

## **Alaska OCS Region Update**

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**May 13, 2014**



## Environmental Studies

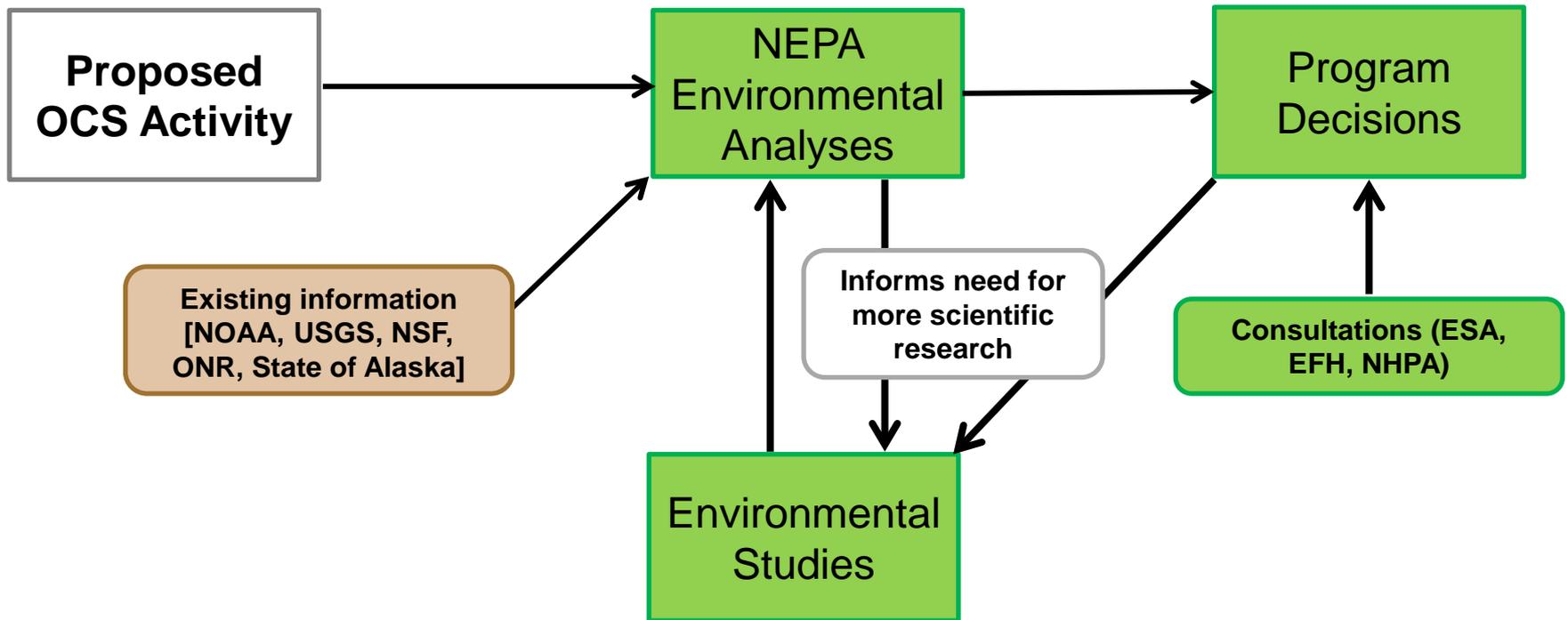
- Physical Oceanography
- Biological
- Endangered Species
- Ice

