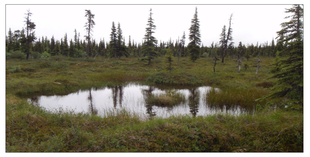
Alagnak Wild River
Landcover Classification

National Park Service
U.S. Department of the Interior



Closed Spruce Forest

Classification: Tree canopy cover is 60% or more, and needleleaf trees make up 75% or more of the total tree cover.

Environment: The Closed Spruce Forest class occurs on gently sloping terrain at low elevations. This class was mapped on 0.1% of the study area. This is an uncommon class that generally occurs in small patches in a matrix of Open Spruce Forest or Mixed Broadleaf/Needleleaf Forest.

Vegetation: *Picea glauca* dominates the tree layer, and *Populus balsamifera* or *Betula papyrifera* var. *kenaica* may be minor canopy associates. Tree height is 15 to 20 meters. *Salix* spp. and ericaceous shrubs may occur sparsely the understory.

Alagnak floodplain plant associations: None defined.

Open Spruce Forest

Classification: Tree cover is 25 to 59%, and needleleaf trees make up 75% or more of the total tree cover.

Environment: The Open Spruce Forest class occurs primarily on lower sideslopes, floodplain terraces, and ancient outwash deposits. This class occurs on flat to gently sloping terrain at low to mid elevations. The class is often interspersed with Spruce Woodland, Birch Forest, and Mixed Broadleaf/Needleleaf Forest landcover classes and was mapped on 7.2% of the study area.

Vegetation: This class is dominated by *Picea glauca*. *Betula papyrifera* var. *kenaica* may be a minor canopy associate. *Alnus incana* ssp. *tenuifolia*, *Salix pulchra*, and *Calamagrostis canadensis* are common in the understory on floodplain terraces, while *Ledum palustre* ssp. *decumbens*, *Salix glauca*, *Betula nana Empetrum nigrum*, and *Vaccinium vitis-idaea* are more common on uplands and abandoned terraces.

Alagnak floodplain plant associations: *Picea glauca/Salix pulchra*

Spruce Woodland

Classification: Tree canopy cover is 10 to 24%, and needleleaf trees make up 75% or more of the total tree cover.

Environment: The Spruce Woodland class is widespread on sideslopes, floodplain terraces, and ancient outwash deposits. This class occurs on flat to moderately steep (35°) slopes at low to mid elevations (18 – 275 m). This widespread class is the matrix coniferous landcover class across the study area. Associated classes include Open Spruce Forest, and Mixed Dwarf/Low Shrub classes. This class was mapped on 17.2% of the study area.

Vegetation: The tree layer is dominated by *Picea glauca*, *Betula papyrifera* var. *kenaica* may be a minor canopy associate. Betula *nana*, *Ledum palustre* ssp. *decumbens*, *Vaccinium uliginosum*, *Vaccinium vitis-idaea*, *Empetrum nigrum* and willow species are common in the shrub layer. On many sites, lichens, particularly *Cladina* spp., are abundant in the ground layer.
On the Alagnak floodplain, *Salix barclayi*, *Calamagrostis canadensis*, and *Equisetum arvense* may be understory dominants.

Alagnak floodplain plant associations: None defined.

Mixed Broadleaf/ Needleleaf Woodland

Classification: Tree canopy cover is between 10% and 24% with needleleaf and broadleaf trees each contributing 25% to 75% of the total tree cover.

Environment: The Mixed Broadleaf/ Needleleaf Woodland class occurs at low elevations on side slopes and abandoned terraces. Slopes range from flat on the terraces to gently sloping on upland sites. Large portions of this landcover class are post-fire early to mid-seral stands that will likely transition to the Mixed Broadleaf/ Needleleaf Forest as they mature. Common adjacent landcover classes include Mixed Broadleaf/Needleleaf Forest, Open Spruce Forest, and Spruce Woodland. This class was mapped on 10.7% of the study area.

Vegetation: *Picea glauca* and *Betula papyrifera* var. *kenaica* dominate the sparse forest canopy. The shrub layer is dominated by *Betula nana*, *Ledum palustre* ssp. *decumbens*, *Salix glauca*, and *Vaccinium vitis-idaea*. Lichens are common in the ground layer.

Alagnak floodplain plant associations: None defined.

