



Alagnak

Aniakchak

Katmai

Kenai Fjords

Lake Clark

Kelp and Eelgrass

Resource Brief

Importance

Kelp and eelgrass are “living habitats” that serve as nutrient filters and provide understory and ground cover for planktivorous fish, clams, urchins, and a physical substrate for other invertebrates and algae. Kelps and eelgrasses also provide spawning and nursery habitats for forage fish and juvenile crustaceans. Kelps are the major primary producers in the marine nearshore and because they are located in shallow water, they could be adversely impacted by oil spills and other human-related activities. Other potential stresses include activities that disturb the beds directly such as dredging and anchor scars, and events that reduce the ability for light to penetrate into the water column, such as runoff (increased turbidity) or nutrient addition.



NPS

Dr. Allan Fukuyama, FHT Environmental, conducting intertidal sampling at rocky sediment sites.



NPS

Eelgrass bed exposed at low tide in Kukak Bay, KATM.

Long-term Monitoring

Intertidal kelps are monitored annually at six sites in Katmai NPP (KATM) and five sites in Kenai Fjords NP (KEFJ). Percent cover is estimated from random point counts collected at -1.5 m and 0.5 m tidal elevations. Several methods to monitor eelgrass beds have been field tested to determine the most appropriate and cost effective method. Within a designated section of an eelgrass bed, a series of transects were delineated perpendicular to shore by deploying buoys to mark the beginning and end points. GPS-linked mapping software was used to record transect lines and eelgrass bed density. An underwater video camera was used to estimate eelgrass density categories along each transect.

Discussion

Alaria marginata is the dominant kelp species in the intertidal zone at both parks. At KATM, it occupies about 20% cover in the lower intertidal zone. Preliminary data from KATM indicate a probable increase in percent cover of *Alaria* over the 3 years. Data from KEFJ have not yet been evaluated. Subtidal canopy-forming kelps in both KATM and KEFJ include *Neroecystis leuetkeana* and *Alaria fistulosa*. Sonar and visual estimates of canopy cover were used to estimate relative abundance of subtidal kelps; however, these methods have not resulted in reasonable estimates due to high variability caused by tides and currents. We are examining the use of aerial photography to evaluate relative abundance of canopy-forming subtidal kelps. Eelgrass cover was estimated in selected eelgrass beds in KATM and KEFJ in 2007. These data provide a baseline estimate of eelgrass cover that will be used to evaluate trends over time.

Contacts

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