## Socioeconomic Studies

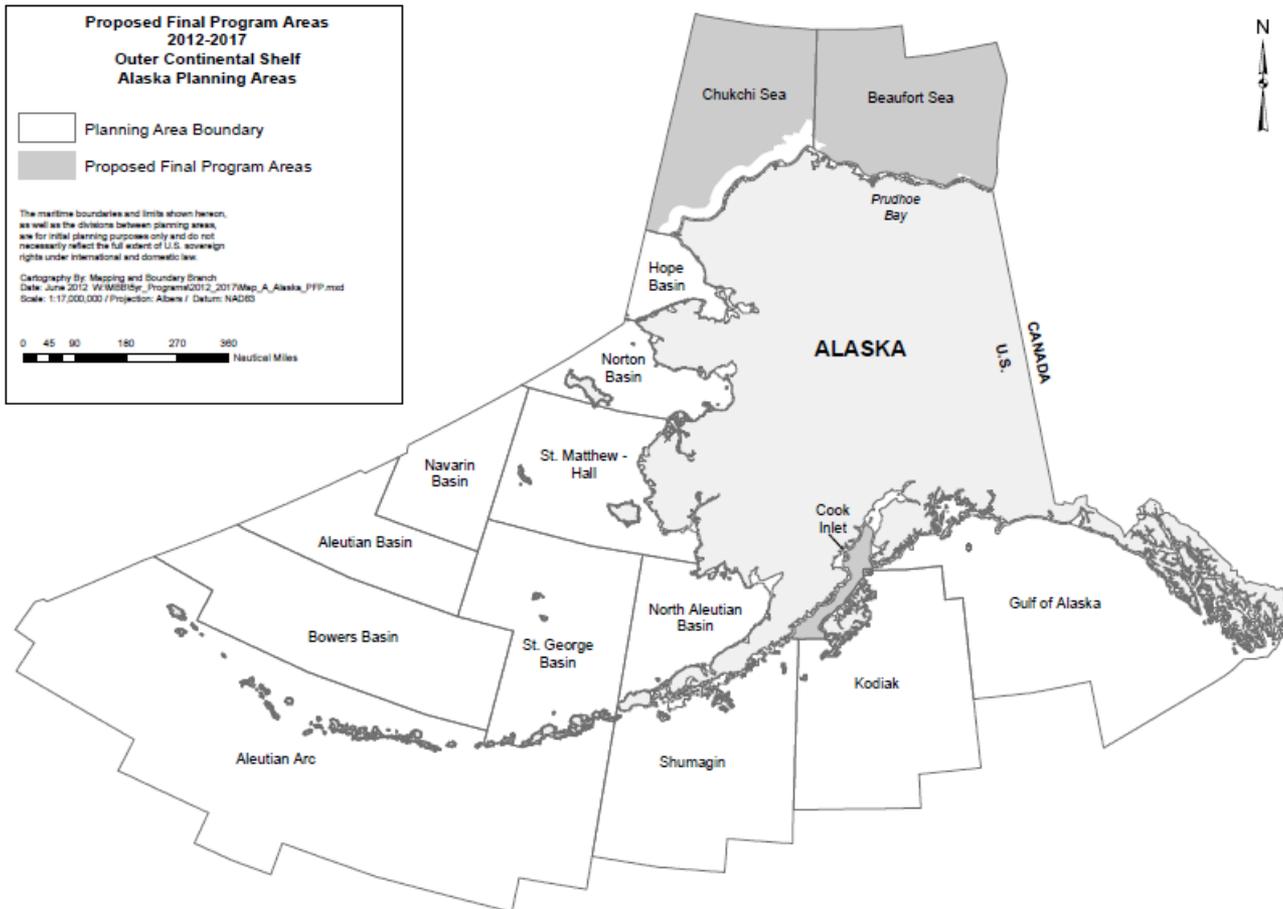
- Marine Subsistence Use
- Economic
- Cultural

## Traditional Knowledge and Community Input





The Alaska Region has 15 Planning Areas.

