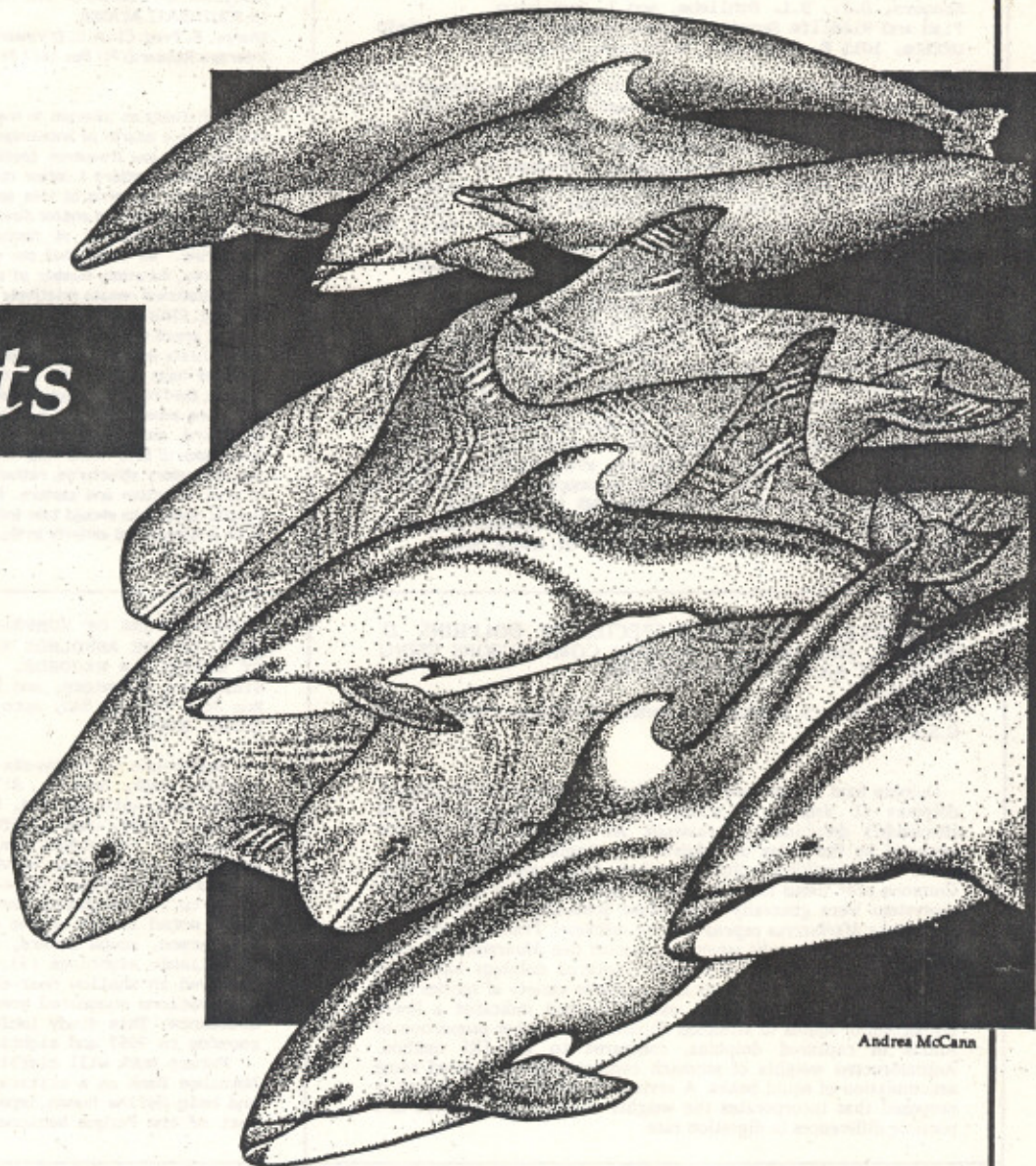


SIGLIANO B LODI, 1989

PUBLIC PROJ.
@ALEXJ.

