

**Chuitna Coal Project
Supplement to Baseline Report for
Vegetation and Wetlands**

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Appendix B.	Updated Project Plant Species List
Appendix C.	Vegetation and Wetland Maps for the New Infrastructure Corridor
Appendix D.	Updated Vegetation Data Summary Tables
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Appendix F.	Updated Soil Series Associated with Major Vegetation Community Types

Abbreviations and Acronyms

AKEPIC – Alaska Exotic Plant Information Clearinghouse

AKNHP – Alaska Natural Heritage Program

AS – Alaska Statutes

ASCMCRA – Alaska Surface Coal Mining Control and Reclamation Act

NEPA – National Environmental Policy Act

PI – Prevalence Index

RI – Relative Importance

USACE – United States Army Corps of Engineers

1.0 Introduction

The Chuitna Coal Project is a mining project being developed by PacRim Coal LP. The coal resources and proposed facilities are located north of the Chuit River, approximately 45 miles west of Anchorage, Alaska, on the west side of Cook Inlet. In the early 1990s, after a decade of baseline studies, a previous project design was permitted under the Alaska Surface Coal Mining Control and Reclamation Act (ASCMCRA; Alaska Statutes [AS] 27.21) and evaluated under the National Environmental Policy Act (NEPA). That project design was not implemented, and after several years of inactivity a revised project is now proposed.

A Baseline Report for Vegetation and Wetlands was submitted to the Alaska Department of Natural Resources in May 2007 (HDR Alaska 2007). The Baseline Report covered the methods and results to characterize vegetation and wetlands. This supplement includes additional data collected along a new segment of infrastructure corridor. That segment runs approximately six miles, between Ladd Landing Development to where it joins the infrastructure corridor already documented in the Baseline Report. The new infrastructure corridor route is shown in Figure 1 below.

All tables and appendices from the Baseline Report which summarized field data or mapping acreage have been completely updated and replaced in this supplement. Table 1 shows the tables, figures, and appendices from the Baseline Report which have been updated and lists the corresponding numbers for the updated information in this supplement. Unless otherwise noted, the updated tables, figures, and appendices are complete replacements of their counterparts in the original Baseline Report.

Table 1. Tables, Figures, and Appendices Updated in this Supplement

Tables, Figures, and Appendices from Baseline Report	Updated Tables, Figures, and Appendices in this Supplement
Table 1. Mapping and field work acreage by project component	Table 2
Table 2. Major and minor communities and associated Viereck Level IV community types	Not Updated
Table 3. Sample adequacy results for major vegetation community types	Table 3
Table 4. Types of problem area wetlands observed at the Chuitna Coal Project	Not Updated
Table 5. Acreage of isolated wetlands in Area 1, Ladd Landing Development, and the Chuitna Coal Mine	Table 4
Table 6. Acreage of questionable wetlands in the Chuitna Coal Mine field work area	Not Updated
Table 7. Major and minor vegetation community types and their acreages by project component	Table 6
Table 8. Major and minor vegetation community types and their wetland acreages by project component	Table 7
Table 9. Aquatic vegetation communities observed in the project area	Not Updated
Table 10. Rare plants found during vegetation and wetland studies for the Chuitna Coal Project	Not Updated

Table 1 continued. Tables, Figures, and Appendices Updated in this Supplement

Table 11. Non-native plants found during vegetation and wetland studies for the Chuitna Coal Project	Not Updated
Figure 1. Vegetation and wetlands mapping and field work areas	Figure 1
Figure 2. Landforms and definitions used for wetland determination plots	Not Updated
Figure 3. Eh-pH diagram	Not Updated
Figure 4. Community types identified through statistical analysis	Not Updated
Appendix A. Field Forms and Photographs	Appendix A. Only plots sampled in 2007 are included in this supplement.
Appendix B. Project Plant Species List	Appendix B
Appendix C. Climate Summary	Not Updated
Appendix D. Vegetation and Wetland Maps for the Project Area	Appendix C. Only maps for the new infrastructure corridor are included in this supplement: J-11, J-12, K-11, K-12, L-12, and M-12.
Appendix E. Mapping Code Crosswalk	Not Updated
Appendix F. Statistical Stratification of Vegetation Communities (PC-ORD)	Not Updated
Appendix G. Vegetation Data Summary Tables	Appendix D
Appendix H. Wetland Indicators Observed at Each Wetland Determination Plot	Appendix E. Only Wetland Determination Plots sampled in 2007 are included in this supplement.
Appendix I. Cowardin Codes Associated with Vegetation Community Types	Not Updated
Appendix J. Soil Series Associated with Major Vegetation Community Types	Appendix F
Appendix K. Notable Plants Memorandum	Not Updated

2.0 Methods

Detailed methods for the wetlands and vegetation study programs were originally provided in the Baseline Study Methods for Wetlands and Vegetation submitted on March 15, 2006 (HDR Alaska Inc. 2006a, b). The Baseline Report summarizes those methods and includes modifications that occurred during the course of field work conducted in 2006 (HDR Alaska 2007). Field methods for the new infrastructure corridor follow those described in the Baseline Report, except for details specific to the new infrastructure corridor that are provided below.

2.1 Study Area

The study area for 2007 includes both a mapping area and a field work area for the new infrastructure corridor, which is part of Area 1.¹ To generate the mapping area, a ¼-mile buffer was placed on either side of the new infrastructure corridor centerline. The field work area for the new infrastructure corridor was created by placing a 250-foot buffer to either side of the centerline to define the potentially affected area. Mapping acreages and boundaries for Areas 1 and 2 have been revised in Table 2 and Figure 1 below.

Table 2. Mapping and field work acreage by project component

Project Component	Total Acres	
	Field Work	Mapping
Chuitna Coal Mine	5,010	9,170
Area 1	1,100	6,200
Area 2	3,500	11,840
Ladd Landing Development	800	2,870
Total	10,410	30,080

2.2 Preliminary Mapping and Random Point Placement

Vegetation communities were mapped to Level IV of The Alaska Vegetation Classification (Viereck et al. 1992) within the mapping area for the new infrastructure corridor. Where mapping already existed from the Baseline Report, it was clipped and copied into the mapping area for the new infrastructure corridor. All mapping for the new infrastructure corridor follows the methods described for Area 1 in Section 2.4.2 of the Baseline Report. The preliminary mapping was used to place random points for vegetation data collection in the field work area for the new infrastructure corridor.

Random points were generated using an ArcGIS supplemental toolbox called Hawth's tools (Beyer 2004). Due to the high ratio of edge to interior area in the mapped polygons, random points were excluded from a 50-foot buffer placed on either side of all polygon boundaries. Two random points were placed in each of the vegetation polygons to create a total of 76 random points. These points were further pared down by randomly selecting three for each of the Viereck Level IV community types, which resulted in 37 random points. Field investigators subjectively chose vegetation plots from among these random points based on daily field logistics and to target under-sampled community types. Major community types were adequately sampled in 2006, so minor community types were targeted. This included wetland community types that are part of the large wetland mosaics and black spruce forests, which are much more prevalent in lower elevations east of the Chuitna Coal Mine.

¹ Detailed descriptions of the project infrastructure components included in Areas 1 and 2 are provided in the Baseline Report.

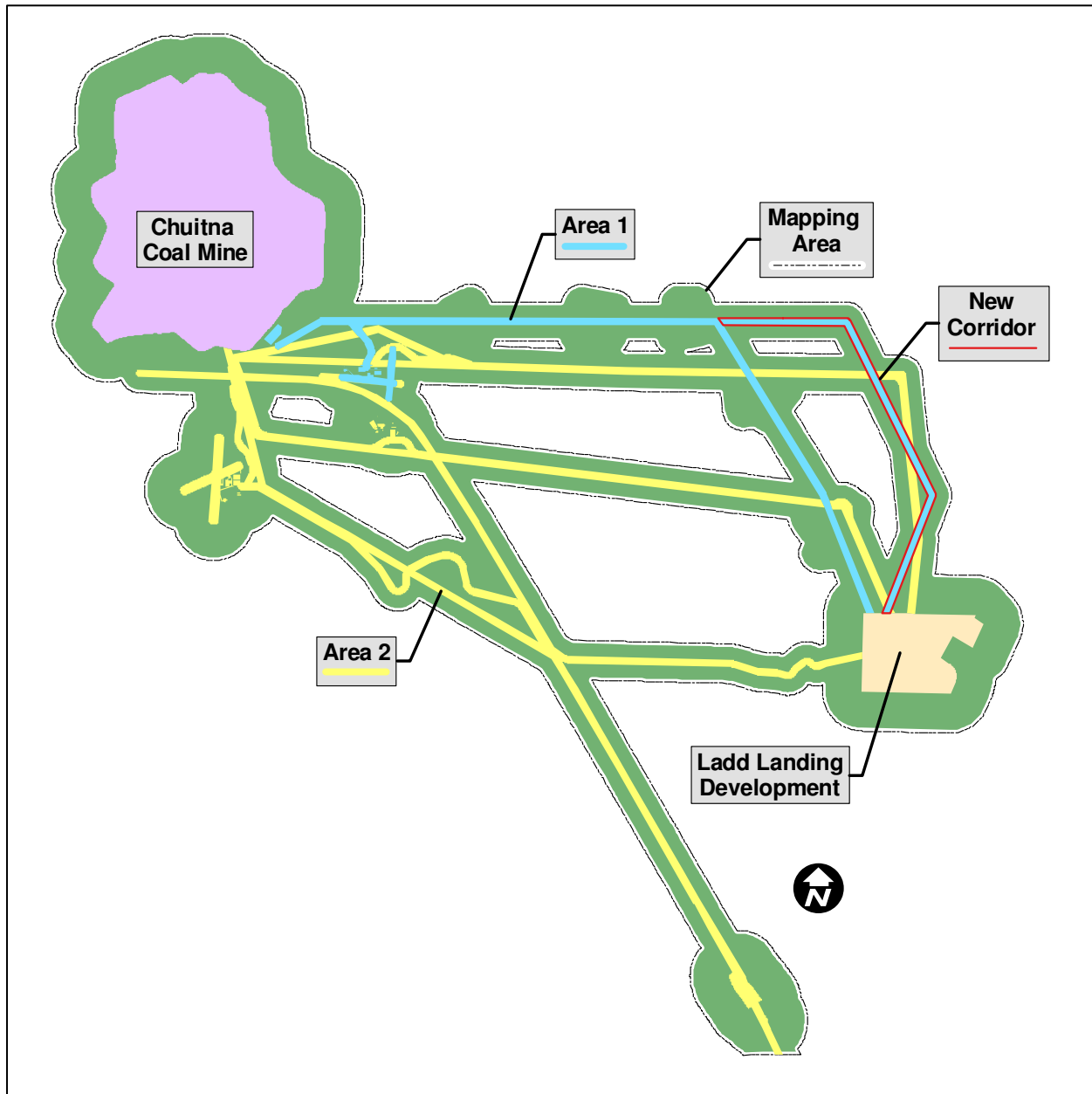


Figure 1. Vegetation and wetlands mapping and field work areas

2.3 Field Work

Field work for the new infrastructure corridor in Area 1 includes plots used to characterize the vegetation and make wetland determinations. Field methods follow those described in the Baseline Report and are not repeated here. Minor changes to the vegetation and wetlands data collection methods are listed below:

- Additional vegetation data collection targeted communities present in the new infrastructure corridor.
- No aquatic vegetation was sampled in the new infrastructure corridor in 2007.
- ORP and pH were not measured in problematic soils in 2007.

Copies of completed data forms and site photographs for both vegetation and wetland determination plots sampled as part of the new infrastructure corridor in 2007 are included in Appendix A.

2.3.1 Climate data summary

Wetland determinations require identification of wetland hydrology indicators at the time of data collection. Wetland hydrology indicators are best observed in the spring at the beginning of the growing season and in the fall during the rainy season, although in drier than normal years, they may not be observed even at these times. Hydrology indicators may often be absent during the driest period of the summer. The Alaska Regional Supplement (USACE 2006) provides many alternative indicators of wetland hydrology to consider in the absence of direct observation of wetland hydrology (flooding, saturation, or a water table within 12 inches of the surface). It is important to evaluate the precipitation preceding the periods when data were collected to understand whether the climatic conditions were close to normal or if they were wetter or drier than the average. This helps investigators interpret hydrology indicators that may be absent at wetland sites in dry years or present at upland sites in wet years.

Precipitation data collected at Ladd Landing Development were evaluated to determine if hydrology indicators observed during field work conducted in the summer of 2007 were representative of normal conditions. The winter storage amount at Ladd Landing Development (September 2006 – May 2007) was 16.8 inches, very close to the average winter storage of 18.3 inches from the Beluga historical dataset (1973-1992). From this, it is expected that groundwater tables and soil moisture observed the following spring and early summer (2007) were normal in Beluga.

In addition to winter storage, monthly precipitation data for June and July were compared to the historical Beluga dataset. Field work was conducted during the first week of July in 2007. Both June and July were drier than normal: 36% and 50% of the average rainfall, respectively. Field work conducted in July occurred when conditions were drier than average; thus, saturated conditions observed in sites sampled during July likely reflect long-term saturation, rather than recent precipitation events.

2.4 Final Mapping

Final mapping methods follow those described in the Baseline Report for Area 1 (minimum vegetation polygon size is ¼ acre). Isolated wetlands were mapped for the new infrastructure corridor. Questionable wetlands were not mapped for the new infrastructure corridor because they were only identified in the Chuitna Coal Mine. Appendix C contains vegetation and wetland maps at 1:4800 scale (1 in = 400 ft) for the new segment of the infrastructure corridor.

2.5 Quality Control

Quality control (QC) procedures described in the Baseline Report were followed for the new infrastructure corridor.

3.0 Results

The community types used to describe wetlands and vegetation were defined in the Baseline Report. Section 3.1 of this supplement includes new sample adequacy results for the major community types. Sections 3.2 and 3.3 cover problematic and isolated wetlands, respectively. Questionable wetlands are not included in this supplement because no questionable wetlands were mapped for the new infrastructure corridor. Section 3.4 includes updated information on other waters mapped in the project area. Detailed community descriptions presented in Section 3.5 of this report were updated and include information on vegetation, wetland status, landforms, soils, and hydrology. Section 3.6 includes a discussion of notable plant species observed in 2007.

3.1 Definition of Community Types

The methods used for defining community types are provided in the Baseline Report. Vegetation data collected in 2007 for the major community types were used to recalculate sample adequacy. Sample adequacy is a statistical test that uses the Snedecor-Cochran formula to determine whether enough vegetation plots were sampled to adequately represent each community. Sample adequacy is based on a 90% confidence level. Although minor wetland community types that are included in the wetland mosaics were targeted for sampling, four of these plots keyed out to sweetgale fen. These plots

generally had lower total cover values than those sampled in 2006 because field work was conducted earlier in the summer. This resulted in an increase in variability and an associated increase in the recommended sample size. However, all major communities met sample adequacy; the results are shown in Table 3 below.

Table 3. Sample adequacy results for major vegetation community types

Major Community Type	Total Plots Sampled in Community Type ¹	Average Total Cover (%)	Recommended Sample Size (N _{min})	Sample Size Adequate?	Change from 2006 N _{min}
Spruce-birch forest	15	171	10	Yes	+ 1
Alder scrub	7	182	5	Yes	Not sampled
Shrub swamp	13	154	9	Yes	+ 1
Sweetgale fen	23	98	19	Yes	+ 4
Fireweed meadow	15	140	9	Yes	Not sampled
Bluejoint meadow	6	114	2	Yes	Not sampled

¹ Excluding herb-dominated plots sampled in June 2006.

3.2 Problem Area Wetlands

A complete discussion of the types of problem area wetlands identified in the project area is included in the Baseline Report. Seven wetland determination plots were problematic in 2007: six plots had problematic vegetation (PI ≥ 3.0) and standard indicators of hydric soils and one plot had hydrophytic vegetation, but problematic soils. All wetland determination plots in 2007 had primary indicators of wetland hydrology.

3.3 Isolated Wetlands

Isolated wetlands were mapped in the new infrastructure corridor. These wetlands do not appear to have a surface hydrologic connection to a tributary to a navigable waterbody. The total isolated wetland acreage by community type is shown in Table 4 below.

Table 4. Acreage of isolated wetlands in Area 1, Ladd Landing Development, and the Chuitna Coal Mine

Vegetation Community Type	Isolated Wetland Acreage Within Project Component Mapping Area			Total Isolated Wetland Acreage Mapped
	Area 1	Ladd Landing Development	Chuitna Coal Mine	
Alder scrub	0	0	7	7
Bluejoint meadow	5	1	8	13
Ericaceous scrub	0	0	6	6
Fireweed meadow	<1	0	1	1
Sedge bog meadow	2	0	0	2
Sedge wet meadow	4	0	0	4
Shrub swamp	0	0	<1	<1
Spruce-birch forest	1	1	28	30
Sweetgale fen	2	<1	17	19
Vegetated pond ¹	5	0	1	6
White spruce forest	0	0	1	1
Willow scrub	0	0	3	3
Total isolated wetland acreage:	18	2	72	92

¹ Not a wetland under strict wetland definition. Rather, this is a type of other water of the U.S.

3.4 Other Waters

Other non-wetland waters mapped in the project area include ponds, lakes, streams, beaches, and mudflats. These do not meet the strict definition of “wetlands” used by the USACE because they do not have soil and do not have abundant vegetation. These are simply “waters of the U.S.” Mileage for streams and acreage for other waters are shown by project component in Table 5 below.

- Rivers and streams were mapped throughout the project area and include both perennial and intermittent streams. These are generally not shown in summary tables because they were mapped as linear features, rather than polygons, because they are so narrow. The exception is the Chuit River, which is wide enough to map as a polygon. The total mileage of perennial and intermittent streams in the mapping area is 143 and 4 miles, respectively.
- Ponds and lakes were mapped throughout the project area. They are shown on the mapping and described as vegetated ponds because they generally support vegetation at least along their margins. They are included in the tables that summarize wetland acreages and in other discussions of wetlands; there, the term “wetlands” should be interpreted in the broad sense. The mapping area includes 662 acres of lakes and ponds.
- Mudflats and beaches were mapped along the coastline of Cook Inlet in Ladd Landing Development and Area 2. They are included within the “unvegetated coastal” minor community type. These unvegetated areas occur below the high tide line of Cook Inlet. Where the unvegetated coastal land cover type is shown in tables and included in discussions under the

heading “wetland”, that term should be interpreted in the broad sense. These areas are not strictly within the wetland subset of “waters of the U.S.” The total area of mudflats and beaches is 810 acres.

Table 5. Acreage of other waters and stream mileage by project component

Other Water Acreage Within Project Component Mapping Area					Total Other Water Acreage Mapped
Other Water Type	Area 1	Area 2	Ladd Landing Development	Chuitna Coal Mine	
Beach and mudflat	0	223	587	0	810
Vegetated pond	149	242	115	156	662
Total other water acreage:	149	465	701	156	1,472
Stream Mileage Within Project Component Mapping Area					Total Stream Mileage Mapped
Stream Type	Area 1	Area 2	Ladd Landing Development	Chuitna Coal Mine	
Intermittent stream	1	1	0	2	4
Perennial stream	25	45	4	70	143
Total stream mileage:	26	45	4	72	147

3.5 Community Type Data Summaries

Vegetation data for the major and minor vegetation communities are summarized in Appendix D. Twelve vegetation plots were sampled in 2007 and included in the tables updated for this supplemental report. Definitions and calculations for the summary statistics used in the tables and the following descriptions are provided below.

- Average absolute cover was calculated for each plant species in each community type by averaging the absolute cover values across all the plots in the community.
- Average relative cover was calculated for each plant species in each community type by dividing the average absolute cover value by the average total vascular plant cover for the community.
- Average plant densities within the 2,000-square-foot belt transect (plants/2,000 ft²) were calculated for tree and shrub species² by averaging the density totals across all the plots in the community. For plant species that were not always included in density measurements due to their variable height (taller or shorter than the 20-inch cutoff), plant densities were calculated by averaging the density totals across all the plots in the community minus the plots in which the plant was found but not counted.
- Average plant densities per acre were calculated by converting the average plant density within the belt transect area to the plant density per acre.
- Constancy is a measure of how consistently a species occurs in the plots for a community type. Constancy was calculated by summing the number of plots at which a species was observed and dividing that by the total number of plots in a community. Plants that were observed in the field at a sampling plot but were physically located outside of the cover and density sampling areas were

² Note that densities were not counted for shrub species shorter than 20 in or for some shrubs taller than 20 in. See Section 2.3.1.

considered present in the plot for the purpose of the constancy calculation. Constancy is reported as a percentage of the total number of plots in that community type.