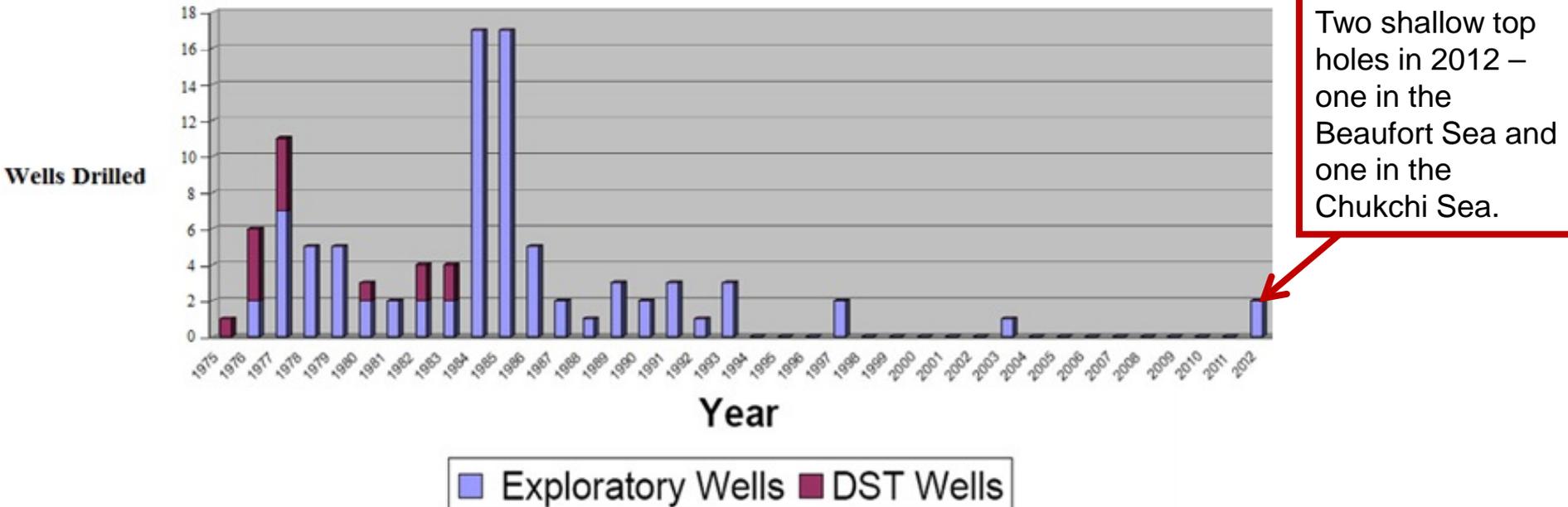


# Historic Exploration Drilling

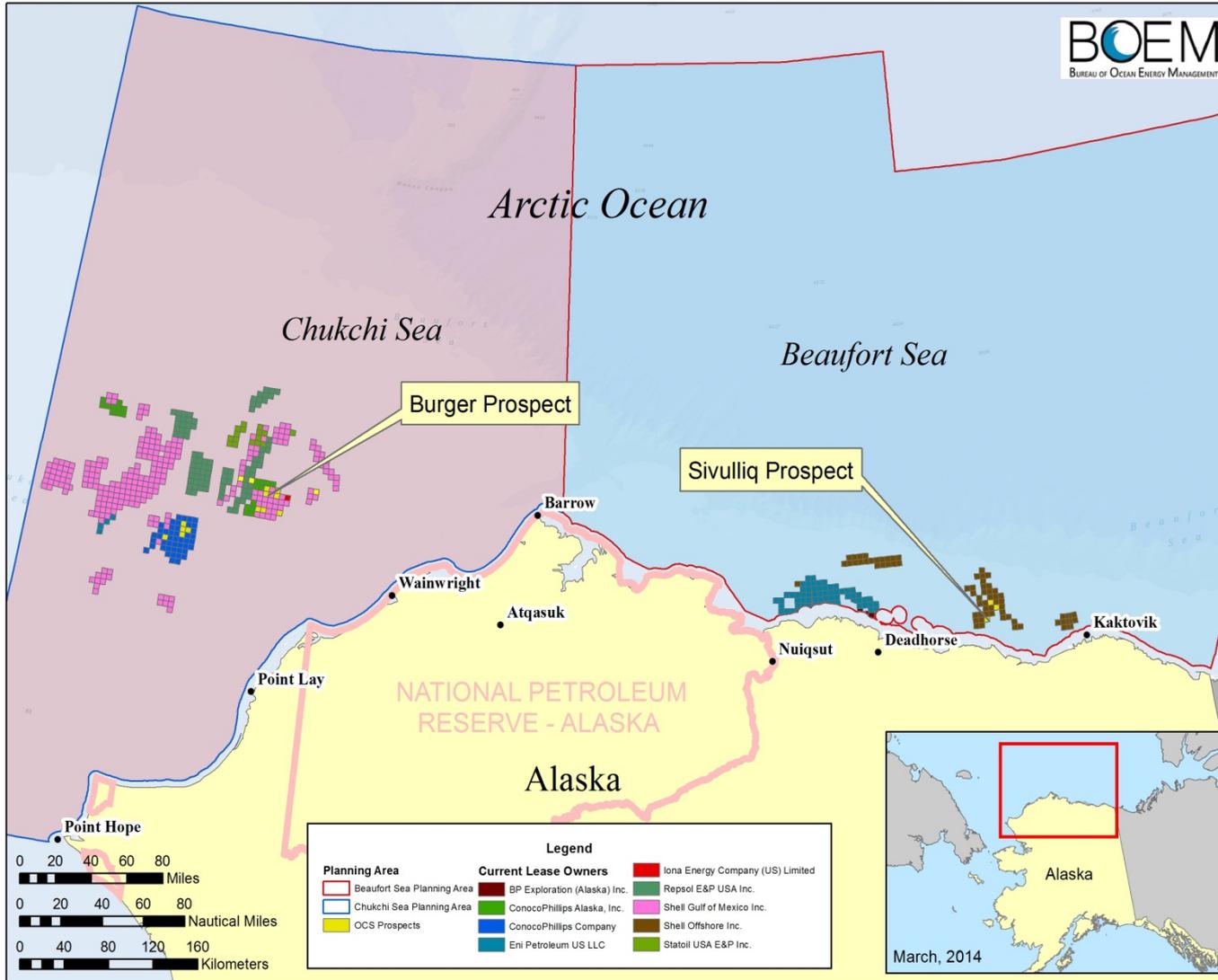
**86 Exploration Wells and 14 Deep Stratigraphic Test Wells have been drilled on the Alaska OCS**

|               |    |                  |    |
|---------------|----|------------------|----|
| Beaufort Sea  | 31 | St. George Basin | 10 |
| Chukchi Sea   | 6  | Cook Inlet       | 13 |
| Norton Sound  | 6  | Gulf of Alaska   | 12 |
| Navarin Basin | 8  |                  |    |