Abstracts



Andrea McCann

8th Biennial Conference on the Biology of Marine Mammals

Pacific Grove
California
December 7-11, 1989

MONITORING THE U.S. HARVEST OF PACIFIC WALRUS: 1980-1989
Seagers, D.J., S.L. Schliebe, and J. Warburton
Fish and Wildlife Service, Marine Mammals Management Field
Office, 1011 E. Tudor Rd., Anchorage, AK 99503

The Marine Mammal Protection Act provides an exemption to the moratorium on taking for harvest of Pacific walrus (*Odobenus rosmarus divergens*) by Alaskan coastal Natives for subsistence or handicraft purposes. Beginning in 1980, the Fish and Wildlife Service initiated a program to monitor the spring (late April - early July) harvest by stationing Biological Technicians in major hunting villages. Data collected included numbers taken, sex, age class, hours and areas hunted. Samples collected included teeth (for age determination), female reproductive tracts, and tissue samples to assess contaminant levels. Data addressing harvest of other marine mammals and birds were taken in some years and villages. From 1980 to 1984 the total take increased to 3,983 walrus; numbers taken have declined steadily since 1985 to about 500 in 1989 (X=2,489). The mean percent of adult males taken in the 10 yr period was 38% (annual range 26-51%); adult females 41% (range 29-58%), calves 13% (range 13-23%), and 8% unknown (8-23%). Factors influencing the numbers taken and structure of the harvest include ice and weather conditions; availability of walrus; and sociological factors, including cooperative restraint by the Alaskan Native community. The FWS is currently evaluating sample size and methodology to assess potential for improving statistical reliability of these data.

NOCTURNAL FEEDING OF THE HUMPBACK WHALE (*Megaptera novaeangliae*) IN SOUTHEAST ALASKA

Sharpe, A. Fred, Cindy G. D'Vincent, G. Russell M. Nilson.
Intersea Research PO Box 1467 Friday Harbor WA 98250

The difficulties inherent in tracking free-ranging cetaceans at night have resulted in a dearth of knowledge concerning their nocturnal behavior. The use of loud, low frequency feeding vocalizations by the Alaskan humpback whale however offers a unique opportunity to study the nocturnal movement and foraging patterns of this species. During the 1987 and 1988 feeding seasons, hydrophones and/or direct observation with spotlights were used to document 7 incidents of nocturnal feeding, representing 16 hours of monitoring. We found that the characteristics of the feeding vocalization (frequency, duration, number of phrases, and the preeminence of particular call signatures) remain relatively constant during both daytime and nocturnal foraging. Similar to daytime foraging activity, abrupt shifts between specific feeding areas were also noted at night. Pods were five times more likely to disaffiliate within an hour of dusk, although we attribute this to a shift in the prey base rather than to an inability to feed in low light conditions. Surface feeding strategies associated with euphausiid prey, such as lateral lunge and echelon feeding exhibited a positive correlation with lower light conditions, and have also been found to occur nocturnally. The ability of humpbacks to feed nocturnally implies that passive listening and the use of somatosensory structures, rather than vision, are the principal senses used in prey detection and capture. Future studies on the energetics of North Pacific humpbacks should take into account nocturnal foraging, which appears to be a widespread activity in this population.

FOOD HABITS OF THREE SPECIES OF DOLPHINS, *D. delphis*, *L. obscurus*, and *C. heavisidii*; COMPARISONS USING TWO DIET ANALYTICAL METHODS

Sekiguchi, K.
Mammal Research Institute, University of Pretoria, Pretoria 0002, R.S.A.

Dolphin food habits were examined using stomachs of 39 common dolphins *D. delphis*, 16 dusky dolphins *L. obscurus*, and 16 Heaviside's dolphins *C. heavisidii*. All stomach contents were analyzed by the Index of Relative Importance (IRI) (Pinkas et al. 1971) and modified volume method (Bigg and Perez 1985). Common prey items taken by these dolphins living in the Benguela ecosystem were generally small-sized schooling animals such as Cape hake *Merluccius capensis*, horse mackerel *Trachurus capensis*, Cape anchovy *Engraulis japonicus*, hatchet fish *Muroliscus muelleri* and white squid *Loligo reynaudii*. Captured dolphins had eaten greater numbers of prey items and a greater variety of species than stranded ones. The modified volume method indicated a lower proportion of squids in stranded dolphins, but higher proportion of squids in captured dolphins, compared to the IRI method. Reconstructed weights of stomach contents clearly showed some accumulation of squid beaks. A revised modified volume method is proposed that incorporates the weights of non-trace remains and possible differences in digestion rate.

