Harbor Seal Remote Monitoring Project

The Question: *How do human activity and environmental change affect the population and behavior of harbor seals in Aialik Bay?*

Since 1980, the number of Pacific harbor seals (*Phoca vitulina*) counted near Aialik Glacier each summer has decreased from more than 1,600 to about 200 seals. This population decline coincides with a widespread decline of harbor seals, sea lions, and other marine birds and mammals throughout the Gulf of Alaska. Identifying which factors are affecting their population and behavior is critical to effectively managing their habitat.

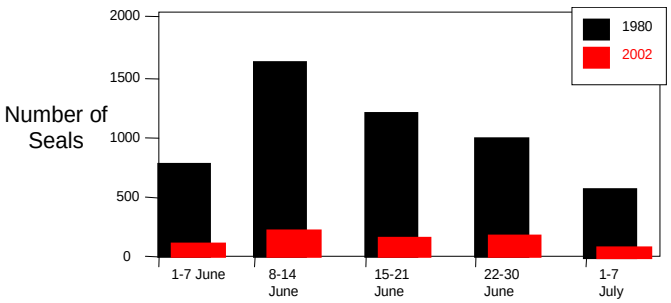
Harbor seals (*Phoca vitulina*) like to rest and bear their young on icebergs near the face of tidewater glaciers in Aialik Bay. Environmental change and increasing vessel traffic may be affecting their habitat.

The Project: *Observe harbor seals in their natural habitat with minimal disturbance using remote camera technology.*

Aialik Bay is one of a few glacial sites suitable for in-depth studies of harbor seals. Seals in Aialik Bay primarily rest on glacier ice calved from Aialik, Pederson, and Holgate glaciers and rarely haul out on land. Remotely-controlled video cameras, located on Squab Island and near Pederson Glacier, transmit images of seals and their habitat via microwave to researchers at the Alaska SeaLife Center. During summer months, the cameras provide a nearly round-the-clock view of harbor seal numbers and distribution, presence or absence of human activity, and changes in iceberg distribution and availability. Analysis of these factors could shed important light on why harbor seal populations are not recovering in Aialik Bay and could even have implications for the entire Gulf of Alaska population. Another important outcome could be recommendations for how to minimize disturbance by vessel traffic while maximizing viewing opportunities for visitors.

Preliminary Results: *The remote camera system works well for observing the seals without disturbing them. More observation is needed to determine if human activity is affecting the seals.*

Researchers have discovered that numbers of harbor seals in upper Aialik Bay have declined 85% from about 1,600 seals in 1980 to around 230 seals in 2002. The cause of the decline is not known but is likely to be related to similar population declines seen in harbor seal populations elsewhere in the Gulf of Alaska. Glacial ice haulouts are ecologically unique habitats that may add additional constraints to seal populations. Seals resting on the ice may be disturbed by vessel activity in the upper bay. Although many seals tolerate vessels in close proximity (less than 300 m), both seals and vessels tend to congregate at the face of the glacier at midday, creating high likelihoods of interactions that force seals to leave the ice during their principal haulout time. Continued research and observation is necessary to determine the impact of increasing human activity in Aialik Bay.



The cause of the decline in harbor seal numbers over the last twenty years in Aialik Bay remains a mystery.