**Number of wells by year from 1975 through 2012.**



**Alaska OCS Exploration Wells 1975 -2012**



## Five-Year OCS Oil and Gas Leasing Program for 2012 to 2017

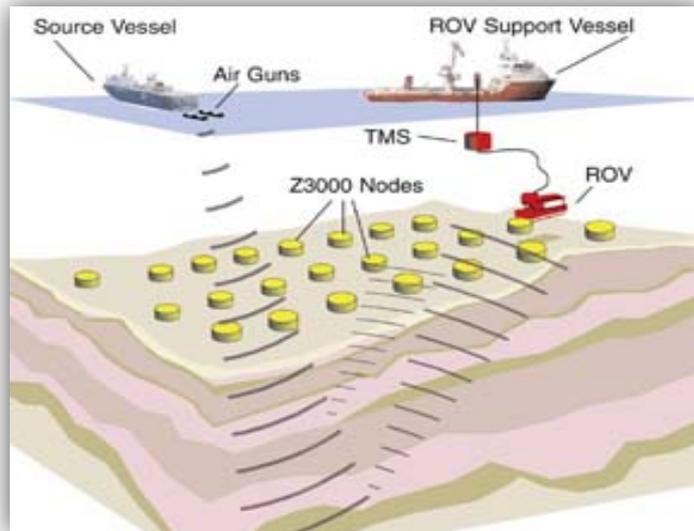
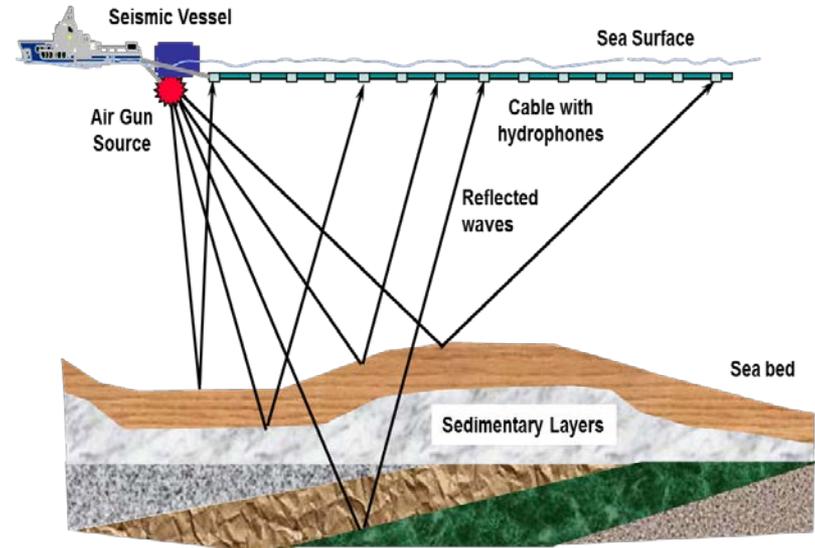
- Cook Inlet Lease Sale proposed 2016
- Chukchi Sea Lease Sale proposed 2016
- Beaufort Sea Lease Sale proposed 2017

## 2013: TGS, Chukchi Sea

- 2D open water marine seismic survey

## 2014: SAExploration, Inc., Beaufort Sea

- 3D on-ice seismic survey



## Proposed:

### 2014: SAExploration, Inc., Beaufort Sea

- 3D ocean-bottom-node seismic survey

### 2014: BP Exploration (Alaska), Inc., Beaufort Sea

- 3D ocean-bottom-node seismic survey

### 2014: SAExploration, Inc., Cook Inlet

- 3D ocean-bottom-node seismic survey

## 2013: BPXA, Beaufort Sea, Winter

- On-ice seabed investigations

## 2013: BPXA, Beaufort Sea, Summer

- 2 vessels for site and route geohazard investigation

## 2013: Shell, Chukchi Sea, Summer

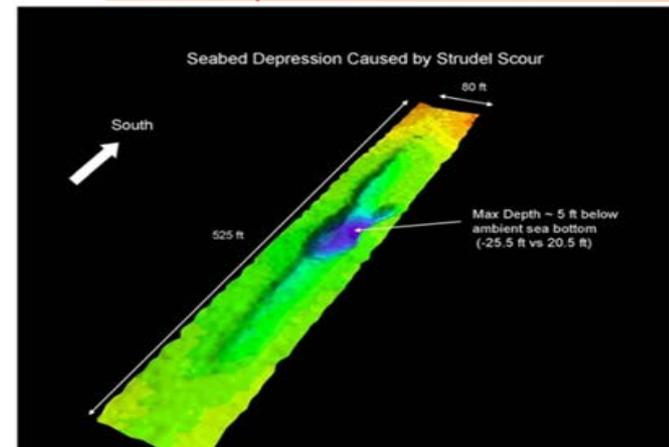
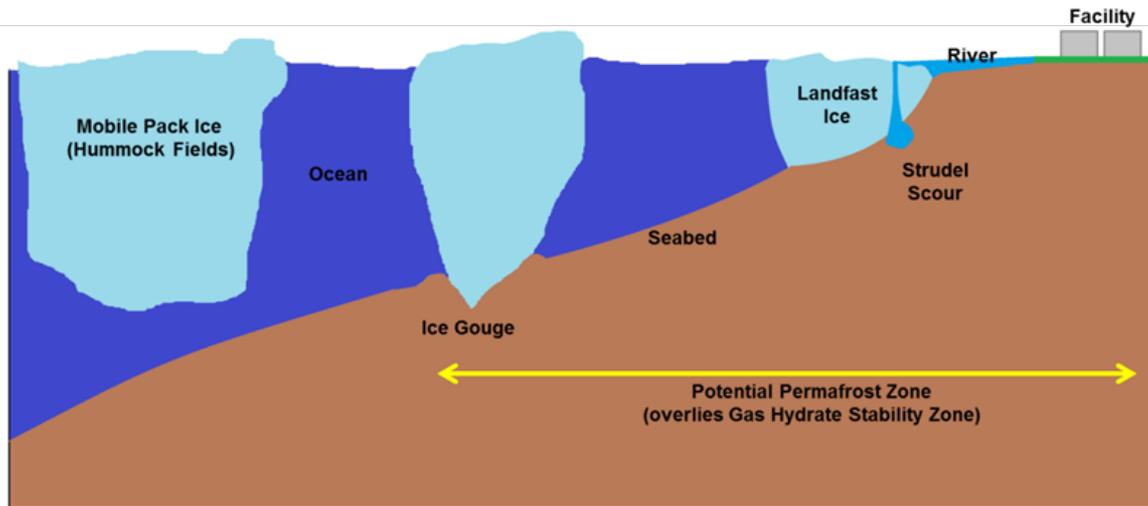
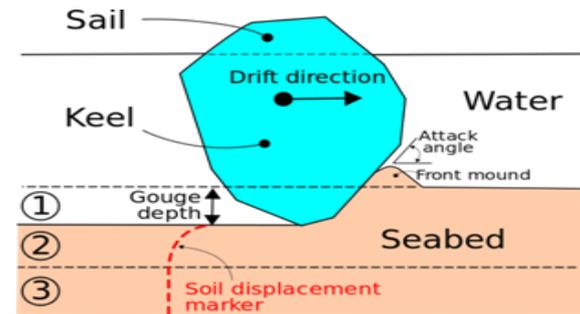
- 1 vessel, ice gouge and shallow hazard investigation