- The relative importance (RI) index provides a way to compare species diversity across community types. The index ranges from 0-200 and is calculated by summing the relative cover value (0-100%) and the constancy value (0-100%). Relative importance is a useful measure because it not only includes information on a species' relative cover but also on its frequency of occurrence (constancy) within the community type. The limitation of using RI, however, is that it can overemphasize constancy when considering dominant plant species. Species with low relative cover but high constancy can easily achieve RI values over 100 and be considered as important as plants with more plant cover and higher biomass that are not consistently present in all plots for a community type.
- Species richness is the total number of plant species observed at each plot. This includes all plants recorded for quantitative measurements (cover and density) and also those plants observed at the site but outside the measurement areas for cover (ground hoops or 200-foot point-intercept transect) and density (belt transect). The number of species in each plot and the average, minimum, and maximum number of species in each community type are all provided on the cover data sheet.
- The complete species list for each community is on the cover data sheet. Only those tree or shrub species which have density information are displayed on the density data sheet.

3.5.1 Major Communities

Five major community types were identified in the project area; these are listed with their acreage by project component in Table 6. Plant species associated with each community type are discussed under the community descriptions below. The community descriptions have been updated to reflect data from 2006 and 2007 vegetation and wetland plots. An updated list of plant species with both scientific and common names is in Appendix B.

Major communities accounted for 67% of the mapping area, and 85% of the Chuitna Coal Mine. Spruce-birch forest was the dominant community type across all project components, accounting for 50% of the total mapped acreage and 47% within the Chuitna Coal Mine. In the Chuitna Coal Mine, alder scrub formed the second most extensive community (12% of mine acreage). Sweetgale fen was nearly as prevalent within the Chuitna Coal Mine (11% of mine acreage). Both alder scrub and sweetgale fen covered only 5% of the entire mapping area. Fireweed meadow and shrub swamp comprised 9% and 6% of the Chuitna Coal Mine, respectively.

Table 6. Major and minor vegetation community types and their acreages by project component

Vegetation Community Types	Acreage Within Project Component Mapping Area				Percent of Mine Area*	Total Acreage Mapped	Percent of Mapped Area
	Area 1	Area 2	Ladd Landing Development	Chuitna Coal Mine			
Major community types							
Spruce-birch forest	3,418	6,060	1,273	4,312	47%	15,063	50%
Alder scrub	108	305	5	1,117	12%	1,536	5%
Shrub swamp	165	289	21	570	6%	1,045	3%
Sweetgale fen	274	281	31	1,024	11%	1,611	5%
Fireweed meadow	64	134	2	812	9%	1,011	3%
Total acreage covered by major communities:	4,029	7,068	1,333	7,835	85%	20,265	67%
Minor community types							
Poplar forest	0	81	5	63	1%	149	0%
White spruce forest	27	12	0	428	5%	467	2%
Black spruce forest	464	770	194	27	<1%	1,456	5%
Willow scrub	11	6	0	65	1%	81	0%
Ericaceous scrub	23	45	2	73	1%	143	0%
Bluejoint meadow	119	170	12	235	3%	536	2%
Mixed forb meadow	<1	0	4	27	<1%	31	0%
Sedge wet meadow	53	59	18	10	<1%	141	0%
Sedge bog meadow	15	22	1	31	<1%	69	0%
Vegetated pond	149	242	115	156	2%	662	2%
Drained beaver pond	0	0	0	4	<1%	4	0%
Dune grass meadow	0	7	0	0	0%	7	0%
Wetland mosaic	880	1,143	506	215	2%	2,744	9%
Unvegetated coastal type	0	226	594	0	0%	820	3%
Disturbed area	429	1,974	86	0	0%	2,489	8%
Chuit River	0	18	0	0	0%	18	0%
Total acreage covered by minor communities:	2,170	4,773	1,537	1,335	15%	9,816	33%
Total acreage:	6,199	11,842	2,870	9,170	100%	30,081	100%

* Percent of mine area is shown separately because field effort was concentrated in that project component (See Section 3.1 of the Baseline Report).

Table 7 shows the wetland acreage of each major and minor community type for each project component. The total wetland acreage across the mapping area is 42%. There is a slightly higher percentage of

wetlands in the Chuitna Coal Mine at 43%. The wetland mosaics have the highest wetland acreage, 9% of the mapping area, closely followed by forests at 8%.

A summary of all the 2007 wetland determination plots with their vegetation prevalence indexes, hydric soil indicators, and hydrology indicators is provided in Appendix E. This includes both wetland determination plots and the vegetation plots where soils and hydrology data were collected.

The associations between the major vegetation community types and soil series mapped in the project area are provided in Appendix F. For each major vegetation community, the dominant soil series mapped within that type are listed along with the percentage of the community type they comprise. The remaining soil series mapped for each community type are summarized based on their hydric status.

Table 7. Major and minor vegetation community types and their wetland acreages by project component

Vegetation Community Types	Wetland Acreage Within Project Component Mapping Area				Percent of Mine Area*	Total Wetland Acreage Mapped	Percent of Mapped Area
	Area 1	Area 2	Ladd Landing Development	Chuitna Coal Mine			
Major community types							
Spruce-birch forest	409	959	122	1,003	11%	2,494	8%
Alder scrub	33	35	0	170	2%	238	1%
Shrub swamp	165	286	21	570	6%	1,045	3%
Sweetgale fen	274	281	31	1,024	11%	1,611	5%
Fireweed meadow	<1	6	0	3	<1%	9	<1%
Total wetland acreage covered by major communities:	882	1,567	175	2,770	30%	5,394	18%
Minor community types							
Poplar forest	0	5	5	3	<1%	13	<1%
White spruce forest	27	12	0	355	4%	394	1%
Black spruce forest	464	770	194	27	<1%	1,456	5%
Willow scrub	11	5	0	52	1%	68	<1%
Ericaceous scrub	23	45	2	73	1%	143	<1%
Bluejoint meadow	119	170	10	234	3%	534	2%
Mixed forb meadow	<1	0	0	<1	<1%	<1	<1%
Sedge wet meadow	53	59	18	10	<1%	141	<1%
Sedge bog meadow	15	22	1	31	<1%	69	<1%
Vegetated pond	149	242	115	156	2%	662	2%
Drained beaver pond	0	0	0	4	<1%	4	<1%
Dune grass meadow	0	0	0	0	0%	0	0%
Wetland mosaic	880	1,143	506	215	2%	2,744	9%
Unvegetated coastal type	0	223	587	0	<1%	810	3%
Disturbed area	<1	43	2	0	<1%	45	<1%
Chuit River	0	18	0	0	<1%	18	<1%
Total wetland acreage covered by minor communities:	1,741	2,756	1,440	1,162	13%	7,100	24%
Total wetland acreage:	2,623	4,324	1,615	3,932	43%	12,494	42%

* Percent of mine area is shown separately because field effort was concentrated in that project component (See Section 3.1 of the Baseline Report).

3.5.1.1 Spruce-birch forest

Spruce-birch forests are widespread throughout the project area but are slightly less common in the Chuitna Coal Mine. In Ladd Landing Development and parts of Area 1 and Area 2 near the coast, these communities occur as large stands. Moving away from the coast toward the Chuitna Coal Mine, stand size decreases and the forest communities transition to mosaics with communities of alder scrub and herbaceous meadows. This community type occurs as both uplands and wetlands throughout the mapping area. It was mapped as upland on backslopes, shoulders, and hilltops in the Chuitna Coal Mine and across the outwash plain from Lone Creek eastward to the coast. It was mapped as wetland in toeslope positions, along discharge slopes, and along the margins of fens throughout the project area. Wetlands in this community type are typically problematic, because the vegetation prevalence index is too high to indicate hydrophytic vegetation. Also, a substantial area mapped as wetland in this community type is questionable wetland because it is difficult to distinguish from upland on aerial photography.

Vegetation Data Summary

- Number of vegetation plots: 15
- Acreage in total mapping area: 15,063 acres
- Percent of total mapping area: 50%
- Percent of Chuitna Coal Mine mapping area: 47%
- Viereck Level IV community types:
 - Closed birch forest
 - Open birch forest
 - Disturbed-open birch forest (logged for spruce)
 - Open spruce-birch forest
 - Open spruce-birch-poplar forest
 - Spruce-birch woodland
- Relative cover of each plant stratum:
 - Trees 29%
 - Shrubs 41%
 - Herbs 30%
- Plant species in each stratum with highest absolute cover, relative importance (RI, scale of 0-200), or both:
 - Trees

▪ Kenai birch	31% cover	RI = 118
▪ White spruce	15% cover	RI = 109
 - Shrubs

▪ Squashberry	19% cover	RI = 104
▪ Rusty menziesia	10% cover	RI = 39
▪ Barclay willow	7% cover	RI = 58
 - Herbs

▪ Bluejoint reedgrass	13% cover	RI = 101
▪ Oak fern	8% cover	RI = 91
▪ Field horsetail	6% cover	RI = 77
▪ Mountain woodfern	5% cover	RI = 96
▪ European starflower	1% cover	RI = 101
- Trees and shrubs with high densities:
 - Trees

▪ Kenai birch	367 plants/acre
▪ White spruce	213 plants/acre
 - Shrubs

▪ Squashberry	3,611 plants/acre
▪ Early blueberry	1,022 plants/acre
▪ Swamp red currant	976 plants/acre
▪ Rusty menziesia	958 plants/acre
- Average plant species counted within each plot: 31 (range 24-41)

Wetlands Data Summary

- Number of wetland determination plots (including vegetation plots):
 - Uplands 103 plots
 - Wetlands 80 plots
 - Problematic wetlands 70 plots
- Acreage and percentage of total mapping area:
 - Uplands 12,569 acres 42%
 - Wetlands 2,494 acres 8%
- Acreage and percentage of Chuitna Coal Mine mapping area:
 - Uplands 3,309 acres 36%
 - Wetlands 1,003 acres 11%
 - Questionable wetlands 379 acres
- Range of prevalence indexes observed:
 - Uplands 3.0 - 4.5
 - Wetlands 2.0 - 4.1
 - Problematic wetlands 3.0 - 4.1
- Hydric soil indicators commonly observed:
 - Histosol
 - Histic Epipedon
 - Hydrogen Sulfide Odor
 - Alaska Redox with 2.5Y Hue
 - Other: Explained in Section 3.2.4 of the Baseline Report
- Wetland hydrology indicators commonly observed:
 - Surface Water
 - High Water Table
 - Saturation
 - Hydrogen Sulfide Odor
 - Dry Season Water Table
 - Water Stained Leaves
 - Drainage Patterns
 - Oxidized Rhizospheres on Living Roots
 - Presence of Reduced Iron Fe²⁺
 - Stunted or Stressed Plants
 - Geomorphic Position
 - Shallow Aquitard

3.5.1.2 Alder scrub

Alder scrub occurs throughout the project area, although it is most common in the Chuitna Coal Mine. It occurs as both upland and wetland; it is usually wet where groundwater discharge or seeps exist along the slope or groundwater is shallow. It is mapped as upland on hilltops, shoulders, and on most backslopes.

Wet alder scrub communities differ from shrub swamps in their landform position, degree of inundation, and plant species. Alder scrub wetlands tend to be found on backslopes. Sitka alder is more common in alder scrub communities while thinleaf alder is more common in shrub swamp communities.

Many alder scrub sites determined to be wetlands in the field were Problem Area wetlands, primarily because the vegetation had a prevalence index greater than 3.0. At some of these sites, the wetland hydrology that was observed may have been the result of heavy late-summer rains. The determination that these sites are wetlands was a conservative decision; that is, the investigators erred on the side of calling sites wetlands. A substantial acreage of the alder scrub mapped as wetland in the mine area is questionable wetland; that is, it is conservatively mapped as wetland because it is on a landform that sometimes supports wetlands.

Vegetation Data Summary

- Number of vegetation plots: 7

- Acreage in total mapping area: 1,536 acres
- Percent of total mapping area: 5%
- Percent of Chuitna Coal Mine mapping area: 12%
- Viereck Level IV community types:
 - Closed tall alder scrub
 - Open tall alder scrub
- Relative cover of each plant stratum:
 - Trees 3%
 - Shrubs 66%
 - Herbs 31%
- Plant species in each stratum with highest absolute cover, relative importance (RI, scale of 0-200), or both:
 - Shrubs
 - Sitka alder 81% cover RI = 144
 - Devil's club 28% cover RI = 115
 - Herbs
 - Mountain woodfern 32% cover RI = 117
 - Watermelon berry 6% cover RI = 103
 - Bluejoint reedgrass 5% cover RI = 88
 - Subarctic lady fern 5% cover RI = 60
 - European starflower 2% cover RI = 101
- Trees and shrubs with high densities:
 - Shrubs
 - Devil's club 3,074 plants/acre
 - Sitka alder 1,017 plants/acre
- Average plant species counted within each plot: 16 (range 11-24)

Wetlands Data Summary

- Number of wetland determination plots (including vegetation plots):
 - Uplands 25 plots
 - Wetlands 22 plots
 - Problematic wetlands 17 plots
- Acreage and percentage of total mapping area:
 - Uplands 1,297 acres 4%
 - Wetlands 238 acres 1%
- Acreage and percentage of Chuitna Coal Mine mapping area:
 - Uplands 947 acres 10%
 - Wetlands 170 acres 2%
 - Questionable wetlands 72 acres
- Range of prevalence indexes observed:
 - Uplands 3.0 - 3.6
 - Wetlands 2.6 - 3.6
 - Problematic wetlands 2.9 - 3.6
- Hydric soil indicators commonly observed:
 - Histosol
 - Histic Epipedon
 - Hydrogen Sulfide Odor
 - Other: Explained in Section 3.2.4 of the Baseline Report
- Wetland hydrology indicators commonly observed:
 - Surface Water
 - High Water Table
 - Saturation
 - Hydrogen Sulfide Odor
 - Drainage Patterns

- Presence of Reduced Iron Fe²⁺
- Geomorphic Position

3.5.1.3 Shrub swamp

Shrub swamps occur throughout the project area. These communities were always mapped as wetlands. Shrub swamp communities dominated by thinleaf alder were strongly associated with groundwater discharge slopes, and were also common along stream channels. This community type occurs in wetland areas in floodplains along Threemile Creek, in toeslope positions on hillsides, and along upper perennial streams. Shrub swamps have water-logged soils with standing water present through much or all of the growing season (Viereck et al. 1992). Many shrub swamps observed in the field were Problem Area wetlands, primarily because the vegetation prevalence index was too high to indicate hydrophytic vegetation.

Vegetation Data Summary

- Number of vegetation plots: 13
- Acreage in total mapping area: 1,045 acres
- Percent of total mapping area: 3%
- Percent of Chuitna Coal Mine mapping area: 6%
- Viereck Level IV community types:
 - Closed shrub swamp
 - Open shrub swamp
- Relative cover of each plant stratum:
 - Trees 2%
 - Shrubs 52%
 - Herbs 45%
- Plant species in each stratum with highest absolute cover, relative importance (RI, scale of 0-200), or both:
 - Shrubs
 - Thinleaf alder 42% cover RI = 112
 - Barclay willow 16% cover RI = 72
 - Diamond-leaf willow 7% cover RI = 51
 - Herbs
 - Bluejoint reedgrass 21% cover RI = 113
 - Subarctic lady fern 16% cover RI = 87
 - Field horsetail 7% cover RI = 97
 - European starflower 1% cover RI = 100
- Trees and shrubs with high densities:
 - Shrubs
 - Barclay willow 987 plants/acre
 - Thinleaf alder 947 plants/acre
- Average plant species counted within each plot: 25 (range 17-31)

Wetlands Data Summary

- Number of wetland determination plots (including vegetation plots):
 - Uplands 0 plots
 - Wetlands 26 plots
 - Problematic wetlands 18 plots
- Acreage and percentage of total mapping area:
 - Uplands 0 acres 0%
 - Wetlands 1,045 acres 3%
- Acreage and percentage of Chuitna Coal Mine mapping area:
 - Uplands 0 acres 0%
 - Wetlands 570 acres 6%
- Range of prevalence indexes observed:
 - Uplands n/a
 - Wetlands 2.4 – 3.4

- Problematic wetlands 3.0 – 3.4
- Hydric soil indicators commonly observed:
 - Histosol
 - Hydrogen Sulfide Odor
- Wetland hydrology indicators commonly observed:
 - Surface Water
 - High Water Table
 - Saturation
 - Hydrogen Sulfide Odor
 - Drainage Patterns
 - Oxidized Rhizospheres on Living Roots
 - Presence of Reduced Iron Fe²⁺
 - Geomorphic Position

3.5.1.4 Sweetgale fen

Sweetgale fens are distributed throughout the project area as a homogenous community, or as a component of wetland mosaics. In these complex patterned fens, sweetgale could not be photo-interpreted separately from the other low scrub and herbaceous communities, however field observations indicate that it covers the greatest area in the wetland mosaics. Sweetgale fen occurs on lake and pond margins, in depressions, and on toeslopes.

Vegetation Data Summary

- Number of vegetation plots: 23
- Acreage in total mapping area: 1,611 acres
- Percent of total mapping area: 5%
- Percent of Chuitna Coal Mine mapping area: 11%
- Viereck Level IV community types:
 - Sweetgale graminoid bog, both closed and open
- Relative cover of each plant stratum:
 - Trees 1%
 - Shrubs 66%
 - Herbs 33%
- Plant species in each stratum with highest absolute cover, relative importance (RI, scale of 0-200), or both:
 - Shrubs
 - Sweetgale 43% cover RI = 145
 - Dwarf birch 10% cover RI = 111
 - Herbs
 - Tufted bulrush 3% cover RI = 73
 - Bluejoint reedgrass 2% cover RI = 71
 - Few-flower sedge 2% cover RI = 63
 - Narrow-leaf cotton-grass 2% cover RI = 59
 - Creeping sedge 2% cover RI = 59
 - Water sedge 2% cover RI = 45
 - Livid sedge 2% cover RI = 41
 - Several flowered sedge 2% cover RI = 33
- Trees and shrubs with high densities:
 - Dominant shrubs were not counted for this community (see Section 2.3.1 of the Baseline Report).
- Average plant species counted within each plot: 26 (range 10-42)

Wetlands Data Summary

- Number of wetland determination plots (including vegetation plots):
 - Uplands 0 plots
 - Wetlands 30 plots
 - Problematic wetlands 0 plots

- Acreage and percentage of total mapping area:
 - Uplands 0 acres 0 %
 - Wetlands 1,611 acres 5%
- Acreage and percentage of Chuitna Coal Mine mapping area:
 - Uplands 0 acres 0%
 - Wetlands 1,024 acres 11%
- Range of prevalence indexes observed:
 - Uplands n/a
 - Wetlands 1.2 - 2.2
 - Problematic wetlands n/a
- Hydric soil indicators commonly observed:
 - Histosol
 - Hydrogen Sulfide Odor
- Wetland hydrology indicators commonly observed:
 - Surface Water
 - High Water Table
 - Saturation
 - Hydrogen Sulfide Odor
 - Water Stained Leaves
 - Drainage Patterns
 - Presence of Reduced Iron Fe²⁺
 - Stunted or Stressed Plants
 - Geomorphic Position

3.5.1.5 Fireweed meadow

Fireweed meadow is distributed throughout the project area, although it is much more common in the Chuitna Coal Mine than other project components. Fireweed meadow communities are associated with upland sites, often found on hilltops, shoulders, and backslopes, with slopes of 5-15%. While Viereck (1992) describes the fireweed community as an early successional community, it appears to be more long-lasting in the project area. For the vegetation and wetland studies, the “fireweed” name is used because the community is so strongly dominated by fireweed and to distinguish it from the bluejoint communities that are generally wetlands in the project area.

