



## Arctic Network

Bering Land Bridge N Pres. • Cape Krusenstern NM  
Gates of the Arctic NP & Pres. • Kobuk Valley NP • Noatak N Pres.

## Terrestrial Vegetation Resource Brief

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Measurements can be repeated in the future to document changes in vegetation

### Long-term Monitoring:

#### How will we monitor terrestrial vegetation in the Arctic Network?

Vegetation will be monitored using plots that can be relocated exactly and re-measured. Our measurements will emphasize vegetation structure (the height and density of different kinds of plants, such as sedges and shrubs), and the species composition of lichens.

### Management Applications

#### How can monitoring vegetation help ARCN parks?

Vegetation monitoring will help us understand changes in habitats that will affect decisions about management of wildlife and fire. Interpretive products will be used to educate the public about how climate change is affecting arctic ecosystems.

### Preliminary Objectives

#### What do we want to know about vegetation in the Arctic Network?

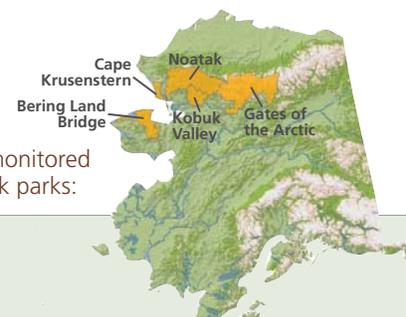
- Long-term changes in plant structure - the height and density of plants - using ground plots in ways that can be tied to remotely sensed imagery, such as aerial photographs and satellite images, for extrapolation over large areas.
- Long-term changes in lichen abundance and diversity.



Arctic tundra vegetation of herbs and low shrubs in fall color



Lichens such as these are grazed by caribou and reindeer



Vegetation is being monitored in all 5 Arctic Network parks:

### Importance

#### Why is terrestrial vegetation important in the Arctic Network?

Vegetation is the basis for ecosystem productivity and wildlife habitat. Arctic vegetation is very sensitive to climate change and disturbance such as fire, herbivory, and traffic. Research has documented an increase in shrubs and, to a lesser extent, trees in the arctic over recent decades, probably related to climate change. Major changes in vegetation structure such as these have a cascading effect on other

ecosystem attributes, such as herbivore use patterns, fire regime, and the chemistry of water bodies. In addition to vascular plants such as shrubs and herbs, the arctic has abundant lichens that provide biodiversity and wildlife forage. Lichens are quite sensitive to caribou and reindeer grazing, competition from other plants, fires, and contaminants. All of these factors could lead to decreased lichen diversity and biomass in the future.