## 2014: BPXA, Beaufort Sea, Winter

- On-ice survey

## 2014: BPXA, Beaufort Sea, Summer (Proposed)

- 1 vessel



## Exploration Activities - Chukchi Sea

- Shell, ConocoPhillips, and Statoil - interest in ancillary and exploration activities
- Geological and Geophysical Activities

## Development / Production Activities

- If the exploration succeeds, development and production activities will be considered
- Vital to replenish oil in Trans-Alaska Pipeline System

## Cook Inlet Activities

- Geological and Geophysical Activities

## ESP Research Activities – ongoing studies

## OCS Proposed Oil and Gas Lease Sales

- Chukchi Sea – 2016
- Cook Inlet – 2016
- Beaufort Sea – 2017

## Exploration Activities - Beaufort Sea:

- Shell has interest in exploration activities
- Geological and Geophysical Activities
- Ancillary Activities

## Development / Production Activities

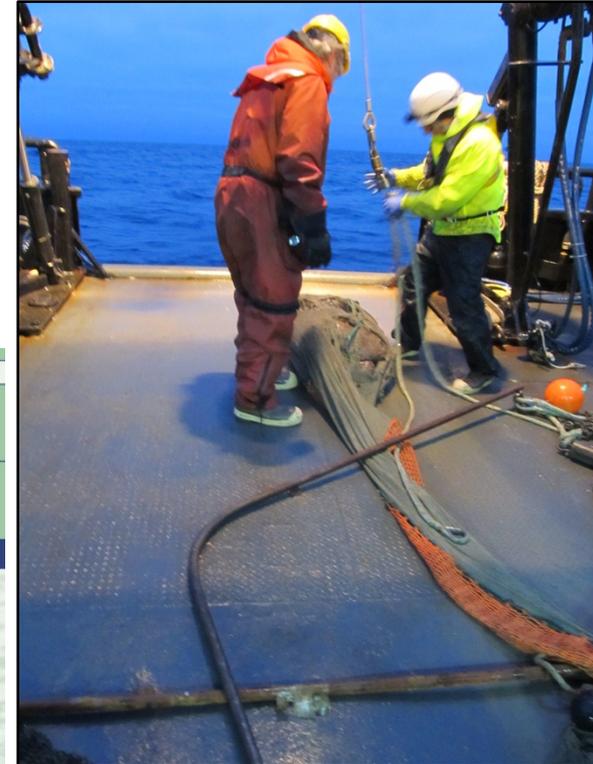
- Development – Liberty Project is being considered for production by 2020 - first production solely on Alaska OCS
- Production – Northstar is a Production Unit with BOEM and the State of Alaska; has been producing since 2001



View of Tow Viking II from the Discoverer 14  
Source: BSEE

**BOEM's Environmental Studies Program (ESP)** develops, conducts and oversees world-class scientific research specifically to inform decisions regarding development of Outer Continental Shelf energy and mineral resources.

**BOEM has invested about \$400 million** studying the OCS environment offshore Alaska, and developed more than 500 reports since 1973.