Vegetation Data Summary

- Number of vegetation plots: 15
- Acreage in total mapping area: 1,011 acres
- Percent of total mapping area: 3%
- Percent of Chuitna Coal Mine mapping area: 9%
- Viereck Level IV community types:
 - Bluejoint-herb meadow
 - Fireweed meadow
- Relative cover of each plant stratum:
 - Trees 3%
 - Shrubs 5%
 - Herbs 92%
- Plant species in each stratum with highest absolute cover, relative importance (RI, scale of 0-200), or both:
 - Shrubs
 - Common red-raspberry 3% cover RI = 95
 - Herbs
 - Fireweed 57% cover RI = 141
 - Bluejoint reedgrass 32% cover RI = 123
 - American false-hellebore 6% cover RI = 84
 - Tall bluebells 5% cover RI = 90
 - Field horsetail 4% cover RI = 103
 - Oak fern 4% cover RI = 56

- European starflower 2% cover RI = 101
- Grove sandwort 2% cover RI = 101
- Trees and shrubs with high densities:
 - None
- Average plant species counted within each plot: 19 (range 12-27)

Wetlands Data Summary

- Number of wetland determination plots (including vegetation plots):
 - Uplands 26 plots
 - Wetlands 3 plots
 - Problematic wetlands 2 plots
- Acreage and percentage of total mapping area:
 - Uplands 1,002 acres 3%
 - Wetlands 9 acres <1%
- Acreage and percentage of Chuitna Coal Mine mapping area:
 - Uplands 809 acres 9%
 - Wetlands 3 acres <1%
- Range of prevalence indexes observed:
 - Uplands 3.1 - 3.9
 - Wetlands 2.5 - 3.6
 - Problematic wetlands 3.1 - 3.6
- Hydric soil indicators observed:
 - Histic Epipedon
 - Hydrogen Sulfide Odor
 - Other: Explained in Section 3.2.4 of the Baseline Report
- Wetland hydrology indicators observed:
 - High Water Table
 - Saturation

3.5.2 Minor Communities

Twelve minor vegetation community types were mapped in the project area and are listed above in Table 6 with their acreage by project component. Their wetland acreages are shown in Table 7. There are four additional cover types grouped with the minor communities: wetland mosaics, unvegetated coastal types (beaches, bluffs, and coastal mudflats), disturbed areas (both with and without successional vegetation), and the Chuit River.

For the minor communities represented by vegetation plots, summary statistics can be found in Appendix D. These include white spruce forest, black spruce forest, willow scrub, ericaceous scrub, bluejoint meadow, mixed forb meadow, sedge wet meadow, sedge bog meadow, vegetated pond, and drained beaver pond. For poplar forest and dune grass meadow, the dominant plant species presented under the vegetation data summaries below are from wetland determination plots.

3.5.2.1 Poplar forest

Poplar forests are represented by four wetland determination plots. Poplar forests are upland communities which are often found on hillsides and the tops of bluffs. Dwarf poplar forests occur in a floodplain position along the Chuit River.

Vegetation Data Summary

- Number of vegetation plots: 0
- Acreage in total mapping area: 149 acres
- Percent of total mapping area: <1%
- Percent of Chuitna Coal Mine mapping area: 1%
- Viereck Level IV community types:
 - Closed poplar forest
 - Open poplar forest
 - Open poplar-birch forest

- Birch and poplar woodland
- Dwarf tree poplar forest
- Dominant plant species from wetland determination plots:
 - Trees
 - Balsam poplar
 - Shrubs
 - Squashberry
 - Herbs
 - Field horsetail
 - Pink wintergreen

Wetlands Data Summary

- Number of wetland determination plots (including vegetation plots):
 - Uplands 4 plots
 - Wetlands 0 plots
 - Problematic wetlands 0 plots
- Acreage and percentage of total mapping area:
 - Uplands 136 acres <1%
 - Wetlands 13 acres <1%
- Acreage and percentage of Chuitna Coal Mine mapping area:
 - Uplands 60 acres 1%
 - Wetlands 3 acres <1%
- Range of prevalence indexes observed:
 - Uplands 3.6 – 3.8
 - Wetlands n/a
 - Problematic wetlands n/a

3.5.2.2 White spruce forest

White spruce forest occurs as both upland and wetland. White spruce communities often occur on flats adjacent to floodplains in the Chuitna Coal Mine, and in toeslope positions. Forests dominated by white spruce are much more common in the Chuitna Coal Mine than they are in Area 1 and the Ladd Landing Development, where black spruce tends to dominate the wet needleleaf forests.

Vegetation Data Summary

- Number of vegetation plots: 10
- Acreage in total mapping area: 467 acres
- Percent of total mapping area: 2%
- Percent of Chuitna Coal Mine mapping area: 5%
- Viereck Level IV community types:
 - Closed white spruce forest
 - Open white spruce forest
 - White spruce woodland
- Dominant plant species from vegetation plots:
 - Trees
 - White spruce
 - Shrubs
 - Barclay willow
 - Diamond-leaf willow
 - Sweetgale
 - Squashberry
 - Arctic raspberry
 - Herbs
 - Bluejoint reedgrass
 - Field horsetail
 - Canada burnet
 - Subarctic lady fern

- Alaska goldthread
- European starflower
- Trees and shrubs with high densities:
 - Trees
 - White spruce
 - Shrubs
 - Barclay willow
 - Diamond-leaf willow
 - Squashberry
 - Beauvered spiraea

Wetlands Data Summary

- Number of wetland determination plots (including vegetation plots):
 - Uplands 15 plots
 - Wetlands 14 plots
 - Problematic wetlands 7 plots
- Acreage and percentage of total mapping area:
 - Uplands 72 acres <1%
 - Wetlands 394 acres 1%
- Acreage and percentage of Chuitna Coal Mine mapping area:
 - Uplands 72 acres 1%
 - Wetlands 355 acres 4%
- Range of prevalence indexes observed:
 - Uplands 2.9 - 4.1
 - Wetlands 2.3 - 3.7
 - Problematic wetlands 3.1 - 3.7
- Hydric soil indicators commonly observed:
 - Histosol
 - Histic Epipedon
 - Hydrogen Sulfide Odor
- Wetland hydrology indicators commonly observed:
 - Surface Water
 - High Water Table
 - Saturation
 - Hydrogen Sulfide Odor
 - Drainage Patterns
 - Presence of Reduced Iron Fe²⁺
 - Stunted or Stressed Plants
 - Geomorphic Position

3.5.2.3 Black spruce forest

This vegetation community occurs in wetland areas on toeslope and flat landforms. It is also found upslope from floodplains from Lone Creek eastward to the coast. This community is always mapped as wetland. Black spruce forest was much more dominant in the lower elevations than in the Chuitna Coal Mine.

The 27 acres mapped as black spruce forest in the Chuitna Coal Mine are actually dominated by stunted white spruce. These sites are dwarf tree scrub with an understory most similar to the black spruce community type.

Vegetation Data Summary

- Number of vegetation plots: 8
- Acreage in total mapping area: 1,456 acres
- Percent of total mapping area: 5%
- Percent of Chuitna Coal Mine mapping area: <1%
- Viereck Level IV community types:

- Open black spruce forest
- Black spruce woodland
- Open dwarf tree black spruce forest
- Dwarf tree black spruce woodland
- Dominant plant species from vegetation plots:
 - Trees
 - Black spruce
 - Shrubs
 - Sweetgale
 - Crowberry
 - Labrador tea
 - Dwarf birch
 - Bog blueberry
 - Cloudberry
 - Mountain cranberry
 - Small cranberry
 - Herbs
 - Water horsetail
 - Field horsetail
 - Bluejoint reedgrass
 - Round-leaf sundew
 - Few-flower sedge
- Trees and shrubs with high densities:
 - Trees
 - Black spruce
 - Shrubs
 - Diamond-leaf willow
 - Prickly rose

Wetlands Data Summary

- Number of wetland determination plots (including vegetation plots):
 - Uplands 2 plots
 - Wetlands 27 plots
 - Problematic wetlands 3 plots
- Acreage and percentage of total mapping area:
 - Uplands 0 acres 0%
 - Wetlands 1,456 acres 5%
- Acreage and percentage of Chuitna Coal Mine mapping area:
 - Uplands 0 acres 0%
 - Wetlands 27 acres <1%
- Range of prevalence indexes observed:
 - Uplands 3.1 - 3.9
 - Wetlands 1.8 - 3.6
 - Problematic wetlands 2.7 - 3.6
- Hydric soil indicators commonly observed:
 - Histosol
 - Histic Epipedon
 - Hydrogen Sulfide Odor
- Wetland hydrology indicators commonly observed:
 - Surface Water
 - High Water Table
 - Saturation
 - Hydrogen Sulfide Odor
 - Presence of Reduced Iron Fe²⁺
 - Stunted or Stressed Plants

- Geomorphic Position
- FAC-Neutral Test

3.5.2.4 Willow scrub

Willow scrub is found in floodplains, along stream banks, and on hillsides. It is mapped as both wetland and upland depending on the landform. Where willow scrub occurs along streambanks or in toeslope positions with seasonal flooding, it is considered shrub swamp. Willow species were most often observed as an understory within forest community types in the Chuitna Coal Mine.

Vegetation Data Summary

- Number of vegetation plots: 3
- Acreage in total mapping area: 81 acres
- Percent of total mapping area: <1%
- Percent of Chuitna Coal Mine mapping area: 1%
- Viereck Level IV community types:
 - Closed tall willow scrub
 - Open tall willow scrub
 - Closed low willow scrub
- Dominant plant species from vegetation plots:
 - Shrubs
 - Barclay willow
 - Herbs
 - Subarctic lady fern
 - Canada goldenrod
- Trees and shrubs with high densities:
 - Shrubs
 - Barclay willow
 - Bog blueberry

Wetlands Data Summary

- Number of wetland determination plots (including vegetation plots):
 - Uplands 3 plots
 - Wetlands 14 plots
 - Problematic wetlands 8 plots
- Acreage and percentage of total mapping area:
 - Uplands 13 acres <1%
 - Wetlands 68 acres <1%
- Acreage and percentage of Chuitna Coal Mine mapping area:
 - Uplands 13 acres <1%
 - Wetlands 52 acres 1%
- Range of prevalence indexes observed:
 - Uplands 3.1 - 3.3
 - Wetlands 1.8 - 3.3
 - Problematic wetlands 2.8 - 3.3
- Hydric soil indicators commonly observed:
 - Histosol
 - Hydrogen Sulfide Odor
 - Other: Explained in Section 3.2.4 of the Baseline Report
- Wetland hydrology indicators commonly observed:
 - High Water Table
 - Saturation
 - Hydrogen Sulfide Odor
 - Drainage Patterns
 - Presence of Reduced Iron Fe²⁺
 - Geomorphic Position

3.5.2.5 Ericaceous scrub

This vegetation community occurs in wetland areas on toeslopes, in depressions, patterned fens, and on pond and lake margins. It is also a component of the wetland mosaics. It occurs throughout the project area.

Vegetation Data Summary

- Number of vegetation plots: 10
- Acreage in total mapping area: 143 acres
- Percent of total mapping area: <1%
- Percent of Chuitna Coal Mine mapping area: 1%
- Viereck Level IV community types:
 - Open low shrub birch – ericaceous shrub bog
 - Open low ericaceous shrub bog
 - Open low shrub birch – willow
 - Open low willow – graminoid shrub bog
- Dominant plant species from vegetation plots:
 - Shrubs
 - Crowberry
 - Swamp birch
 - Labrador tea
 - Bog blueberry
 - Herbs
 - Few-flower sedge
 - Water sedge

Wetlands Data Summary

- Number of wetland determination plots (including vegetation plots):
 - Uplands 0 plots
 - Wetlands 14 plots
 - Problematic wetlands 0 plots
- Acreage and percentage of total mapping area:
 - Uplands 0 acres 0%
 - Wetlands 143 acres <1%
- Acreage and percentage of Chuitna Coal Mine mapping area:
 - Uplands 0 acres 0%
 - Wetlands 73 acres 1%
- Range of prevalence indexes observed:
 - Uplands n/a
 - Wetlands 1.5 - 2.8
 - Problematic wetlands n/a
- Hydric soil indicators commonly observed:
 - Histosol
 - Hydrogen Sulfide Odor
- Wetland hydrology indicators commonly observed:
 - Surface Water
 - High Water Table
 - Saturation
 - Hydrogen Sulfide Odor
 - Stunted or Stressed Plants
 - Geomorphic Position

3.5.2.6 Bluejoint meadow

Bluejoint meadows occur in several positions: floodplains, depressions, swales, and toeslopes. They are strongly associated with depressions and distinct swales. Herb-dominated communities were mapped as bluejoint meadows and wetlands when in these positions. Bluejoint meadows are often Problem Area

wetlands, with a vegetation prevalence index too high to indicate hydrophytic vegetation, or without standard hydric soil indicators, or both.

Vegetation Data Summary

- Number of vegetation plots: 6
- Acreage in total mapping area: 536 acres
- Percent of total mapping area: 2%
- Percent of Chuitna Coal Mine mapping area: 3%
- Viereck Level IV community types:
 - Bluejoint meadow
 - Bluejoint-shrub meadow
- Dominant plant species from vegetation plots:
 - Shrubs
 - Barclay willow
 - Herbs
 - Bluejoint reedgrass
 - Water sedge
 - Sitka sedge
 - Field horsetail
 - Fireweed
- Trees and shrubs with high densities:
 - Shrubs
 - Barclay willow

Wetlands Data Summary

- Number of wetland determination plots (including vegetation plots):
 - Uplands 6 plots
 - Wetlands 33 plots
 - Problematic wetlands 21 plots
- Acreage and percentage of total mapping area:
 - Uplands 3 acres <1%
 - Wetlands 534 acres 2%
- Acreage and percentage of Chuitna Coal Mine mapping area:
 - Uplands 1 acre <1%
 - Wetlands 234 acres 3%
- Range of prevalence indexes observed:
 - Uplands 2.7 - 3.4
 - Wetlands 2.0 - 3.4
 - Problematic wetlands 2.0 - 3.4
- Hydric soil indicators commonly observed:
 - Histic Epipedon
 - Hydrogen Sulfide Odor
 - Alaska Redox with 2.5Y Hue
 - Other: Explained in Section 3.2.4 of the Baseline Report
- Wetland hydrology indicators commonly observed:
 - Surface Water
 - High Water Table
 - Saturation
 - Hydrogen Sulfide Odor
 - Oxidized Rhizospheres on Living Roots
 - Presence of Reduced Iron Fe²⁺
 - Geomorphic Position

3.5.2.7 Mixed forb meadow

This community occurs on hilltops, shoulders, and backslopes. This community was observed as a wetland when found on flat benches or in depressions.

Vegetation Data Summary

- Number of vegetation plots: 2
- Acreage in total mapping area: 31 acres
- Percent of total mapping area: <1%
- Percent of Chuitna Coal Mine mapping area: <1%
- Viereck Level IV community types:
 - Mixed forb meadow
- Dominant plant species from vegetation plots:
 - Shrubs
 - Arctic raspberry
 - Herbs
 - Cow parsnip
 - Canada goldenrod
 - Northern bedstraw
 - Bluejoint reedgrass
 - Fireweed
 - Common yarrow
 - Canada burnet
 - Rough fescue
 - Tall bluebells
 - Grove sandwort

Wetlands Data Summary

- Number of wetland determination plots (including vegetation plots):
 - Uplands 3 plots
 - Wetlands 1 plots
 - Problematic wetlands 1 plots
- Acreage and percentage of total mapping area:
 - Uplands 31 acres <1%
 - Wetlands <1 acre <1%
- Acreage and percentage of Chuitna Coal Mine mapping area:
 - Uplands 27 acres <1%
 - Wetlands <1 acre <1%
- Range of prevalence indexes observed:
 - Uplands 3.2 – 3.4
 - Wetlands 3.6
 - Problematic wetlands 3.6
- Hydric soil indicators observed:
 - Alaska Redox
- Wetland hydrology indicators observed:
 - Dry Season Water Table
 - Drainage Patterns
 - Geomorphic Position

3.5.2.8 Sedge wet meadow

Sedge wet meadows are found in wetland areas along streambanks and lake and pond margins.

Vegetation Data Summary

- Number of vegetation plots: 3
- Acreage in total mapping area: 141 acres
- Percent of total mapping area: <1%
- Percent of Chuitna Coal Mine mapping area: <1%
- Viereck Level IV community types:
 - Subarctic lowland sedge wet meadow
- Dominant plant species from vegetation plots:

- Herbs
 - Marsh cinquefoil
 - Water sedge
 - Northwest Territory sedge
 - Sitka sedge
 - Mud sedge
- Trees and shrubs with high densities:
 - Shrubs
 - Diamond-leaf willow
 - Barclay's willow

Wetlands Data Summary

- Number of wetland determination plots (including vegetation plots):
 - Uplands 0 plots
 - Wetlands 6 plots
 - Problematic wetlands 0 plots
- Acreage and percentage of total mapping area:
 - Uplands 0 acres 0%
 - Wetlands 141 acres <1%
- Acreage and percentage of Chuitna Coal Mine mapping area:
 - Uplands 0 acres 0%
 - Wetlands 10 acres <1%
- Range of prevalence indexes observed:
 - Uplands n/a
 - Wetlands 1.0 - 2.2
 - Problematic wetlands n/a
- Hydric soil indicators commonly observed:
 - Histosol
 - Hydrogen Sulfide Odor
- Wetland hydrology indicators commonly observed:
 - Surface Water
 - High Water Table
 - Saturation
 - Hydrogen Sulfide Odor
 - Presence of Reduced Iron Fe²⁺
 - Geomorphic Position

3.5.2.9 Sedge bog meadow

Sedge bog meadow is found in wetland areas along lake and pond margins and also in patterned fens and depressions. This community is also included in the wetland mosaic.

Vegetation Data Summary

- Number of vegetation plots: 8
- Acreage in total mapping area: 69 acres
- Percent of total mapping area: <1%
- Percent of Chuitna Coal Mine mapping area: <1%
- Viereck Level IV community types:
 - Subarctic lowland sedge-moss bog meadow
 - Subarctic lowland sedge bog meadow
- Dominant plant species from vegetation plots:
 - Shrubs
 - Small cranberry
 - Bog rosemary
 - Herbs
 - Mud sedge
 - Narrow leaf cotton grass

- Creeping sedge
- Buckbean

Wetlands Data Summary

- Number of wetland determination plots (including vegetation plots):
 - Uplands 0 plots
 - Wetlands 4 plots
 - Problematic wetlands 0 plots
- Acreage and percentage of total mapping area:
 - Uplands 0 acres 0%
 - Wetlands 69 acres <1%
- Acreage and percentage of Chuitna Coal Mine mapping area:
 - Uplands 0 acres 0%
 - Wetlands 31 acres <1%
- Range of prevalence indexes observed:
 - Uplands n/a
 - Wetlands 1.0 - 1.4
 - Problematic wetlands n/a
- Hydric soil indicators commonly observed:
 - Histosol
 - Hydrogen Sulfide Odor
- Wetland hydrology indicators commonly observed:
 - High Water Table
 - Saturation
 - Hydrogen Sulfide Odor
 - Geomorphic Position

3.5.2.10 Vegetated pond

Aquatic vegetation communities were sampled in 2006 but not in 2007. A description of the types of aquatic vegetation communities and the dominant aquatic plants is provided in the Baseline Report.

3.5.2.11 Drained beaver pond

This community type is located where early-successional plant species have invaded areas once flooded by water backed up by beaver dams.

Vegetation Data Summary

- Number of vegetation plots: 2
- Acreage in total mapping area: 4 acres
- Percent of total mapping area: <1%
- Percent of Chuitna Coal Mine mapping area: <1%
- Viereck Level IV community types:
 - Not represented
- Dominant plant species from vegetation plots:
 - Herbs
 - Thread rush
 - Pendant grass
 - Hoary sedge
 - Rough bentgrass
 - Swordleaf rush

Wetlands Data Summary

- Number of wetland determination plots (including vegetation plots):
 - Uplands 0 plots
 - Wetlands 1 plots
 - Problematic wetlands 0 plots

- Acreage and percentage of total mapping area:
 - Uplands 0 acres 0%
 - Wetlands 4 acres <1%
- Acreage and percentage of Chuitna Coal Mine mapping area:
 - Uplands 0 acres 0%
 - Wetlands 4 acres <1%
- Range of prevalence indexes observed:
 - Uplands n/a
 - Wetlands 1.7
 - Problematic wetlands n/a
- Hydric soil indicators observed:
 - Histosol
 - Hydrogen Sulfide Odor
- Wetland hydrology indicators observed:
 - High Water Table
 - Saturation
 - Hydrogen Sulfide Odor
 - Presence of Reduced Iron Fe²⁺
 - Geomorphic Position

3.5.2.12 Dune grass meadow

One graminoid community, dune grass, was mapped along the coast. Dune grass communities comprise 7 acres of upland in the mapping area, represented by one wetland determination plot. The dominant species in the dune grass community sampled was American dune grass (*Leymus mollis*).

3.5.2.13 Wetland mosaic

Wetland mosaics were mapped where large complexes of ponds, low and dwarf scrub wetlands, and various wet graminoid communities were too intermingled to differentiate in mapping, often forming patterned fens. The individual communities that comprise the mosaics are represented by vegetation plots. Since the mosaics are composed of several vegetation communities described elsewhere – both major and minor community types – they have characteristics of all these types. These communities are complexes which include sweetgale fen, ericaceous scrub, sedge bog meadow, and vegetated pond community types. Two types of wetland mosaics have been distinguished by the presence or absence of open water hollows or ponds; this is reflected in the mapping by inclusion or absence of the aquatic vegetation (IIID1a/f) code.

Mosaics are found in similar positions as the individual communities that comprise them. This includes wetland areas such as lake and pond margins, depressions, toeslopes, and flats. This type comprises 9% of the mapping area, but only 2% of the Chuitna Coal Mine.

