

# **King Eider winter movements in the Bering Sea tracked by satellite telemetry**

**Steffen Oppel**

Department of Biology and Wildlife, University of Alaska, Fairbanks, AK, USA

**Lynne Dickson**

Canadian Wildlife Service, Edmonton, Canada

**Abby Powell**

U.S. Geological Survey, Alaska Cooperative Fish and Wildlife Research Unit,  
Fairbanks, AK, USA



## Background

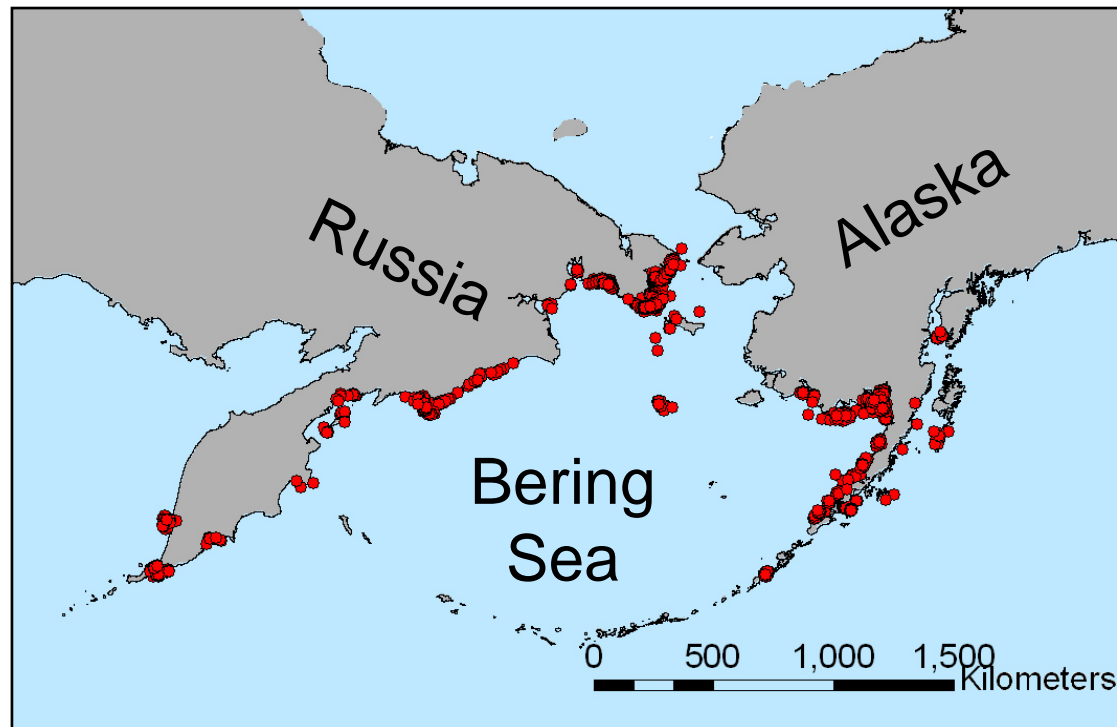
- King Eiders spend ca. 10 months per year at sea
- forage on benthic invertebrates by diving to sea floor





## Background

- birds from western North America winter in Bering Sea
- winter period from August through May





# Questions

- What movements occur during winter?
- Is sea ice correlated with winter movements?

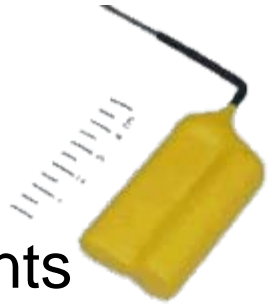




## Methods

- 94 birds fitted with satellite transmitter in June 2002-2005
- winter movement defined as  $>50$  km
- calculated sea ice concentration for all movements