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**DEEP-SEA RESEARCH**  
**PART II**

Editor:  
**John D. Milliman**

Guest Editors  
**Kenneth H. Dunton  
Jacqueline M. Grebmeier  
John H. Trefry**

**The Northern Chukchi Sea Benthic Ecosystem:  
Characterization, Biogeochemistry, and  
Trophic Linkages**

**BOEM**  
BUREAU OF OCEAN ENERGY MANAGEMENT

[www.elsevier.com/locate/dsr2](http://www.elsevier.com/locate/dsr2)

The image shows the cover of the journal 'Deep-Sea Research Part II'. The cover features a collage of images related to deep-sea research, including a research vessel, marine life, and researchers. The BOEM logo is prominently displayed in the center.

## Research in Partnership (recent 5 years)

|                  |                           |                        |
|------------------|---------------------------|------------------------|
| NOAA             | 13                        | ~ \$ 28,000,000        |
| UAF / CMI / CESU | 15                        | ~ \$ 12,000,000        |
| ADFG             | 5                         | ~ \$ 9,000,000         |
| CANADA (DFO)     | 2                         | ~ \$ 6,300,000         |
| USGS             | 6                         | ~ \$ 2,700,000         |
| USFWS            | 1                         | ~ \$ 1,000,000         |
| NPRB**           | 2                         | ~ \$ 700,000           |
| <b>TOTAL</b>     | <b>44 (total studies)</b> | <b>~ \$ 60,000,000</b> |

**\*\*Expanded Partnership with North Pacific Research Board underway:  
Proposed for 2016  
Proposed for \$1M  
Proposed to enhance ecosystem process studies through IARPC**

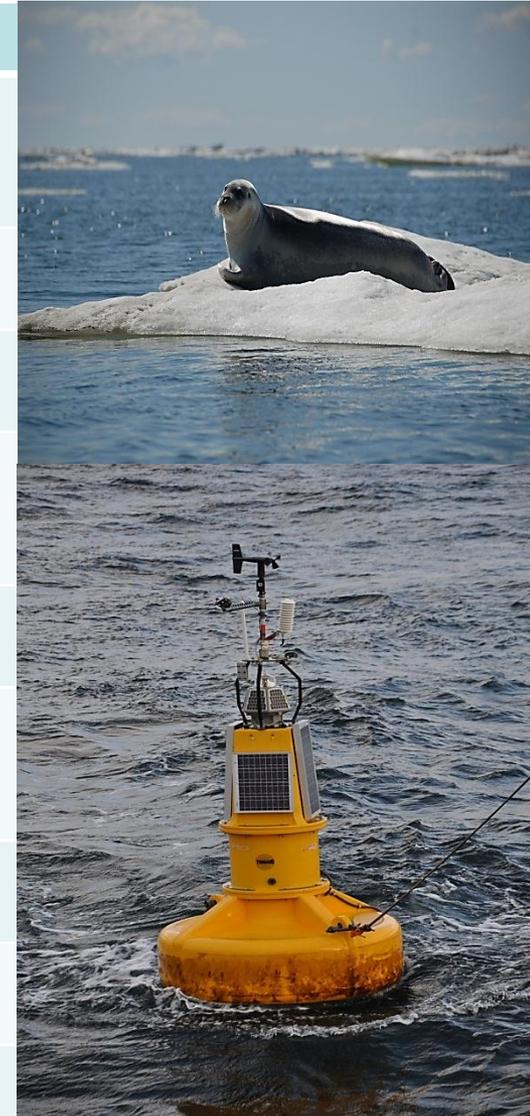


- **Alaska Marine Science Symposium**
  - ~1000 attended
  - 12 BOEM-funded project presentations
  - Staff attended 11 other science conferences/workshops
- **Participated in Fieldwork**
  - Hanna Shoal
  - Satellite Tagging of Bowhead Whales; Pacific Walrus
  - US/Canada Trans-boundary Fish Survey
- **11 New Completed Reports**
  - 4 Social Science; 4 Biology; 3 Physical Oceanography
  - Deep Sea Research Part II: Topical Studies in Oceanography, Volume 102, Pages 1-164 (April 2014)
- **18 FY14 New Studies; 12 Proposed in FY15**



## 2013 Completed Reports

| Report Number   | Study Title  |
|-----------------|--|
| BOEM 2013-0218  | Monitoring Cross Island Whaling Activities, Beaufort Sea, Alaska: 2008-2012 Final Report, Incorporating ANIMIDA and cANIMIDA (2001-2007)         |
| BOEM 2013-01110 | Satellite Tracking of Bowhead Whales: Movements and Analysis from 2006 to 2012   |
| BOEM 2013-205   | Oil Spill Occurrence Rates for Alaska North Slope Crude and Refined Oil Spills   |
| BOEM 2013-01150 | Pinniped Movements and Foraging: Seasonal Movements, Habitat Selection, Foraging and Haul-out Behavior of Adult Bearded Seals in the Chukchi Sea |
| BOEM 2013-00117 | Distribution and Relative Abundance of Marine Mammals in the Northeastern Chukchi and Western Beaufort Seas, 2012                                |
| BOEM 2013-0116  | Updates to Fault Tree for Oil Spill Occurrence Estimators Needed under the Forthcoming BOEM 2012-2017, 5-Year Program                            |
| BOEM 2013-0119  | Beaufort and Chukchi Seas Mesoscale Meteorology Modeling Study   |
| BOEM 2013-0114  | Bowhead Whale Feeding Ecology study (BOWFEST) in the Western Beaufort Sea  |
| BOEM 2013-0015  | Subsistence Use and Knowledge of Salmon in Barrow and Nuiqsut, Alaska  |



