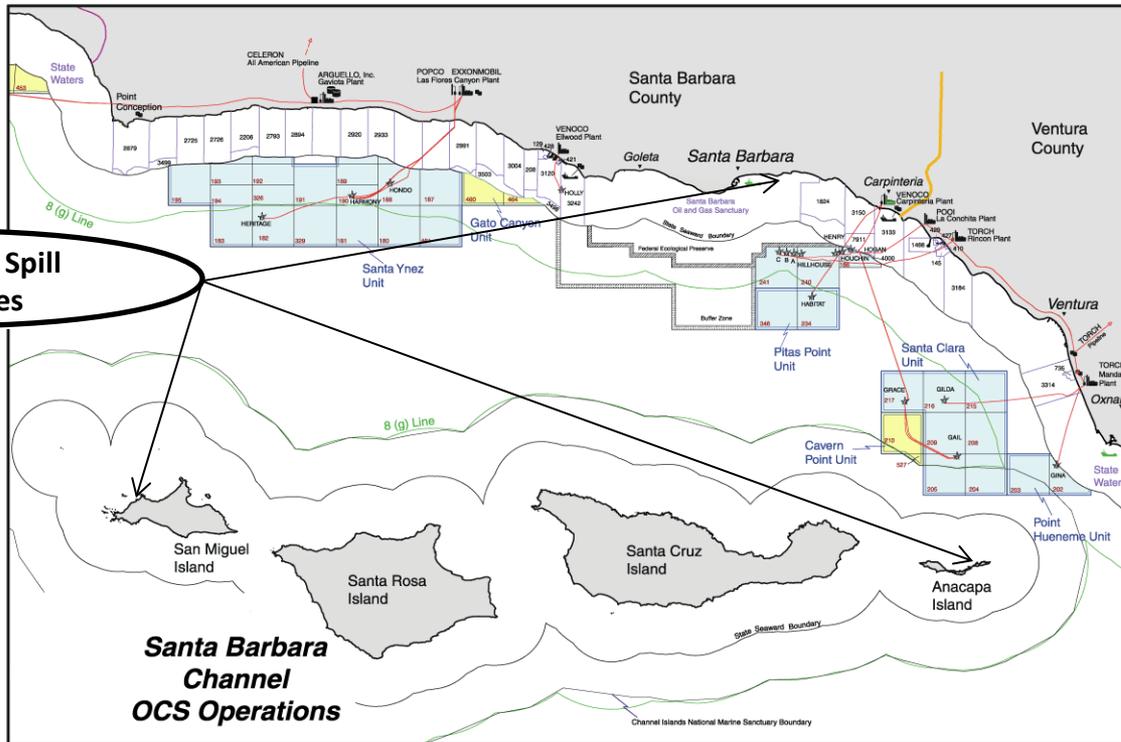
- Concentrated off Southern California Bight
- Expanded production from existing platforms
- New and rejuvenated wells
- New pipelines and power cables



