

MOVEMENTS AND HABITAT OF UGRUKS (BEARDED SEALS)



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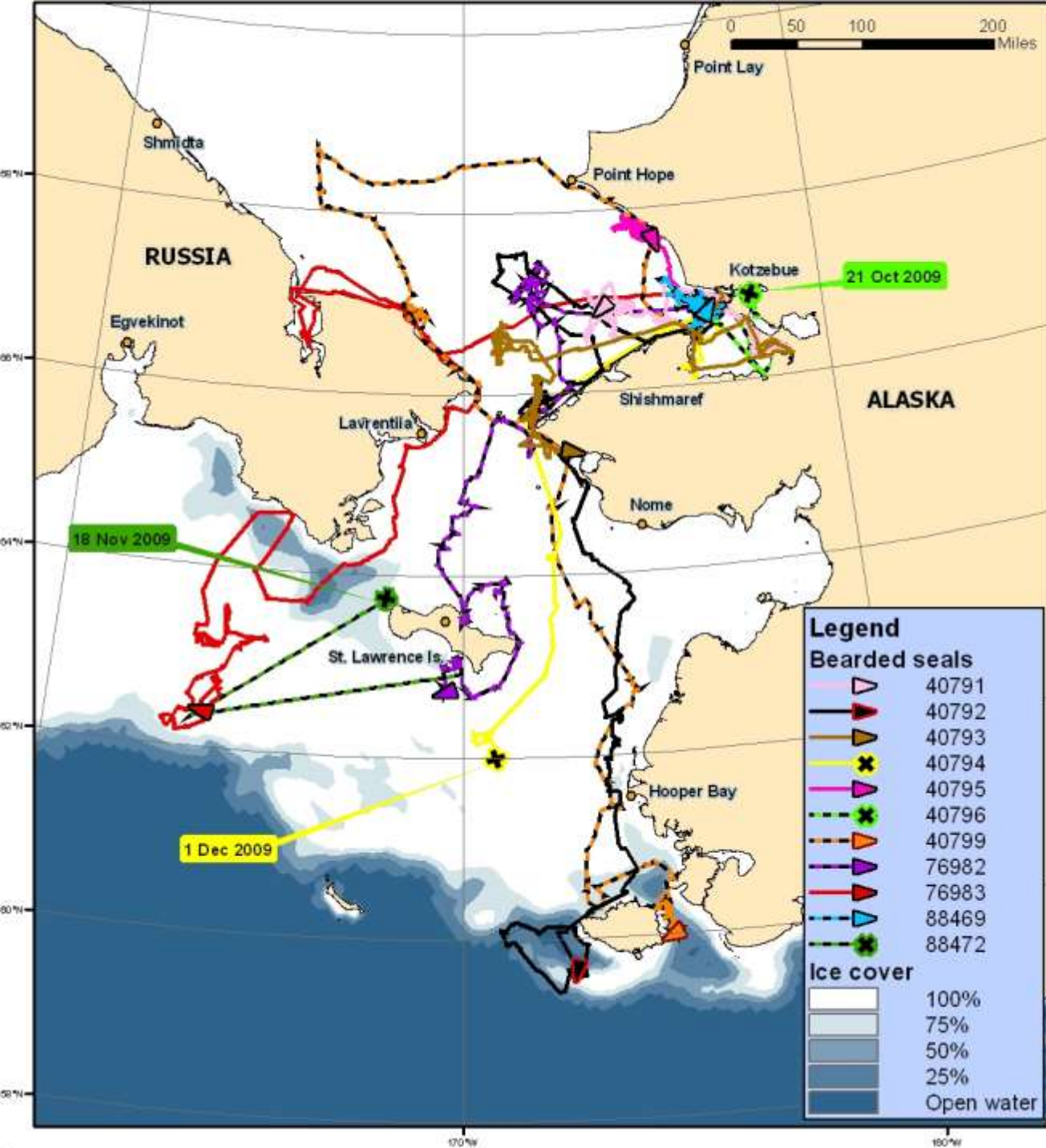


Why study bearded seals?

- Vitally important nutritional and cultural resource
- Key component of Arctic marine ecosystems
- Climate, sea ice, and ocean changes
- Increasing activities in the Arctic (oil & gas, shipping, tourism)
- Very little scientific information about bearded seals; need a “base line” for detecting change
- Opportunity for joining scientific ways with traditional ways of understanding nature
- **Use satellite tracking to extend the “map” of what is important for this subsistence species**

Habitat preferences and seasonal movements of young bearded seals





Young-of-the-year bearded seals have been tracked extensively from autumn to spring in the Chukchi and Bering Seas



What about older bearded seals? What about the summer period?