Mixed Broadleaf/Needleleaf Forest

Classification: Tree canopy cover is at least 25%, with needleleaf and broadleaf trees each contributing 25% to 75% of the total tree cover.

Environment: The Mixed Broadleaf/ Needleleaf Forest class occurs at low elevations on side slopes and valley bottoms. It also occurs as localized patches within the floodplain. Slopes range from flat on the floodplain to gently sloping on upland sites. This widespread class often occurs adjacent to other forested classes including Mixed Broadleaf/Needleleaf Woodland, Birch Forest, Open Spruce Forest, and Spruce Woodland. This class was mapped on 13% of the study area.

Vegetation: *Picea glauca* and *Betula papyrifera* var. *kenaica* dominate the forest canopy. *Populus balsamifera* may contribute to the broadleaf canopy floodplain terraces. The shrub layer is variable across sites. Common species may include *Alnus incana* ssp. *tenuifolia*, *Viburnum edule*, *Betula nana*, *Ledum palustre* ssp. *decumbens*, and *Salix* spp. including *S. pulchra*, *S. glauca*, and *S. barclayi*. Dwarf shrubs such as *Vaccinium uliginosum*, *V. Vitis-idaea*, and *Linnaea borealis* may be common. Herbaceous species including *Calamagrostis canadensis* *Equisetum pratense*, *Equisetum arvense*, and *Gymnocarpium Dryopteris* may be common. Mosses and lichens are present in varying amounts.

Alagnak floodplain plant associations: *Picea glauca–Betula papyrifera* var. *kenaica/Calamagrostis Canadensis*, *Picea glauca–Populus balsamifera–Betula papyrifera* var. *kenaica/Viburnum edule*