3.5.2.14 Unvegetated coastal type

The unvegetated coastal land cover type includes beaches, bluffs, and mudflats. This type was only mapped in Area 2 and the Ladd Landing Development and comprises 820 acres, or 3% of the mapping area.

3.5.2.15 Disturbed area

Disturbed areas were mapped where photo interpretation revealed evidence of logging, seismic lines, trails, roads, or pads. When disturbed areas were vegetated, they were mapped as a disturbed form of a vegetation type. Disturbed areas are present in all project components except for the Chuitna Coal Mine and account for 2,500 acres, 8% of the mapping area.

3.6 Rare and Alien Plants

Notable plants were discussed in detail in Appendix K of the Baseline Report. That appendix included a discussion of rare plants, alien plants, notable habitats, and range extensions. During the field work in 2007, one new alien plant was discovered and additional information on a rare plant was collected. This information is provided below.

3.6.1 Rare plants

The Alaska Natural Heritage Program (AKNHP) tracks the occurrences of rare plants in the state with their Biological and Conservation Database (AKNHP 2006). AKNHP ranks the plants with a code that describes their population status on a global (G-rank) and on a statewide level (S-rank). The status levels are described on a scale from 1 to 5, where 5 is a common plant with demonstrably secure populations, and 1 is a critically imperiled plant whose populations are vulnerable to extirpation or extinction. If the level is uncertain, it is described as a range between two numbers (for example, S1S2) or with a question mark (G5?). This nationally recognized ranking system complements federal designations of threatened and endangered species. During the vegetation and wetland studies in 2006, seven rare plants were observed. One plant tracked by AKNHP was further documented in 2007:

Pedicularis groenlandica, Elephanthead lousewort (AKNHP Rank = G4G5 and S1S2)

The fen population of elephanthead lousewort on the project's western boundary was revisited on July 10, 2007 for a thorough count. Five hundred seventy-five plants were observed, and a little more than half of these were in late flower. This plant is represented by voucher specimen numbers MD06-369, MD06-381, MD07-016.



Close-up, *Pedicularis groenlandica*

3.6.2 Non-native plants

Occurrences of non-native plants in Alaska are tracked by the Alaska Exotic Plant Information Clearinghouse. The Alaska Natural Heritage Program administers the database and website for the project (AKEPIC Database 2005). Plants are ranked according to invasiveness potential on a scale from 0 to 100, with 100 being the highest potential. During the vegetation and wetland studies in 2006, six non-native plants were observed. One new non-native plant was observed during field work in 2007:

Poa annua, Annual bluegrass (AKEPIC rank = 46)

This is a common alien bluegrass that is widespread in the state, usually encountered in disturbed habitats. It was observed at plot 9026 on the muddy margin of a well used ATV trail under a power line, where it was common. There are no specimens or photographs to document this plant.

4.0 References

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**Chuitna Coal Project
Supplement to Baseline Report for
Vegetation and Wetlands**

- Appendix A. Field Forms and Photographs for 2007**
- Appendix B. Updated Project Plant Species List**
- Appendix C. Vegetation and Wetlands Maps for the New Infrastructure Corridor**
- Appendix D. Updated Vegetation Data Summary Tables**
- Appendix E. Wetland Indicators Observed at Each Wetland Determination Plot for 2007**
- Appendix F. Updated Soil Series Associated with Major Vegetation Community Types**

Appendix A. Field Forms and Photographs for 2007

Field Forms and Photographs

Field forms and photographs are provided in PDF documents bookmarked according to plot number. The PDF documents are separated into individual series that were used for field work in 2007: 1500 and 9000. The forms are provided in the following order for each plot:

- a. Vegetation field form,
- b. Vegetation report from vegetation database,
- c. Wetland determination field form,
- d. Wetland determination report from wetland database, and
- e. Functional assessment field form (if the plot is a wetland).

Data forms from the field were entered into their respective databases for final review. Reports from the vegetation database reflect the final vegetation data for all parameters. Not all data from the wetland determination field forms were entered into the wetlands database. Reports from the wetlands database reflect the final wetlands data for the following parameters:

- Vegetation indicators,
- Hydric soil indicators, and
- Wetland hydrology indicators.

Appendix B. Updated Project Plant Species List

Project Plant Species List
Sorted by Scientific Name

Scientific Name ¹	Common Name	Synonymous Name in the 1988 National Wetlands Indicator List ²	Alaska Region Wetlands Indicator ³
<i>Achillea millefolium</i>	Common yarrow	<i>Achillea millefolium</i>	FACU
<i>Aconitum delphiniifolium</i>	Monkshood	<i>Aconitum delphiniifolium</i>	FAC
<i>Actaea rubra</i>	Baneberry		NL
<i>Adoxa moschatellina</i>	Muskroot	<i>Adoxa moschatellina</i>	FAC
<i>Agrostis alaskana</i>	Alaska bentgrass	<i>Agrostis alaskana</i>	OBL
<i>Agrostis scabra</i>	Rough bentgrass	<i>Agrostis scabra</i>	FAC
<i>Agrostis</i> sp.	Unkeyed agrostis		-
<i>Allium schoenoprasum</i>	Wild chives	<i>Allium schoenoprasum</i>	FAC
<i>Alnus incana</i> ssp. <i>tenuifolia</i>	Thinleaf alder	<i>Alnus tenuifolia</i>	FAC
<i>Alnus viridis</i> ssp. <i>fruticosa</i>	Green alder	<i>Alnus crispa</i>	FAC
<i>Alnus viridis</i> ssp. <i>sinuata</i>	Sitka alder	<i>Alnus sinuata</i>	FAC
<i>Alopecurus aequalis</i>	Short-awn foxtail	<i>Alopecurus aequalis</i>	OBL
<i>Alopecurus pratensis</i> ⁴	Meadow foxtail	<i>Alopecurus pratensis</i>	FACW
<i>Andromeda polifolia</i>	Bog rosemary	<i>Andromeda polifolia</i>	OBL
<i>Anemone richardsonii</i>	Yellow thimble-weed	<i>Anemone richardsonii</i>	FAC
<i>Angelica genuflexa</i>	Kneeling angelica	<i>Angelica genuflexa</i>	FACW
<i>Angelica lucida</i>	Seawatch angelica	<i>Angelica lucida</i>	FACU
<i>Arabis drummondii</i>	Drummond's rockcress	<i>Arabis drummondii</i>	FACU
<i>Arctagrostis latifolia</i>	Board-leaf arctic-bentgrass	<i>Arctagrostis latifolia</i>	FACW
<i>Arctophila fulva</i>	Pendent grass	<i>Arctophila fulva</i>	OBL
<i>Arnica latifolia</i>	Broadleaf arnica	<i>Arnica latifolia</i>	FAC
<i>Athyrium filix-femina</i>	Subarctic lady fern	<i>Athyrium filix-femina</i>	FAC
<i>Betula glandulosa</i>	Tundra dwarf birch	<i>Betula glandulosa</i>	FAC
<i>Betula</i> hybrid	Birch hybrid		-
<i>Betula kenaica</i>	Kenai birch	<i>Betula papyrifera</i>	FACU
<i>Betula nana</i> ssp. <i>exilis</i>	Swamp birch	<i>Betula nana</i>	FAC
<i>Bistorta vivipara</i>	Viviparous knotweed	<i>Polygonum viviparum</i>	FAC
<i>Botrychium lanceolatum</i>	Triangle moonwort	<i>Botrychium lanceolatum</i>	FAC
<i>Botrychium lunaria</i>	Moonwort	<i>Botrychium lunaria</i>	FACW
<i>Botrychium multifidum</i>	Leathery grapefern	<i>Botrychium multifidum</i>	FAC
<i>Botrychium pinnatum</i> ⁴	Northern moonwort	<i>Botrychium boreale</i>	FAC
<i>Bromus ciliatus</i>	Fringed brome	<i>Bromus ciliatus</i>	FACW
<i>Calamagrostis canadensis</i>	Blue-joint reedgrass	<i>Calamagrostis canadensis</i>	FAC
<i>Calla palustris</i> ⁴	Water arum	<i>Calla palustris</i>	OBL
<i>Callitriche palustris</i>	Spiny water-starwort	<i>Callitriche verna</i>	OBL
<i>Cardamine oligosperma</i> var. <i>kamtschatica</i>	Umbel-flower bitter-cress	<i>Cardamine umbellata</i>	FACW
<i>Cardamine pratensis</i>	Cuckoo flower	<i>Cardamine pratensis</i>	OBL
<i>Carex aquatilis</i> var. <i>aquatilis</i>	Water sedge	<i>Carex aquatilis</i>	OBL
<i>Carex aquatilis</i> var. <i>dives</i>	Sitka sedge	<i>Carex sitchensis</i>	OBL
<i>Carex brunnescens</i>	Brownish sedge	<i>Carex brunnescens</i>	FAC
<i>Carex buxbaumii</i>	Brown bog sedge	<i>Carex buxbaumii</i>	FACW
<i>Carex canescens</i>	Hoary sedge	<i>Carex canescens</i>	OBL
<i>Carex chordorrhiza</i>	Creeping sedge	<i>Carex chordorrhiza</i>	OBL
<i>Carex diandra</i>	Lesser paniced sedge	<i>Carex diandra</i>	OBL
<i>Carex disperma</i>	Softleaf sedge	<i>Carex disperma</i>	FACW*
<i>Carex echinata</i> ssp. <i>phyllomanica</i>	Coastal stellate sedge	<i>Carex phyllomanica</i>	OBL
<i>Carex gynocrates</i>	Northern bog sedge	<i>Carex gynocrates</i>	OBL

Project Plant Species List
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Scientific Name ¹	Common Name	Synonymous Name in the 1988 National Wetlands Indicator List ²	Alaska Region Wetlands Indicator ³
<i>Carex lenticularis</i> var. <i>lipocarpa</i>	Kellogg's sedge	<i>Carex kelloggii</i>	OBL
<i>Carex leptalea</i>	Bristly-stalk sedge	<i>Carex leptalea</i>	OBL
<i>Carex limosa</i>	Mud sedge	<i>Carex limosa</i>	OBL
<i>Carex livida</i>	Livid sedge	<i>Carex livida</i>	OBL
<i>Carex loliacea</i> ⁴	Ryegrass sedge	<i>Carex loliacea</i>	OBL
<i>Carex macrochaeta</i>	Alaska long-awn sedge	<i>Carex macrochaeta</i>	FACW
<i>Carex magellanica</i> ssp. <i>irrigua</i>	Boreal bog sedge	<i>Carex paupercula</i>	OBL
<i>Carex mertensii</i>	Merten's sedge	<i>Carex mertensii</i>	FACW
<i>Carex pachystachya</i>	Thick-head sedge	<i>Carex pachystachya</i>	FAC
<i>Carex pauciflora</i>	Few-flower sedge	<i>Carex pauciflora</i>	OBL
<i>Carex pluriflora</i>	Several flowered sedge	<i>Carex pluriflora</i>	OBL
<i>Carex rariflora</i>	Loose flowered sedge	<i>Carex rariflora</i>	OBL
<i>Carex rostrata</i>	Beaked sedge	<i>Carex rostrata</i>	OBL
<i>Carex rotundata</i>	Round-fruit sedge	<i>Carex rotundata</i>	OBL
<i>Carex saxatilis</i>	Russet sedge	<i>Carex saxatilis</i>	FACW
<i>Carex</i> sp.	Unkeyed sedge		-
<i>Carex tenuiflora</i>	Sparse-flower sedge	<i>Carex tenuiflora</i>	OBL
<i>Carex utriculata</i>	Northwest Territory sedge	<i>Carex rhynchophysa</i>	OBL
<i>Carex vaginata</i>	Sheathed sedge	<i>Carex vaginata</i>	OBL
<i>Castilleja unalaschcensis</i>	Alaska Indian paintbrush	<i>Castilleja unalaschcensis</i>	FAC
<i>Chamaedaphne calyculata</i>	Leatherleaf	<i>Chamaedaphne calyculata</i>	FACW
<i>Chamerion angustifolium</i>	Fireweed	<i>Epilobium angustifolium</i>	FACU
<i>Chamerion latifolium</i> ⁴	River beauty	<i>Epilobium latifolium</i>	FAC
<i>Chrysosplenium tetrandrum</i>	Northern golden-saxifrage	<i>Chrysosplenium tetrandrum</i>	OBL
<i>Cicuta virosa</i>	Mackenzie water-hemlock	<i>Cicuta mackenziana</i>	OBL
<i>Cinna latifolia</i> ⁴	Drooping woodreed	<i>Cinna latifolia</i>	OBL
<i>Circaea alpina</i>	Small enchanter's nightshade	<i>Circaea alpina</i>	NI
<i>Comarum palustre</i>	Marsh cinquefoil	<i>Potentilla palustris</i>	OBL
<i>Conioselinum gmelinii</i>	Hemlock-parsley	<i>Conioselinum gmelinii</i>	FACW
<i>Coptis trifolia</i>	Alaska goldthread	<i>Coptis trifolia</i>	FAC
<i>Corallorrhiza trifida</i>	Yellow coralroot	<i>Corallorrhiza trifida</i>	FACW
<i>Cornus canadensis</i>	Canada bunchberry	<i>Cornus canadensis</i>	FACU
<i>Cornus</i> sp.	Unkeyed dogwood		-
<i>Cornus suecica</i>	Swedish dwarf dogwood	<i>Cornus suecica</i>	FAC
<i>Danthonia intermedia</i>	Timber oatgrass	<i>Danthonia intermedia</i>	FAC
<i>Dasiphora fruticosa</i> ssp. <i>floribunda</i>	Shrubby cinquefoil	<i>Potentilla fruticosa</i>	FAC
<i>Deschampsia cespitosa</i>	Tufted hairgrass	<i>Deschampsia cespitosa</i>	FAC
<i>Diphasiastrum complanatum</i> ⁴	Groundcedar	<i>Lycopodium complanatum</i>	UPL
<i>Drosera anglica</i>	English sundew	<i>Drosera anglica</i>	OBL
<i>Drosera rotundifolia</i>	Round-leaf sundew	<i>Drosera rotundifolia</i>	OBL
<i>Dryopteris expansa</i>	Mountain woodfern	<i>Dryopteris dilatata</i>	FACU
<i>Eleocharis mamillata</i>			
<i>(Eleocharis palustris</i> s.l.) ^{4,5}	Soft-stem spikerush	<i>Eleocharis mamillata</i>	OBL
<i>Eleocharis</i> sp.	Unkeyed spikerush		-
<i>Elymus trachycaulus</i>	Slender wheatgrass	<i>Agropyron trachycaulum</i>	FACU
<i>Empetrum nigrum</i>	Black crowberry	<i>Empetrum nigrum</i>	FAC

Project Plant Species List
Sorted by Scientific Name

Scientific Name ¹	Common Name	Synonymous Name in the 1988 National Wetlands Indicator List ²	Alaska Region Wetlands Indicator ³
<i>Epilobium ciliatum</i>	Hairy willow-herb	<i>Epilobium ciliatum</i>	FACU
<i>Epilobium lactiflorum</i>	White-flower willow-herb	<i>Epilobium lactiflorum</i>	NI
<i>Epilobium palustre</i>	Marsh willow-herb	<i>Epilobium palustre</i>	OBL
<i>Epilobium</i> sp., s.l.	Unkeyed epilobium		-
<i>Equisetum arvense</i>	Field horsetail	<i>Equisetum arvense</i>	FACU
<i>Equisetum fluviatile</i>	Water horsetail	<i>Equisetum fluviatile</i>	OBL
<i>Equisetum palustre</i>	Marsh horsetail	<i>Equisetum palustre</i>	FACW
<i>Equisetum pratense</i>	Meadow horsetail	<i>Equisetum pratense</i>	FACW
<i>Equisetum sylvaticum</i>	Woodland horsetail	<i>Equisetum sylvaticum</i>	FACU
<i>Equisetum variegatum</i>	Variegated horsetail	<i>Equisetum variegatum</i>	FACW
<i>Erigeron peregrinus</i>	Wandering fleabane	<i>Erigeron peregrinus</i>	FACW
<i>Eriophorum angustifolium</i>	Narrow-leaf cotton-grass	<i>Eriophorum angustifolium</i>	OBL
<i>Eriophorum angustifolium</i> ssp. <i>scabriusculum</i> ⁴	Tall cottongrass	<i>Eriophorum angustifolium</i> ssp. <i>scabriusculum</i>	OBL
<i>Eriophorum chamissonis</i>	Russet cotton-grass	<i>Eriophorum chamissonis</i>	OBL
<i>Eriophorum gracile</i>	Slender cottongrass	<i>Eriophorum gracile</i>	OBL
<i>Eriophorum scheuchzeri</i>	Scheuchzer's cotton-grass	<i>Eriophorum scheuchzeri</i>	OBL
<i>Eriophorum</i> sp.	Unkeyed cotton-grass		-
<i>Eriophorum viridicarinatum</i>	Green-keel cotton-grass	<i>Eriophorum viridicarinatum</i>	OBL
<i>Erysimum cheiranthoides</i> ⁴	Wormseed wallflower	<i>Erysimum cheiranthoides</i>	UPL
<i>Festuca altaica</i>	Rough fescue	<i>Festuca altaica</i>	FAC
<i>Fragaria chiloensis</i> ssp. <i>pacifica</i> ⁴	Beach strawberry		NL
<i>Fritillaria camschatcensis</i>	Kamchatka mission-bells/chocolate lily	<i>Fritillaria camschatcensis</i>	FAC
<i>Galeopsis bifida</i> ⁴	Splitlip hempnettle		NL
<i>Galium boreale</i>	Northern bedstraw	<i>Galium boreale</i>	FACU
<i>Galium kamtschaticum</i>	Boreal bedstraw		NL
<i>Galium trifidum</i>	Small bedstraw	<i>Galium trifidum</i>	FACW
<i>Galium triflorum</i>	Sweet-scent bedstraw	<i>Galium triflorum</i>	FACU
<i>Gentiana douglasiana</i>	Swamp gentian	<i>Gentiana douglasiana</i>	FACW
<i>Gentianella amarella</i>	Autumn dwarf gentian	<i>Gentianella amarella</i>	FACW
<i>Geocaulon lividum</i>	False toadflax	<i>Geocaulon lividum</i>	FACU
<i>Geranium erianthum</i>	Woolly geranium	<i>Geranium pratense</i>	FAC
<i>Geum macrophyllum</i>	Large-leaf avens	<i>Geum macrophyllum</i>	FACW
<i>Glyceria borealis</i> ⁴	Small floating mannagrass	<i>Glyceria borealis</i>	OBL
<i>Goodyera repens</i>	Dwarf rattlesnake-plantain	<i>Goodyera repens</i>	FAC*
<i>Gymnocarpium dryopteris</i>	Oak fern	<i>Gymnocarpium dryopteris</i>	FACU
<i>Heracleum maximum</i>	Cow-parsnip	<i>Heracleum lanatum</i>	FACU
<i>Hierochloa odorata</i>	Holy grass	<i>Hierochloa odorata</i>	FACU
<i>Hippuris vulgaris</i> ⁴	Common mare's-tail	<i>Hippuris vulgaris</i>	OBL
<i>Honckenya peploides</i> ⁴	Seaside sandplant	<i>Honckenya peploides</i>	OBL
<i>Impatiens noli-tangere</i>	Western touch-me-not	<i>Impatiens noli-tangere</i>	FACW
<i>Iris setosa</i>	Beach-head iris	<i>Iris setosa</i>	FAC
<i>Isoetes echinospora</i> ⁴	Spiny-spore quillwort	<i>Isoetes echinospora</i>	OBL
<i>Juncus bufonius</i>	Toad rush	<i>Juncus bufonius</i>	OBL
<i>Juncus ensifolius</i>	Swordleaf rush	<i>Juncus ensifolius</i>	FACW
<i>Juncus filiformis</i>	Thread rush	<i>Juncus filiformis</i>	FACW
<i>Juncus mertensianus</i>	Merten's rush	<i>Juncus mertensianus</i>	OBL
<i>Juncus stygius</i>	Moor rush	<i>Juncus stygius</i>	OBL