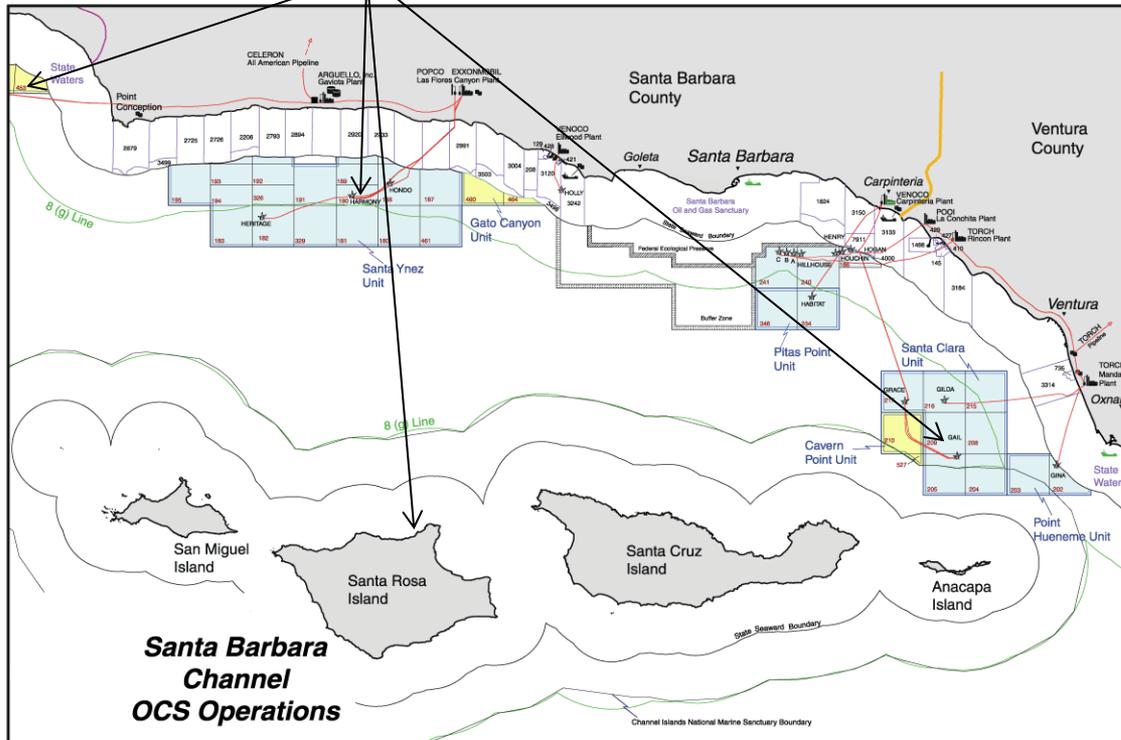
Location of Pacific Oil and Gas Sites

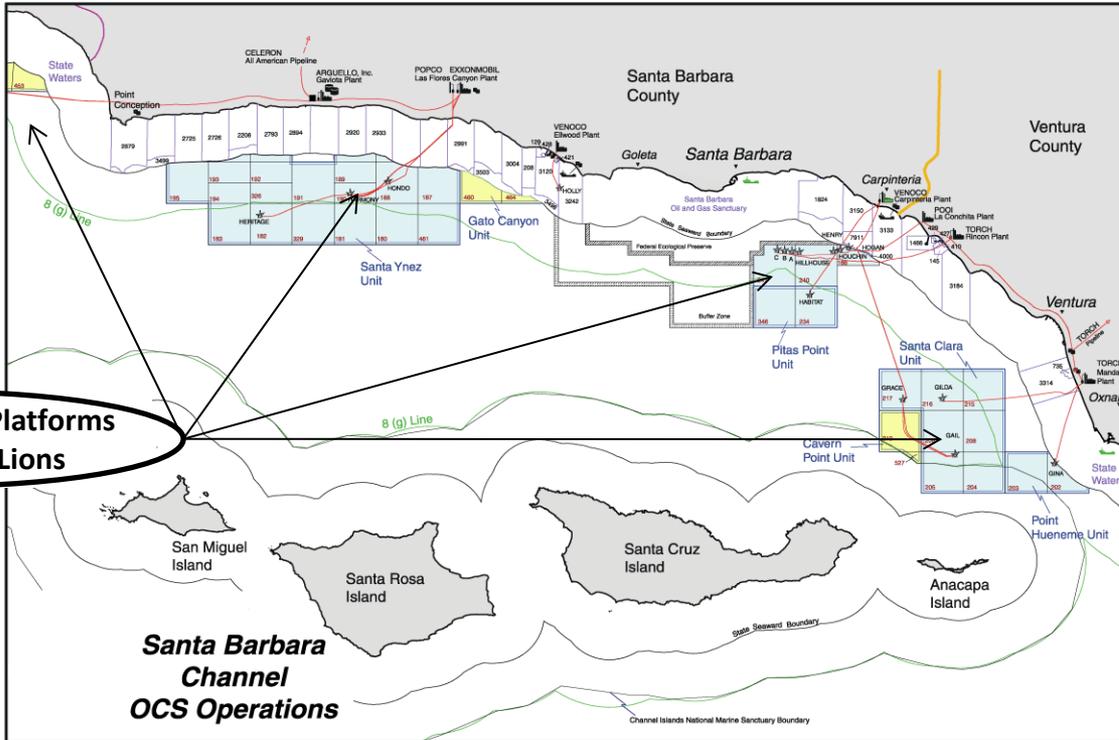






**Using Nocturnal Surveys to Monitor Light Effects on Birds**





**Monitoring Use of Platforms by Seals and Sea Lions**





➤ **Research the role of platforms in the southern California marine ecosystem**

What drives the biological oceanographic connections between reefs and OCS platforms?

