

**Walrus Seasonal Distribution and Habitat Use in
the Eastern Chukchi Sea**



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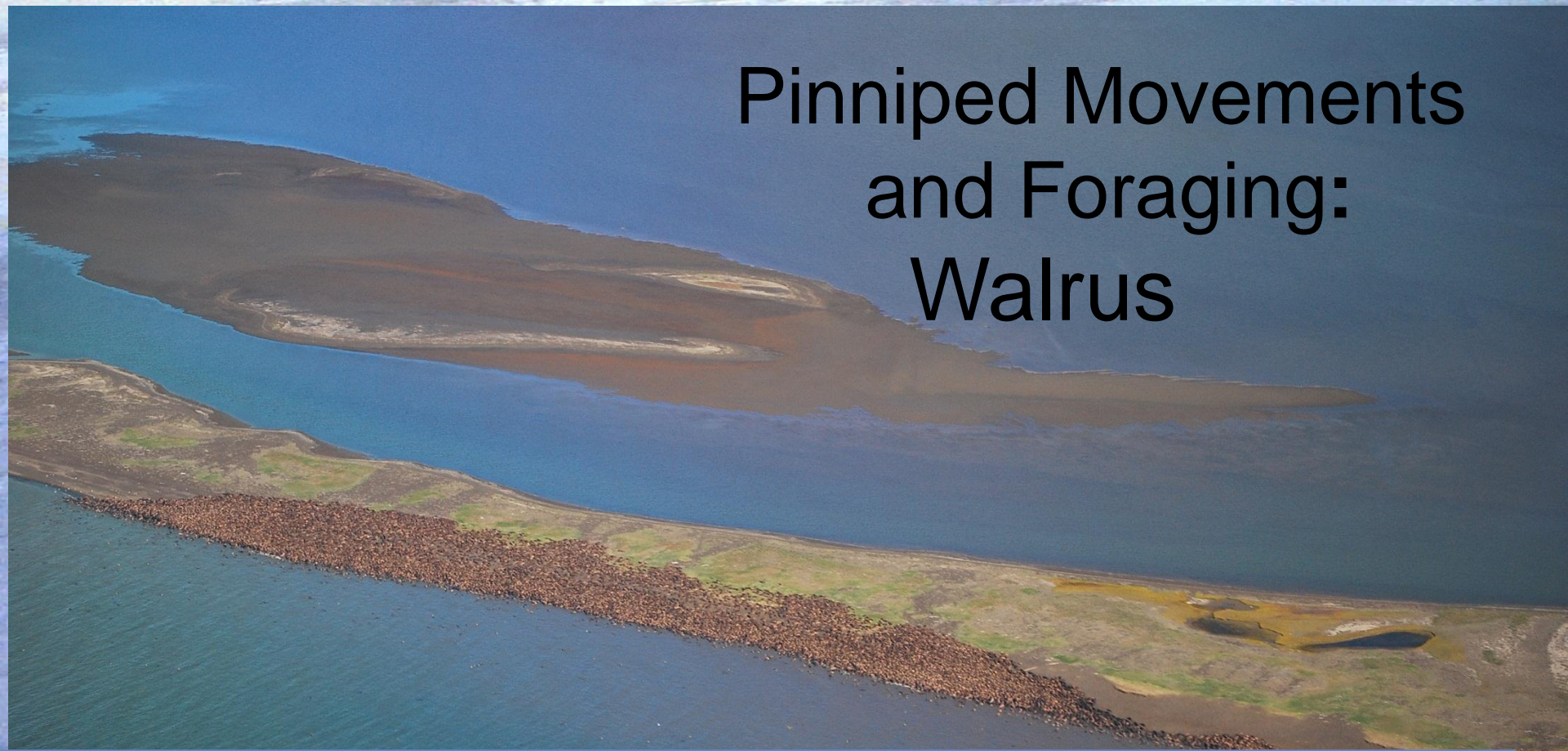


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AQ = Air Quality IM = Information Management PO = Physical Oceanography		FE = Fates & Effects SS = Social Systems HE = Habitat & Ecology	MM = Marine Mammals and Protected Species REN = Renewable Energy

* Denotes project that remains contingent on collaboration with external groups.



