

Vessel Disturbance Studies of Harbor Seals in Aialik Bay, Alaska

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Numbers of seals in Aialik Bay, a tide-water glacial fjord, on the Kenai Peninsula, southcentral Alaska, have declined from more than 1,600 seals in 1980 to only 269 seals by 1989. Decreased numbers of seals coincided with a widespread regional population decline in the Gulf of Alaska. With the establishment of the Kenai Fjords National Park in 1980, expansion of tourism has greatly increased vessel traffic at seal haulouts in upper Aialik Bay.

Baseline studies in 1979 and 1980 documented low vessel traffic, with 1-3 vessels per day visiting the upper bay. Few of those vessels entered the ice or interacted with the seals. By 1996, multiple vessels ranging from kayaks to 100 ft eco-tour vessels were visiting glacial sites on a daily basis. In 1996, the National Park Service (NPS) observed seals during a 12-day period at two tidewater glacier fjords in the Park, including Aialik Bay. During that time they observed 28 vessels entering ice affected areas. Of those vessels, 57% caused at least one seal to leave the ice and 46 % caused major disturbances with large proportions of nearby seals leaving the ice (Tetreau 1996).

Vessel congestion at wildlife viewing areas, associated disturbances of marine mammals, and awareness of the Marine Mammal Protection Act's prohibition of "take" by harassment precipitated local tour vessel operators to voluntarily develop viewing guidelines in 2000-2001. The marine mammal viewing guidelines were developed to minimize the impact of tour vessel operations on wildlife and enhance viewing opportunities throughout the day.

In 2002, the Alaska Sealife Center (ASLC), in partnership with the NPS through the Ocean Alaska Science and Learning Center (OASLC), initiated a study of harbor seals in Aialik Bay using remotely-controlled video cameras. Video cameras developed by SeeMore Wildlife have been placed at three locations for observing seals at Pederson and Aialik Glaciers. The cameras are controlled by personnel at the ASLC via UHF transmissions. Video signals are received at the ASLC and recorded on time-lapse video tape. Video images are used for documenting harbor seal population dynamics, haulout behavior, and interactions between vessels and seals.

During 2002, observers at the ASLC documented 64 interactions between vessels and harbor seals. Of those interactions, 58% resulted in no seals entering the water while 12% caused major disturbances. In 2003, vessel operators were more aware of the presence of the cameras. During 2003, observers at the ASLC observed 89 interactions

between vessels and harbor seals. Of those, seals entered the water in only 18 % of the interactions and only 8% were classified as major disturbances (Table 1). The decreased frequency of major disturbances appears to be the combined results of voluntary use of marine mammal viewing guidelines adopted by local commercial vessel operators and knowledge of the video cameras' presence.

Table 1. The response of seals to vessel activity in the Kenai Fjords National Park, Alaska, since 1996.			
Disturbance Level	1996 n= 28	2002 n= 64	2003 n= 89
None	43%	58%	82%
Minor (<6 seals)	11%	30%	10%
Major (>6 seals, & > 1/3 of seals near vessel)	46%	12%	8%

Improvements in large vessel operations in 2002 and 2003 contrasted with practices of some small vessel operators, particularly kayakers. Kayak outfitters provide for guided and unguided trips in the fjords. Kayakers are exploring remote seal haulout areas, like Pederson Lake, in increasing numbers. Seals appear particularly sensitive to the movements and low profiles of kayakers. Unlike commercial vessel operators who have proactively taken steps to enhance viewing opportunities by reducing adverse activities near wildlife, kayakers appear inadequately informed about appropriate behavior in the presence of seals and of best practices for reducing their cumulative impacts on sensitive wildlife.