➤ **Study conventional energy within a regional context**

Can we reduce the spatial and temporal extent of sampling for MARINe while retaining the statistical power to detect change?

➤ **Investigate potential impacts from removal or reefing of conventional energy structures**

What is the most valuable publication method for a synthesis of 30+ years of research at Pacific platforms?

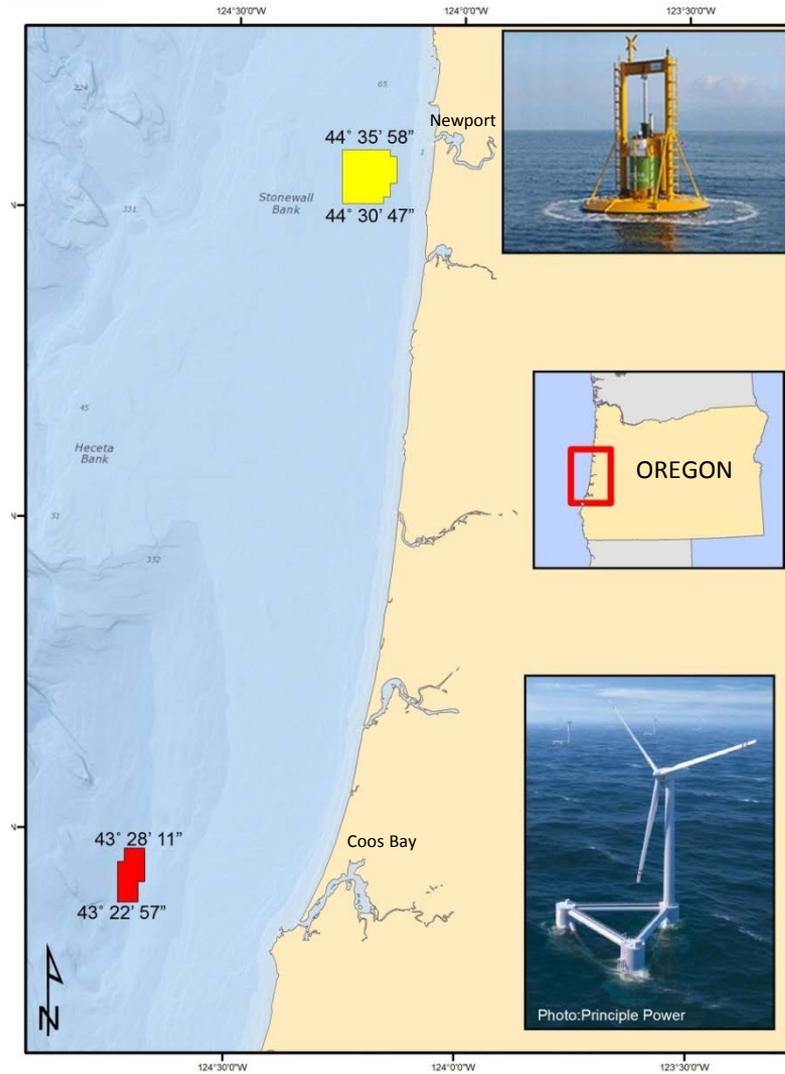




