

Highlights of Renewable Energy Studies and Research

In the
Bureau of Ocean Energy Management

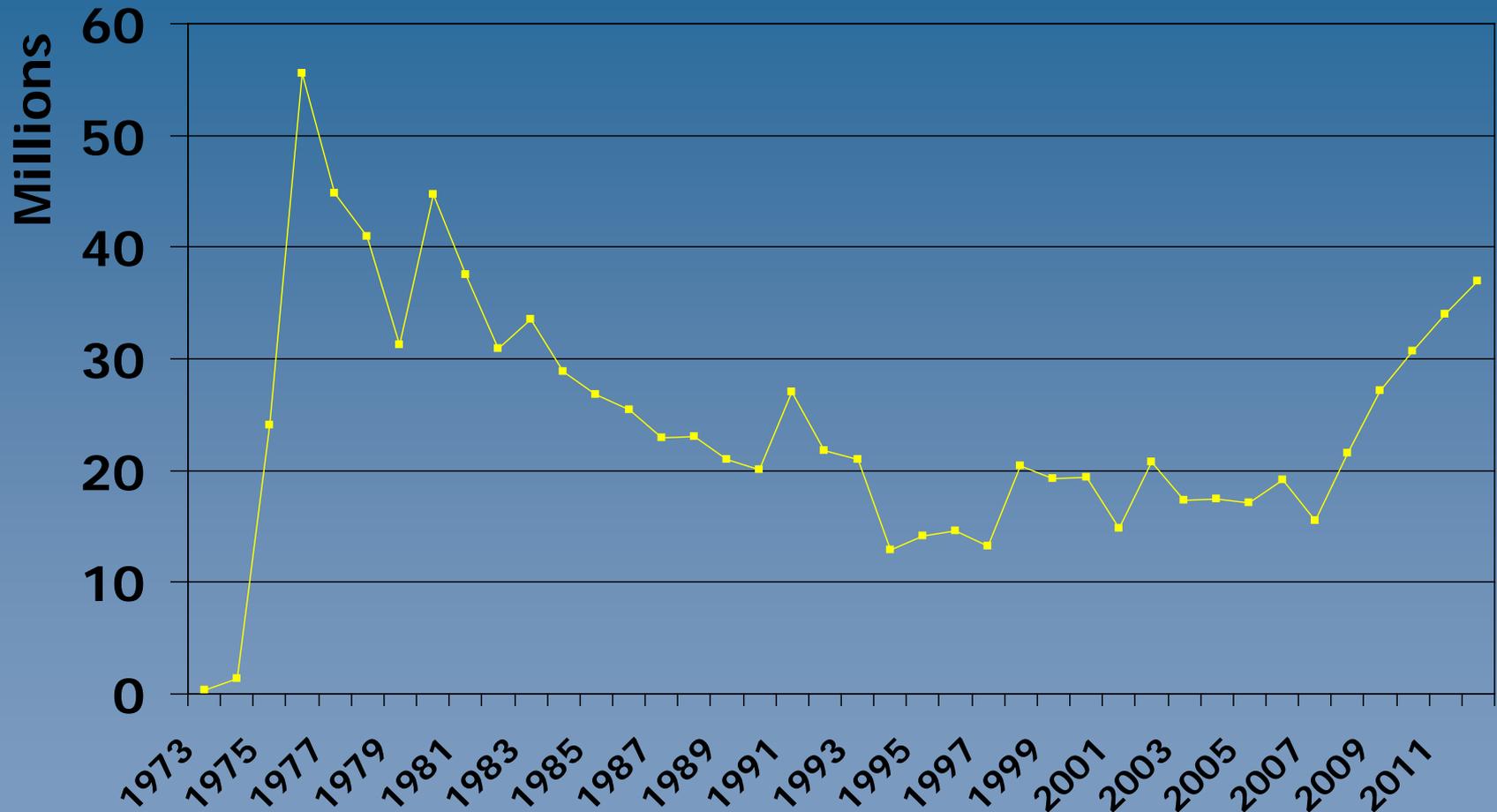
Mary Elaine Helix
Pacific OCS Region



Environmental Studies Program

- **Topically diverse**
 - Air quality
 - Fates and Effects
 - Physical Oceanography and Water Quality
 - Habitat and Ecology
 - Marine Mammals and Protected Species
 - Social Sciences and Archeology
 - Information Management
- **Integrated research**
- **Leverages cooperation and partnership**
- **High quality, peer-reviewed science**
- **Approx \$35 Million/yr**

Studies Expenditures 1973-2012



Renewable Energy Studies



Main Categories:

- Human Dimensions
- Outreach/Public Engagement
- Geospatial Data Collections
- Biology
- Air Quality

Highlighted Renewable Energy ESP Studies

Ongoing and Completed Studies pertinent to Pacific Region RE projects:

- Renewable Energy Visual Evaluations
- **Protocols for Baseline Studies and Monitoring for Ocean Renewable Energy**
- Characterization and Potential Impacts of Noise-Producing Construction and Operation Activities on the OCS
- **Developing Environmental Protocols and Modeling Tools to Support Ocean Renewable Energy and Stewardship**
- Bayesian Integration for Marine Spatial Planning and Renewable Energy and Stewardship

Highlighted Renewable Energy ESP Studies

- Survey of Benthic Communities near Potential Renewable Energy Sites Offshore Oregon/Washington
- **Evaluating Acoustic Technologies to Monitor Aquatic Organisms at Renewable Sites**
- Marine Mammal and Seabird Surveys of Potential Alternative Energy Sites Offshore Northern California, Oregon, and Washington
- **Improving Cetacean Electronic Data Loggers**
- Acoustic Monitoring of Temporal and Spatial Abundance of Birds Near Structures

Highlighted Renewable Energy ESP Studies

- **Effects of EMFs from Undersea Power Cables on Elasmobranchs and Other Marine Species**
- **Developing and Applying a Vulnerability Index for Scaling Possible Adverse Effects of Offshore RE on Seabirds on the Pacific OCS**

Technology Assessment and Research Program



Highlighted Renewable Energy TA&R Studies

Comparative Study of Offshore
Wind Turbine Generators
(OWTG) Standards

**Offshore Electrical Cable Burial
for Wind Farms: Standards and
Guidance; Acceptable Burial Depths
and Separation Distances; and Sand
Wave Effects**

Assess the Design and
Inspection Criteria and
Standards for Wave and Current
Energy Generating Devices

Mitigation of Underwater Pile
Driving Noise During
Construction

**Offshore Wind and Ocean
Energy Installation Cost
Estimation in the US Outer
Continental Shelf**

Characteristics, Behavior and
Response Effectiveness of
Spilled Dielectric Insulating Oil in
the Marine Environment

Bureau of Ocean Energy Management

Pacific Region Environmental Studies

<http://www.boem.gov/Environmental-Stewardship/environmental-studies>