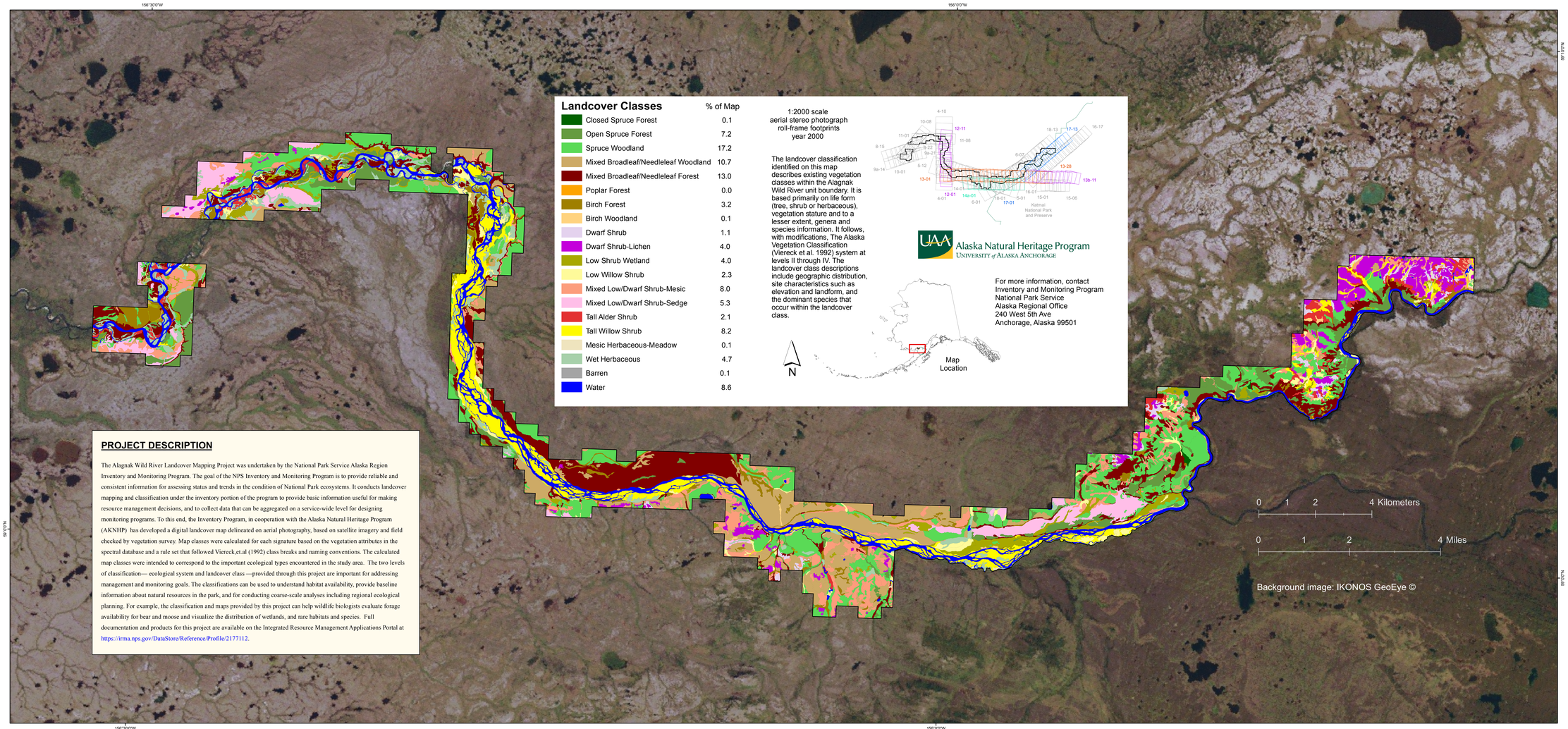
Poplar Forest

Classification: Tree canopy cover is at least 10%. Broadleaf tree cover is 75% or more of the total tree cover, and balsam poplar dominates the tree layer.

Environment: This uncommon class occurs in small patches on floodplain terraces and adjacent uplands. The slope ranges from relatively level on floodplains to moderately steep on hillsides. This class was mapped on 0.02% of the study area. On steep sideslopes, this class occurs intermixed with the Birch Forest class. On floodplain terraces, this class is associated with the Tall Willow class.

Vegetation: *Populus balsamifera* dominates the tree layer, and *Betula papyrifera* var. *kenaica* is a common associate. *Alnus incana* ssp. *tenuifolia* may be common in the shrub layer. Common species in the herbaceous layer include *Calamagrostis canadensis*, *Equisetum arvense*, *Equisetum pratense*, *Cornus canadensis*, *Rubus arcticus*, and *Gymnocarpium dryopteris*. Mosses such as *Rhytidiadelphus* spp. and *Hylocomium splendens* may be common in the ground layer.

Alagnak floodplain plant associations: *Populus balsamifera/Alnus incana* ssp. *tenuifolia/Calamagrostis canadensis*



PROJECT DESCRIPTION

The Alagnak Wild River Landcover Mapping Project was undertaken by the National Park Service Alaska Region 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, the Inventory Program, in cooperation with the Alaska Natural Heritage Program (AKNHP) has developed a digital landcover map delineated on aerial photography, 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 calculated map classes were intended to correspond to the important ecological types encountered in the study area. The two levels of classification— ecological system and landcover class —provided through this project are important for addressing management and monitoring goals. The 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. For example, the classification and maps provided by this project can help wildlife biologists evaluate forage availability for bear and moose and visualize the distribution of wetlands, and rare habitats and species. Full documentation and products for this project are available on the Integrated Resource Management Applications Portal at https://irma.nps.gov/DataStore/Reference/Profile/2177112.

Birch Forest

Classification: Tree canopy cover is at least 25%. Broadleaf tree cover is 75% or more of the total tree cover, and Kenai birch dominates the tree layer.

Environment: The Birch Forest class occurs at low elevations on side slopes and valley bottoms. It also occurs as localized patches within the floodplain. The slope ranges from relatively level on floodplains to moderately steep on hillsides. This class commonly occurs adjacent to other forested classes including Mixed Broadleaf/Needleleaf Forest and Spruce Woodland. This class was mapped on 3.2% of the study area.

Vegetation: *Betula papyrifera* var. *kenaica* dominates the tree canopy. Common canopy associates include *Populus balsamifera* and *Picea glauca*. The understory is variable across the landscape. *Betula nana*, *Ledum palustre* ssp. *decumbens*, and *Vaccinium vitis-idaea* are often common on upland sites. Within the floodplain, common species include *Alnus incana* ssp. *tenuifolia*, *Viburnum edule*, *Salix pulchra*, *Calamagrostis canadensis*, and *Equisetum arvense*. Mosses and lichens are present in varying amounts.

Alagnak floodplain plant associations: None defined.