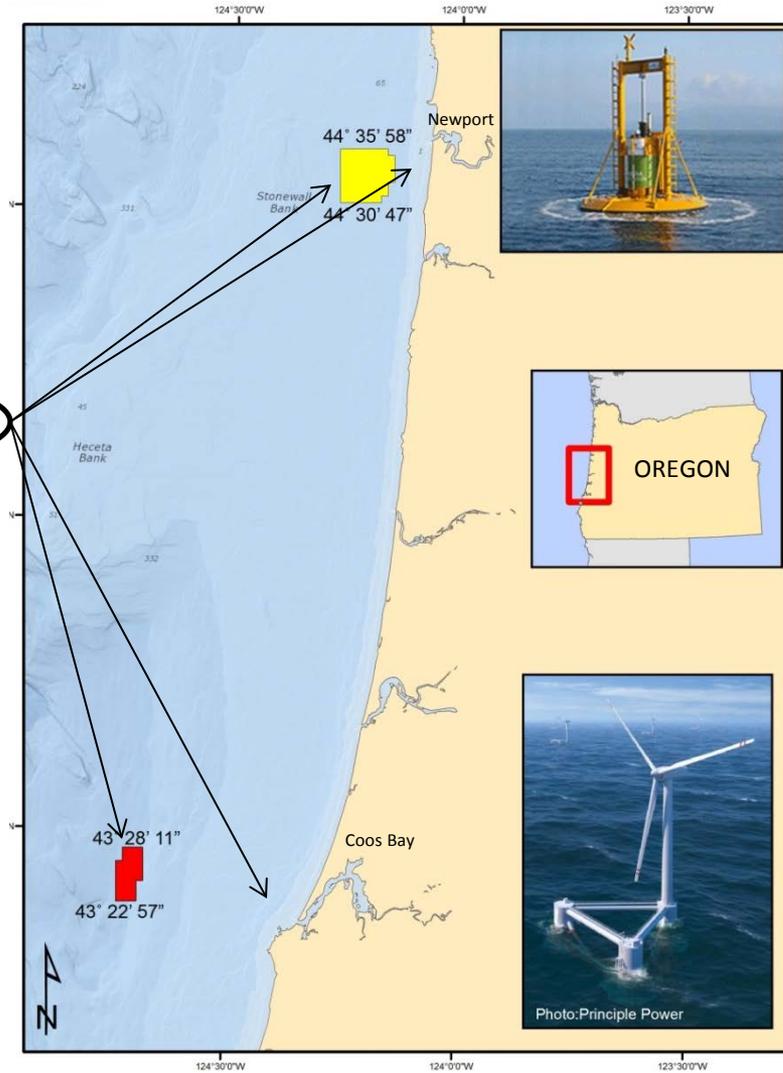
- Concentrated off Oregon and Hawaii
- Washington is focused on hydropower and Puget Sound tidal where BOEM has no jurisdiction
- California is focused on terrestrial wind and desert solar where BOEM has no jurisdiction
- Task Forces requested by and formed for Oregon and Hawaii



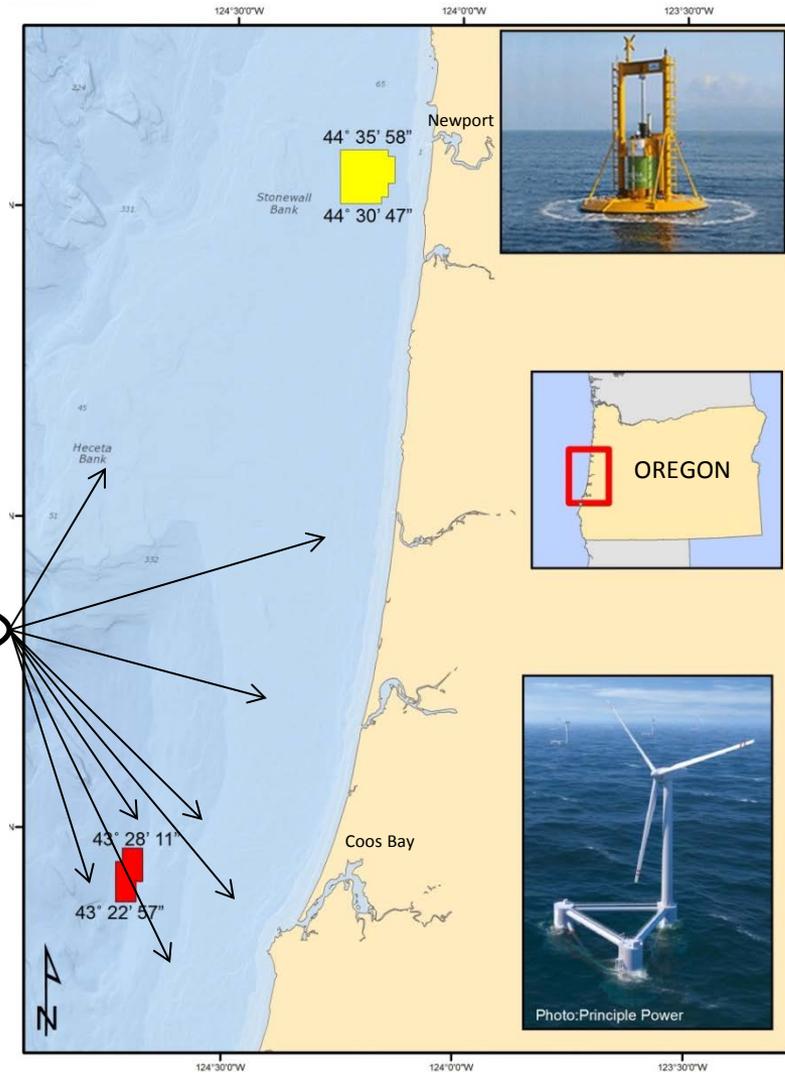
## Location of Oregon Renewable Energy Sites



