

considered and the precautionary principle applied regarding management of piracatinga fishing.

Status of ringed, bearded, spotted, and ribbon seals in Alaska using harvest-based monitoring across decades: 1960s, 1970s, 2000s, and 2010s

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Ice-associated seals (ringed, *Pusa hispida*, bearded, *Erignathus barbatus*, spotted, *Phoca largha*, and ribbon, *Histiophoca fasciata*), important subsistence resources for Alaska Natives, are expected to be negatively affected by sea ice decline by reducing available habitat and their time to rest, rear pups, and molt on sea ice. Current demographic data are insufficient for detecting trends in abundance; however, data from the subsistence harvest can be used as indices of population status. We compared seal indices collected during the current ice decline (2000s and 2010s) with those collected prior to the decline (1960s and 1970s). Indices included length at age (growth), blubber thickness (body condition), pregnancy rate (productivity), and proportion of pups harvested (pup survival to weaning). During the 2010s as sea ice declined, seal growth and blubber thickness were typically average or above. Below average years for both indices were often followed by average or above average years. Pregnancy rate during the 2010s was higher for bearded and spotted seals than during the earlier periods; no periods were statistically different for ringed or ribbon seals. The average age of maturity (age at first ovulation) for bearded seals decreased over time to 2.8 years in the 2010s. In contrast, age of maturity for ringed (3.7) and spotted (3.3) seals in the 2010s was similar to the 1960s and 2000s

and lower than the 1970s. Finally, a relatively high proportion of pups were harvested in the 2010s indicating that pups were produced, weaned, and survived to be harvested. Several of our indices decreased in 2010 and 2011, coinciding with the Unusual Mortality Event, but were followed by a return to average in 2012. Overall, our indices have not shown sustained decreases in growth, body condition, productivity, or pup survival as predicted with declining sea ice that would be indicative of population declines.

First Documented Use of Caves along the Coast of Albania by Mediterranean Monk Seals. Ecological and Conservation Inferences

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The information on habitat use by the Mediterranean monk seal (*Monachus monachus*) on the coast of Albania has so far been limited to vague and general data. During a survey conducted along the coast of the National Marine Park Karaburun-Sazan in August 2019, we identified two marine caves with optimal geomorphological characteristics for use by the species. A monk seal scat was recovered in one of them. These two caves were subsequently equipped with infrared cameras. After about a year of monitoring, we obtained photographic material confirming such use. This is the very first documentation of the use of marine caves by the species in Albania. The scat sample was analysed for trophic and anthropogenic contamination (microplastics) data. The inferences resulting from the analyses of the above data provide additional information on the

ecology of the species and also for its conservation which need to be contextualized on an Adriatic-Ionian region scale.

Using GIS to pinpoint hot spots of cetacean strandings in Peru: A 10 year review

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Conservation efforts for cetaceans are limited due to the lack of knowledge of their distribution and abundance, and gaining this information is challenging as cetaceans are highly mobile and often elusive. Long-term data from stranding networks can offer spatial, temporal and demographic trends on species richness, diversity and mortality. Here, we collate a long-term data set from ORCA's Stranding Network in Peru from 2009 to 2019 to map stranding hot-spots on the coast of Peru. Over 10 years, there were 286 stranding events across 22 different cetacean species, comprising 90% small cetaceans and 10% large cetacean. The most recorded species were *Phocoena spinipinnis* (n=71), *Tursiops truncatus* (n=50), *Delphinus delphis* (n=45), and *Lagenorhynchus obscurus* (n=44), meanwhile *Megaptera novaeangliae* (n=15) was the most common large cetacean. The majority of strandings were caused by human factors (65 %), with 43 % of the strandings caused by direct intentional catch. There were three stranding hotspots: Wakama, Lambayeque and South of Lima City, which had an overall density of 86 strandings per 50 Km. We used the raster calculator to show the density changes between 2009 and 2019. The results showed no significant changes in the spatial trend. However, there was a slight decrease in density around Wakama and an increase around North and South Lima. Our results improve the understanding of spatial-temporal patterns of cetacean diversity on the

Peruvian coast. The use of small cetaceans for consumption and bait is common practice in Peru, though it has been banned since the mid-1990s. Yet, our data shows small cetacean capture at high levels, which calls for urgent action. For example, *Phocoena spinipinnis*, the most commonly stranded species, is listed as threatened under the IUCN, causing concern for their population in Peru. Furthermore, these results are vital information for management plans, targeted surveys and community-led action.

One year later: Demographic changes at a Steller sea lion rookery following a volcanic eruption on Raykoke Island, Russia.

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After sitting quiet for nearly 100 years, the Raykoke Island volcano, in the Kuril Islands of Russia, erupted violently on 22 June 2019, near the peak of the Steller sea lion (SSL) pupping season. Volcanic ash blanketed the Raykoke SSL rookery several meters deep, and volcanic debris extended the coastline seaward for tens to hundreds of meters, presumably killing all newly-born pups, and probably many non-pups. The rookery had been located in a steep area of old lava but was transformed into something akin to a lunar surface with a low angle slope formed by gray volcanic ash. No SSLs were observed around the former rookery area during two visits to the island in July and September 2019. Observations in the summer of 2020 revealed that winter storms had washed off much of the volcanic ash from the rookery area, exposing the outer edge of old solid lava substrate. On 18 June 2020 we found 24 newly-born pups and 140 non-pups on the rookery (69 females, 56 bulls, 10

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