

Endocrine profiles of pregnant and non-pregnant harbor seals from Tracy Arm and Glacier Bay Alaska.

Mashburn, Kendall L.¹; Atkinson, Shannon¹; Blundell, Gail²; Hoover-Miller, Anne³

(1) University of Alaska Fairbanks, 17101 Pt Lena Loop Rd, Juneau, Alaska, 99801, USA

(2) Alaska Department of Fish and Game, P.O. Box 110024, Juneau, Alaska, 99811, USA

(3) Alaska SeaLife Center, 301 Railway Avenue; P.O. Box 1329, Seward, Alaska, 99664, USA

Corresponding author: klmashburn@alaska.edu

Blood samples (n=59) were collected from free-ranging harbor seals over the years 2003-2010 from Prince William Sound, Endicott Arm, and Glacier Bay, Alaska. Collection occurred in spring (February to early May) just prior to the pupping season (mid-May through early July). Sampled animals were manually palpated to determine reproductive status. Follow-up resights of animals confirmed presence of a pup for seals in Glacier Bay. Radioimmunoassay (RIA) for progesterone concentrations were initially run “blind” and reproductive status was determined based on resultant concentrations. Those animals classed as non-pregnant exhibited a progesterone concentration range of 0.52–3.83 ng/ml, whereas animals classed as pregnant presented progesterone concentrations that ranged from 23.51–95.06 ng/ml. Comparison of pregnancy determination through manual palpation in the field and through RIA indicated that palpation only identified 50% of pregnant animals. From the samples run for progesterone, a subset representing adult animals of known reproductive status (pregnant and non-pregnant; n=11, n=12,

respectively) as determined through RIA, was selected for further endocrine analysis. Pregnant animals exhibited significantly higher concentrations of progesterone ($P < 0.001$), leptin ($P = 0.003$) and aldosterone ($P = 0.002$). Non-pregnant animals exhibited a significantly higher concentration of total T3 ($P = 0.034$). These results indicate that while manual palpation correctly identified pregnant animals, it did so with only 50% accuracy. Endocrine results indicate that aldosterone activity in pregnant seals is similar to that in other species; that is, it increases over the course of the pregnancy to offset the antialdosterone actions of increased progesterone for gestational maintenance. Increased leptin in pregnant seals may be a reflection of the added production of leptin by the fetoplacental unit. Lower concentrations of total T3 close to parturition may be a reflection of maternal attempts to enhance energy reserves in preparation for the birth and feeding of the neonate.



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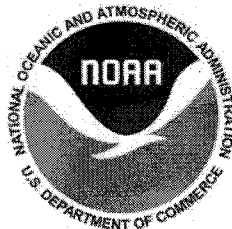
ON

THE BIOLOGY OF MARINE MAMMALS

TAMPA, FLORIDA
NOVEMBER 27 - DECEMBER 2, 2011

HOSTED BY

National Marine Fisheries Service
Southeast Regional Office
National Oceanic and Atmospheric
Administration
St. Petersburg, Florida



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