## 17 New Studies Since Last Meeting

| NSL         | Study Title  | Contract Type |
|-------------|--|---------------|
| AK-11-14a   | ANIMIDA III: Boulder Patch and Other Kelp Communities in the Development Area  | COMP          |
| AK-11-14b   | ANIMIDA III: Contaminants, source and Bioaccumulation  | COMP          |
| AK-12-03b   | Arctic Tracer Release Experiment (ARCTREX) Applications for Mapping Spilled Oil in the Arctic Waters   | COOP          |
| AK-13-02    | Chukchi Acoustic, Oceanography and Zooplankton Study: Hanna Shoal (Extension of CHAOZ)   | IA            |
| AK-13-04    | Enhanced Verification and Interpretation of Freeze-Up Conditions for the Alaska OCS Leases of the Northeast Chukchi Shelf (In procurement)                                 | COOP          |
| AK-13-x10   | Cook Inlet Circulation Model Calculations  | COOP          |
| AK-13-03-02 | Sensitivity to Hydrocarbons and Baselines of Exposure in Marine Birds on the Chukchi and Beaufort Seas   | COOP          |
| AK-13-03-03 | Development of an Accurate Model of the Beaufort and Chukchi Ice Drift and Dispersion for Forecasting Spill Trajectories and Providing Decision Support for Spill Response | COOP          |
| AK-13-03-04 | Distribution and Abundance of Select Trace Metals in Chukchi and Beaufort Sea Ice  | COOP          |
| AK-13-03-05 | Analysis of Benthic Communities on Weathervane Scallop Beds in Shelikof Strait   | COOP          |
| AK-13-03-06 | Crude Oil Infiltration and Movement in First year Sea Ice: Impacts on Ice-Associated Biota and Physical Constraints  | COOP          |
| AK-13-03-07 | Development and Testing of a Low-cost Satellite-tracked Ice Drifter for Arctic Alaska  | COOP          |
| AK-13-03-08 | Testing the Use of Unmanned Aircraft Systems for Intertidal Surveys – proof of concept   | COOP          |
| AK-13-03-09 | Sea Level Measurements along the Alaskan Chukchi and Beaufort Coasts   | COOP          |
| AK-13-03-10 | Biodegradation and Transport of Crude Oil in Sand and Gravel Beaches of Arctic Alaska  | COOP          |
| AK-14-03    | Genomics of Arctic Cod: A Sentinel Species in a Changing Environment   | IA            |
| AK-14-04a   | Management and Logistics of Oceanographic Equipment – Launch 1273  | COMP          |

| Page Number | Discipline | Ranking | Study Title  |
|-------------|------------|---------|--|
| 231         | PO         | 1       | Development of a Very High-resolution Regional Circulation Model of Beaufort Sea Nearshore Areas                                 |
| 233         | IM         | 2       | Coastal Habitat Maps: Closing Spatial Gaps in ShoreZone Imagery and Data for the Cook Inlet Area                                 |
| 235         | PO / SE    | 3       | Synthesis of Sub-Seabed Physical Environmental Data for the Beaufort and Chukchi Seas  |
| 237         | IM         | 4       | Support for the Canada-United States Northern Oil and Gas Research Forum, 2014   |
| 239         | SE         | 5       | Traditional Knowledge Implementation: Accessing Arctic Community Panels of Subject Matter Experts                                |
| 241         | HE         | 6       | Monitoring Fish in Chukchi and Beaufort Sea Lagoons and Nearshore Zones  |
| 243         | MM         | 7       | Estimation of Abundance and Demographic Rates of Pacific Walruses Using a Genetics-based Mark-Recapture Approach                 |
| 245         | MM         | 8       | Field Evaluation of an Unmanned Aircraft System (UAS) for Studying Cetacean Distribution, Density, and Habitat Use in the Arctic |
| 247         | HE         | 9       | Subtidal and Intertidal Habitats and Invertebrate Biota in Lower Cook Inlet, Alaska  |
| 249         | MM         | 10      | Cetacean Distribution, Abundance, and Ecology in Cook Inlet  |
| 253         | IM         | 11      | Alternative Energy Capacity Inventory in Coastal Alaska  |
| 255         | MM         | 12      | Habitat Use, Ecology, and Population Status of Polar Bears in the Chukchi Sea  |

**Discipline Codes**

AQ = Air Quality

IM = Information Management

PO = Physical Oceanography

FE = Fates & Effects

MM = Marine Mammals & Protected Species

SE = Social & Economic Sciences

HE = Habitat & Ecology





*Spectacled Eider*  
Source: Audubon Society Photo (2007)