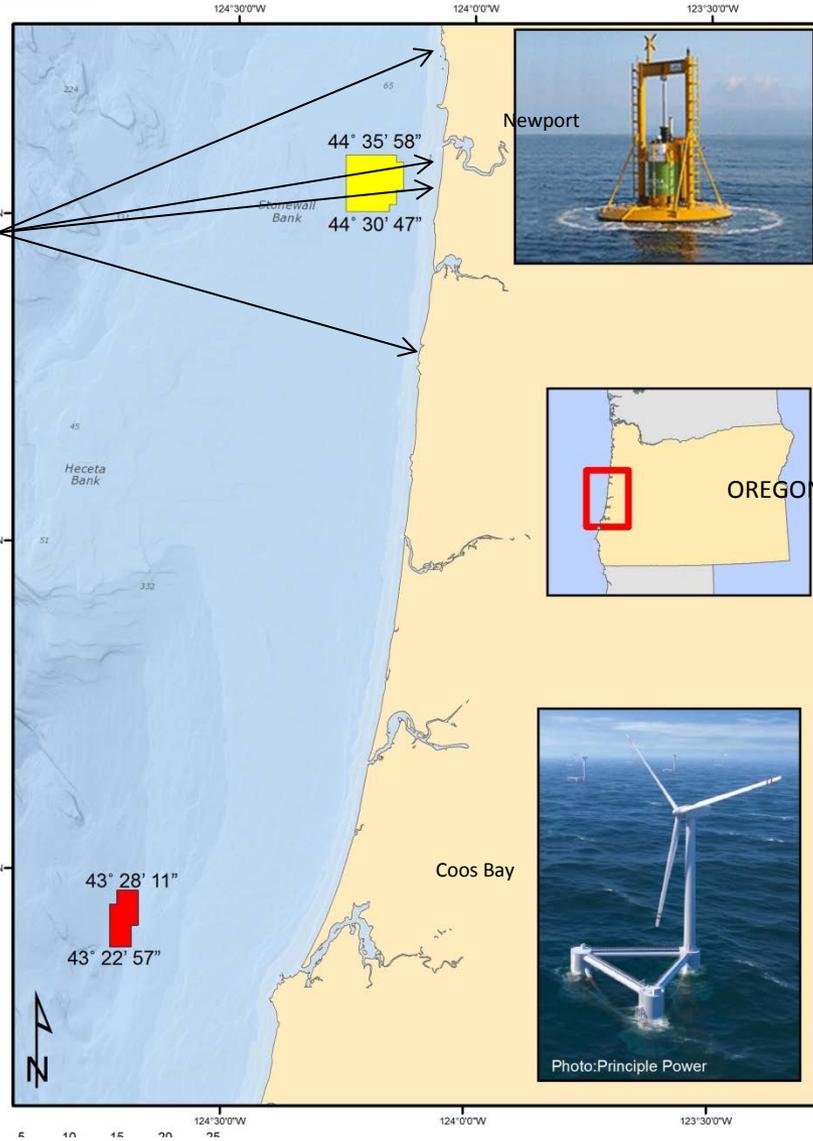
Survey of Benthic Communities  
At and Near Sites