Project Plant Species List
Sorted by Scientific Name

Scientific Name ¹	Common Name	Synonymous Name in the 1988 National Wetlands Indicator List ²	Alaska Region Wetlands Indicator ³
<i>Juncus supiniformis</i> ⁴	Hairy-leaf rush	<i>Juncus supiniformis</i>	OBL
<i>Lathyrus palustris</i>	Vetchling peavine	<i>Lathyrus palustris</i>	OBL
<i>Ledum palustre</i> ssp. <i>decumbens</i>	Narrow-leaf Labrador-tea	<i>Ledum decumbens</i>	FACW
<i>Linnaea borealis</i>	Twinflower	<i>Linnaea borealis</i>	UPL
<i>Listera cordata</i>	Heart-leaf twayblade	<i>Listera cordata</i>	FACU
<i>Lupinus nootkatensis</i>	Nootka lupine	<i>Lupinus nootkatensis</i>	FAC
<i>Lupinus polyphyllus</i>	Bigleaf lupine	<i>Lupinus polyphyllus</i>	FAC
<i>Luzula multiflora</i>	Common woodrush	<i>Luzula multiflora</i>	FACU
<i>Luzula parviflora</i>	Small-flower woodrush	<i>Luzula parviflora</i>	FAC
<i>Lycopodium annotinum</i>	Stiff clubmoss	<i>Lycopodium annotinum</i>	FAC
<i>Lysimachia thyrsoiflora</i> ⁴	Tufted loosestrife	<i>Lysimachia thyrsoiflora</i>	OBL
<i>Malaxis paludosa</i>	Bog adder's-mouth	<i>Malaxis paludosa</i>	OBL
<i>Matteuccia struthiopteris</i>	Ostrich fern	<i>Matteuccia struthiopteris</i>	FACW
<i>Menyanthes trifoliata</i>	Buckbean	<i>Menyanthes trifoliata</i>	OBL
<i>Menziesia ferruginea</i>	Mock-azalea	<i>Menziesia ferruginea</i>	UPL
<i>Mertensia paniculata</i>	Tall bluebells	<i>Mertensia paniculata</i>	FACU
<i>Mimulus guttatus</i>	Common large monkey-flower	<i>Mimulus guttatus</i>	OBL
<i>Moehringia lateriflora</i>	Grove sandwort	<i>Moehringia lateriflora</i>	NI
<i>Moneses uniflora</i>	Shy maiden		NL
<i>Myrica gale</i>	Sweetgale	<i>Myrica gale</i>	OBL
<i>Nuphar polysepalum</i>	Yellow cow-lily	<i>Nuphar luteum</i>	OBL
<i>Nymphaea tetragona</i> ⁴	Pygmy waterlily	<i>Nymphaea tetragona</i>	OBL
<i>Oplopanax horridus</i>	Devil's-club	<i>Oplopanax horridus</i>	FACU
<i>Orthilia secunda</i>	One-sided wintergreen	<i>Pyrola secunda</i>	UPL
<i>Parnassia kotzebuei</i>	Kotzebue's grass-of-parnassus	<i>Parnassia kotzebuei</i>	FACW
<i>Parnassia palustris</i>	Northern grass-of-parnassus	<i>Parnassia palustris</i>	FACW
<i>Pedicularis groenlandica</i>	Elephanthead lousewort	<i>Pedicularis groenlandica</i>	OBL ⁶
<i>Pedicularis labradorica</i>	Labrador lousewort	<i>Pedicularis labradorica</i>	FACW
<i>Pedicularis parviflora</i>	Small-flower lousewort	<i>Pedicularis parviflora</i>	FACW
<i>Pedicularis</i> sp.	Unkeyed lousewort		-
<i>Phegopteris connectilis</i>	Narrow beech fern		NL
<i>Phleum alpinum</i>	Alpine timothy	<i>Phleum alpinum</i>	FACU
<i>Picea glauca</i>	White spruce	<i>Picea glauca</i>	FACU
<i>Picea mariana</i>	Black spruce	<i>Picea mariana</i>	FACW
<i>Pinguicula villosa</i>	Hairy butterwort	<i>Pinguicula villosa</i>	OBL
<i>Platanthera aquilonis</i>	Northern green orchid	<i>Platanthera hyperborea</i>	FACW
<i>Platanthera dilatata</i>	Leafy white orchid	<i>Platanthera dilatata</i>	FACW
<i>Platanthera obtusata</i>	Small northern bog orchid	<i>Platanthera obtusata</i>	FACW
<i>Platanthera stricta</i> ⁴	Slender bog orchid	<i>Platanthera stricta</i>	FACW
<i>Poa alpina</i> ⁴	Alpine bluegrass	<i>Poa alpina</i>	FACU
<i>Poa annua</i> ⁴	Annual bluegrass	<i>Poa annua</i>	FAC
<i>Poa palustris</i>	Fowl bluegrass	<i>Poa palustris</i>	FAC
<i>Poa pratensis</i>	Kentucky bluegrass	<i>Poa pratensis</i>	FACU
<i>Poa pratensis</i> ssp. <i>alpigena</i> ⁴	Low bluegrass	<i>Poa alpigena</i>	FACU
<i>Polemonium acutiflorum</i>	Sticky tall Jacob's-ladder	<i>Polemonium acutiflorum</i>	FAC
<i>Populus balsamifera</i>	Cottonwood	<i>Populus balsamifera</i>	FACU
<i>Populus balsamifera</i> ssp. <i>trichocarpa</i>	Black cottonwood	<i>Populus balsamifera</i>	FACU

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<i>Populus tremuloides</i> ⁴	Quaking aspen	<i>Populus tremula</i>	FACU
<i>Potamogeton alpinus</i>	Alpine pondweed	<i>Potamogeton alpinus</i>	OBL
<i>Potamogeton epihydrus</i> ⁴	Ribbonleaf pondweed	<i>Potamogeton epihydrus</i>	OBL
<i>Potamogeton gramineus</i> ⁴	Variableleaf pondweed	<i>Potamogeton gramineus</i>	OBL
<i>Potamogeton natans</i>	Floating-leaf pondweed	<i>Potamogeton natans</i>	OBL
<i>Potamogeton pusillus</i> ssp. <i>tenuissimus</i>	Small pondweed	<i>Potamogeton pusillus</i>	OBL
<i>Potamogeton</i> sp., s.l.	Unkeyed pondweed		-
<i>Potentilla norvegica</i>	Norwegian cinquefoil	<i>Potentilla norvegica</i>	FAC
<i>Pyrola asarifolia</i>	Pink wintergreen	<i>Pyrola asarifolia</i>	FAC
<i>Pyrola minor</i>	Lesser wintergreen	<i>Pyrola minor</i>	FAC
<i>Pyrola</i> sp., s.l.	Unkeyed wintergreen		-
<i>Ranunculus abortivus</i>	Little-leaf buttercup	<i>Ranunculus abortivus</i>	FAC
<i>Ranunculus flammula</i> ⁴	Greater creeping spearwort	<i>Ranunculus flammula</i>	FACW
<i>Ranunculus gmelinii</i>	Gmelin's buttercup	<i>Ranunculus gmelinii</i>	FACW
<i>Ranunculus hyperboreus</i>	Arctic buttercup	<i>Ranunculus hyperboreus</i>	OBL
<i>Ranunculus lapponicus</i> ⁴	Lapland buttercup	<i>Ranunculus lapponicus</i>	OBL
<i>Ranunculus macounii</i>	Macoun's buttercup	<i>Ranunculus macounii</i>	FACW
<i>Ranunculus</i> sp.	Unkeyed buttercup		-
<i>Rhinanthus minor</i> ssp. <i>groenlandicus</i>	Little yellow rattle	<i>Rhinanthus arcticus</i>	FAC
<i>Rhynchospora alba</i>	White beaksedge	<i>Rhynchospora alba</i>	OBL
<i>Ribes hudsonianum</i>	Hudson bay currant	<i>Ribes hudsonianum</i>	FAC
<i>Ribes laxiflorum</i>	Trailing black currant		NL
<i>Ribes</i> sp.	Unkeyed currant		-
<i>Ribes triste</i>	Swamp red currant	<i>Ribes triste</i>	FAC
<i>Rorippa palustris</i>	Bog yellow-cress	<i>Rorippa palustris</i>	FAC
<i>Rosa acicularis</i>	Prickly rose	<i>Rosa acicularis</i>	FACU
<i>Rosa nutkana</i>	Nootka rose	<i>Rosa nutkana</i>	NI
<i>Rubus arcticus</i>	Arctic raspberry	<i>Rubus arcticus</i>	FAC
<i>Rubus arcticus</i> ssp. <i>stellatus</i>	Nagoonberry	<i>Rubus stellatus</i>	FAC
<i>Rubus chamaemorus</i>	Cloudberry	<i>Rubus chamaemorus</i>	FACW
<i>Rubus idaeus</i>	Common red raspberry	<i>Rubus idaeus</i>	FAC
<i>Rubus pedatus</i>	Strawberry-leaf raspberry	<i>Rubus pedatus</i>	FAC*
<i>Rubus spectabilis</i>	Salmonberry	<i>Rubus spectabilis</i>	FACU
<i>Rumex arcticus</i>	Arctic dock	<i>Rumex arcticus</i>	FACW
<i>Rumex occidentalis</i>	Western dock	<i>Rumex occidentalis</i>	OBL
<i>Salix alaxensis</i>	Felt-leaf willow	<i>Salix alaxensis</i>	FAC
<i>Salix arbusculoides</i>	Little-tree willow	<i>Salix arbusculoides</i>	FACW
<i>Salix barclayi</i>	Barclay willow	<i>Salix barclayi</i>	FAC
<i>Salix bebbiana</i>	Bebb willow	<i>Salix bebbiana</i>	FAC
<i>Salix fuscescens</i>	Alaska bog willow	<i>Salix fuscescens</i>	FACW
<i>Salix lucida</i> ssp. <i>lasiandra</i>	Pacific willow	<i>Salix lasiandra</i>	FACW
<i>Salix pulchra</i>	Diamond-leaf willow	<i>Salix planifolia</i>	FACW
<i>Salix scouleriana</i>	Scouler willow	<i>Salix scoulerana</i>	FAC
<i>Salix sitchensis</i>	Sitka willow	<i>Salix sitchensis</i>	FAC
<i>Salix</i> sp.	Unkeyed willow		-
<i>Sambucus racemosa</i>	European red elder	<i>Sambucus racemosa</i>	FACU
<i>Sanguisorba canadensis</i>	Canada burnet	<i>Sanguisorba canadensis</i>	FACW
<i>Scheuchzeria palustris</i> ⁴	Rannoch-rush	<i>Scheuchzeria palustris</i>	OBL

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<i>Schizachne purpurascens</i>	False melic	<i>Schizachne purpurascens</i>	FAC
<i>Scirpus microcarpus</i> ⁴	Small-fruit bulrush	<i>Scirpus microcarpus</i>	OBL
<i>Selaginella selaginoides</i>	Club spike-moss	<i>Selaginella selaginoides</i>	FACU
<i>Senecio</i> sp.	Unkeyed ragwort		-
<i>Senecio triangularis</i>	Arrow-leaf groundsel	<i>Senecio triangularis</i>	FACW
<i>Solidago lepida</i>	Canada goldenrod	<i>Solidago canadensis</i>	FACU
<i>Solidago multiradiata</i>	Mountain goldenrod	<i>Solidago multiradiata</i>	FACU
<i>Solidago</i> sp.	Unkeyed goldenrod		-
<i>Sorbus scopulina</i>	Greene's mountain-ash	<i>Sorbus scopulina</i>	NI
<i>Sparganium angustifolium</i>	Narrow-leaf burreed	<i>Sparganium emersum</i>	OBL
<i>Sparganium hyperboreum</i>	Northern burreed	<i>Sparganium hyperboreum</i>	OBL
<i>Spergularia rubra</i> ⁴	Red sandspurry	<i>Spergularia rubra</i>	FAC
<i>Spiraea stevenii</i>	Beauvered spiraea	<i>Spiraea beauverdiana</i>	FAC
<i>Spiranthes romanzoffiana</i>	Hooded ladies'-tresses	<i>Spiranthes romanzoffiana</i>	OBL
<i>Stellaria borealis</i> ssp. <i>sitchana</i>	Sitka starwort	<i>Stellaria sitchana</i>	FAC
<i>Stellaria calycantha</i>	Northern starwort	<i>Stellaria calycantha</i>	FACW
<i>Stellaria crispa</i>	Crisp starwort	<i>Stellaria crispa</i>	FAC
<i>Streptopus amplexifolius</i>	Clasp-leaf twisted-stalk	<i>Streptopus amplexifolius</i>	FAC
<i>Swertia perennis</i>	Felwort	<i>Swertia perennis</i>	FAC
<i>Symphyotrichum subspicatum</i>	Douglas aster	<i>Aster subspicatus</i>	FAC
<i>Taraxacum officinale</i>	Common dandelion	<i>Taraxacum officinale</i>	FACU
<i>Thalictrum alpinum</i>	Alpine meadow-rue	<i>Thalictrum alpinum</i>	FAC
<i>Thalictrum sparsiflorum</i>	Few-flower meadow-rue	<i>Thalictrum sparsiflorum</i>	FACU
<i>Triantha occidentalis</i> ssp. <i>brevistyla</i>	Priest Lake tofieldia	<i>Tofieldia glutinosa</i>	FACW*
<i>Trichophorum alpinum</i>	Alpine cotton-grass	<i>Eriophorum alpinum</i>	OBL
<i>Trichophorum cespitosum</i>	Tufted bulrush	<i>Scirpus cespitosus</i>	OBL
<i>Trientalis europaea</i>	European starflower	<i>Trientalis europaea</i>	FAC
<i>Trifolium hybridum</i> ⁴	Alsike clover	<i>Trifolium hybridum</i>	FAC
<i>Triglochin maritimum</i>	Seaside arrow-grass	<i>Triglochin maritimum</i>	OBL
<i>Triglochin palustre</i>	Marsh arrow-grass	<i>Triglochin palustre</i>	OBL
<i>Urtica dioica</i> ssp. <i>gracilis</i>	California nettle	<i>Urtica dioica</i>	FACU
<i>Utricularia intermedia</i> ⁴	Flatleaf bladderwort	<i>Utricularia intermedia</i>	OBL
<i>Utricularia macrorhiza</i>	Common bladderwort	<i>Utricularia macrorhiza</i>	OBL
<i>Utricularia minor</i>	Lesser bladderwort	<i>Utricularia minor</i>	OBL
<i>Vaccinium caespitosum</i>	Dwarf bilberry	<i>Vaccinium caespitosum</i>	FACW
<i>Vaccinium ovalifolium</i>	Early blueberry	<i>Vaccinium ovalifolium</i>	FAC
<i>Vaccinium oxycoccos</i>	Small cranberry	<i>Vaccinium oxycoccos</i>	OBL
<i>Vaccinium uliginosum</i>	Bog blueberry	<i>Vaccinium uliginosum</i>	FAC
<i>Vaccinium vitis-idaea</i>	Mountain cranberry	<i>Vaccinium vitis-idaea</i>	FAC
<i>Vahlodea atropurpurea</i>	Mountain hairgrass		NL
<i>Valeriana capitata</i>	Clustered valerian	<i>Valeriana capitata</i>	FAC
<i>Veratrum viride</i>	American false-hellebore	<i>Veratrum viride</i>	FACU
<i>Veronica americana</i>	American speedwell	<i>Veronica americana</i>	OBL
<i>Veronica serpyllifolia</i>	Bright-blue speedwell	<i>Veronica serpyllifolia</i>	OBL
<i>Veronica wormskjoldii</i>	American alpine speedwell	<i>Veronica wormskjoldii</i>	FAC
<i>Viburnum edule</i>	Squashberry	<i>Viburnum edule</i>	FACU
<i>Viola adunca</i>	Hooked-spur violet	<i>Viola adunca</i>	FAC

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<i>Viola epipsila</i> ⁷	Dwarf marsh violet	<i>Viola pallens</i>	NI
<i>Viola glabella</i> ⁴	pioneer violet	<i>Viola glabella</i>	FACW
<i>Viola langsдорffii</i>	Alaska violet	<i>Viola langsдорffii</i>	FACW
<i>Viola renifolia</i>	White violet	<i>Viola renifolia</i>	FAC
<i>Viola selkirkii</i>	Selkirk's violet		NL
<i>Viola</i> sp.	Unkeyed violet		-

1 - Primary reference: Flora of North America (Flora of North America Editorial Committee 1993+). Secondary reference: USDA PLANTS database (NRCS 2007). Tertiary reference: Hultén (1968).

2 - Reed (1988)

3 - Obligate Wetland (OBL). Occur almost always (estimated probability >99%) under natural conditions in wetlands.

Facultative Wetland (FACW). Usually occur in wetlands (estimated probability 67%-99%), but occasionally found in non-wetlands.

Facultative (FAC). Equally likely to occur in wetlands or non-wetlands (estimated probability 34%-66%).

Facultative Upland (FACU). Usually occur in non-wetlands (estimated probability 67%-99%), but occasionally found in wetlands (estimated probability 1%-33%).

Obligate Upland (UPL). Occur almost always (estimated probability >99%) under natural conditions in non-wetlands.

No Indicator (NI). Insufficient information was available to determine an indicator status.

An asterisk following an indicator (e.g. FAC*) identifies a tentative assignment based on limited information from which to determine the indicator status.

Not listed (NL). Plant species not on the list which also do not have a synonymous listing. These species are treated as upland species.

4 - Incidental observations made during wetland determination field work or during aquatic sampling. All referenced entries were observed within the project area.

5 - (s.l.) sensu lato, in the broad sense.

6 - National indicator.

7 - See discussion in Section 2.3.2.1 of the Baseline Report for this species.

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Alaska bentgrass	<i>Agrostis alaskana</i>	<i>Agrostis alaskana</i>	OBL
Alaska bog willow	<i>Salix fuscescens</i>	<i>Salix fuscescens</i>	FACW
Alaska goldthread	<i>Coptis trifolia</i>	<i>Coptis trifolia</i>	FAC
Alaska Indian paintbrush	<i>Castilleja unalaschcensis</i>	<i>Castilleja unalaschcensis</i>	FAC
Alaska long-awn sedge	<i>Carex macrochaeta</i>	<i>Carex macrochaeta</i>	FACW
Alaska violet	<i>Viola langsдорffii</i>	<i>Viola langsдорffii</i>	FACW
Alpine bluegrass	<i>Poa alpina</i> ⁴	<i>Poa alpina</i>	FACU
Alpine cotton-grass	<i>Trichophorum alpinum</i>	<i>Eriophorum alpinum</i>	OBL
Alpine meadow-rue	<i>Thalictrum alpinum</i>	<i>Thalictrum alpinum</i>	FAC
Alpine pondweed	<i>Potamogeton alpinus</i>	<i>Potamogeton alpinus</i>	OBL
Alpine timothy	<i>Phleum alpinum</i>	<i>Phleum alpinum</i>	FACU
Alsike clover	<i>Trifolium hybridum</i> ⁴	<i>Trifolium hybridum</i>	FAC
American alpine speedwell	<i>Veronica wormskjoldii</i>	<i>Veronica wormskjoldii</i>	FAC
American false-hellebore	<i>Veratrum viride</i>	<i>Veratrum viride</i>	FACU
American speedwell	<i>Veronica americana</i>	<i>Veronica americana</i>	OBL
Annual bluegrass	<i>Poa annua</i> ⁴	<i>Poa annua</i>	FAC
Arctic buttercup	<i>Ranunculus hyperboreus</i>	<i>Ranunculus hyperboreus</i>	OBL
Arctic dock	<i>Rumex arcticus</i>	<i>Rumex arcticus</i>	FACW
Arctic raspberry	<i>Rubus arcticus</i>	<i>Rubus arcticus</i>	FAC
Arrow-leaf groundsel	<i>Senecio triangularis</i>	<i>Senecio triangularis</i>	FACW
Autumn dwarf gentian	<i>Gentianella amarella</i>	<i>Gentianella amarella</i>	FACW
Baneberry	<i>Actaea rubra</i>		NL
Barclay willow	<i>Salix barclayi</i>	<i>Salix barclayi</i>	FAC
Beach strawberry	<i>Fragaria chiloensis</i> ssp. <i>pacifica</i> ⁴		NL
Beach-head iris	<i>Iris setosa</i>	<i>Iris setosa</i>	FAC
Beaked sedge	<i>Carex rostrata</i>	<i>Carex rostrata</i>	OBL
Beauvered spiraea	<i>Spiraea stevenii</i>	<i>Spiraea beauverdiana</i>	FAC
Bebb willow	<i>Salix bebbiana</i>	<i>Salix bebbiana</i>	FAC
Bigleaf lupine	<i>Lupinus polyphyllus</i>	<i>Lupinus polyphyllus</i>	FAC
Birch hybrid	<i>Betula</i> hybrid		-
Black cottonwood	<i>Populus balsamifera</i> ssp. <i>trichocarpa</i>	<i>Populus balsamifera</i>	FACU
Black crowberry	<i>Empetrum nigrum</i>	<i>Empetrum nigrum</i>	FAC
Black spruce	<i>Picea mariana</i>	<i>Picea mariana</i>	FACW
Blue-joint reedgrass	<i>Calamagrostis canadensis</i>	<i>Calamagrostis canadensis</i>	FAC
Board-leaf arctic-bentgrass	<i>Arctagrostis latifolia</i>	<i>Arctagrostis latifolia</i>	FACW
Bog adder's-mouth	<i>Malaxis paludosa</i>	<i>Malaxis paludosa</i>	OBL
Bog blueberry	<i>Vaccinium uliginosum</i>	<i>Vaccinium uliginosum</i>	FAC
Bog rosemary	<i>Andromeda polifolia</i>	<i>Andromeda polifolia</i>	OBL
Bog yellow-cress	<i>Rorippa palustris</i>	<i>Rorippa palustris</i>	FAC
Boreal bedstraw	<i>Galium kamtschaticum</i>		NL
Boreal bog sedge	<i>Carex magellanica</i> ssp. <i>irrigua</i>	<i>Carex paupercula</i>	OBL
Bright-blue speedwell	<i>Veronica serpyllifolia</i>	<i>Veronica serpyllifolia</i>	OBL
Bristly-stalk sedge	<i>Carex leptalea</i>	<i>Carex leptalea</i>	OBL
Broadleaf arnica	<i>Arnica latifolia</i>	<i>Arnica latifolia</i>	FAC
Brown bog sedge	<i>Carex buxbaumii</i>	<i>Carex buxbaumii</i>	FACW
Brownish sedge	<i>Carex brunnescens</i>	<i>Carex brunnescens</i>	FAC
Buckbean	<i>Menyanthes trifoliata</i>	<i>Menyanthes trifoliata</i>	OBL