<http://www.natice.noaa.gov/products/alaska/index.htm>







## Results: winter movements

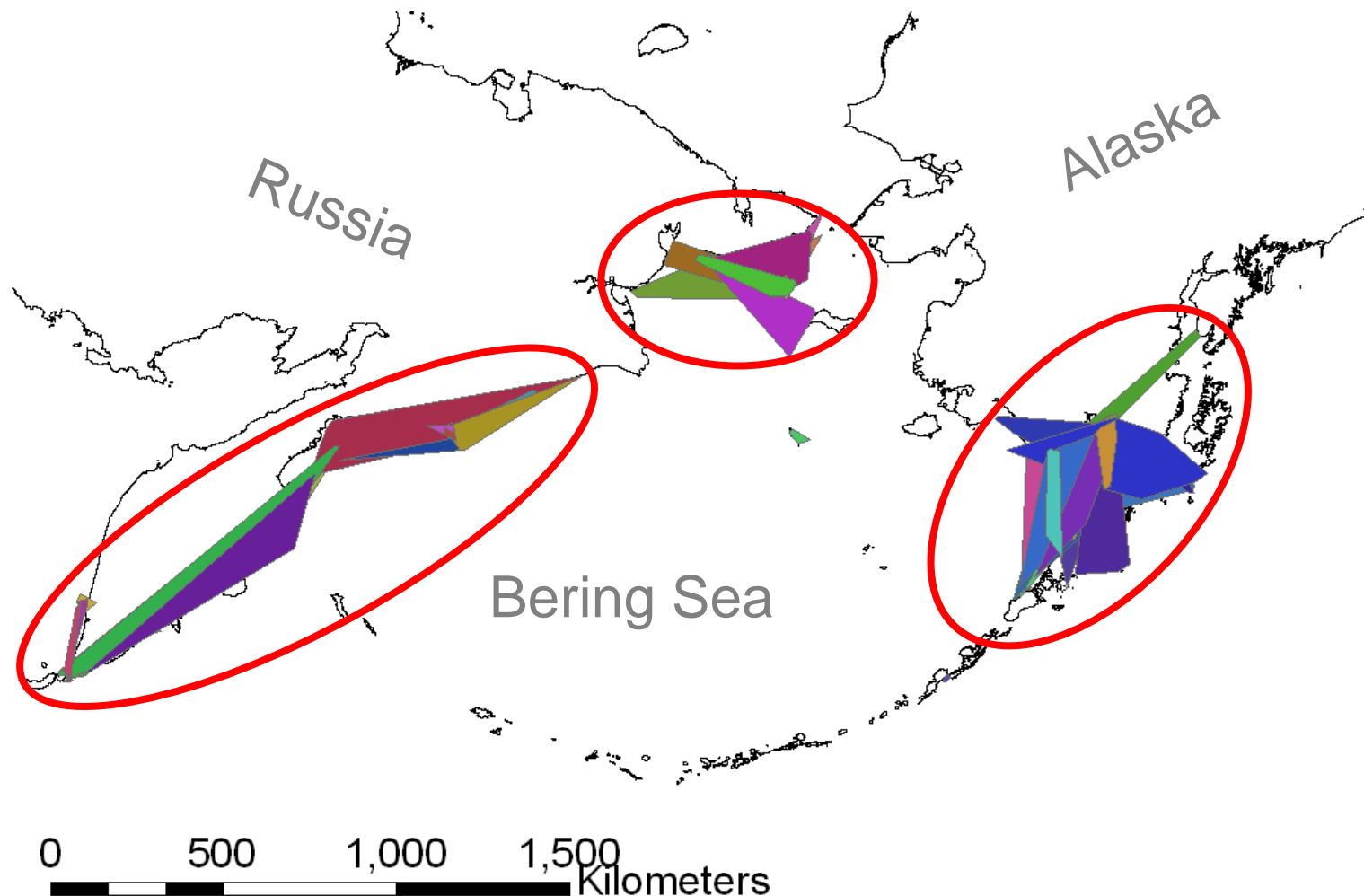
- 59.1% of tracked birds used  $>1$  wintering site
- some birds use up to 4 wintering sites





## Results: winter movements

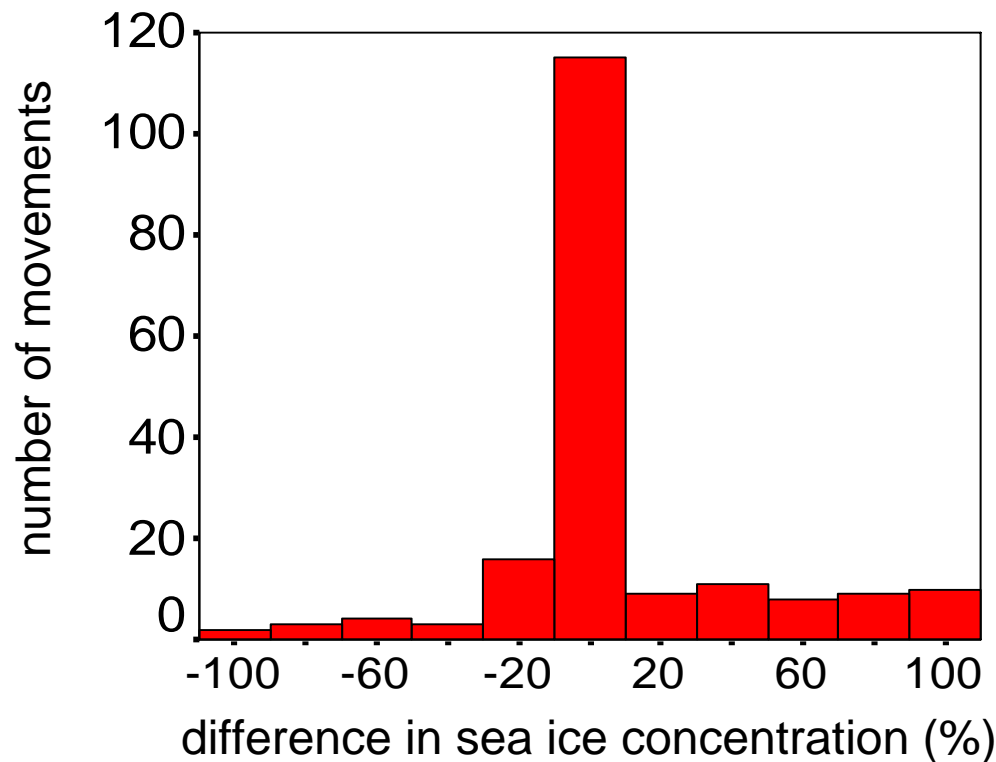
Mean winter movements for early (12,000 km<sup>2</sup>) and late (18,000 km<sup>2</sup>)





## Results: correlates of winter movements

- only 16 % of movements synchronized between individuals
- sea ice concentration constant for most movements







## Discussion

- wintering more dynamic than in other sea ducks

*(Petersen et al. 2002, Merkel and Mosbech 2007, Iverson and Esler 2006)*

- sea ice does not appear to cause movements
- movements may be exploratory



## Management implications

- potential to adapt to changing environment



- numbers using an area may be substantially higher than number counted at any given time



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...and a large number of  
field assistants...





Questions?

<http://mercury.bio.uaf.edu/kingeider>



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