

Marine Debris and Animal Carcasses

Vital Signs Monitoring- Southwest Alaska Network



Sea otter skulls collected on beaches around Ninigiak Island in Hallo Bay, Katmai National Park and Preserve, 2006

Importance / Issues

Marine debris from commercial fishing gear and cargo ships is a chronic problem on SWAN coastlines. Debris washed ashore diminishes the scenic value of beaches, and while adrift or onshore can entangle marine wildlife. Marine debris also collects and transports oil and other pollutants onto beaches. Beach cast carcasses can provide useful information on the state, causes, and the extent of die offs related to disease, marine pollution and other causes. Usually the first sign of environmental injury from spilled oil is the appearance of dead and dying birds and marine mammals on beaches. Monitoring marine debris and animal carcasses monitoring provides a relatively inexpensive window into offshore events, such as discharge of pollutants, and provides baseline data for use in oil spill damage assessments.

Objectives and Sampling Design

Specified beach segments that collect debris, commonly known as "keeper beaches," will be surveyed annually. Sea otter skulls will be collected and a tooth extracted to determine the age of the sea otter and to develop age-specific survival estimates based on models. The number and location of other bird and mammal carcasses, herring spawn, large debris items, oil or chemical spills, and items spilled from cargo ships will be recorded.

Current and Future Monitoring

In April 2006, USGS and SWAN staff used fixed-wing aircraft based in King Salmon to access and survey 9.3 km of the coast of KATM. One sea otter carcass and 1 bald eagle carcass were recovered and 6 beach debris segments (100 m) were surveyed. During June, two sea otter carcasses were recovered along 12 km of beach and 4 debris and beach wrack segments were surveyed with vessel support from the R/V Waters. In addition to mainland beaches, biologists searched 2 small islands (< 1 km) offshore from Ninigiak Island and portions of Shakun Island (approximately 4 km) for marine bird and mammal skulls. Extensive spraint (droppings) above mean high water revealed that sea otters commonly use these islands as haul outs. Biologists identified 30 entire sea otter carcasses and collected 37 skulls from which a tooth could be extracted for aging. As a result of field testing two modifications will be made to the SOP: 1) carcass searches will be directed at islands used as sea otter haul outs because they provide a more efficient means of recovering a large sample of skulls; 2) skiff support is more efficient and reliable than fixed-wing aircraft due to long commute distances from King Salmon and limited landing locations.

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