Birch Woodland

Classification: Tree canopy cover is 10 to 24%. Broadleaf tree cover is 75% or more of the total tree cover, and Kenai birch dominates the tree layer.

Environment: Birch Woodland occurs at low elevations on side slopes and valley bottoms. It also occurs as localized patches within the floodplain. Slopes range from flat on the floodplain to gently sloping on upland sites. This is a minor class that often occurs in combination with tall shrub classes such as Tall Alder and Tall Willow. It can also occur as an early to mid-seral forest type occurring post-fire, and as the forest matures, it will likely transition to a Birch Forest or Mixed Broadleaf/ Needleleaf Forest class. Common adjacent landcover classes include Mixed Broadleaf/Needleleaf Forest and woodland, Birch Forest, Open Spruce Forest, and Spruce Woodland. This class was mapped on 0.1% of the study area.

Vegetation: *Betula papyrifera* var. *kenaica* dominates the tree canopy. Common canopy associates include *Picea glauca* seedlings and saplings. The understory is variable across the landscape. *Betula nana*, *Ledum palustre* ssp. *decumbens*, and *Salix glauca* are common on upland sites. Within the floodplain, common species include *Alnus incana* ssp. *tenuifolia*, *Viburnum edule*, and *Calamagrostis canadensis*. Mosses and lichens are present in varying amounts.

Alagnak floodplain plant associations: *Betula papyrifera* var. *kenaica/Alnus incana* ssp. *tenuifolia/Calamagrostis canadensis*

Dwarf Shrub

Classification: Tree canopy cover is less than 10%. Shrub canopy cover is at least 25% and the average shrub height is less than 0.2 meters tall and lichen cover is < 35%.

Environment: The Dwarf Shrub class occurs on rolling hills, mountain sideslopes, rounded mountain ridges, and high elevation valleys. Within the project area, the class occurs commonly on mid to high elevation slopes above the upper reaches of the Alagnak River. Slopes range from gentle to moderately steep and sites are well drained. The Dwarf Shrub class typically occurs above treeline upslope of the Tall Alder class and forested classes. This class is commonly interspersed with the Dwarf Shrub-Lichen class. Other adjacent classes include Tall Alder, Tall Willow, Mixed Low/Dwarf Shrub, Mixed Broadleaf/ Needleleaf Forest and Woodland, Spruce Forest and Woodland. This class was mapped on 1.1% of the study area.

Vegetation: The dwarf shrub canopy is typically dominated by a combination of shrubs including *Vaccinium uliginosum*, *V. vitis-idaea*, *Ledum palustre* ssp. *decumbens*, *Empetrum nigrum*, and *Betula nana*. Other species that may be present include *Salix arctica*, *Arctostaphylos rubra*, and *Carex bigelowii*. Mosses have low cover in the ground layer, and lichen cover is less than 35%.

Alagnak floodplain plant associations: None defined.

Dwarf Shrub–Lichen

Classification: Tree canopy cover is less than 10%. Shrub canopy cover is at least 25% and the average shrub height is < 0.2 meters tall. Lichen cover is greater than 35%. This class was included in the Dwarf Shrub class in the KATM landcover classification.

Environment: The Dwarf Shrub–Lichen class occurs on rolling hills, mountain sideslopes, rounded mountain ridges, and high elevation valleys. Within the project area, the class occurs commonly on well drained mid to high elevation slopes above the upper reaches of the Alagnak River. Slopes range from relatively flat to gently sloping, and slope shape is typically convex. The Dwarf Shrub–Lichen class typically occurs above treeline upslope of the Tall Alder class and forested classes. This class is commonly interspersed with the Dwarf Shrub class. Other adjacent classes include Tall Alder, Tall Willow, Mixed Low/Dwarf Shrub, Mixed Broadleaf/Needleleaf Forest and Woodland, Spruce Forest and Woodland. This class was mapped on 4.0% of the study area.

Vegetation: *Ledum palustre* ssp. *decumbens* and *Empetrum nigrum* are the most abundant species in the dwarf shrub canopy. Other shrub species that commonly occur include *Vaccinium uliginosum*, *V. vitis-idaea*, *Betula nana*, *Salix arctica*, and *Arctostaphylos rubra*. Moss cover is low, but lichens such as *Cladina* spp. and *Flavocetraria* spp. are abundant in the ground layer.

