Yukon-Charley Rivers National Preserve

Landcover Classification

National Park Service
U.S. Department of the Interior

PROJECT DESCRIPTION

The Yukon-Charley Rivers National Preserve landcover mapping project was undertaken by the National Park Service Alaska Inventory and Monitoring Program. The goal of the NPS Inventory and Monitoring Program is to provide reliable and consistent information for assessing status and trends in the condition of National Park ecosystems. It conducts landcover mapping and classification under the inventory portion of the program to provide basic information useful for making resource management decisions, and to collect data that can be aggregated on a service-wide level for designing monitoring programs.

To this end, in cooperation with the Bureau of Land Management and Ducks Unlimited, the Inventory Program has developed a digital landcover map based on satellite imagery and field checked by vegetation survey. Map classes were calculated for each signature based on the vegetation attributes in the spectral database and a rule set that followed Viereck, et.al (1992) class breaks and naming conventions. The plant associations developed by the Alaska Natural Heritage Program provide a more detailed description of landcover mapping units while the description of fire ecology provides a perspective on a dominant ecological process within the Preseve. The Yukon-Charley Rivers National Preserve classifications can be used to understand habitat availability, provide baseline information about natural resources in the park, and for conducting coarse-scale analyses including regional ecological planning. Products and full documentation and products for this project can be found on the National Park Service Integrated Resource Management Applications portal at https://irma.nps.gov/DataStore/Reference/Profile/2170671.

Closed Needleleaf Forest



(Representative photo not from within Preserve boundary)

At least 60% of the cover is trees, and ≥75% of the trees are needleleaf trees. Closed needleleaf sites are rare because even where stem densities are high, the crown closure remains low. Generally, closed needleleaf sites are found only along major rivers.

Closed Mixed Deciduous



At least 60% of the cover is trees, and ≥75% of the trees are deciduous. Occurs in stands of limited size, generally on the floodplains of major rivers, but occasionally on hillsides, riparian gravel bars, or bordering small lakes. This class may include Paper Birch (*Betula papyfera*), Aspen (*Populus tremuloides*) or Cottonwood (*Populus balsamifera* and *Populus trichocarpa*).

Open Needleleaf Forest



(Representative photos not from within Preserve boundary)

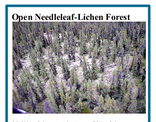
25-59% of the cover is trees, and ≥75% of the trees are needleleaf. This class is very common throughout the interior of Alaska. A wide variety of understory plant groups were present, including low and tall shrubs, forbs, grasses, sedges, horsetails, mosses and lichens.

Open Mixed Deciduous



From 25-59% of the cover is trees, and ≥75% of the trees are deciduous. There is generally a needleleaf component to this class even though it is less than 25%. This a relatively uncommon class.

Open Needleleaf-Lichen Forest



25-59% of the cover is trees, ≥75% of the trees are needleleaf, and ≥ 20% of the understory is lichen. This class is less common than either Open Needleleaf or Woodland Needleleaf Lichen.

Closed Mixed Needleleaf/Deciduous



At least 60% of the cover is trees, but neither needleleaf nor deciduous trees make up ≥75% of the tree cover. This class was uncommon and found mainly along major river channels.

Woodland Needleleaf



(Representative photo not from within Preserve boundary)

From 10-24% of the cover is trees, and ≥75% of the trees are needleleaf. This is a fairly common class but the understory is extremely varied and includes most of the shrub, herbaceous or graminoid types present in the study area.

Open Mixed Needleleaf/Deciduous



From 25-59% of the cover is trees, but neither needleleaf nor deciduous trees make up ≥75% of the tree cover. This class is more common than the similar class, Open Deciduous, and can be found mainly on hill slopes or bordering lakes.

Woodland Needleleaf-Lichen



From 10-24% of the cover is trees, ≥75% of the trees are needleleaf, and ≥ 20% of the understory is lichen. This class is more common than Open Needleleaf Lichen. The lichen often occurs in small round patches between trees. Within the study area, this class was generally found along ridgetops or on riparian benches.

