

# Genetic studies of Steller's sea lions.

*John Bickham, PI*

**CoPIs and Collaborators**

Dr. John C. Patton

**Graduate Students:**

Caleb Phillips, FNR, Ph.D.

**Goals:**

To better understand the genetic effects of population decline in a marine mammal.

**Recent Publications:**

Baker, Alyson R., Thomas R. Loughlin, Vladimir Burkanov, Cole W. Matson, Robert G. Trujillo, Donald G. Calkins, Jeffrey K. Wickliffe, and John W. Bickham. 2005. Variation Of Mitochondrial Control Region Sequences Of Steller Sea Lions, *Eumatopias jubatus*: The Three-Stock Hypothesis. Journal of Mammalogy 86:1075-1084.

Harlin-Cognato, A., J. W. Bickham, T. R. Loughlin, and R. L. Honeycutt. 2005. Glacial refugia and the phylogeography of Steller's sea lion (*Eumatopias jubatus*) in the North Pacific. Journal of Evolutionary Biology doi:10.1111/j.1420-9102.2005.01052.x.

Hoffman, J. I., C. W. Matson, W. Amos, T. R. Loughlin, and J. W. Bickham. 2006. Deep genetic subdivision within a continuously

**Statement of Problem:**

This study was begun in 1992 and now represents one of the most complete population genetics analysis of any wildlife species, including sampling nearly every rookery of significant size across a vast geographic range (central California to the Sea of Okhotsk). The purpose is to understand the genetic effects of the massive decline of Steller sea lions as well as patterns of subdivision and evolution of this important marine mammal.

**Current Activities:**

We are presently conducting morphometric analyses to determine if multiple subspecies exist within Steller sea lions, and nuclear gene and mtDNA analyses to detect the effects of past glacial cycles on the genetics of the three currently recognized stocks.

<p>distributed and highly vagile marine mammal, the Steller's sea lions <i>Eumetopias jubatus</i>. Molecular Ecology 15:2821-2832.</p> <p>D'Corry-Crowe G., B. L. Taylor, T. Gelatt, T. R. Loughlin, J. Bickham, M. Basterretche, K. W. Pitcher, and D. P. DeMaster. 2006. Demographic independence along ecosystem boundaries in Steller sea lions revealed by mtDNA analysis: implications for management of an endangered species. Canadian Journal of Zoology, 84: 1796-1809.</p>	
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