- Adults are the largest age group, and the breeders
- The summer period is critical for feeding; ice recedes to deep waters
- Need to build upon previous studies by developing the capability to track adult bearded seals
- Field projects in Kotzebue and Barrow to develop new methods for catching, handling and tracking larger bearded seals.

A collaboration of experienced hunters and researchers in a community-based project to document habitat requirements of a vital resource

Virgil John J Mike Henry Peter Shawn J
Noah John G Jeff



Not pictured: Pearl, Shawn D. and Dave



Gavin

Boyuk

Virgil Jr

Shawn

James

Pearl

John

Virgil

Peter

Allen

John













Results



- 1 adult and 2 sub-adult males, Kotzebue 2009
- 2 sub-adult females and 1 sub-adult male, Kotzebue 2011
- Weights ranged from 252 to 557 lbs

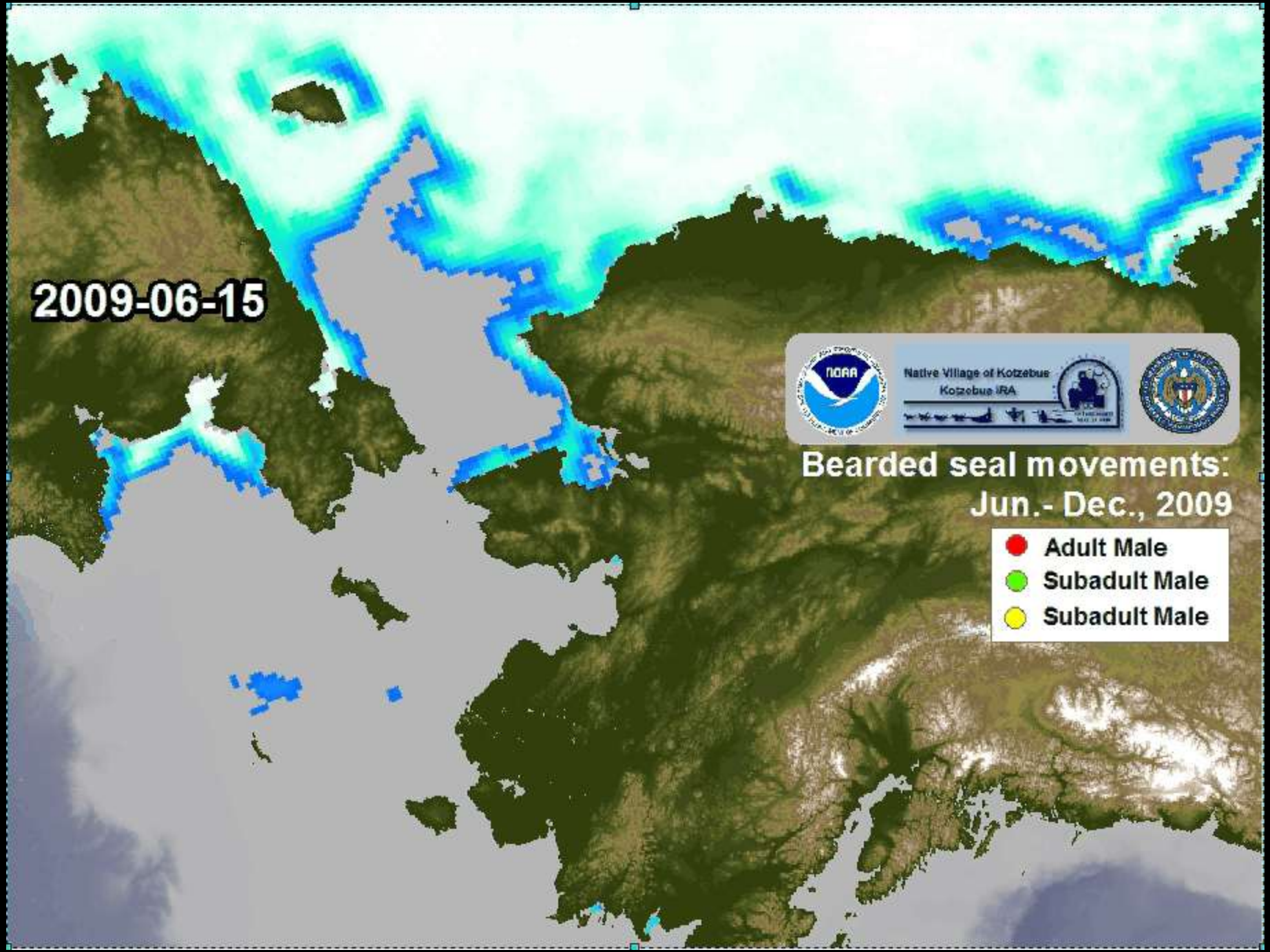
2009-06-15



NOAA
Native Village of Kotzebue
Kotzebue IRA

**Bearded seal movements:
Jun.- Dec., 2009**

- Adult Male
- Subadult Male
- Subadult Male

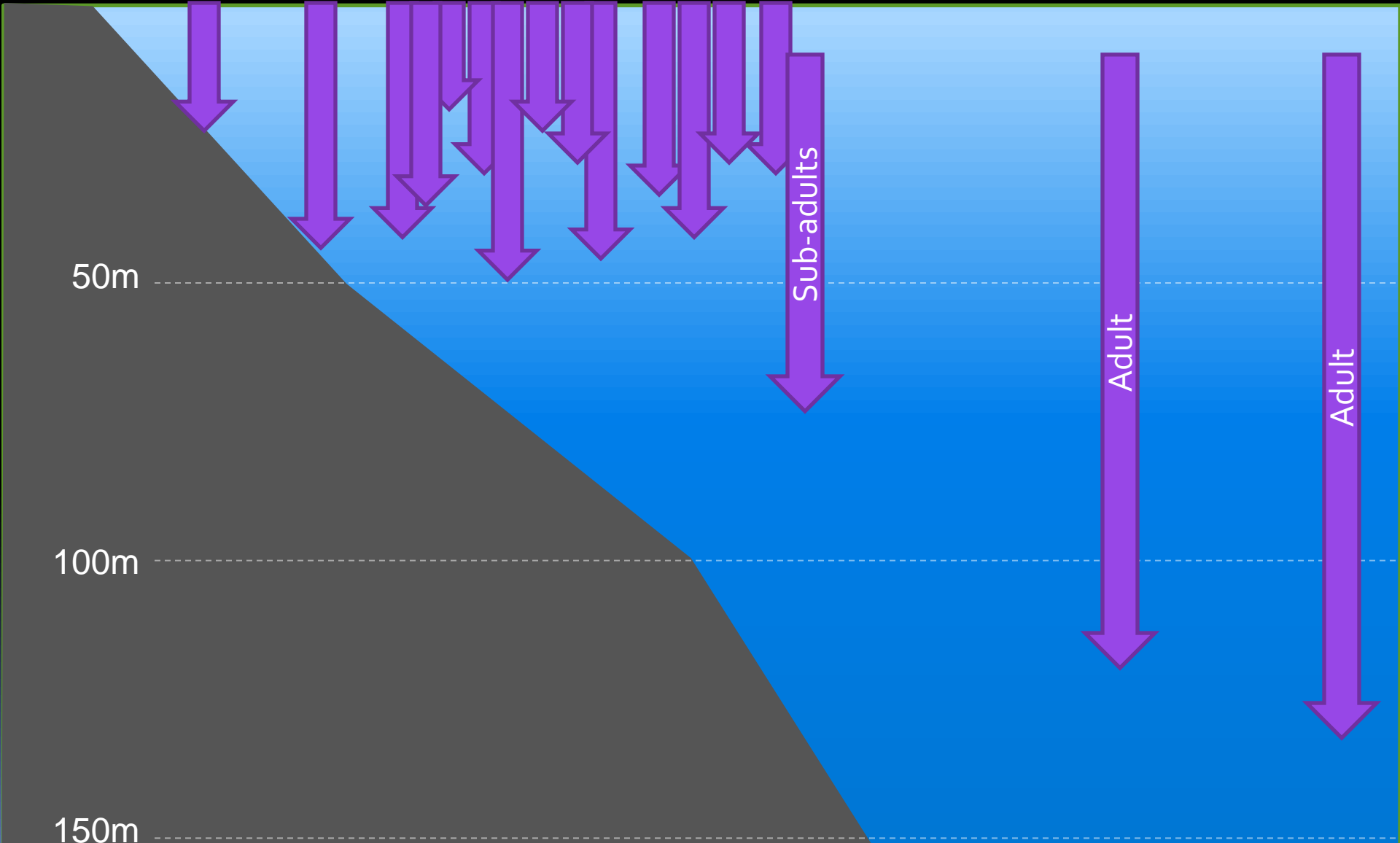


Dive Depth

Seals rarely go as deep as water temperature 100m deep water

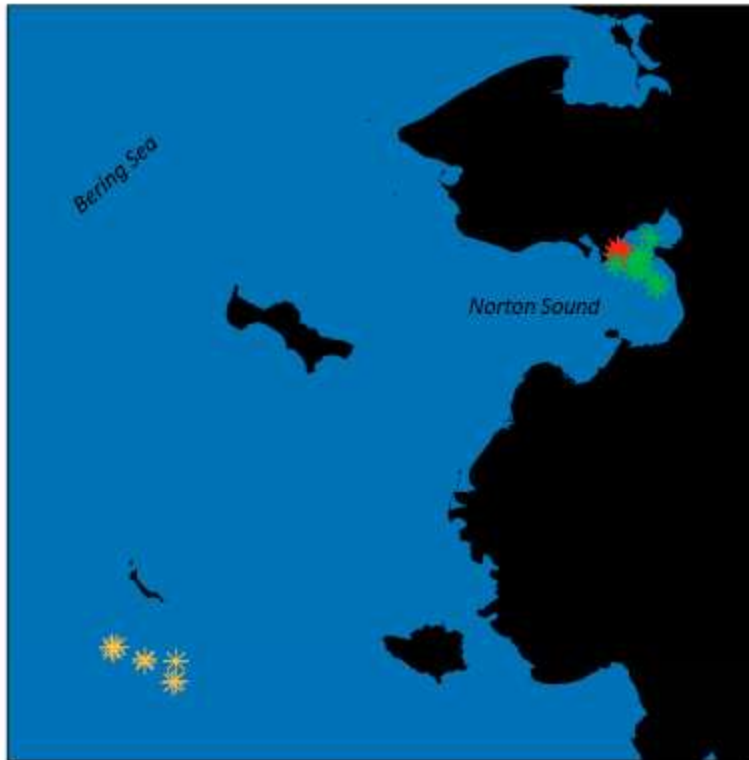
Sub-adults down to 125m, but Adults Maxly 225m and 25-45m.

When involved in deep water seals subside to 250m between 25-45m.