Alagnak floodplain plant associations: None defined.

Low Shrub Wetland

Classification: Tree canopy cover is less than 10%. Shrub cover is at least 25% and the average shrub height is between 0.2 and 1.5 meters tall. This class includes low shrub wetlands dominated by *Myrica gale*, *Betula nana*, and *Ledum palustre* ssp. *decumbens*. In the KATM landcover classification this class was included in the Mixed Low/Dwarf Shrub class.

Environment: The Low Shrub Wetland class occurs on poorly drained valley bottoms and abandoned channels. Slopes are flat. This class is commonly interspersed with the Wet Herbaceous, Low Willow, and Mixed Low/Dwarf Shrub classes. It also occurs on poorly drained areas within forested classes such as Mixed Broadleaf/Needleleaf Forest and Woodland, Open Spruce Forest and Spruce Woodland. This class was mapped on 4.0% of the study area.

Vegetation: *Myrica gale*, *Betula nana*, and *Ledum palustre* ssp. *decumbens* are the most common canopy shrubs. Other shrubs that may share dominance include *Salix barclayi* and *S. pulchra*. *Salix fuscescens* and *Vaccinium oxycoccos* may occur with low canopy cover in the understory. Common herbaceous species include *Calamagrostis canadensis*, *Carex aquatilis*, *Carex pluriflora*, *Eriophorum vaginatum*, *Equisetum arvense*, *E. fluviatile*, *Comarum palustre*, and *Rubus chamaemorus*. Mosses such as *Sphagnum* spp. and *Tomentypnum nitens* are common in the ground layer.

Alagnak floodplain plant associations:
Betula nana–Ledum palustre ssp. *decumbens/Sphagnum* spp. (inactive terrace)
Myrica gale–Salix pulchra
Myrica gale–Betula nana

Low Willow Shrub

Classification: Tree canopy cover is less than 10%. Total shrub cover is 25% to 100%, and *Salix* species 0.2 to 1.5 meters tall contribute 75% or more of the total shrub cover.

Environment: The Low Willow class occurs on the Alagnak River floodplain and on poorly-drained valley bottom sites. Slopes are generally flat. Floodplain sites on which this class occurs are not subjected to frequent flooding. Adjacent classes on the floodplain include Mixed Low/Dwarf Shrub Wetland, Tall Willow, and Wet Herbaceous. This class was mapped on 2.3% of the study area.

Vegetation: *Salix pulchra* and *S. barclayi* are dominant in the shrub canopy. Other shrubs with low canopy cover may include *Myrica gale*, *Dasiphora fruticosa*, *Spiraea stevenii*, and *Betula nana*. Herbaceous species include *Calamagrostis canadensis*, *Carex utriculata*, *Equisetum arvense*, *Comarum palustre*, *Rubus arcticus*, and *Polemonium acutiflorum*.

Alagnak floodplain plant associations: *Salix pulchra–Salix barclayi*

Mixed Low/ Dwarf Shrub- Mesic

Classification: Tree canopy cover is less than 10%. Shrub cover is at least 25% and the average shrub height is between 0.2 and 1.5 meters tall. The combined cover of *Eriophorum* spp. and *Carex* spp. is less than 30%. This class includes non-willow low and dwarf shrublands dominated by *Betula nana* and *Ledum palustre* ssp. *decumbens*.

Environment: The Mixed Low/Dwarf Shrub-Mesic class occurs on sideslopes, inactive terraces, and valley bottoms. Slopes are flat to gently sloping. This class is common on sideslopes above treeline and below the alpine dwarf shrub classes. It is also occurs on ancient river terraces above the current Alagnak River floodplain. This class is commonly interspersed with the Spruce Woodland class. Other adjacent classes include Low Shrub Wetland, Mixed Broadleaf/Needleleaf Forest and Woodland, Spruce Forest, Birch Forest, and Wet Herbaceous. This class was mapped on 8.0% of the study area.

Vegetation: *Betula nana* and *Ledum palustre* ssp. *decumbens* are the most common canopy shrubs. Other shrubs that may share dominance include *Salix barclayi*, *Vaccinium uliginosum* and *V. vitis-idaea*. *Carex bigelowii* and *Eriophorum vaginatum* are often present in the herbaceous layer, but canopy cover of these graminoids generally does not exceed 25%. Other common herbaceous species include *Calamagrostis canadensis* and *Rubus chamaemorus*. Mosses and lichens occur in varying amounts in the ground layer.