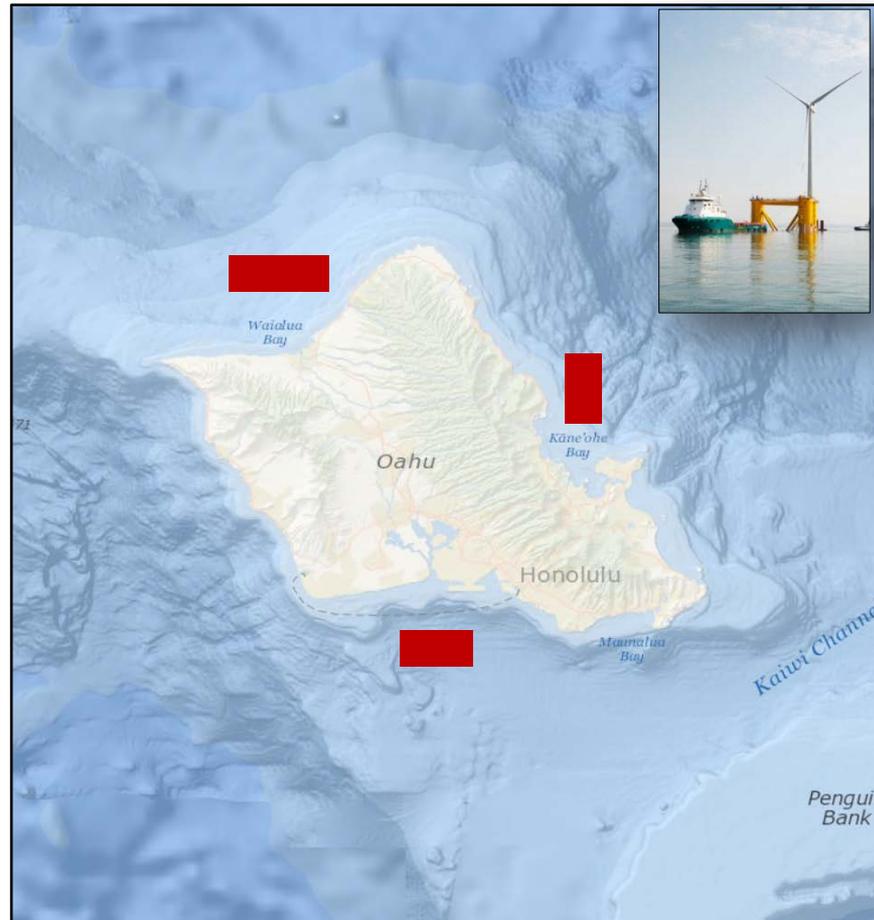
Diel Patterns of Habitat Use by Seabirds