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California nettle	<i>Urtica dioica</i> ssp. <i>gracilis</i>	<i>Urtica dioica</i>	FACU
Canada bunchberry	<i>Cornus canadensis</i>	<i>Cornus canadensis</i>	FACU
Canada burnet	<i>Sanguisorba canadensis</i>	<i>Sanguisorba canadensis</i>	FACW
Canada goldenrod	<i>Solidago lepida</i>	<i>Solidago canadensis</i>	FACU
Clasp-leaf twisted-stalk	<i>Streptopus amplexifolius</i>	<i>Streptopus amplexifolius</i>	FAC
Cloudberry	<i>Rubus chamaemorus</i>	<i>Rubus chamaemorus</i>	FACW
Club spike-moss	<i>Selaginella selaginoides</i>	<i>Selaginella selaginoides</i>	FACU
Clustered valerian	<i>Valeriana capitata</i>	<i>Valeriana capitata</i>	FAC
Coastal stellate sedge	<i>Carex echinata</i> ssp. <i>phyllomanica</i>	<i>Carex phyllomanica</i>	OBL
Common bladderwort	<i>Utricularia macrorhiza</i>	<i>Utricularia macrorhiza</i>	OBL
Common dandelion	<i>Taraxacum officinale</i>	<i>Taraxacum officinale</i>	FACU
Common large monkey-flower	<i>Mimulus guttatus</i>	<i>Mimulus guttatus</i>	OBL
Common mare's-tail	<i>Hippuris vulgaris</i> ⁴	<i>Hippuris vulgaris</i>	OBL
Common red raspberry	<i>Rubus idaeus</i>	<i>Rubus idaeus</i>	FAC
Common woodrush	<i>Luzula multiflora</i>	<i>Luzula multiflora</i>	FACU
Common yarrow	<i>Achillea millefolium</i>	<i>Achillea millefolium</i>	FACU
Cottonwood	<i>Populus balsamifera</i>	<i>Populus balsamifera</i>	FACU
Cow-parsnip	<i>Heracleum maximum</i>	<i>Heracleum lanatum</i>	FACU
Creeping sedge	<i>Carex chordorrhiza</i>	<i>Carex chordorrhiza</i>	OBL
Crisp starwort	<i>Stellaria crispa</i>	<i>Stellaria crispa</i>	FAC
Cuckoo flower	<i>Cardamine pratensis</i>	<i>Cardamine pratensis</i>	OBL
Devil's-club	<i>Oplopanax horridus</i>	<i>Oplopanax horridus</i>	FACU
Diamond-leaf willow	<i>Salix pulchra</i>	<i>Salix planifolia</i>	FACW
Douglas aster	<i>Symphotrichum subspicatum</i>	<i>Aster subspicatus</i>	FAC
Drooping woodreed	<i>Cinna latifolia</i> ⁴	<i>Cinna latifolia</i>	OBL
Drummond's rockcress	<i>Arabis drummondii</i>	<i>Arabis drummondii</i>	FACU
Dwarf bilberry	<i>Vaccinium caespitosum</i>	<i>Vaccinium caespitosum</i>	FACW
Dwarf marsh violet	<i>Viola epipsila</i> ⁷	<i>Viola pallens</i>	NI
Dwarf rattlesnake-plantain	<i>Goodyera repens</i>	<i>Goodyera repens</i>	FAC*
Early blueberry	<i>Vaccinium ovalifolium</i>	<i>Vaccinium ovalifolium</i>	FAC
Elephanthead lousewort	<i>Pedicularis groenlandica</i>	<i>Pedicularis groenlandica</i>	OBL ⁶
English sundew	<i>Drosera anglica</i>	<i>Drosera anglica</i>	OBL
European red elder	<i>Sambucus racemosa</i>	<i>Sambucus racemosa</i>	FACU
European starflower	<i>Trientalis europaea</i>	<i>Trientalis europaea</i>	FAC
False melic	<i>Schizachne purpurascens</i>	<i>Schizachne purpurascens</i>	FAC
False toadflax	<i>Geocaulon lividum</i>	<i>Geocaulon lividum</i>	FACU
Felt-leaf willow	<i>Salix alaxensis</i>	<i>Salix alaxensis</i>	FAC
Felwort	<i>Swertia perennis</i>	<i>Swertia perennis</i>	FAC
Few-flower meadow-rue	<i>Thalictrum sparsiflorum</i>	<i>Thalictrum sparsiflorum</i>	FACU
Few-flower sedge	<i>Carex pauciflora</i>	<i>Carex pauciflora</i>	OBL
Field horsetail	<i>Equisetum arvense</i>	<i>Equisetum arvense</i>	FACU
Fireweed	<i>Chamerion angustifolium</i>	<i>Epilobium angustifolium</i>	FACU
Flatleaf bladderwort	<i>Utricularia intermedia</i> ⁴	<i>Utricularia intermedia</i>	OBL
Floating-leaf pondweed	<i>Potamogeton natans</i>	<i>Potamogeton natans</i>	OBL
Fowl bluegrass	<i>Poa palustris</i>	<i>Poa palustris</i>	FAC
Fringed brome	<i>Bromus ciliatus</i>	<i>Bromus ciliatus</i>	FACW
Gmelin's buttercup	<i>Ranunculus gmelinii</i>	<i>Ranunculus gmelinii</i>	FACW

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Greater creeping spearwort	<i>Ranunculus flammula</i> ⁴	<i>Ranunculus flammula</i>	FACW
Green alder	<i>Alnus viridis</i> ssp. <i>fruticosa</i>	<i>Alnus crispa</i>	FAC
Greene's mountain-ash	<i>Sorbus scopulina</i>	<i>Sorbus scopulina</i>	NI
Green-keel cotton-grass	<i>Eriophorum viridicarinatum</i>	<i>Eriophorum viridicarinatum</i>	OBL
Groundcedar	<i>Diphasiastrum complanatum</i> ⁴	<i>Lycopodium complanatum</i>	UPL
Grove sandwort	<i>Moehringia lateriflora</i>	<i>Moehringia lateriflora</i>	NI
Hairy butterwort	<i>Pinguicula villosa</i>	<i>Pinguicula villosa</i>	OBL
Hairy willow-herb	<i>Epilobium ciliatum</i>	<i>Epilobium ciliatum</i>	FACU
Hairyleaf rush	<i>Juncus supiniformis</i> ⁴	<i>Juncus supiniformis</i>	OBL
Heart-leaf twayblade	<i>Listera cordata</i>	<i>Listera cordata</i>	FACU
Hemlock-parsley	<i>Conioselinum gmelinii</i>	<i>Conioselinum gmelinii</i>	FACW
Hoary sedge	<i>Carex canescens</i>	<i>Carex canescens</i>	OBL
Holy grass	<i>Hierochloe odorata</i>	<i>Hierochloe odorata</i>	FACU
Hooded ladies'-tresses	<i>Spiranthes romanzoffiana</i>	<i>Spiranthes romanzoffiana</i>	OBL
Hooked-spur violet	<i>Viola adunca</i>	<i>Viola adunca</i>	FAC
Hudson bay currant	<i>Ribes hudsonianum</i>	<i>Ribes hudsonianum</i>	FAC
Kamchatka mission-bells/chocolate lily	<i>Fritillaria camschatcensis</i>	<i>Fritillaria camschatcensis</i>	FAC
Kellogg's sedge	<i>Carex lenticularis</i> var. <i>lipocarpa</i>	<i>Carex kelloggii</i>	OBL
Kenai birch	<i>Betula kenaica</i>	<i>Betula papyrifera</i>	FACU
Kentucky bluegrass	<i>Poa pratensis</i>	<i>Poa pratensis</i>	FACU
Kneeling angelica	<i>Angelica genuflexa</i>	<i>Angelica genuflexa</i>	FACW
Kotzebue's grass-of-parnassus	<i>Parnassia kotzebuei</i>	<i>Parnassia kotzebuei</i>	FACW
Labrador lousewort	<i>Pedicularis labradorica</i>	<i>Pedicularis labradorica</i>	FACW
Lapland buttercup	<i>Ranunculus lapponicus</i> ⁴	<i>Ranunculus lapponicus</i>	OBL
Large-leaf avens	<i>Geum macrophyllum</i>	<i>Geum macrophyllum</i>	FACW
Leafy white orchid	<i>Platanthera dilatata</i>	<i>Platanthera dilatata</i>	FACW
Leatherleaf	<i>Chamaedaphne calyculata</i>	<i>Chamaedaphne calyculata</i>	FACW
Leathery grapefern	<i>Botrychium multifidum</i>	<i>Botrychium multifidum</i>	FAC
Lesser bladderwort	<i>Utricularia minor</i>	<i>Utricularia minor</i>	OBL
Lesser paniced sedge	<i>Carex diandra</i>	<i>Carex diandra</i>	OBL
Lesser wintergreen	<i>Pyrola minor</i>	<i>Pyrola minor</i>	FAC
Little yellow rattle	<i>Rhinanthus minor</i> ssp. <i>groenlandicus</i>	<i>Rhinanthus arcticus</i>	FAC
Little-leaf buttercup	<i>Ranunculus abortivus</i>	<i>Ranunculus abortivus</i>	FAC
Little-tree willow	<i>Salix arbusculoides</i>	<i>Salix arbusculoides</i>	FACW
Livid sedge	<i>Carex livida</i>	<i>Carex livida</i>	OBL
Loose flowered sedge	<i>Carex rariflora</i>	<i>Carex rariflora</i>	OBL
Low bluegrass	<i>Poa pratensis</i> ssp. <i>alpigena</i> ⁴	<i>Poa alpigena</i>	FACU
Mackenzie water-hemlock	<i>Cicuta virosa</i>	<i>Cicuta mackenziana</i>	OBL
Macoun's buttercup	<i>Ranunculus macounii</i>	<i>Ranunculus macounii</i>	FACW
Marsh arrow-grass	<i>Triglochin palustre</i>	<i>Triglochin palustre</i>	OBL
Marsh cinquefoil	<i>Comarum palustre</i>	<i>Potentilla palustris</i>	OBL
Marsh horsetail	<i>Equisetum palustre</i>	<i>Equisetum palustre</i>	FACW
Marsh willow-herb	<i>Epilobium palustre</i>	<i>Epilobium palustre</i>	OBL
Meadow foxtail	<i>Alopecurus pratensis</i> ⁴	<i>Alopecurus pratensis</i>	FACW
Meadow horsetail	<i>Equisetum pratense</i>	<i>Equisetum pratense</i>	FACW

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Merten's rush	<i>Juncus mertensianus</i>	<i>Juncus mertensianus</i>	OBL
Merten's sedge	<i>Carex mertensii</i>	<i>Carex mertensii</i>	FACW
Mock-azalea	<i>Menziesia ferruginea</i>	<i>Menziesia ferruginea</i>	UPL
Monkshood	<i>Aconitum delphiniifolium</i>	<i>Aconitum delphiniifolium</i>	FAC
Moonwort	<i>Botrychium lunaria</i>	<i>Botrychium lunaria</i>	FACW
Moor rush	<i>Juncus stygius</i>	<i>Juncus stygius</i>	OBL
Mountain cranberry	<i>Vaccinium vitis-idaea</i>	<i>Vaccinium vitis-idaea</i>	FAC
Mountain goldenrod	<i>Solidago multiradiata</i>	<i>Solidago multiradiata</i>	FACU
Mountain hairgrass	<i>Vahlodea atropurpurea</i>		NL
Mountain woodfern	<i>Dryopteris expansa</i>	<i>Dryopteris dilatata</i>	FACU
Mud sedge	<i>Carex limosa</i>	<i>Carex limosa</i>	OBL
Muskroot	<i>Adoxa moschatellina</i>	<i>Adoxa moschatellina</i>	FAC
Nagoonberry	<i>Rubus arcticus</i> ssp. <i>stellatus</i>	<i>Rubus stellatus</i>	FAC
Narrow beech fern	<i>Phegopteris connectilis</i>		NL
Narrow-leaf burreed	<i>Sparganium angustifolium</i>	<i>Sparganium emersum</i>	OBL
Narrow-leaf cotton-grass	<i>Eriophorum angustifolium</i>	<i>Eriophorum angustifolium</i>	OBL
Narrow-leaf Labrador-tea	<i>Ledum palustre</i> ssp. <i>decumbens</i>	<i>Ledum decumbens</i>	FACW
Nootka lupine	<i>Lupinus nootkatensis</i>	<i>Lupinus nootkatensis</i>	FAC
Nootka rose	<i>Rosa nutkana</i>	<i>Rosa nutkana</i>	NI
Northern bedstraw	<i>Galium boreale</i>	<i>Galium boreale</i>	FACU
Northern bog sedge	<i>Carex gynocrates</i>	<i>Carex gynocrates</i>	OBL
Northern burreed	<i>Sparganium hyperboreum</i>	<i>Sparganium hyperboreum</i>	OBL
Northern golden-saxifrage	<i>Chrysosplenium tetrandrum</i>	<i>Chrysosplenium tetrandrum</i>	OBL
Northern grass-of-parnassus	<i>Parnassia palustris</i>	<i>Parnassia palustris</i>	FACW
Northern green orchid	<i>Platanthera aquilonis</i>	<i>Platanthera hyperborea</i>	FACW
Northern moonwort	<i>Botrychium pinnatum</i> ⁴	<i>Botrychium boreale</i>	FAC
Northern starwort	<i>Stellaria calycantha</i>	<i>Stellaria calycantha</i>	FACW
Northwest Territory sedge	<i>Carex utriculata</i>	<i>Carex rhynchophysa</i>	OBL
Norwegian cinquefoil	<i>Potentilla norvegica</i>	<i>Potentilla norvegica</i>	FAC
Oak fern	<i>Gymnocarpium dryopteris</i>	<i>Gymnocarpium dryopteris</i>	FACU
One-sided wintergreen	<i>Orthilia secunda</i>	<i>Pyrola secunda</i>	UPL
Ostrich fern	<i>Matteuccia struthiopteris</i>	<i>Matteuccia struthiopteris</i>	FACW
Pacific willow	<i>Salix lucida</i> ssp. <i>lasiandra</i>	<i>Salix lasiandra</i>	FACW
Pendent grass	<i>Arctophila fulva</i>	<i>Arctophila fulva</i>	OBL
Pink wintergreen	<i>Pyrola asarifolia</i>	<i>Pyrola asarifolia</i>	FAC
pioneer violet	<i>Viola glabella</i> ⁴	<i>Viola glabella</i>	FACW
Prickly rose	<i>Rosa acicularis</i>	<i>Rosa acicularis</i>	FACU
Priest Lake tofieldia	<i>Triantha occidentalis</i> ssp. <i>brevistyla</i>	<i>Tofieldia glutinosa</i>	FACW*
Pygmy waterlily	<i>Nymphaea tetragona</i> ⁴	<i>Nymphaea tetragona</i>	OBL
Quaking aspen	<i>Populus tremuloides</i> ⁴	<i>Populus tremula</i>	FACU
Rannoch-rush	<i>Scheuchzeria palustris</i> ⁴	<i>Scheuchzeria palustris</i>	OBL
Red sandspurry	<i>Spergularia rubra</i> ⁴	<i>Spergularia rubra</i>	FAC
Ribbonleaf pondweed	<i>Potamogeton epihydrus</i> ⁴	<i>Potamogeton epihydrus</i>	OBL
River beauty	<i>Chamerion latifolium</i> ⁴	<i>Epilobium latifolium</i>	FAC
Rough bentgrass	<i>Agrostis scabra</i>	<i>Agrostis scabra</i>	FAC
Rough fescue	<i>Festuca altaica</i>	<i>Festuca altaica</i>	FAC
Round-fruit sedge	<i>Carex rotundata</i>	<i>Carex rotundata</i>	OBL

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Round-leaf sundew	<i>Drosera rotundifolia</i>	<i>Drosera rotundifolia</i>	OBL
Russet cotton-grass	<i>Eriophorum chamissonis</i>	<i>Eriophorum chamissonis</i>	OBL
Russet sedge	<i>Carex saxatilis</i>	<i>Carex saxatilis</i>	FACW
Ryegrass sedge	<i>Carex loliacea</i> ⁴	<i>Carex loliacea</i>	OBL
Salmonberry	<i>Rubus spectabilis</i>	<i>Rubus spectabilis</i>	FACU
Scheuchzer's cotton-grass	<i>Eriophorum scheuchzeri</i>	<i>Eriophorum scheuchzeri</i>	OBL
Scouler willow	<i>Salix scouleriana</i>	<i>Salix scoulerana</i>	FAC
Seaside arrow-grass	<i>Triglochin maritimum</i>	<i>Triglochin maritimum</i>	OBL
Seaside sandplant	<i>Honckenya peploides</i> ⁴	<i>Honckenya peploides</i>	OBL
Seawatch angelica	<i>Angelica lucida</i>	<i>Angelica lucida</i>	FACU
Selkirk's violet	<i>Viola selkirkii</i>		NL
Several flowered sedge	<i>Carex pluriflora</i>	<i>Carex pluriflora</i>	OBL
Sheathed sedge	<i>Carex vaginata</i>	<i>Carex vaginata</i>	OBL
Short-awn foxtail	<i>Alopecurus aequalis</i>	<i>Alopecurus aequalis</i>	OBL
Shrubby cinquefoil	<i>Dasiphora fruticosa</i> ssp. <i>floribunda</i>	<i>Potentilla fruticosa</i>	FAC
Shy maiden	<i>Moneses uniflora</i>		NL
Sitka alder	<i>Alnus viridis</i> ssp. <i>sinuata</i>	<i>Alnus sinuata</i>	FAC
Sitka sedge	<i>Carex aquatilis</i> var. <i>dives</i>	<i>Carex sitchensis</i>	OBL
Sitka starwort	<i>Stellaria borealis</i> ssp. <i>sitchana</i>	<i>Stellaria sitchana</i>	FAC
Sitka willow	<i>Salix sitchensis</i>	<i>Salix sitchensis</i>	FAC
Slender bog orchid	<i>Platanthera stricta</i> ⁴	<i>Platanthera stricta</i>	FACW
Slender cottongrass	<i>Eriophorum gracile</i>	<i>Eriophorum gracile</i>	OBL
Slender wheatgrass	<i>Elymus trachycaulus</i>	<i>Agropyron trachycaulum</i>	FACU
Small bedstraw	<i>Galium trifidum</i>	<i>Galium trifidum</i>	FACW
Small cranberry	<i>Vaccinium oxycoccos</i>	<i>Vaccinium oxycoccos</i>	OBL
Small enchanter's nightshade	<i>Circaea alpina</i>	<i>Circaea alpina</i>	NI
Small floating mannagrass	<i>Glyceria borealis</i> ⁴	<i>Glyceria borealis</i>	OBL
Small northern bog orchid	<i>Platanthera obtusata</i>	<i>Platanthera obtusata</i>	FACW
Small pondweed	<i>Potamogeton pusillus</i> ssp. <i>tenuissimus</i>	<i>Potamogeton pusillus</i>	OBL
Small-flower lousewort	<i>Pedicularis parviflora</i>	<i>Pedicularis parviflora</i>	FACW
Small-flower woodrush	<i>Luzula parviflora</i>	<i>Luzula parviflora</i>	FAC
Small-fruit bulrush	<i>Scirpus microcarpus</i> ⁴	<i>Scirpus microcarpus</i>	OBL
Softleaf sedge	<i>Carex disperma</i>	<i>Carex disperma</i>	FACW*
Soft-stem spikerush	<i>Eleocharis mamillata</i> <i>(Eleocharis palustris</i> s.l.) ^{4,5}	<i>Eleocharis mamillata</i>	OBL
Sparse-flower sedge	<i>Carex tenuiflora</i>	<i>Carex tenuiflora</i>	OBL
Spiny water-starwort	<i>Callitriche palustris</i>	<i>Callitriche verna</i>	OBL
Spiny-spore quillwort	<i>Isoetes echinospora</i> ⁴	<i>Isoetes echinospora</i>	OBL
Splitlip hempnettle	<i>Galeopsis bifida</i> ⁴		NL
Squashberry	<i>Viburnum edule</i>	<i>Viburnum edule</i>	FACU
Sticky tall Jacob's-ladder	<i>Polemonium acutiflorum</i>	<i>Polemonium acutiflorum</i>	FAC
Stiff clubmoss	<i>Lycopodium annotinum</i>	<i>Lycopodium annotinum</i>	FAC
Strawberry-leaf raspberry	<i>Rubus pedatus</i>	<i>Rubus pedatus</i>	FAC*
Subarctic lady fern	<i>Athyrium filix-femina</i>	<i>Athyrium filix-femina</i>	FAC
Swamp birch	<i>Betula nana</i> ssp. <i>exilis</i>	<i>Betula nana</i>	FAC