Alagnak floodplain plant associations: None defined.

Mixed Low/ Dwarf Shrub- Sedge

Classification: Tree canopy cover is less than 10%. Shrub cover is at least 25% and the average shrub height is between 0.2 and 1.5 meters tall. *Carex* spp. or *Eriophorum* spp. is at least 30%. (This class is equivalent to the Mixed Low/Dwarf Shrub Herbaceous class in the Katmai National Park landcover map, Boggs et al. 2003).

Environment: The Mixed Low/Dwarf Shrub – Sedge class occurs on ancient terraces and gentle slopes above the Alagnak floodplain. Slopes are flat to gently sloping. This class is similar in composition to the Mixed Low/Dwarf Shrub class, but the combined cover of *Carex* spp. and *Eriophorum* spp. is generally >30%. This class was mapped on 5.3% of the study area.

Vegetation: *Betula nana* and *Ledum palustre* ssp. *decumbens* are the most abundant canopy shrubs. Other common shrubs include *Vaccinium uliginosum* and *V. vitis-idaea*. Either *Carex bigelowii* or *Eriophorum vaginatum* is generally the most abundant species in the herbaceous layer. Other common herbaceous species include *Calamagrostis canadensis*, *Carex aquatilis*, *Carex pluriflora*, and *Rubus chamaemorus*. *Sphagnum* spp. is common in the ground layer.

Alagnak floodplain plant associations: None defined.

Tall Willow Shrub

Classification:
Tree canopy cover is less than 10%. Shrub cover is 25 to 100% and average shrub height is at least 1.5 meters. *Salix* species comprise at least 75% of the total shrub cover.

Environment: The Tall Willow class is widespread on the Alagnak River floodplain on terraces, point bars, and islands. It also occurs as small patches on mid-elevation mountain sideslopes and along narrow riparian corridors. Slopes range from flat on the floodplain to moderately steep on sideslopes. On the floodplain, this class is often interspersed with the Wet Herbaceous and Water classes. On upland sites, the Tall Willow class often occurs just down slope of the Dwarf Shrub, Dwarf Shrub-Lichen, and Mixed Low/Dwarf Shrub classes. The Tall Willow class occurs upslope of the forested classes. The Tall Willow and Tall Alder classes occur on similar slope positions on upland sites. This class was mapped on 8.2% of the study area.

Vegetation: *Salix alaxensis*, *S. pulchra*, and *S. barclayi* are the most common shrub species across the Tall Willow class. *Salix alaxensis* is the dominant willow on the most active portion of the floodplain, such as islands in the braided portion of the river, while *S. pulchra* is common on terraces adjacent to the river and also on upland slopes. Dominant understory species include *Calamagrostis canadensis*, *Equisetum arvense*, and *Comarum palustre*. Other minor associated species include *Polemonium acutiflorum* and *Rubus arcticus*.

Alagnak floodplain plant associations:
Salix pulchra–Salix barclayi
Salix pulchra/Calamagrostis canadensis
Salix alaxensis–Salix pulchra
Salix alaxensis/Calamagrostis canadensis–Equisetum arvense

Mesic Herbaceous Meadow

Classification: Tree canopy is less than 10%. Shrub cover is less than 25%, and herbaceous cover is greater than 25%. Sites are mesic with little to no standing water.

Environment: The Mesic Herbaceous Meadow class occurs under a variety of site conditions. Within the study area it occurs primarily on mid-elevation mountain sideslopes. It generally occurs above treeline and below the alpine dwarf shrub classes on slopes that are concave to straight. It also occurs as small patches on floodplain terraces. This class is often interspersed with Tall Alder, Tall Willow, and Mixed low/Dwarf Shrub classes. Along mountain sideslopes, adjacent classes occurring upslope of the Mesic Herbaceous Meadow class include Dwarf Shrub and Dwarf Shrub-Lichen. Tall shrub and forested landcover classes occur down slope of this class. On floodplain terraces, common adjacent classes include Tall Willow and Wet Herbaceous. This class was mapped on 0.1% of the study area.