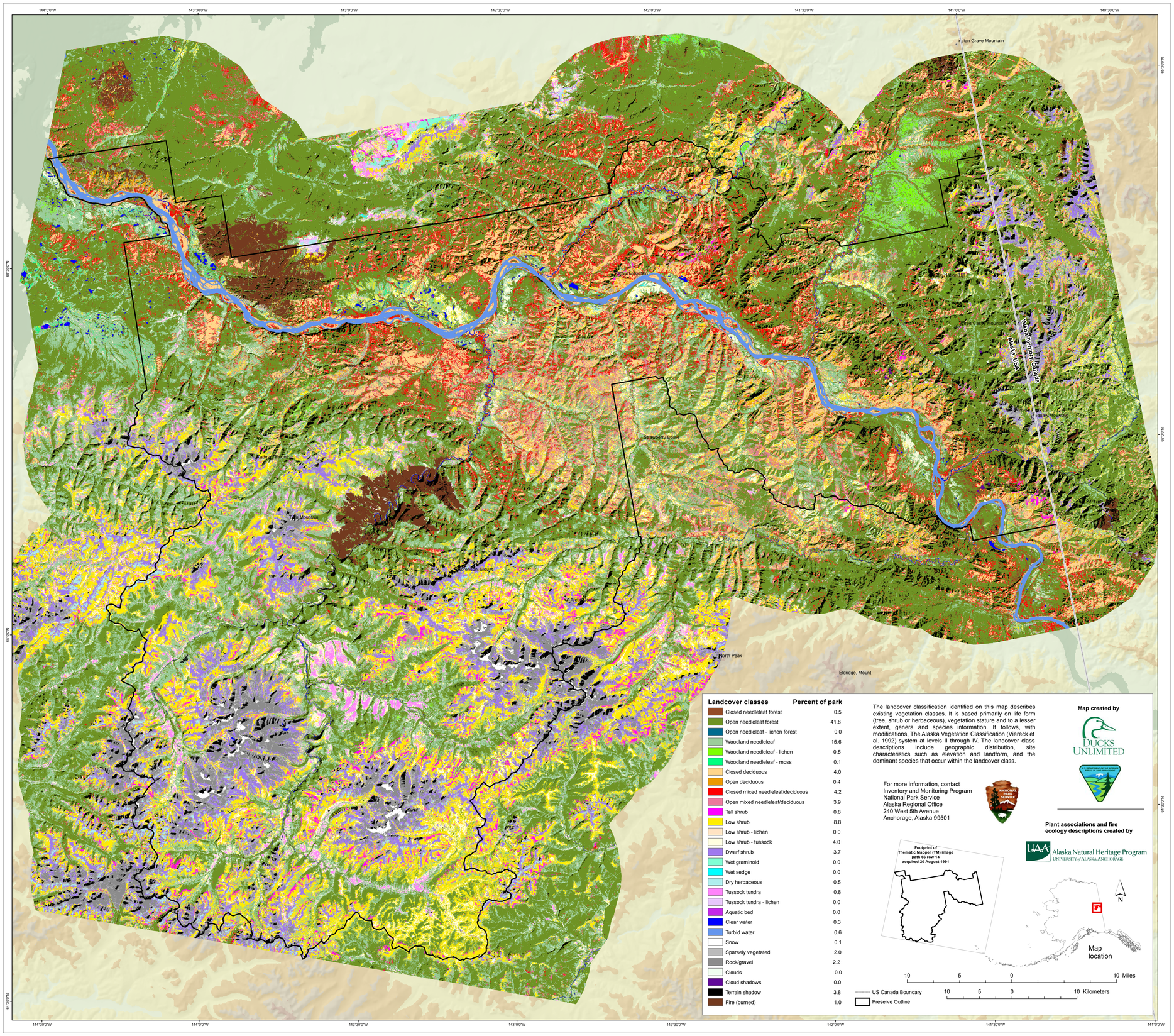
Tall Shrub



(Representative photo not from within Preserve boundary)

Shrubs make up 25-100% of the cover, and the shrub height is ≥1-3 meters. This class generally has a major willow component that is mixed with Dwarf Birch and/or alder, but can also be dominated by nearly pure stands of alder. It is found most often in wet draws, at the head of streams, or on the slopes of mountains and hills.





Landcover classes — **Percent of park**

Closed needleleaf forest	0.5
Open needleleaf forest	41.8
Open needleleaf - lichen forest	0.0
Woodland needleleaf	15.6
Woodland needleleaf - lichen	0.5
Woodland needleleaf - moss	0.1
Closed deciduous	4.0
Open deciduous	0.4
Closed mixed needleleaf/deciduous	4.2
Open mixed needleleaf/deciduous	3.9
Tall shrub	0.8
Low shrub	8.8
Low shrub - lichen	0.0
Low shrub - tussock	4.0
Dwarf shrub	3.7
Wet graminoid	0.0
Wet sedge	0.0
Dry herbaceous	0.5
Tussock tundra	0.8
Tussock tundra - lichen	0.0
Aquatic bed	0.0
Clear water	0.3
Turbid water	0.6
Snow	0.1
Sparsely vegetated	2.0
Rock/gravel	2.2
Clouds	0.0
Cloud shadows	0.0
Terrain shadow	3.8
Fire (burned)	1.0

The landcover classification identified on this map describes existing vegetation classes. It is based primarily on life form (tree, shrub or herbaceous), vegetation stature and to a lesser extent, genera and species information. It follows, with modifications, The Alaska Vegetation Classification (Viereck et al. 1992) system at levels II through IV. The landcover class descriptions include geographic distribution, site characteristics such as elevation and landform, and the dominant species that occur within the landcover class.

For more information, contact
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Map created by
DUCKS UNLIMITED

Plant associations and fire ecology descriptions created by
Alaska Natural Heritage Program
UNIVERSITY of ALASKA ANCHORAGE

Footprint of Thematic Mapper (TM) image path 66 row 14 acquired 20 August 1991

Map location

10 5 0 10 Miles
10 5 0 10 Kilometers

US Canada Boundary
Preserve Outline

Woodland Needleleaf-Moss



(Representative photo not from within Preserve boundary)

From 10-24% of the cover is trees, >75% of the trees are needleleaf, and ≥ 20% of the understory is moss. Although this class was not included in the classification scheme developed at the BLM earth cover workshop, there was enough evidence of the class in the TM imagery and in field notes that an attempt was made to classify it.