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Swamp gentian	<i>Gentiana douglasiana</i>	<i>Gentiana douglasiana</i>	FACW
Swamp red currant	<i>Ribes triste</i>	<i>Ribes triste</i>	FAC
Swedish dwarf dogwood	<i>Cornus suecica</i>	<i>Cornus suecica</i>	FAC
Sweetgale	<i>Myrica gale</i>	<i>Myrica gale</i>	OBL
Sweet-scent bedstraw	<i>Galium triflorum</i>	<i>Galium triflorum</i>	FACU
Swordleaf rush	<i>Juncus ensifolius</i>	<i>Juncus ensifolius</i>	FACW
Tall bluebells	<i>Mertensia paniculata</i>	<i>Mertensia paniculata</i>	FACU
Tall cottongrass	<i>Eriophorum angustifolium</i> ssp. <i>scabriusculum</i> ⁴	<i>Eriophorum angustifolium</i> ssp. <i>scabriusculum</i>	OBL
Thick-head sedge	<i>Carex pachystachya</i>	<i>Carex pachystachya</i>	FAC
Thinleaf alder	<i>Alnus incana</i> ssp. <i>tenuifolia</i>	<i>Alnus tenuifolia</i>	FAC
Thread rush	<i>Juncus filiformis</i>	<i>Juncus filiformis</i>	FACW
Timber oatgrass	<i>Danthonia intermedia</i>	<i>Danthonia intermedia</i>	FAC
Toad rush	<i>Juncus bufonius</i>	<i>Juncus bufonius</i>	OBL
Trailing black currant	<i>Ribes laxiflorum</i>		NL
Triangle moonwort	<i>Botrychium lanceolatum</i>	<i>Botrychium lanceolatum</i>	FAC
Tufted bulrush	<i>Trichophorum cespitosum</i>	<i>Scirpus cespitosus</i>	OBL
Tufted hairgrass	<i>Deschampsia cespitosa</i>	<i>Deschampsia cespitosa</i>	FAC
Tufted loosestrife	<i>Lysimachia thyrsoiflora</i> ⁴	<i>Lysimachia thyrsoiflora</i>	OBL
Tundra dwarf birch	<i>Betula glandulosa</i>	<i>Betula glandulosa</i>	FAC
Twinflower	<i>Linnaea borealis</i>	<i>Linnaea borealis</i>	UPL
Umbel-flower bitter-cress	<i>Cardamine oligosperma</i> var. <i>kamtschatica</i>	<i>Cardamine umbellata</i>	FACW
Unkeyed agrostis	<i>Agrostis</i> sp.		-
Unkeyed buttercup	<i>Ranunculus</i> sp.		-
Unkeyed cotton-grass	<i>Eriophorum</i> sp.		-
Unkeyed currant	<i>Ribes</i> sp.		-
Unkeyed dogwood	<i>Cornus</i> sp.		-
Unkeyed epilobium	<i>Epilobium</i> sp., s.l.		-
Unkeyed goldenrod	<i>Solidago</i> sp.		-
Unkeyed lousewort	<i>Pedicularis</i> sp.		-
Unkeyed pondweed	<i>Potamogeton</i> sp., s.l.		-
Unkeyed ragwort	<i>Senecio</i> sp.		-
Unkeyed sedge	<i>Carex</i> sp.		-
Unkeyed spikerush	<i>Eleocharis</i> sp.		-
Unkeyed violet	<i>Viola</i> sp.		-
Unkeyed willow	<i>Salix</i> sp.		-
Unkeyed wintergreen	<i>Pyrola</i> sp., s.l.		-
Variableleaf pondweed	<i>Potamogeton gramineus</i> ⁴	<i>Potamogeton gramineus</i>	OBL
Variiegated horsetail	<i>Equisetum variegatum</i>	<i>Equisetum variegatum</i>	FACW
Vetchling peavine	<i>Lathyrus palustris</i>	<i>Lathyrus palustris</i>	OBL
Viviparous knotweed	<i>Bistorta vivipara</i>	<i>Polygonum viviparum</i>	FAC
Wandering fleabane	<i>Erigeron peregrinus</i>	<i>Erigeron peregrinus</i>	FACW
Water arum	<i>Calla palustris</i> ⁴	<i>Calla palustris</i>	OBL
Water horsetail	<i>Equisetum fluviatile</i>	<i>Equisetum fluviatile</i>	OBL
Water sedge	<i>Carex aquatilis</i> var. <i>aquatilis</i>	<i>Carex aquatilis</i>	OBL
Western dock	<i>Rumex occidentalis</i>	<i>Rumex occidentalis</i>	OBL
Western touch-me-not	<i>Impatiens noli-tangere</i>	<i>Impatiens noli-tangere</i>	FACW
White beaksedge	<i>Rhynchospora alba</i>	<i>Rhynchospora alba</i>	OBL
White spruce	<i>Picea glauca</i>	<i>Picea glauca</i>	FACU

Project Plant Species List
Sorted by Common Name

Common Name	Scientific Name ¹	Synonymous Name in the 1988 National Wetlands Indicator List ²	Alaska Region Wetlands Indicator ³
White violet	<i>Viola renifolia</i>	<i>Viola renifolia</i>	FAC
White-flower willow-herb	<i>Epilobium lactiflorum</i>	<i>Epilobium lactiflorum</i>	NI
Wild chives	<i>Allium schoenoprasum</i>	<i>Allium schoenoprasum</i>	FAC
Woodland horsetail	<i>Equisetum sylvaticum</i>	<i>Equisetum sylvaticum</i>	FACU
Woolly geranium	<i>Geranium erianthum</i>	<i>Geranium pratense</i>	FAC
Wormseed wallflower	<i>Erysimum cheiranthoides</i> ⁴	<i>Erysimum cheiranthoides</i>	UPL
Yellow coralroot	<i>Corallorrhiza trifida</i>	<i>Corallorrhiza trifida</i>	FACW
Yellow cow-lily	<i>Nuphar polysepalum</i>	<i>Nuphar luteum</i>	OBL
Yellow thimble-weed	<i>Anemone richardsonii</i>	<i>Anemone richardsonii</i>	FAC

1 - Primary reference: Flora of North America (Flora of North America Editorial Committee 1993+). Secondary reference: USDA PLANTS database (NRCS 2007). Tertiary reference: Hultén (1968).

2 - Reed (1988)

3 - Obligate Wetland (OBL). Occur almost always (estimated probability >99%) under natural conditions in wetlands.

Facultative Wetland (FACW). Usually occur in wetlands (estimated probability 67%-99%), but occasionally found in non-wetlands.

Facultative (FAC). Equally likely to occur in wetlands or non-wetlands (estimated probability 34%-66%).

Facultative Upland (FACU). Usually occur in non-wetlands (estimated probability 67%-99%), but occasionally found in wetlands (estimated probability 1%-33%).

Obligate Upland (UPL). Occur almost always (estimated probability >99%) under natural conditions in non-wetlands.

No Indicator (NI). Insufficient information was available to determine an indicator status.

An asterisk following an indicator (e.g. FAC*) identifies a tentative assignment based on limited information from which to determine the indicator status.

Not listed (NL). Plant species not on the list which also do not have a synonymous listing. These species are treated as upland species.

4 - Incidental observations made during wetland determination field work or during aquatic sampling. All referenced entries were observed within the project area.

5 - (s.l.) sensu lato, in the broad sense.

6 - National indicator.

7 - See discussion in Section 2.3.2.1 of the Baseline Report for this species.

References

Flora of North America Editorial Committee (ed). 1993+. Flora of North America North of Mexico. Flora of North America Association, New York, New York, and Oxford, England.

Hultén E. 1968. Flora of Alaska and Neighboring Territories. Stanford University Press, Stanford, California.

NRCS. 2007. The USDA PLANTS database. National Plants Data Center. Baton Rouge, Louisiana. <http://plants.usda.gov/>

Reed P.B., Jr. 1988. National List of Plant Species that Occur in Wetlands: Alaska (Region A). p. 84. U.S. Fish and Wildlife Service, National Wetlands Inventory Center, St. Petersburg, Florida.

**Appendix C. Vegetation and Wetlands Maps for the New
Infrastructure Corridor**

Vegetation and wetland maps are provided separately in an additional binder.

Appendix D. Updated Vegetation Data Summary Tables

Alder Scrub - 7 plots

Plant Species	Absolute Cover by Plot							Cover Values				Constancy (%)	Relative Importance ¹ (0-200)
	1006	1200	2004	2010	2045	2137	5005	Average Absolute (%)	Average Relative (%)	Abs Min	Abs Max		
Tree													
<i>Betula kenaica</i>	34		X		1	1		5	3	0	34	57	60
<i>Picea glauca</i>	6		X	0	X			1	0	0	6	57	58
Total Tree Values:								6	3				
Shrub													
<i>Alnus incana</i> ssp. <i>tenuifolia</i>						4		1	0	0	4	14	15
<i>Alnus viridis</i> ssp. <i>sinuata</i>	61	89	84	56	92	91	93	81	44	56	93	100	144
<i>Oplopanax horridus</i>	33	38	27	26	28	24	17	28	15	17	38	100	115
<i>Ribes glandulosum/laxiflorum</i>				X	6			1	0	0	6	29	29
<i>Ribes laxiflorum</i>	1	0.2	X	0		10.8		2	1	0	11	71	72
<i>Ribes triste</i>	2	X		0		X	0.4	0	0	0	2	71	72
<i>Rubus arcticus</i>				X				0	0	0	0	14	14
<i>Rubus idaeus</i>	X					3		0	0	0	3	29	29
<i>Rubus pedatus</i>				X				0	0	0	0	14	14
<i>Rubus spectabilis</i>				3				0	0	0	3	14	15
<i>Sambucus racemosa</i>	0	0	X		5	10	10	4	2	0	10	86	88
<i>Sorbus scopulina</i>	10		X	4	3	2		3	1	0	10	71	73
<i>Spiraea stevenii</i>				0				0	0	0	0	14	14
<i>Vaccinium ovalifolium</i>				6				1	0	0	6	14	15
<i>Viburnum edule</i>	0							0	0	0	0	14	14
Total Shrub Values:								120	66				
Herb													
<i>Adoxa moschatellina</i>			X					0	0	0	0	14	14
<i>Athyrium filix-femina</i>	X		X	17.6			19.2	5	3	0	19	57	60
<i>Calamagrostis canadensis</i>	0.6	4	0.02	8.84	X	19.4		5	3	0	19	86	88
<i>Carex disperma</i>				X				0	0	0	0	14	14
<i>Chamerion angustifolium</i>	0.2			X		X		0	0	0	0	43	43
<i>Circaea alpina</i>						X		0	0	0	0	14	14
<i>Coptis trifolia</i>				X				0	0	0	0	14	14
<i>Cornus canadensis</i>				X				0	0	0	0	14	14
<i>Dryopteris expansa</i>	16.2	22	39	24	36	35.02	49.8	32	17	16	50	100	117
<i>Equisetum arvense</i>	17	3.2	0.6	6		2.2	1.6	4	2	0	17	86	88
<i>Equisetum sylvaticum</i>					0.4	1.22		0	0	0	1	29	29
<i>Galium triflorum</i>	X							0	0	0	0	14	14
<i>Gymnocarpium dryopteris</i>	0.42		3.02				8.4	2	1	0	8	43	44
<i>Lycopodium annotinum</i>						X		0	0	0	0	14	14
<i>Sanguisorba canadensis</i>				X				0	0	0	0	14	14
<i>Streptopus amplexifolius</i>	12	1.6	13	4.4	6.4	3	X	6	3	2	13	100	103
<i>Trientalis europaea</i>	7.62	1	0.4	4.4	1.8	1	0.8	2	1	0	8	100	101
<i>Veratrum viride</i>	X	X						0	0	0	0	29	29
<i>Viola epipsila</i>				X				0	0	0	0	14	14
<i>Viola selkirkii</i>	X						X	0	0	0	0	29	29
Total Herb Values:								56	31				
Community Totals:								182	100				

Alder Scrub - 7 plots

Plant Species	Absolute Cover by Plot							Cover Values				Constancy (%)	Relative Importance ¹ (0-200)	
	1006	1200	2004	2010	2045	2137	5005	Average Absolute (%)	Average Relative (%)	Abs Min	Abs Max			
Richness Measures	Number of Species by Plot							Avg			Min	Max		
Total Number of Species:	21	11	15	24	12	18	11	16			11	24		
Number of Tree Species:	2	0	2	1	2	1	0	1			0	2		
Number of Shrub Species:	8	5	5	11	5	8	4	7			4	11		
Number of Herb Species:	11	6	8	12	5	9	7	8			5	12		

¹ Relative Importance = relative cover + constancy.

X - Found outside plot.

Alder Scrub - 7 plots

Plant Species	Total Plants by Plot							Density Values				Constancy (%)
	1006	1200	2004	2010	2045	2137	5005	Average Plants/ 2000 ft ²	Average Plants/ Acre	Min/ 2000 ft ²	Max/ 2000 ft ²	
Tree												
<i>Betula kenaica</i>	4		X		0	1		1	16	0	4	57
<i>Picea glauca</i>	2		X	0	X			0	6	0	2	57
Total Tree Values:								1	22			
Shrub												
<i>Alnus incana ssp. tenuifolia</i>						1		0	3	0	1	14
<i>Alnus viridis ssp. sinuata</i>	26	15	61	67	41	91	26	47	1017	15	91	100
<i>Oplopanax horridus</i>	177	129	172	310	99	62	39	141	3074	39	310	100
<i>Ribes laxiflorum</i>	53	NA	X	44		NA		19	423	0	53	71
<i>Ribes triste</i>	82	X		23		X	NA	18	381	0	82	71
<i>Rubus spectabilis</i>				113				16	352	0	113	14
<i>Sambucus racemosa</i>	1	10	X		16	9	33	10	215	0	33	86
<i>Sorbus scopulina</i>	3		X	7	4	0		2	44	0	7	71
<i>Vaccinium ovalifolium</i>				39				6	121	0	39	14
<i>Viburnum edule</i>	33							5	103	0	33	14
Total Shrub Values:								263	5732			
Community Totals:								264	5754			

X - Found outside of plot.

NA - Species was present but density was not counted because of height. For this species, this plot is excluded from the average density calculations, and that is indicated by the average densities being shown in italicized font. The average densities are included in the total density

Black Spruce Forest - 8 plots

Plant Species	Absolute Cover by Plot								Cover Values				Constancy (%)	Relative Importance ¹ (0-200)
	1086	1101	1528	2060	2066	3000	9004	9045	Average Absolute (%)	Average Relative (%)	Abs Min	Abs Max		
Tree														
<i>Betula hybrid</i>							2		0	0	0	2	13	13
<i>Betula kenaica</i>					1			0	0	0	0	1	25	25
<i>Picea glauca</i>			0						0	0	0	0	13	13
<i>Picea mariana</i>	26	48	34	18	25	41	33	19	31	29	18	48	100	129
Total Tree Values:									31	29				
Shrub														
<i>Alnus tenuifolia</i>	9							2	1	1	0	9	25	26
<i>Andromeda polifolia</i>			0.42	0.28	0.08	2		0.2	0	0	0	2	63	63
<i>Betula nana</i> ssp. <i>exilis</i>	9	5.62	1.82	3.2	4	1.2	13	5.6	5	5	1	13	100	105
<i>Chamaedaphne calyculata</i>	3	0.4	0.82				0.42	2.62	1	1	0	3	75	76
<i>Dasiphora fruticosa</i> ssp. <i>floribunda</i>								3.2	0	0	0	3	25	25
<i>Empetrum nigrum</i>	1	0.02	18.4	11	16.4	16.6	1.24	1	8	8	0	18	100	108
<i>Ledum palustre</i> ssp. <i>decumbens</i>	7.22	3.22	15.4	5.4	3.6	13.4	7.6	6.22	8	7	3	15	100	107
<i>Myrica gale</i>	24	36.4		15		0.8	33.2	9.8	15	14	0	36	75	89
<i>Rosa acicularis</i>	X			0.2				1	0	0	0	1	50	50
<i>Rubus chamaemorus</i>	3.4	7.2	7.22	0.64	0.04	2	3.6	5.8	4	3	0	7	100	103
<i>Salix barclayi</i>		0							0	0	0	0	13	13
<i>Salix fuscescens</i>	0.4	1.2						0.4	0	0	0	1	38	38
<i>Salix pulchra</i>	10	6							2	2	0	10	25	27
<i>Salix scouleriana</i>		0							0	0	0	0	13	13
<i>Spiraea stevenii</i>	X	1.8		0.2				0.4	0	0	0	2	50	50
<i>Vaccinium oxycoccos</i>	0.08	0.1	8	0.26	0.02	0.08	0.86	0.42	1	1	0	8	100	101
<i>Vaccinium uliginosum</i>	5	3.82	2.4	5.2	2	5.02	5.4	2.4	4	4	2	5	100	104
<i>Vaccinium vitis-idaea</i>	2.8	6.6	2.82	0.02	1.24	0.24	0.64	0.46	2	2	0	7	100	102
<i>Viburnum edule</i>								1	0	0	0	1	13	13
Total Shrub Values:									53	50				
Herb														
<i>Calamagrostis canadensis</i>	6.4	5.2		0.02				0.6	2	2	0	6	63	64
<i>Carex aquatilis</i> var. <i>aquatilis</i>	1	X						1.2	1	1	0	3	50	51
<i>Carex chordorrhiza</i>								0.02	0	0	0	0	13	13
<i>Carex disperma</i>	0.02	3						1	1	0	0	3	38	38
<i>Carex gynocrates</i>		0.4						4	1	1	0	4	25	26
<i>Carex limosa</i>						X			0	0	0	0	13	13
<i>Carex magellanica</i> ssp. <i>irrigua</i>	1.6					X	13.44	0.2	2	2	0	13	50	52
<i>Carex pauciflora</i>			1.82	1.02	0.02	1.02	0.62		1	1	0	2	63	63
<i>Carex rotundata</i>						0.02			0	0	0	0	13	13
<i>Carex</i> sp.						X			0	0	0	0	13	13
<i>Carex tenuiflora</i>	X							0.02	0	0	0	0	25	25
<i>Comarum palustre</i>	5.4	0.2							1	1	0	5	25	26
<i>Coptis trifolia</i>				0.02				0.24	0	0	0	0	25	25
<i>Cornus suecica</i>	0.8						0.02	1	0	0	0	1	38	38
<i>Deschampsia cespitosa</i>								X	0	0	0	0	13	13
<i>Drosera rotundifolia</i>			3.82	0.62	0.42	X	X	0.02	1	1	0	4	75	76
<i>Equisetum arvense</i>	11.2	11	0.4	1.02				2.2	3	3	0	11	63	66
<i>Equisetum fluviatile</i>	28.6	33.6						2.44	8	8	0	34	50	58

Black Spruce Forest - 8 plots

Plant Species	Absolute Cover by Plot								Cover Values				Constancy (%)	Relative Importance ¹ (0-200)
	1086	1101	1528	2060	2066	3000	9004	9045	Average Absolute (%)	Average Relative (%)	Abs Min	Abs Max		
<i>Equisetum palustre</i>								4.02	1	0	0	4	13	13
<i>Equisetum sylvaticum</i>			6.82	0.02	0.42				1	1	0	7	38	38
<i>Eriophorum angustifolium</i>			0.62	0.2		0.62			0	0	0	1	38	38
<i>Eriophorum chamissonis</i>						X	X		0	0	0	0	25	25
<i>Eriophorum scheuchzeri</i>			0.02						0	0	0	0	13	13
<i>Galium boreale</i>								0.02	0	0	0	0	13	13
<i>Geocaulon lividum</i>	X				0.04	0.42			0	0	0	0	38	38
<i>Iris setosa</i>							X	X	0	0	0	0	25	25
<i>Linnaea borealis</i>					0.02			2.4	0	0	0	2	25	25
<i>Lycopodium annotinum</i>				1.2				3.84	1	1	0	4	25	26
<i>Orthilia secunda</i>		0.02							0	0	0	0	13	13
<i>Pedicularis labradorica</i>			X	0.02		X			0	0	0	0	38	38
<i>Platanthera dilatata</i>		X							0	0	0	0	13	13
<i>Sanguisorba canadensis</i>								2.8	0	0	0	3	13	13
<i>Solidago multiradiata</i>								0.02	0	0	0	0	13	13
<i>Thalictrum alpinum</i>								0.2	0	0	0	0	13	13
<i>Trichophorum cespitosum</i>				3	1	X			1	0	0	3	38	38
<i>Trientalis europaea</i>		0.04					0.2	0.04	0	0	0	0	38	38
<i>Valeriana capitata</i>								X	0	0	0	0	13	13
<i>Viola epipsila</i>							0.02	0.04	0	0	0	0	25	25
Total Herb Values:									22	21				
Community Totals:									107	100				
Richness Measures	Number of Species by Plot								Avg	Min	Max			
Total Number of Species:	25	25	17	23	16	22	27	39	24		16	39		
Number of Tree Species:	1	1	2	1	2	1	3	1	2		1	3		
Number of Shrub Species:	14	14	9	11	8	10	11	16	12		8	16		
Number of Herb Species:	10	10	6	11	6	11	13	22	11		6	22		

¹ Relative Importance = relative cover + constancy.

