

*Gulf of Alaska – Marine Mammals*

**Health Assessment of Steller Sea Lions**

**Camilla Lieske**, Alaska Department of Fish and Game, [camilla.lieske@alaska.gov](mailto:camilla.lieske@alaska.gov)  
**Kimberlee Beckmen**, Alaska Department of Fish and Game, [kimberlee.beckmen@alaska.gov](mailto:kimberlee.beckmen@alaska.gov)  
**Kathy Burek**, Alaska Veterinary Pathology Services, [fnkab1@uaf.edu](mailto:fnkab1@uaf.edu)  
**Lorrie Rea**, Alaska Department of Fish and Game, [lorrie.rea@alaska.gov](mailto:lorrie.rea@alaska.gov)

One hypothesis for the decline in the endangered western stock of Steller sea lions (*Eumetopias jubatus*) as compared to the threatened eastern stock is decreased pup survival rate. In conjunction with surveys for population dynamics, infectious disease prevalence and toxicologic exposure, methods for evaluating individual and population health are important evaluation tools. An objective, quantitative method of comparing individual and population health was developed as part of an epidemiological assessment of Steller sea lion health in Alaska, USA. Utilizing samples collected between 1998 and 2005, from sea lions aged one to 30 months, “normal” ranges for hematology and blood chemistry parameters (hematocrit, white blood cell counts, total protein, albumin/globulin ratio, total bilirubin, BUN, creatinine, liver enzymes (ALT, AST, GGT), alkaline phosphatase, calcium, chloride, sodium, potassium, phosphorus, CO<sub>2</sub> and glucose) were determined. These ranges were used to score different parameters, incorporating expected age differences and physiological associations (e.g. renal function score based on both BUN and creatinine). A total health score was calculated combining the blood parameters with physical examination findings. Overall, scores did not vary significantly ( $p>0.05$ ) with age and sex, but scores did vary significantly by rookery, with a significant collection year/rookery interaction. No significant difference in pup and juvenile health was noted between the western and eastern stock. In addition to the development of method to evaluate health, results derived from this project will be used to identify parameters most important for future monitoring of the Steller sea lion populations.



# Alaska Marine Science SYMPOSIUM 2008

## **Book of Abstracts for Oral Presentations and Posters**

**January 20-23, 2008**

**Hotel Captain Cook, Anchorage, Alaska**

### **Sponsoring Organizations**

Alaska Department of Fish and Game

Alaska Fisheries Science Center

Alaska Ocean Observing System

Alaska Pacific University

Alaska Sea Grant

Alaska SeaLife Center

Alliance for Coastal Technologies

Exxon Valdez Oil Spill Trustee Council

Kachemak Bay Research Reserve

Minerals Management Service

National Ocean Service

National Park Service

North Pacific Fishery Management Council

North Pacific Research Board

North Slope Science Initiative

Oceans Alaska Science and Learning Center

Oil Spill Recovery Institute

Pollock Conservation Cooperative Research Center

Prince William Sound Science Center

University of Alaska Fairbanks

US Arctic Research Commission

USGS Alaska Science Center

[www.alaskamarinescience.org](http://www.alaskamarinescience.org)