Site Fidelity of Adult Male Bearded Seals

Jan-April 2010

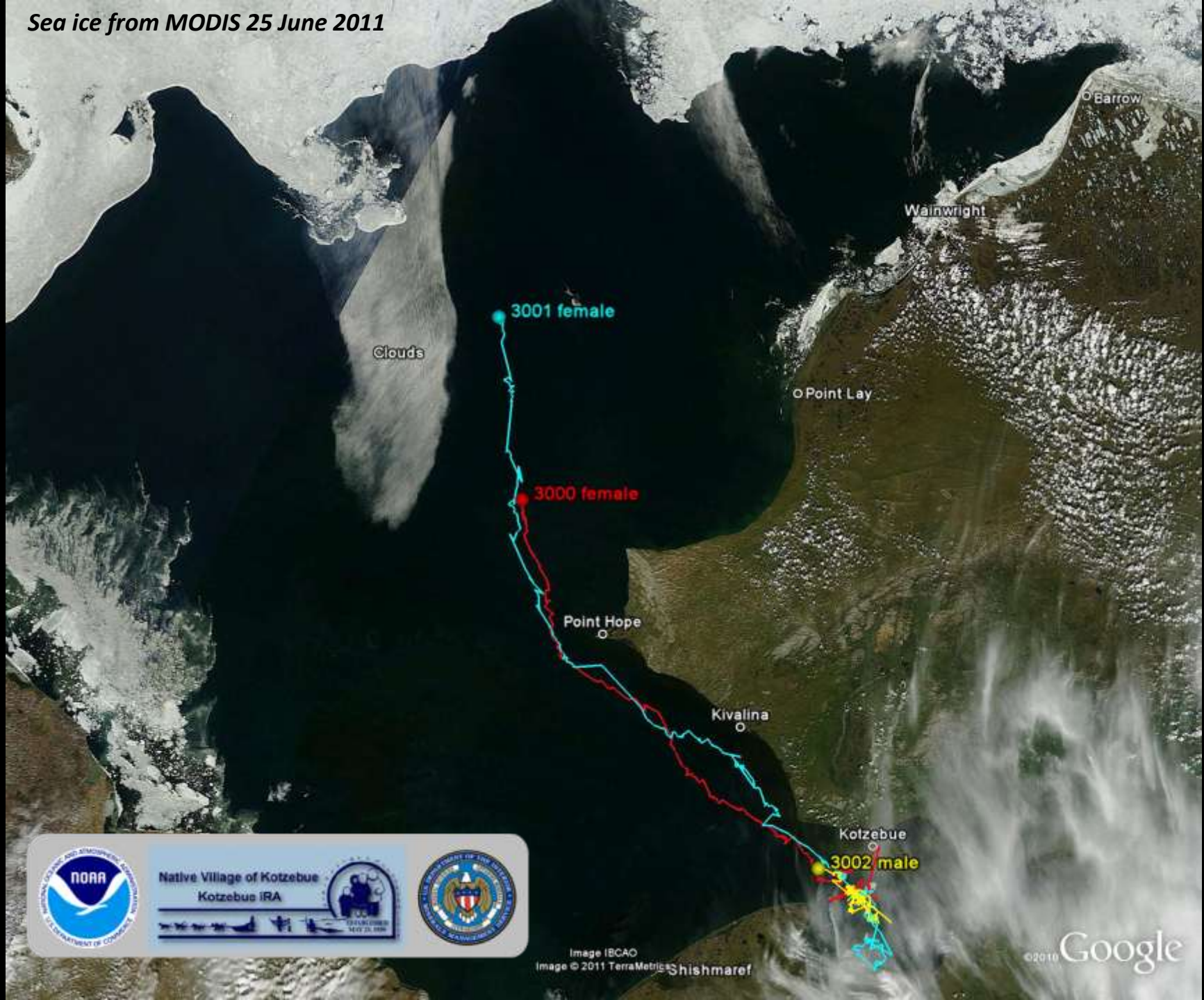


Jan-April 2011



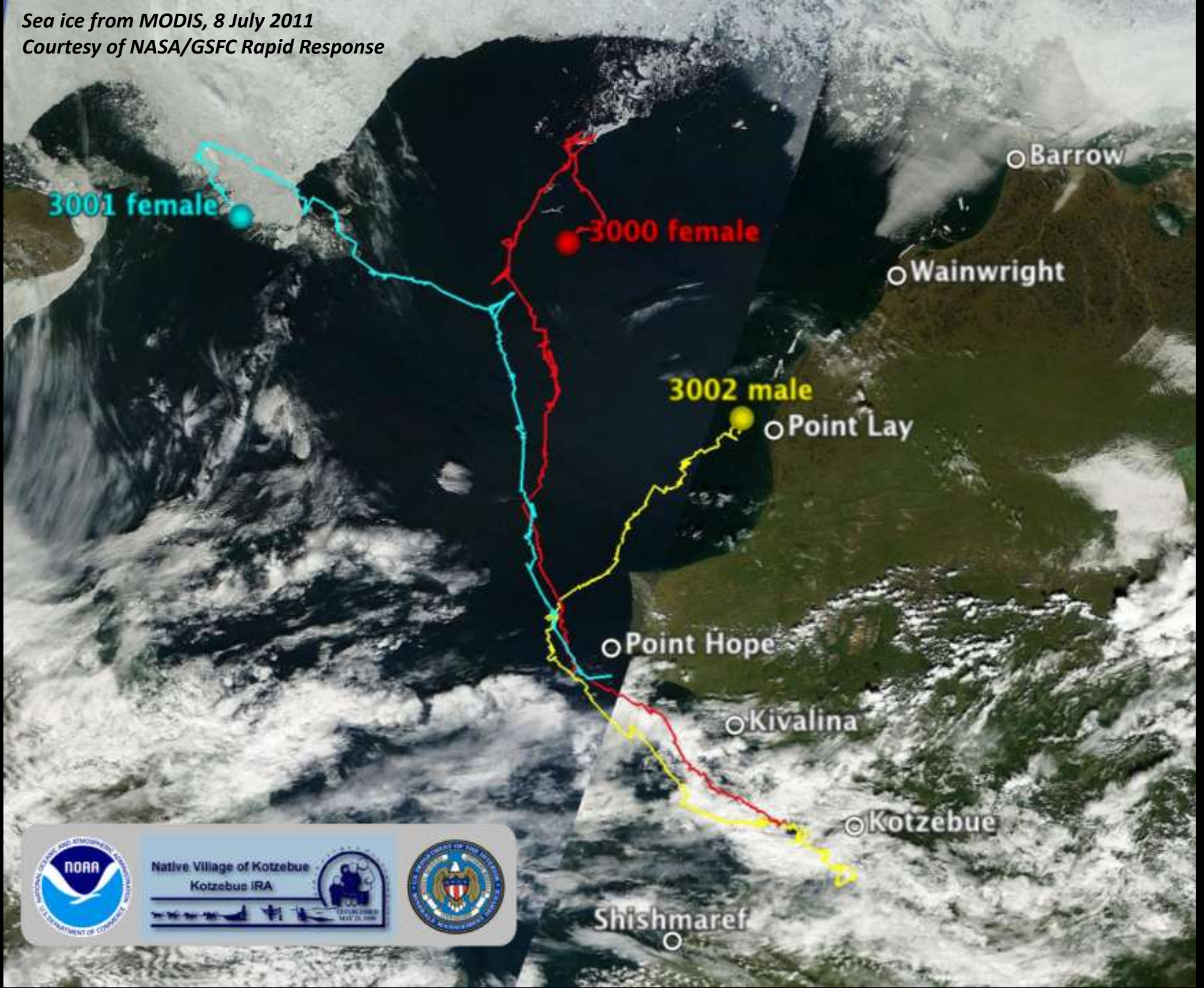
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Logos for NOAA, Native Village of Kotzebue, Kotzebue IRA, and the U.S. Department of the Interior.