# Arctic Challenges

***Climate Change***

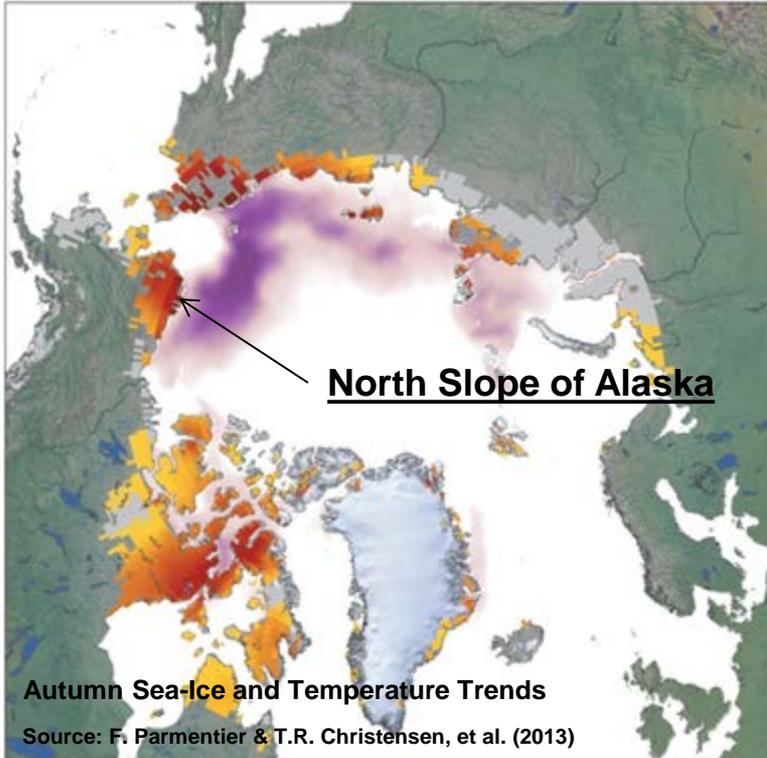
***Partnerships - Integrated Arctic Management***

***Traditional Knowledge***

***International/Arctic Council***



***BOEM considers climate change in our environmental analyses.***



Temperature change (°C per decade)



Change in sea-ice concentration (% per decade)



BOEM actively seeks **TK/TEK** to complement its use of Western science to make better decisions



*Photo by Emily Brown*



## BOEM OCEAN SCIENCE

THE SCIENCE & TECHNOLOGY JOURNAL OF THE BUREAU OF OCEAN ENERGY MANAGEMENT

VOLUME 9 ISSUE 2 • APRIL/MAY/JUNE 2012

### *Special Issue on* **Traditional Knowledge**

**Science in Transformation**

**Traditional Knowledge and Sociocultural Studies**

**Integrating Traditional Knowledge into Biological Resource Studies**

**Cultural Landscapes: Traditional Knowledge Across the Pacific Rim**

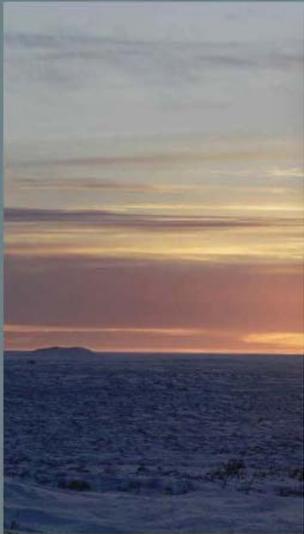
**Fenton Rexford (Interview), Tribal Administrator of the Native Village of Kaktovik**

**Where Do We Go From Here?**



OCS Study BOEM 2013-212

Aggregate Effects of Oil Industry Operations on Iñupiaq Subsistence Activities, Nuiqsut, Alaska: A History and Analysis of Mitigation and Monitoring



U.S. Department of the Interior  
Bureau of Ocean Energy Management  
Alaska Outer Continental Shelf Region  
www.boem.gov

## Subsistence and Impacts to Food Security

- 12 multi-year studies since 2000, ~\$5.5M funded by BOEM

### Subsistence harvesters:

- Depend on predictable migration cycles, wind, ice conditions, weather, and other environmental factors.
- Provide keen observations on climatic changes that affect the outcome of subsistence harvest.

OCS Study BOEM 2013-211

COMIDA: Impact Monitoring for Offshore Subsistence Hunting, Wainwright and Point Lay, Alaska



U.S. Department of the Interior  
Bureau of Ocean Energy Management  
Alaska Outer Continental Shelf Region  
www.boem.gov

# Reports on the U.S. Arctic



**Permanent Participants** have full consultation rights in connection with the Council's negotiations and decisions.

Arctic boundaries



- Arctic Athabaskan Council (AAC)
- Aleut International Association (AIA)
- Gwich'in Council International (GCI)
- Inuit Circumpolar Council (ICC)
- Russian Association of Indigenous Peoples of the North (RAIPON)
- Saami Council (SC)

Arctic boundaries



# Thank You!



And remember...there is no such thing as bad weather, just bad clothing!

