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Modeling spatiotemporal abundance and movement dynamics using an integrated  
spatial capture-recapture movement model. *Ecology*.

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## Data S1

### **R scripts and shapefiles to simulate data and fit the integrated spatial capture-recapture (SCR) movement model.**

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#### **Author(s)**

Nathan J. Hostetter

Washington Cooperative Fish and Wildlife Research Unit, School of Aquatic and Fishery  
Sciences, University of Washington, Seattle, WA, USA. *Current address*: U.S. Geological  
Survey, North Carolina Cooperative Fish and Wildlife Research Unit, Department of Applied  
Ecology, North Carolina State University, Raleigh, NC, USA  
njhostet@ncsu.edu

Eric V. Regehr

Applied Physics Laboratory, Polar Science Center, University of Washington, Seattle, WA, USA

Ryan R. Wilson

Marine Mammals Management, United States Fish and Wildlife Service, Anchorage, AK, USA

J. Andrew Royle

U.S. Geological Survey, Eastern Ecological Science Center, Laurel, MD, USA

Sarah J. Converse

U.S. Geological Survey, Washington Cooperative Fish and Wildlife Research Unit, School of  
Environmental and Forest Sciences & School of Aquatic and Fishery Sciences, University of  
Washington, Seattle, WA, USA

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#### **File list (files found within DataS1.zip)**

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sim_SCR_mvmt.R  
sim_SCR_mvmt_SamplersAndFunctions.R  
effortLines_raw_final_06july16.shp
```

gridCells\_final\_06july16.shp

## **Description**

sim\_SCR\_mvmt.R - This R script simulates SCR-movement data described in the manuscript, including initial abundance, initial distribution, random walk movement processes, telemetry, and SCR detection processes.

sim\_SCR\_mvmt\_SamplersAndFunctions.R - This R script provides the MCMC functions for the SCR-movement model described in sim\_SCR\_mvmt.R. While nearly all aspects can be expressed in common BUGS language, these functions greatly improve MCMC efficiency.

effortLines\_raw\_final\_06july16.shp - Helicopter track files used to quantify search effort.

gridCells\_final\_06july16.shp - Grid cells used to discretize the state-space