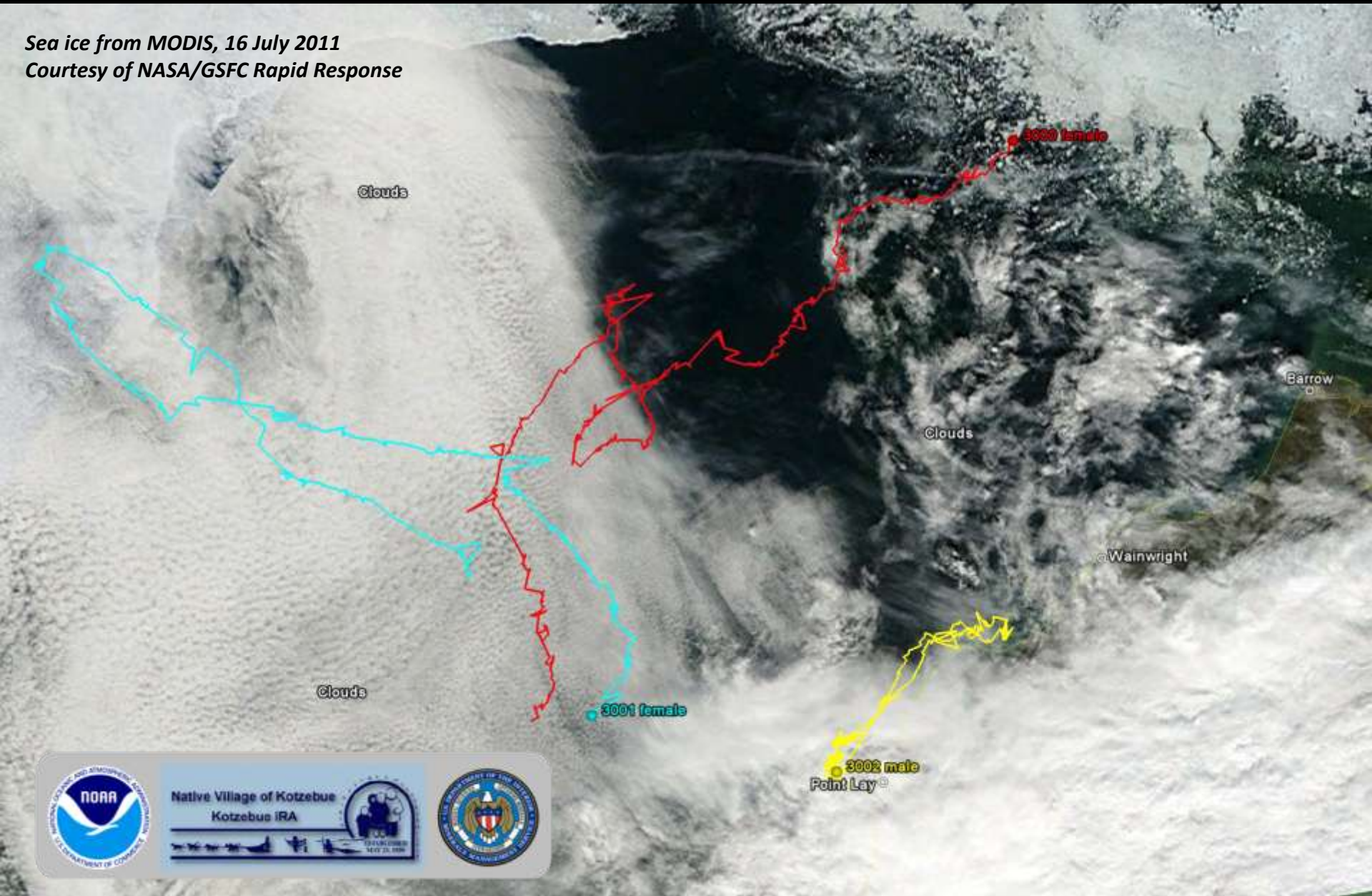
Sea ice from MODIS, 8 July 2011
Courtesy of NASA/GSFC Rapid Response



Logos and institutional affiliations:

- NORR (National Oceanic and Atmospheric Administration, Department of Commerce)
- Native Village of Kotzebue Kotzebue IRA
- Department of the Interior, Bureau of Land Management