Pinniped Movements and Foraging: Walrus



Close up



BOEM Information Need:

- Data on the seasonal distribution, abundance, and habitat use of walrus (*Odobenus rosmarus*) are an integral part of assessing and managing anthropogenic risks and environmental effects of Chukchi OCS development on marine mammals.
- Timing is important- especially in light of the loss of sea ice habitat and ecological changes that have occurred in recent years.
- This study will provide information for NEPA analyses for proposed OCS oil and gas activities, MMPA authorizations, and ESA conferences.



Background:

A) Relationship with Previous Work/Efforts

- Pacific Walrus International Database (PWID)
- Walrus Siting's Cataloged on aerial surveys of Marine Mammals (ASSAM) The surveys in the northeastern Chukchi Sea have been conducted annually from 1982-1991 and 2008 to the present.
- 2008-2011- Walrus Distributional and Foraging Response to Changing Ice and Benthic Conditions in the Chukchi Sea (Jay, Grebmeier)
- North Pacific Research Board-
 - 2006, Role of Walrus in distribution of human trichinellosis disease among indigenous people in Chukchi Peninsula

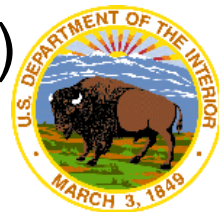




Background:

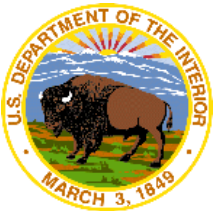
B) Relationship with Concurrent/Future Efforts

- USGS (2007-2011) Chukchi Satellite Tagging study- to provide tracking data intended to help describe foraging and movements.
- AK-09-01 Alaska Department of Fish & Game- current study with Lori Quakenbush to monitor land haulouts, associated mortalities & disease utilizing local residents & subsistence hunters.
- AK-11-05 Synthesis of aerial sightings, satellite telemetry, and acoustic datasets collected by multiple agencies on the Pacific walrus. Synthesis of Arctic Research (SOAR) Workshop Product.



Study's Objectives:

- Patterns of utilization are still being established by walrus in response to continued reductions in sea ice habitats
- Exploration activities in the Chukchi Sea may begin in 2012 and continue through at least 2014. Walrus monitoring needs to continue without interruption through at least the next five years to provide pre-development and development information and describe changes in walrus distribution and abundance associated with changing sea ice habitats.
- Obtain information on the seasonal abundance, distribution, and habitat use of walrus in the Chukchi Sea.



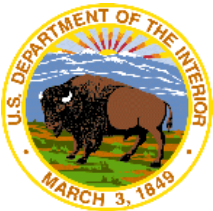
Study's Objectives:

- Estimate the abundance of walruses in the eastern Chukchi Sea in late summer/fall.
- Delineate the areas - most important to walruses during critical times of their annual life history
- Determine seasonal distribution and movements of walruses & habitats of importance -in the Chukchi Sea lease sale area.
- Determine whether prey selection and/or foraging areas are changing over time with increased use of nearshore habitats.



Methods:

- Conduct aerial surveys in late summer/ early fall to enumerate walrus at coastal haulouts in Alaska. Effort will focus on development of necessary correction factors.
- Deploy radio-tag instruments on a sufficient sample of walrus.
- Use GIS and spatial analysis methods to define important habitats, identify migration pathways, and to identify areas for potential deferral from future lease sales.



Methods:

- Collect appropriate walrus tissue, fecal and/or biopsy samples and perform molecular analysis to identify prey taxa and trends in dietary taxa composition over time.
- Utilize sound source information and satellite-tag data to track walrus location relative to industry activities.



USGS

Tentative Ranking: 7

