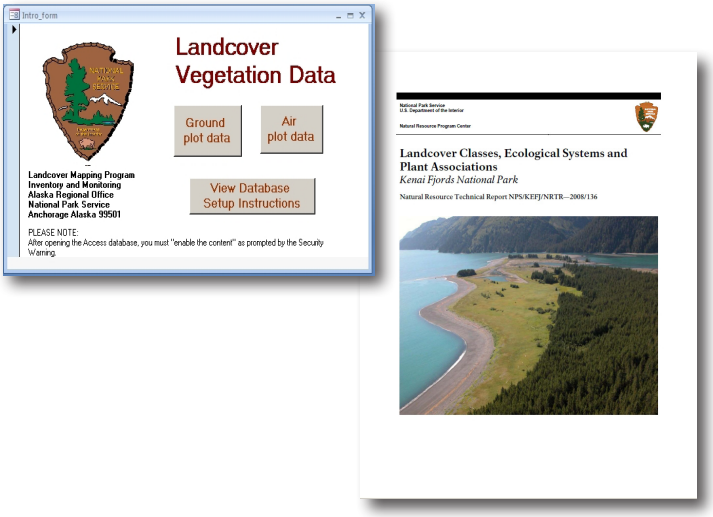
Vegetation Inventory

Background

Landcover (vegetation) inventories classify, describe, and map plant species and communities. They provide valuable baseline information about vegetation that facilitates general resource management decisions within parks and are useful for the design and implementation of other natural resource programs. The vegetation inventory is one of 12 baseline inventories conducted by the Inventory and Monitoring Program of the National Park Service. The primary purpose of natural resource inventories is to document the presence of resources in parks, and to assess and document the current condition and knowledge of natural resources in the parks (National Park Service, 2009). Inventories are used as a starting point and planning tool for long-term monitoring efforts and management decisions.

The Alaska Regional Inventory and Monitoring Program manages the vegetation inventory, along with inventories of base cartography and soil, for national parks in Alaska. The state encompasses 16 park units that make up 65% of the acreage managed by the National Park Service throughout the country. Thus, a regional approach is the most efficient way of inventorying landcover in Alaska. Nine other inventories, which complete the set of inventories that form the baseline of biological and physical information in national parks, are managed through a combination of national, network, and park efforts.



Landcover inventory products include field data viewers and natural resource technical reports (shown above) as well as image mosaics and landcover maps.

Photo: NPS

An NPS researcher conducts a vegetation survey in an alpine area of Kenai Fjords National Park.

Inventory Products

The landcover, or vegetation, inventory has a set of four derived products that, when combined, make up a delivery "package."

Maps and GIS datasets are generated through a compilation of various data sources and incorporate results from fieldwork, plot data, satellite image processing, and digitization techniques. All datasets are either developed in or are compatible with ESRI ArcGIS software and are available online.

Technical reports describe the landcover inventory project processes and are comprised of technical details on map production and ecological descriptions of mapping classes. Technical reports are available online.

Image Mosaics consist of ortho-rectified mosaic of satellite images or digital aerial photos. These image mosaics can be used as a backdrop for visualization of the landscape or as a basemap for general orientation and interpretation within GIS applications.

Field Data Viewers are ArcGIS/Microsoft Access tools developed with NPS Alaska Region GIS programmers. The tool links together tabular field data, site photos, ArcGIS features, and historical data.

The vegetation, or landcover, inventory of Kenai Fjords National Park shows higher elevation areas dominated by ice and snow, diverse vegetative communities in lower altitudes, and aquatic environments. The landcover map is one of four products produced as part of the vegetation inventory. A legend describing the vegetative communities identified in the inventory is below.

- Closed Sitka Spruce
- Closed Mountain Hemlock
- Closed Sitka Spruce/Mountain Hemlock
- Open Sitka Spruce
- Open Mountain Hemlock
- Open Sitka Spruce/Mountain Hemlock
- Open Sitka Spruce/Black Cottonwood
- Woodland Sitka Spruce
- Woodland Sitka Spruce/Black Cottonwood
- Woodland Sitka Spruce/Alder
- Woodland Sitka Spruce/Alder/Willow
- Woodland Sitka Spruce/Herbaceous
- Woodland Sitka Spruce/Mtn Hemlock
- Woodland Mountain Hemlock
- Krumholz
- Dead Forest
- Closed Sitka Spruce/Black Cottonwood
- Closed Black Cottonwood
- Open Black Cottonwood
- Woodland Black Cottonwood
- Mountain Hemlock/Sitka Spruce Peatland
- Open Low Shrub Peatland
- Closed Tall Alder
- Closed Tall willow
- Closed Tall Alder/Willow
- Closed Alder/Salmonberry
- Closed Tall Salmonberry
- Closed Alder/Mesic Herbaceous Mosaic
- Open Tall Alder
- Open Tall Alder/Willow
- Open Tall willow
- Closed Low Willow
- Closed Low Salmonberry
- Closed Low Alder
- Closed Low Alder/Willow
- Open Low Willow
- Open Low Willow/Mesic Herbaceous
- Open Low Alder
- Open Low Alder/Willow
- Open Low Shrub
- Dwarf Shrub
- Dwarf Shrub/Mesic Herbaceous Mosaic
- Mesic Herbaceous
- Herbaceous Marsh and Wet Meadow
- Intertidal Sparse Vegetation
- Freshwater Aquatic Bed
- Herbaceous Peatland
- Moss/Lichen
- Sparse Vegetation
- Unvegetated
- Road
- Lake
- Pond
- River
- Ocean
- Snow and Ice

Status

Baseline landcover inventories have been completed for approximately 98% of the area in Alaska's national parks and have been delivered to twelve of the sixteen parks. Aniakchak National Monument and Preserve currently has a landcover inventory in progress. To complete the three remaining inventories, two agreements with the University of Alaska Anchorage have been established. These agreements will lead to the completion of landcover inventories for Alagnak Wild and Scenic River, Klondike Gold Rush National Historical Park, and Sitka National Historical Park by 2012.

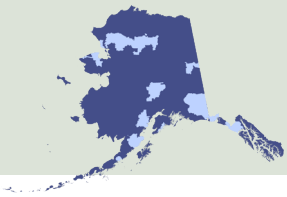
Applications of Vegetation Inventories

Landcover, or vegetation inventories, are used as inputs for habitat evaluation, fire fuels modeling, I&M vital signs monitoring, and are important when describing ecological processes. Using spatial displays and analyses is an effective way to organize complex natural resource information. For example, by incorporating relatively basic information about vegetation communities and topography into a spatial analysis, managers can locate potential habitats for endangered species or predict the likely course of a wildfire (National Park Service, 2009).

Landcover maps, image mosaics, and technical reports are available for each of the national parks in Alaska through the Natural Resource Information Portal (nrinfo.nps.gov). Field data viewers are available upon request. Contact the regional inventory office for more information (see contact info below).

For more information on natural resource inventories:

National website: http://science.nature.nps.gov/im/

National Park Service. 2009. Strategic plan for natural resource inventories: FY 2008 - FY 2012. Natural Resource Report NPS/NRPC/NRR—2009/094. National Park Service, Fort Collins, Colorado.

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