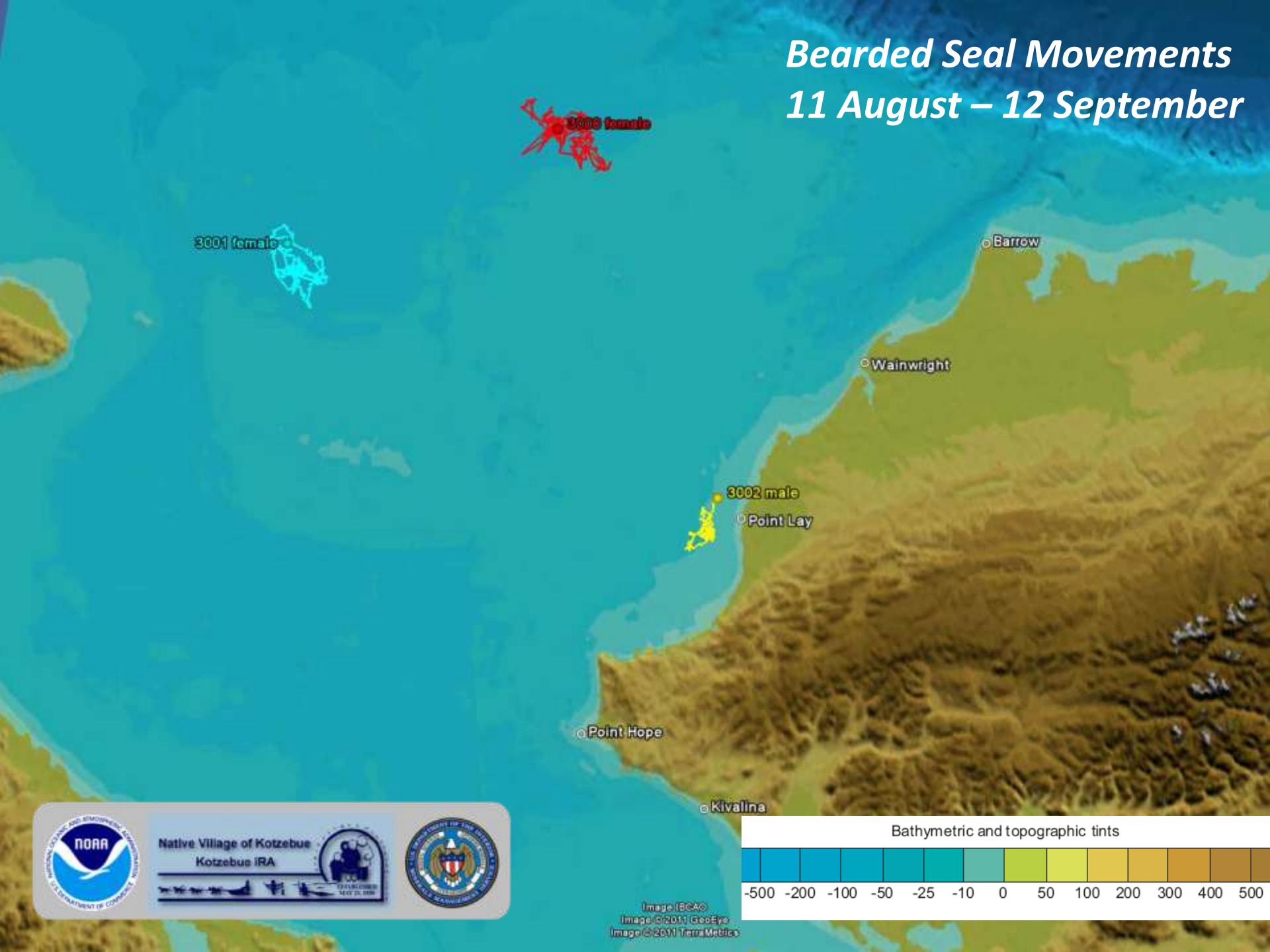
Sea ice from MODIS, 16 July 2011
Courtesy of NASA/GSFC Rapid Response