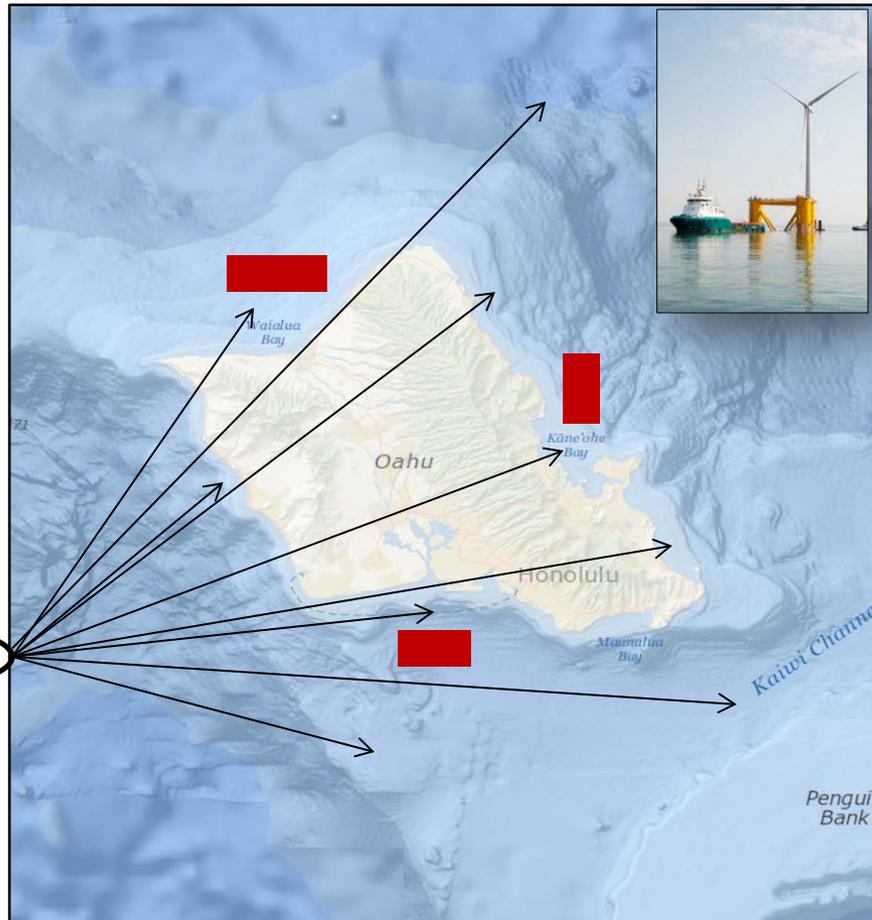


**Wave Energy Depletion  
and Shoreline Conditions**



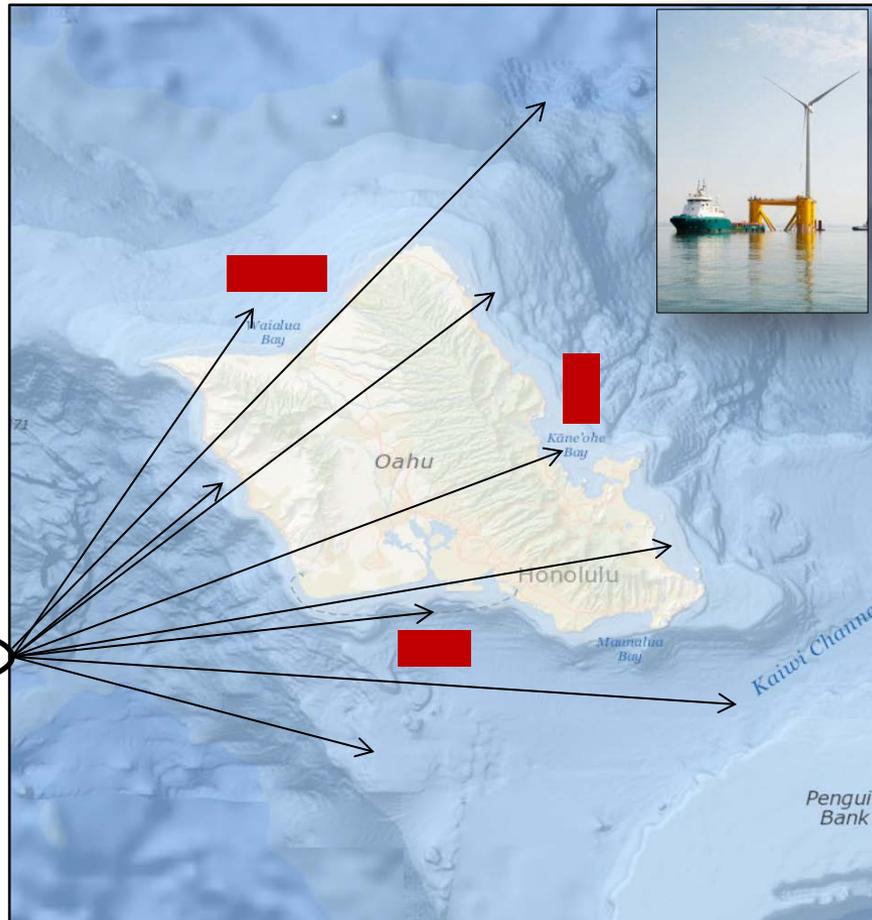
## Location of Potential Hawaii Renewable Energy Sites