OBSERVATIONS OF HUMPBACK WHALES, *MEGAPTERA NOVAENGLIAE*, IN THE ABROLHOS BANK, NE BRAZIL, WITH A SUMMARY OF BRAZILIAN RECORDS.

Siciliano, Salvatore, and Lodi, Liliane
Rua José Higino, 340, apto.102, Tijuca, Rio de Janeiro, RJ, 20520, BRAZIL.

Twenty-one of fifty-six sightings (37.5%) of humpbacks on Abrolhos Bank, Brazil, S17 40'-W038 50', included cow-calf pairs, some with escorts. Four day surveys, September through November, 1988, used cliff-top, lighthouse, and boat stations to document individual whales (photoids), and to record environmental correlations to whale behavior and habitat use. High seas and restricted visibilities impacted observations.

Up to 127 humpbacks were sighted, in groups of 1-15, with pairs noted in 45% of the sightings. Interviewed local users (fishermen, scuba divers, researchers, etc.) reported 13 of 39 reliable sightings (33.4%) as cow-calf pairs. Many were observed in shallow near-shore or coral reef areas. Some observations suggested boat-associated surface activity and/or avoidance. This study includes a review of coastal whaling records to 1967 and sighting/stranding records to present.

Future work will clarify the potential significance of the Abrolhos Bank as a critical humpback breeding/calving area, and help define human impacts. Since 1983 this area has been part of the Parque Nacional Marinho dos Abrolhos.

SEASONAL AND SITE VARIATIONS IN DIETS OF HARBOR SEALS, *PHOCA VITULINA*, IN NORTHERN CALIFORNIA.

Shaffer, K.E.
Humboldt State University, Arcata, CA, 95521

Three populations of harbor seals were studied to identify seasonal differences in diets within each population and site variation among populations. The three populations studied hauled out at south Humboldt Bay, rocks off Abalone Beach, and the Klamath River estuary, northern California.

Scat analysis was the primary method used to identify prey consumed. Scats were collected from May 1986 to August 1987. Prey data revealed that diet variation corresponded to 1) relative abundance of prey at any one site, 2) differences in potential prey due to habitat, 3) seasonal fluctuations in prey species populations. The data suggest that harbor seals are opportunistic foragers, consuming prey that are most abundant and relatively easy to catch. The majority of prey species identified inhabited shallow or protected waters and were small, schooling or benthic fishes

PINNIPEDS OBSERVED ALONG THE COAST OF RIO DE JANEIRO STATE, BRAZIL, 1987-1989

Siciliano, S., and Lodi, L.
Convênio IBAMA/NEMA - Parque Nacional Marinho dos Abrolhos, Praia do Kitongo s/n, Caravelas, Bahia, Brazil 45900

We report on the observations and collection of four pinniped species along the coast of Rio de Janeiro State, Brazil, from 1987-1989.

A young southern fur seal, *Arctocephalus australis*, of about 1.0 m was captured alive in a gill net set off Macaé in March 1987. It was photographed and later released. Three male subantarctic fur seals, *Arctocephalus tropicalis*, were collected on different beaches in the city of Rio de Janeiro during that austral winter. These specimens were kept alive at the City Zoo for periods ranging from nine to 11 months. One southern elephant seal, *Mirounga leonina*, of about 2.0 m was photographed on Barra de Guaratiba in August 1988, but returned to the sea shortly thereafter. A 1.87 m male crab-eater seal, *Lobodon carcinophagus*, was observed at Piratininga, Niterói and captured two days later by the Rio Zoo where it survived for 28 days. At least four other pinnipeds, three of them *Arctocephalus* sp. were observed during this period.

We suggest that the occurrence of pinnipeds as far north as the coast of Rio de Janeiro State (-22° S) is associated with the cold Malvinas (Falkland) current. We recognize that these records might reflect a greater sighting effort, however they could also be due to an increase in population size of these species.