Native Village of Kotzebue
Kotzebue IRA



Bearded Seal Movements 11 August – 12 September



NOAA
NATIVE VILLAGE OF KOTZEBUE
KOTZEBUE IRA
U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

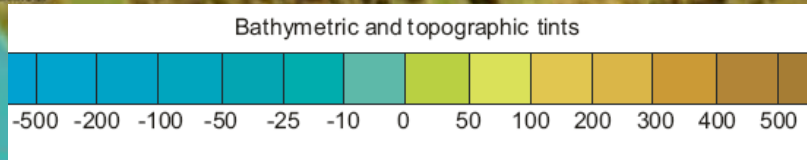
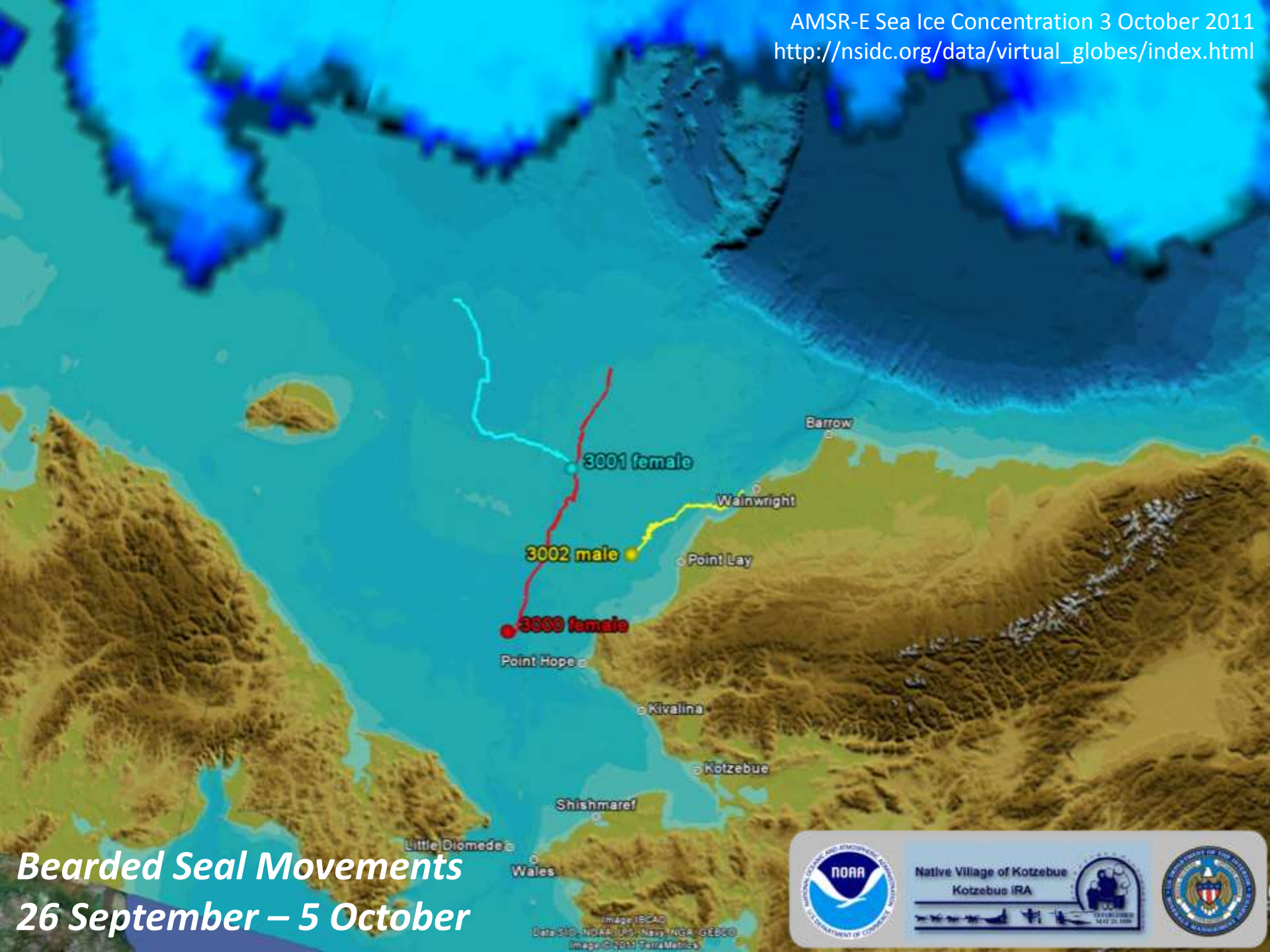


Image (BCAO)
Image © 2011 GeoEye
Image © 2011 TerraMetrics



***Bearded Seal Movements
26 September – 5 October***



Image: IBCAC
Data: SIO, NOAA, JPL, Navy, NGA, GEBCO
Image: © 2011 TerraMetrics

Analysis

- Movements, distribution, and feeding behavior
- **Identify habitats required for breeding, molting, feeding, and migration**
- Health status, disease screening, genetics
- Provide haul-out corrections for abundance surveys

What's next?

- One more tagging season with existing funding
- To extend the study or to expand to other communities, we need a larger sample (i.e., high success rate in final season)
- Thanks to community of Kotzebue for support of the project!