Poster: Gulf of Alaska – Seabirds & Marine Mammals

Changes in the foraging behavior and physiology of young Steller sea lions, *Eumetopias jubatus*, over their first winter

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In young air-breathing marine vertebrates, the transition to independent foraging requires balancing at-surface oxygen uptake with underwater nutrient acquisition. Foraging in young animals is expected to be limited by low aerobic capacity and small body size which physiologically limits diving ability. Understanding how diving behavior develops in relation to total body oxygen (TBO) and how nutrient source impacts diving behavior are critical to understanding the transition to independent foraging. In a longitudinal study we examined the foraging behavior of eight Steller sea lions over their first winter using archival time depth recorders. We also examined changes in TBO and correlated behavioral information with nutritional source. Nutritional source was categorized as 'maternally dependent' if the animal was re-sighted suckling or if milk was obtained from gastric sampling at recapture. Animals for which maternal dependence could not be verified were classified as being of 'unknown' nutritional source. Diving behavior changed over time with significant increases in dive duration ($p=0.035$) and effort ($p=0.003$) and a significant decrease in time at surface between dives ($p=0.049$). Animals that were still maternally dependent spent longer periods of time at the surface between dives ($p=0.017$) and performed fewer dives/day ($p=0.016$) than animals whose nutritional source was unknown. Mass and TBO increased over time ($p<0.001$ and $p=0.045$) but did not differ significantly between nutritional source groups ($p=0.577$ and $p=0.233$). Thus, differences in diving behavior may be more strongly influenced by nutritional sources than by physiological ability.

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