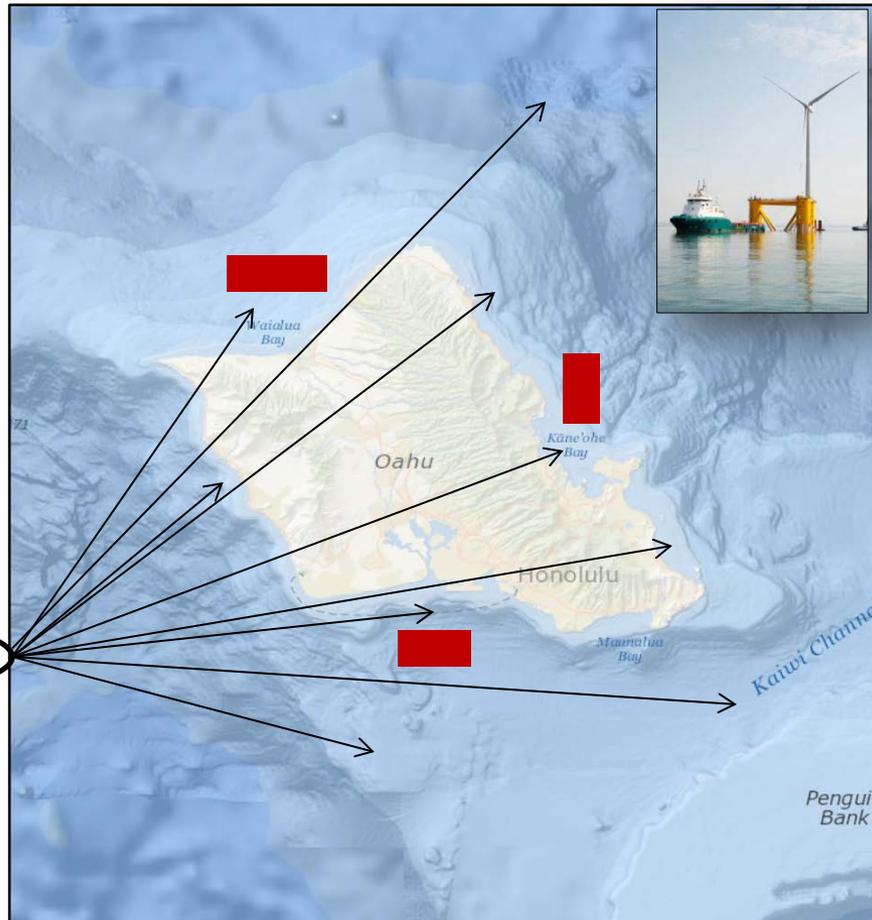
Mapping Human Uses  
of the Ocean





Seabird Habitats and at-sea Ranging Behavior







- **Expand our area of study for potential siting of projects to encompass the Pacific coast and Hawaii**  
Can we predictively model Pacific seabird spatial distributions well enough for site-specific renewable energy evaluations?
- **Complete foundational studies for renewable energy**  
How can we enhance ocean use maps to help define cumulative impacts of renewable energy projects?
- **Study renewable energy within a regional context**  
What are the potential consequences of renewable energy activities on the productivity and trophic structure of sensitive habitat in the California Current Ecosystem?



## Continuous Improvement of Pacific Environmental Science Program



- **Support a culture of scientific and scholarly integrity**
  - Facilitate flow of scientific and scholarly information
  - Enhance through engagement with professional societies and organizations
  
- **Prioritize strategies for regional study development**
  - Pursue greatest value given applied science approach
  - Seek broadest applicability to energy programs and multiple regions
  
- **Examine stakeholder outreach**
  - Determine better approach to gathering external ideas
  - Plan methods for public scientific information dissemination



## Pacific OCS Region Contact

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