

MILK COMPOSITION AND INTAKE RATES FOR STELLER SEA LION PUPS

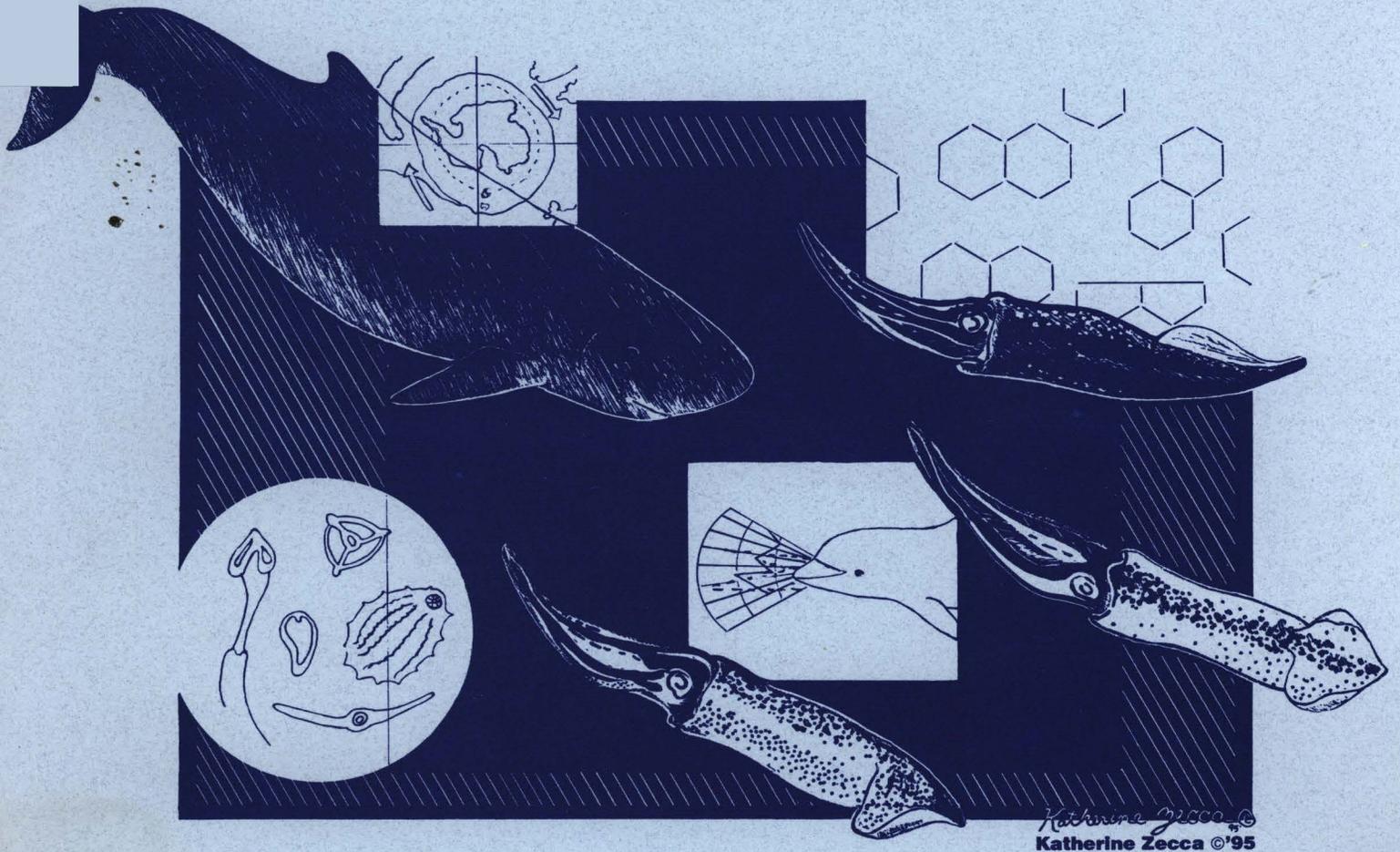
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The population of Steller sea lions has declined in the western Gulf of Alaska and the Aleutian Islands, but has remained stable in southeast Alaska. Although the cause of the population decline remains unknown, one hypothesis is a decline in prey availability for lactating females, which might decrease the nutritional quality and quantity of milk delivered to pups. To test this hypothesis, we sampled the milk of lactating females and measured the milk intake rates of pups during the first four weeks postpartum on Chirikof Island (area of population decline) and Lowrie Island (area of stable population). Milk samples were collected from anesthetized females following injection of 10 ml oxytocin and kept frozen until analysis for percent water, total solids and ash. Milk intake of known-age pups was estimated from labelled water turnover following injection with 10 ml 99% deuterium oxide. The mean total milk solids were not significantly different ( $p > 0.05$ ) between islands and averaged  $37.90\% \pm 5.63$  S.D. ( $n=22$ ). The mean milk intake rate of pups was also not significantly different ( $p > 0.05$ ) for either island and averaged 2.32 liters/day  $\pm 0.43$  S.D. ( $n=12$ ). Assuming these measurements are an indication of food availability and the capacity of females to provision their pups, the data do not suggest any differences in the abundance or nutritional quality of prey items for either island. Concurrent studies of foraging trip duration did not indicate that females in the area of decline were working harder to obtain energy for themselves and their pups. Additional data are needed from the area of population decline to more accurately assess the effects of prey availability on lactating females and their ability to provision their pups. Also needed are milk samples and intake rates for the period beyond the fourth week postpartum, as weaning does not occur until about six months.

# Eleventh Biennial Conference on the Biology of Marine Mammals



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*14 - 18 December 1995 Orlando, Florida, U.S.A.*

**ABSTRACTS**