Vegetation: *Calamagrostis canadensis* is typically the most abundant species. Other common species include *Chamerion angustifolium*, *Equisetum arvense*, *E. sylvaticum*, *Geranium erianthum*, *Heracleum maximum*, *Sanguisorba canadensis*, *Thalictrum sparsiflorum*, and *Spiraea stevenii*.

Alagnak floodplain plant associations: *Calamagrostis canadensis–Forb*

Tall Alder Shrub

Classification: Tree canopy cover is less than 10%. Total shrub cover is 25% to 100% and average shrub height at least 1.5 meters. *Alnus* species contribute greater than 75% of the total shrub cover.

Environment: The Tall Alder class occurs on mid-elevation mountain side slopes above the coniferous treeline and below the alpine dwarf shrub classes. It is also common on the lower portion of the Alagnak River floodplain. Slopes range from flat on the floodplain to moderately steep on upland sites. On upland sites upslope of the Tall Alder class, adjacent landcover classes include Dwarf Shrub, Dwarf Shrub-Lichen, and Mixed Low/Dwarf Shrub. Down slope, adjacent classes include Mixed Broadleaf/Needleleaf Forest, Open Spruce Forest, and Birch Forest. The Tall Willow and Tall Alder classes occur on similar slope positions. Common adjacent landcover classes on the floodplain include Wet Herbaceous, Water, and Mixed Broadleaf/Needleleaf Forest. This class was mapped on 2.1% of the study area.

Vegetation: On upland sites the dominant shrub is *Alnus viridis* ssp. *sinuata* (photo *a*). Other common shrubs may include *Salix* spp. and *Ribes* spp. Understory herbaceous species include *Calamagrostis canadensis*, and *Dryopteris expansa*. On floodplain sites (photo *b*), *Alnus incana* ssp. *tenuifolia* is the dominant shrub, and *Salix pulchra* is a common canopy associate. Understory herbaceous species on the floodplain include *Calamagrostis canadensis*, *Equisetum arvense*, and *Comarum palustre*.

Alagnak floodplain plant associations:
Alnus incana ssp. *tenuifolia/Calamagrostis canadensis*

Wet Herbaceous

Classification: Tree canopy is less than 10%. Shrub cover is less than 25%, and herbaceous cover is greater than 25%. The dominant vegetation is emergent; semi-permanent or standing water is present.

Environment: The Wet Herbaceous class is common on lacustrine deposits, sloughs, saturated river terraces, and the edges of lakes and ponds. sites have standing or semi-permanent water dominated by hydrophilic vegetation. Relative to other classes, the patch size of the Wet Herbaceous class is generally small and patchy in distribution. On the Alagnak River floodplain, this class often occurs interspersed with the Tall Willow class. This class was mapped on 4.7% of the study area.

Vegetation: Graminoid species typically dominate the upper canopy layer in the Wet Herbaceous class. *Calamagrostis canadensis*, *Carex aquatilis*, *Carex lyngbyei*, *Carex pluriflora*, *Carex utriculata*, and *Arctophila fulva* are species that often dominate the graminoid layer. *Comarum palustre* often occurs under canopies dominated by *Carex* spp. Other species that are often present include *Equisetum fluviatile*, *Eriophorum angustifolium*, *E. chamissonis*, and *E. russeolum*. *Arctophila fulva* forms near monocultures in still or slow-moving standing water. *Sphagnum* spp. is the most common moss genus.

Alagnak floodplain plant associations:
Calamagrostis canadensis–Wetland
Carex lyngbye/ Calamagrostis canadensis
Carex lyngbye/–Comarum palustre
Carex lyngbye/–Carex aquatilis
Carex aquatilis–Comarum palustre
Carex utriculata
Carex pluriflora–Comarum palustre
Arctophila fulva

Barren

Classification:
Total vegetation cover is less than 15%, and bare ground dominates.

Environment:
Barren ground was mapped along the active portion of the Alagnak River floodplain on cut banks and non-vegetated portions of point bars and islands.

This class was mapped on 0.1% of the study area.

Water

Classification: Total vegetation cover is less than 15%, and water dominates.

Environment: Most of the area mapped as Water is the Alagnak River. Additional areas include ponds, small lakes, sloughs, side streams, and areas within side streams that have been flooded by beaver dams.

This class was mapped on 8.6% of the study area.