



Sensitive Plant Communities

Resource Brief

Importance

Shifts in the composition and structure of sensitive plant communities are expected to serve as early indicators of change. Subtle changes in the environment may have significant long-term effects on communities that are strongly controlled by physical factors (e.g., hydrology, snow cover) or occur at the edge of their range. Among the sensitive communities targeted for monitoring are salt marshes and nunataks (alpine ridges surrounded by ice). Salt marshes provide critical foraging habitat for brown bears, nursery areas for fish and shellfish, and staging grounds for migrating waterfowl. Nunataks are thought to have remained ice free during the Last Glacial Maximum, approximately 20,000 years before present, and as a result may have provided habitat for species that are now regionally or globally rare.



NPS

Amy Miller,
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ecologist,
samples
nunatak plant
communities
above Tuxedni
Glacier, LACL.

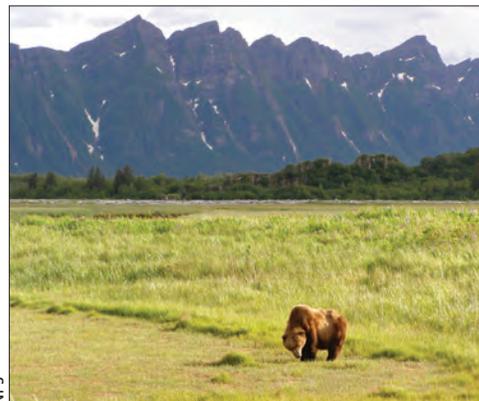
Status

Monitoring sites have been established at salt marsh sites in Lake Clark NPP (LACL) and Katmai NPP (KATM), and at nunatak sites in LACL and Kenai Fjords NP (KEFJ). In 2007-2008, three salt marsh monitoring sites were established in LACL and KATM. Methods for monitoring vegetation, sedimentation, and surface hydrology were field-tested through a contract with ABR, Inc. Species composition and soil characteristics were described along surveyed transects from the lower marsh to the forest edge, and dataloggers were installed to monitor water level and temperature in the tidal guts. Collectively, these data should provide an integrative measure of total environmental change.

In 2005, 11 nunatak sites were inventoried in LACL and KEFJ through a CESU Task Agreement with the Alaska Natural Heritage Program. Baseline monitoring was initiated at eight of the sites. Species of conservation concern included Lemmon's rockcress (*Arabis lemmonii*), rayless arnica (*Arnica diversifolia*), dunhead sedge (*Carex phaeocephala*), Alaska rock jasmine (*Douglasia alaskana*), pale poppy (*Papaver alboroseum*), and Drummond's cinquefoil (*Potentilla drummondii*).

Discussion

Established monitoring sites will be revisited every ten years, and where possible, aerial photos and ancillary climate data will be used to interpret environmental variation that could lead to changes in species composition. In both nunatak and salt marsh communities, changes in snow depth and duration, and/or changes in glacial melt, could have measurable effects on species establishment and turnover.



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Salt marshes
provide
important
foraging
habitat for
brown bears
(Hallo Bay,
KATM).

Contacts

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