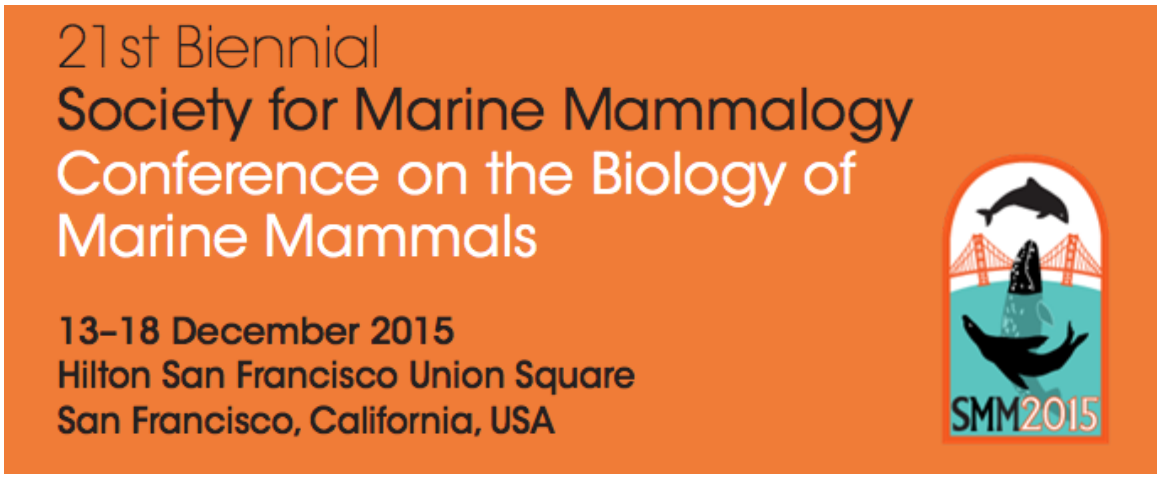

2015. Kienle, S., Sorensen, H., Costa, D., Mehta, R., and Reichmuth, C. Pinnipeds suck: examining underwater feeding strategies in seals and sea lions. *21st Biennial Conference on Marine Mammals,* San Francisco, United States, 13 December – 18 December. (Presentation abstract).

Pinnipeds suck: examining underwater feeding strategies in seals and sea lions

Many terrestrial mammalian carnivores capture prey by biting with their large canine teeth. However, many aquatic mammals, including cetaceans and pinnipeds, are reported to use suction. In fact, some pinnipeds (e.g., walruses and bearded seals) have evolved specialized means of generating suction that correspond to morphological changes in their skull and dentition. Here, our objective was to examine underwater feeding strategies of several North Pacific pinnipeds, specifically spotted seals, ringed seals, bearded seals, harbor seals, and California sea lions. We documented feeding events in these species and determined the frequency with which suction, biting, or both were used to capture prey. Captive individuals were provisioned with freshly thawed whole capelin and herring fish, and approach and consumption were simultaneously videotaped from anterior and lateral views. We conducted 50-80 controlled feeding trials per individual. We found that all species were capable of using suction for prey capture, and, in many trials, both biting and suction were used to capture prey. Suction feeding was the primary strategy used by bearded seals (77% of trials) and spotted seals (67% of trials), while biting with suction was the dominant strategy used by the other species. Prey capture via suction was faster than just biting or biting combined with suction. For example, in the bearded seal, suction feeding events lasted an average of 0.19 s, while biting lasted 0.31 s. All individuals showed strong preferences for prey orientation as fish entered the oral cavity; prey items were often manipulated accordingly (i.e., tail first vs. head first). The time spent biting increased with prey size, suggesting that pinnipeds adaptively alter their feeding behavior. This comparative examination of feeding strategies in pinnipeds provides a behavioral baseline for understanding the relationship between feeding strategy and skull morphology in secondarily aquatic carnivores.