Low Shrub



(Representative photos not from within Preserve boundary)

Shrubs make up 25-100% of the cover, the shrub height is .25-1.3 meters. This is the most common low shrub class. It is generally composed of Dwarf Birch, Willow species, *Vaccinium* species, and *Ledum* species.

Low Shrub/Lichen



Shrubs make up 25-100% of the cover, the shrub height is .25-1.3 meters, and >20% of the cover is made up of lichen. This class is found at mid-high elevations. The shrub species in this class are nearly always Dwarf Birch.

Wet Sedge



(Representative photo not from within Preserve boundary)

Composed of ≥40% herbaceous species where >50% of the herbaceous cover was sedges, and between 5 and 25% water, where ≥50% of the herbaceous cover was sedges, or >20% of the site was *Carex aquatilis*. This class generally occurs in low, barely sloping areas, and represents wet or seasonally flooded sites. It is often present in stands too small to be mapped at the current scale.

Low Shrub/Tussock Tundra



(Representative photo not from within Preserve boundary)

Shrubs make up 25-100% of the cover, the shrub height is .25-1.3 meters, and ≥35% of the cover is made up of tussock forming Cotton Grass (*Eriophorum vaginatum*). This class is found in extensive patches in flat, poorly drained areas. It is generally made up of cotton grass, ericaceous shrubs, willow species, other graminoids, and an occasional black spruce.

Dry Herbaceous



(Representative photos not from within Preserve boundary)

Composed of ≥40% herbaceous species and ≤5% water, excluding tussock forming cotton grass (*Eriophorum vaginatum*) and *Carex aquatilis*. This class is made up of both mesicdry graminoid and forb communities. These communities are uncommon in the study area and too few sites were visited to make up separate mesicdry graminoid and mesicdry forb classes.

Dwarf Shrub



Shrubs make up 25-100% of the cover, and the shrub height is <.25 meters. This class is generally made up of dwarf ericaceous shrubs and *Dryas* species, but often includes a variety of forbs and graminoids, and some rock. It is nearly always found at higher elevations on hilltops, mountain slopes and plateaus.

Tussock Tundra



Composed of ≥40% herbaceous species and ≤25% water, where >50% of the herbaceous cover was graminoid, and ≥35% of the graminoid cover is made up of tussock forming cotton grass (*Eriophorum vaginatum*). Tussock tundra often includes ericaceous shrubs, willow species, forbs, bryoids, and other graminoids, and is usually found at lower elevations in flat, poorly drained areas.

Wet Graminoid



(Representative photos not from within Preserve boundary)

Composed of ≥40% herbaceous species and between 5-25% water, where >60% of the herbaceous cover was graminoid. This class represents wet or seasonally flooded sites. It is often present in stands too small to be mapped at the current scale.

Tussock Tundra/Lichen



(Representative photo not from within Preserve boundary)

Composed of >40% herbaceous species and <25% water, where ≥50% of the herbaceous cover was graminoid, and >20% of the cover is lichen, and ≥35% of the graminoid cover is made up of tussock forming cotton grass (*Eriophorum vaginatum*). Tussock tundra often includes ericaceous shrubs, willow species, forbs and other graminoids, and is usually found at lower elevations in flat, poorly drained areas. This class includes a major component of lichen.

Aquatic Bed



(Representative photos not from within Preserve boundary)

Aquatic vegetation makes up ≥20% of the cover, and ≥20% of the vegetation is composed of plants with floating leaves. This class is found in shallow water and is generally dominated by pond lilies.

Water



Water classes include snow, clear and turbid water. The distinction between clear and turbid water is relative, but deep open water is usually clear, while shallow or particulate heavy water is usually classed as turbid. In this area, the Yukon River is classed as turbid water. Other rivers, creeks, and lakes/ponds are classed as clear water.

Snow: Composed of >50% snow.

Clear Water: Composed of ≤80% clear water.

Turbid Water: Composed of >80% turbid water.

Sparsely Vegetated



At least 50% of the area is barren, but vegetation makes up ≥20% of the cover. This class is often found on riparian gravel bars, on rocky or very steep slopes and in abandoned gravel-pits. The plant species are generally herbs, graminoids and bryoids, and may include rare species.

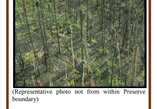
Rock/Gravel



(Representative photos not from within Preserve boundary)

At least 50% of the area is barren ≥50% of the cover is composed of rock and/or gravel, and vegetation makes up less than 20% of the cover. This class is most often made up of mountain tops, talus slopes, or glaciers.

Fire (Burned)



(Representative photo not from within Preserve boundary)

This class includes areas that have recently burned (within 2-3 years), or older burned areas that have retained enough standing dead trees to cause spectral confusion with recent burns. They typically contain a shrub (low and/or tall) or herbaceous understory and a snag overstory.