X - Found outside plot.

Black Spruce Forest - 8 plots

Plant Species	Total Plants by Plot								Density Values				Constancy (%)
	1086	1101	1528	2060	2066	3000	9004	9045	Average Plants/ 2000 ft ²	Average Plants/ Acre	Min/ 2000 ft ²	Max/ 2000 ft ²	
Tree													
<i>Betula hybrid</i>							1		0	3	0	1	13
<i>Betula kenaica</i>					3			1	1	11	0	3	25
<i>Picea glauca</i>			1						0	3	0	1	13
<i>Picea mariana</i>	124	181	244	118	220	330	129	203	194	4217	118	330	100
Total Tree Values:									194	4231			
Shrub													
<i>Alnus tenuifolia</i>	33							10	5	117	0	33	25
<i>Rosa acicularis</i>	X			NA				1	22	473	0	151	50
<i>Salix barclayi</i>		6							1	16	0	6	13
<i>Salix pulchra</i>	81	39							15	327	0	81	25
<i>Salix scouleriana</i>		1							0	3	0	1	13
<i>Viburnum edule</i>								29	4	79	0	29	13
Total Shrub Values:									47	1015			
Community Totals:									241	5245			

X - Found outside of plot.

NA - Species was present but density was not counted because of height. For this species, this plot is excluded from the average density calculations, and that is indicated by the average densities being shown in italicized font. The average densities are included in the total density calculations.

Bluejoint Meadow - 6 plots

Plant Species	Absolute Cover by Plot						Cover Values				Constancy (%)	Relative Importance ¹ (0-200)
	1136	1168	3006	3026	5001	5004	Average Absolute (%)	Average Relative (%)	Abs Min	Abs Max		
Tree												
<i>Betula kenaica</i>	1				3		1	1	0	3	33	34
<i>Picea glauca</i>					0		0	0	0	0	17	17
<i>Populus balsamifera</i>		X				0	0	0	0	0	33	33
Total Tree Values:						1	1					
Shrub												
<i>Alnus incana</i> ssp. <i>tenuifolia</i>	X	X			1	0	0	0	0	1	67	67
<i>Betula nana</i>					1.2		0	0	0	1	17	17
<i>Myrica gale</i>					6	1.2	1	1	0	6	33	34
<i>Rubus arcticus</i>	1.2			3.8	0.4		1	1	0	4	50	51
<i>Rubus pedatus</i>				0.22			0	0	0	0	17	17
<i>Salix alaxensis</i>						0	0	0	0	0	17	17
<i>Salix barclayi</i>		3	1		18	8	5	4	0	18	67	71
<i>Salix fuscescens</i>					X		0	0	0	0	17	17
<i>Salix pulchra</i>	6		X		0	0	1	1	0	6	67	68
<i>Salix sitchensis</i>		X			0	1	0	0	0	1	50	50
<i>Spiraea stevenii</i>					X	0.04	0	0	0	0	33	33
<i>Viburnum edule</i>					0		0	0	0	0	17	17
Total Shrub Values:							9	8				
Herb												
<i>Agrostis scabra</i>		X	X		X	3.4	1	0	0	3	67	67
<i>Alopecurus aequalis</i>			X				0	0	0	0	17	17
<i>Anemone richardsonii</i>					0.02		0	0	0	0	17	17
<i>Angelica genuflexa</i>	X		X	0.4	X		0	0	0	0	67	67
<i>Arctophila fulva</i>		X	X		X		0	0	0	0	50	50
<i>Athyrium filix-femina</i>	X	X		15			3	2	0	15	50	52
<i>Calamagrostis canadensis</i>	79.2	49.62	71.6	63	27.42	74.8	61	53	27	79	100	153
<i>Callitriche palustris</i>	X		X		X		0	0	0	0	50	50
<i>Cardamine oligosperma</i> var. <i>kamtschatica</i>		X				0.02	0	0	0	0	33	33
<i>Carex aquatilis</i> var. <i>aquatilis</i>		29.2	16			4.4	8	7	0	29	50	57
<i>Carex aquatilis</i> var. <i>dives</i>			0.6		41		7	6	0	41	33	39
<i>Carex brunnescens</i>	X	X			0.02		0	0	0	0	50	50
<i>Carex canescens</i>	3.6		0.02		0.4	1.4	1	1	0	4	67	67
<i>Carex lenticularis</i> var. <i>lipocarpa</i>			X				0	0	0	0	17	17
<i>Carex pachystachya</i>		X	X			X	0	0	0	0	50	50
<i>Carex utriculata</i>	X						0	0	0	0	17	17
<i>Chamerion angustifolium</i>	X	8.4	0.6	3.2	X	3.8	3	2	1	8	100	102
<i>Cicuta virosa</i>		X					0	0	0	0	17	17
<i>Comarum palustre</i>	12.4	2			1.82		3	2	0	12	50	52
<i>Dasiphora fruticosa</i> ssp. <i>floribunda</i>					X		0	0	0	0	17	17
<i>Eleocharis</i> sp.	X						0	0	0	0	17	17
<i>Epilobium ciliatum</i>	X	0.22	0.6		X	0.62	0	0	0	1	83	84
<i>Epilobium palustre</i>					0.02		0	0	0	0	17	17
<i>Equisetum arvense</i>	7.2	1	13	6	6.42	X	6	5	1	13	100	105
<i>Equisetum fluviatile</i>		7	16		0.4	X	4	3	0	16	67	70
<i>Equisetum sylvaticum</i>			0.4	1.6			0	0	0	2	33	34

Bluejoint Meadow - 6 plots

Plant Species	Absolute Cover by Plot						Cover Values				Constancy (%)	Relative Importance ¹ (0-200)
	1136	1168	3006	3026	5001	5004	Average Absolute (%)	Average Relative (%)	Abs Min	Abs Max		
<i>Galium trifidum</i>		1	X	0.02	X	0.42	0	0	0	1	83	84
<i>Geranium erianthum</i>				1.6			0	0	0	2	17	17
<i>Geum macrophyllum</i>		0.82	X		0.02	13.8	2	2	0	14	67	69
<i>Heracleum maximum</i>		X				X	0	0	0	0	33	33
<i>Juncus ensifolius</i>		0.02			X	1.84	0	0	0	2	50	50
<i>Juncus filiformis</i>		X	1		0.02	2	1	0	0	2	67	67
<i>Lathyrus palustris</i>			X				0	0	0	0	17	17
<i>Mertensia paniculata</i>			X	0.6			0	0	0	1	33	33
<i>Mimulus guttatus</i>		X	X				0	0	0	0	33	33
<i>Moehringia lateriflora</i>						0.02	0	0	0	0	17	17
<i>Orthilia secunda</i>					X		0	0	0	0	17	17
<i>Parnassia kotzebuei</i>			X				0	0	0	0	17	17
<i>Pedicularis groenlandica</i>						X	0	0	0	0	17	17
<i>Platanthera dilatata</i>		X					0	0	0	0	17	17
<i>Polemonium acutiflorum</i>	0.2	X	X		0.2	X	0	0	0	0	83	83
<i>Potamogeton alpinus</i>			X		0.8		0	0	0	1	33	33
<i>Potamogeton pusillus ssp tenuissimus</i>					X		0	0	0	0	17	17
<i>Potamogeton sp, sens lat</i>	X						0	0	0	0	17	17
<i>Potentilla norvegica</i>						0.02	0	0	0	0	17	17
<i>Ranunculus gmelinii</i>	X						0	0	0	0	17	17
<i>Ranunculus macounii</i>			X				0	0	0	0	17	17
<i>Rorippa palustris</i>			X				0	0	0	0	17	17
<i>Rumex arcticus</i>						X	0	0	0	0	17	17
<i>Rumex occidentalis</i>			X				0	0	0	0	17	17
<i>Sanguisorba canadensis</i>			X	10.4	X	X	2	2	0	10	67	68
<i>Senecio triangularis</i>				0.2			0	0	0	0	17	17
<i>Solidago lepida</i>		X	X			X	0	0	0	0	50	50
<i>Sparganium emersum</i>	X				X		0	0	0	0	33	33
<i>Stellaria borealis ssp. sitchana</i>			X			1	0	0	0	1	33	33
<i>Streptopus amplexifolius</i>				0.6			0	0	0	1	17	17
<i>Swertia perennis</i>					X		0	0	0	0	17	17
<i>Thalictrum sparsiflorum</i>	X	X	0.4		X	0.4	0	0	0	0	83	83
<i>Trientalis europaea</i>	1.04		X	2.62			1	1	0	3	50	51
<i>Veratrum viride</i>				5.2			1	1	0	5	17	17
<i>Veronica americana</i>		0.04	X			0.22	0	0	0	0	50	50
<i>Veronica serpyllifolia</i>						0.02	0	0	0	0	17	17
<i>Viola epipsila</i>		X	X		X	3.42	1	0	0	3	67	67
<i>Viola sp.</i>				5.62			1	1	0	6	17	17
Total Herb Values:							105	92				
Community Totals:							114	100				
Richness Measures							Avg		Min	Max		
Total Number of Species:	22	30	37	17	41	35	30		17	41		
Number of Tree Species:	1	1	0	0	2	1	1		0	2		
Number of Shrub Species:	3	3	2	2	10	7	5		2	10		
Number of Herb Species:	18	26	35	15	29	27	25		15	35		

¹ Relative Importance = relative cover + constancy.

X - Found outside plot.

Bluejoint Meadow - 6 plots

Plant Species	Total Plants by Plot						Density Values				Constancy (%)
	1136	1168	3006	3026	5001	5004	Average Plants/ 2000 ft ²	Average Plants/ Acre	Min/ 2000 ft ²	Max/ 2000 ft ²	
Tree											
<i>Betula kenaica</i>	1				20		4	76	0	20	33
<i>Picea glauca</i>					2		0	7	0	2	17
<i>Populus balsamifera</i>		X				9	2	33	0	9	33
Total Tree Values:							5	116			
Shrub											
<i>Alnus incana ssp. tenuifolia</i>	X	X			1	2	1	11	0	2	67
<i>Salix alaxensis</i>						1	0	4	0	1	17
<i>Salix barclayi</i>		NA	4		158	147	62	1346	0	158	67
<i>Salix pulchra</i>	24		X		19	3	8	167	0	24	67
<i>Salix sitchensis</i>		X			7	13	3	73	0	13	50
<i>Viburnum edule</i>					1		0	4	0	1	17
Total Shrub Values:							74	1604			
Community Totals:							79	1720			

X - Found outside of plot.

NA - Species was present but density was not counted because of height. For this species, this plot is excluded from the average density calculations, and that is indicated by the average densities being shown in italicized font. The average densities are included in the total density calculations.

Drained Beaver Pond - 2 plots

Plant Species	Absolute Cover by Plot		Cover Values				Constancy (%)	Relative Importance ¹ (0-200)
	1162	5012	Average Absolute (%)	Average Relative (%)	Abs Min	Abs Max		
Tree								
<i>Betula kenaica</i>		0.02	0	0	0	0	50	50
Total Tree Values:			0	0				
Shrub								
<i>Myrica gale</i>	0.2		0	0	0	0	50	50
<i>Rubus arcticus</i>		0.02	0	0	0	0	50	50
<i>Salix barclayi</i>	1.24	X	1	1	1	1	100	101
<i>Salix lucida</i> ssp. <i>lasiandra</i>		X	0	0	0	0	50	50
<i>Salix sitchensis</i>		X	0	0	0	0	50	50
Total Shrub Values:			1	1				
Herb								
<i>Agrostis alaskana</i>	1	4.2	3	4	1	4	100	104
<i>Agrostis scabra</i>		18.4	9	14	0	18	50	64
<i>Alopecurus aequalis</i>		X	0	0	0	0	50	50
<i>Arctophila fulva</i>	3.4	22.6	13	20	3	23	100	120
<i>Calamagrostis canadensis</i>	2.2	X	1	2	2	2	100	102
<i>Callitriche palustris</i>		X	0	0	0	0	50	50
<i>Carex canescens</i>	8.02	13.4	11	16	8	13	100	116
<i>Carex lenticularis</i> var. <i>lipocarpa</i>	5.2		3	4	0	5	50	54
<i>Dryopteris expansa</i>	0.42		0	0	0	0	50	50
<i>Epilobium ciliatum</i>	0.42	0.26	0	1	0	0	100	101
<i>Equisetum fluviatile</i>		X	0	0	0	0	50	50
<i>Galium trifidum</i>	0.02	0.02	0	0	0	0	100	100
<i>Geum macrophyllum</i>	X	X	0	0	0	0	100	100
<i>Hierochloa odorata</i>		X	0	0	0	0	50	50
<i>Juncus ensifolius</i>	12		6	9	0	12	50	59
<i>Juncus filiformis</i>	9.8	28.4	19	29	10	28	100	129
<i>Juncus mertensianus</i>		0.62	0	0	0	1	50	50
<i>Mimulus guttatus</i>	0.62	X	0	0	1	1	100	100
<i>Polemonium acutiflorum</i>		X	0	0	0	0	50	50
<i>Ranunculus hyperboreus</i>		X	0	0	0	0	50	50
<i>Solidago lepida</i>		X	0	0	0	0	50	50
<i>Stellaria calycantha</i>		0.02	0	0	0	0	50	50
<i>Urtica dioica</i> ssp. <i>gracilis</i>		X	0	0	0	0	50	50
<i>Veronica americana</i>		X	0	0	0	0	50	50
<i>Viola epipsila</i>		0.02	0	0	0	0	50	50
<i>Viola</i> sp.	0.02		0	0	0	0	50	50
Total Herb Values:			66	99				
Community Totals:			66	100				
Richness Measures								
	Number of Species by Plot		Avg		Max		Min	
Total Number of Species:	15	27	21		15		27	
Number of Tree Species:	0	1	1		0		1	
Number of Shrub Species:	2	4	3		2		4	
Number of Herb Species:	13	22	18		13		22	

¹ Relative Importance = relative cover + constancy.

X - Found outside plot.

Ericaceous Scrub - 10 plots

Plant species	Absolute Cover by Plot										Cover Values				Constancy (%)	Relative Importance ¹ (0-200)
	1169	1170	2023	2177	2178	2179	3021	5007	5013	5023	Average Absolute (%)	Average Relative (%)	Abs Min	Abs Max		
Tree																
<i>Picea glauca</i>			1				1	2	1	1	1	1	0	2	50	51
<i>Picea mariana</i>					4			5	0		1	1	0	5	30	31
Total Tree Values:											2	2				
Shrub																
<i>Alnus incana</i> ssp. <i>tenuifolia</i>													0	2	10	10
<i>Andromeda polifolia</i>	2.22	3.22	1.44	1.4	1	5.6	3.62	2.8	3.2	7.4	3	4	1	7	100	104
<i>Betula nana</i> ssp. <i>exilis</i>	17.2	7.62	16.2	33	15.8	12.4	17.6	16.6	9.6	14.6	16	19	8	33	100	119
<i>Empetrum nigrum</i>	20.8	17.6	24.2		27.4		34.8	30	6.6	5.2	17	20	0	35	80	100
<i>Ledum palustre</i> ssp. <i>decumbens</i>	19.4	3.42	4.8		10		10.6	13	8.4		7	8	0	19	70	78
<i>Myrica gale</i>	X	X		3		5	X	0.04		X	1	1	0	5	70	71
<i>Rubus arcticus</i>											0	0	0	1	10	10
<i>Rubus arcticus</i> ssp. <i>stellatus</i>				0.6							0	0	0	1	10	10
<i>Rubus chamaemorus</i>	0.04	0.22			0.66		4.86	0.42	X	0.22	1	1	0	5	70	71
<i>Salix fuscescens</i>	X			15.4		8.2		X	X	6.8	3	4	0	15	60	64
<i>Salix pulchra</i>				2							0	0	0	2	10	10
<i>Spiraea stevenii</i>										X	0	0	0	0	10	10
<i>Vaccinium ovalifolium</i>				2							0	0	0	2	10	10
<i>Vaccinium oxycoccos</i>	2.62	1.04	1.02	0.64	2.24	2.6	0.28	0.46	0.48	0.46	1	1	0	3	100	101
<i>Vaccinium uliginosum</i>	8	5.42	5.22		8.8		5.8	5.8	0.62	5.2	4	5	0	9	80	85
Total Shrub Values:											54	63				
Herb																
<i>Agrostis alaskana</i>	X			0.62		0.6					0	0	0	1	30	30
<i>Bistorta vivipara</i>											0	0	0	0	10	10
<i>Calamagrostis canadensis</i>	X			6.6		0.22				0.02	1	1	0	7	40	41
<i>Carex aquatilis</i> var. <i>aquatilis</i>	0.8	0.06	2.84		9					12	3	4	0	12	60	64
<i>Carex aquatilis</i> var. <i>dives</i>								8.2			1	1	0	8	10	11
<i>Carex chordorrhiza</i>	X	0.42				12.4				X	2	3	0	12	50	53
<i>Carex gynocrates</i>											0	0	0	0	10	10
<i>Carex limosa</i>		4.6				4.2				X	1	1	0	5	40	41
<i>Carex livida</i>	X		3								0	0	0	3	20	20
<i>Carex magellanica</i> ssp. <i>irrigua</i>				15			X			0.82	2	2	0	15	30	32
<i>Carex pauciflora</i>	19.6	13.6	11.82	3	6.8		24.8	5.24	4.6	6.04	10	11	0	25	90	101
<i>Carex pluriflora</i>	0.26								1.82	1.6	0	0	0	2	30	30
<i>Carex rariflora</i>			X								0	0	0	0	10	10
<i>Carex rostrata</i>								1.42			0	0	0	1	10	10
<i>Carex rotundata</i>	2	1.4	6	0.4	X	X	1	X			1	1	0	6	80	81
<i>Carex</i> sp.			2.8								0	0	0	3	10	10
<i>Carex utriculata</i>				2.82							0	0	0	3	10	10
<i>Chamerion angustifolium</i>				X							0	0	0	0	20	20
<i>Comarum palustre</i>	X		0.04		0.04		11.02	4			1	1	0	6	50	51
<i>Coptis trifolia</i>	X			0.02							0	0	0	0	20	20
<i>Cornus suecica</i>	X		0.04		0.04		11.02	4			2	2	0	11	50	52
<i>Deschampsia cespitosa</i>	X		X	0.4					X	0.2	0	0	0	0	50	50
<i>Drosera anglica</i>		0.08									0	0	0	0	10	10
<i>Drosera rotundifolia</i>	0.08		0.26	0.2	0.42		0.08	X	X		0	0	0	0	70	70

Ericaceous Scrub - 10 plots

Plant species	Absolute Cover by Plot										Cover Values				Constancy (%)	Relative Importance ¹ (0-200)
	1169	1170	2023	2177	2178	2179	3021	5007	5013	5023	Average Absolute (%)	Average Relative (%)	Abs Min	Abs Max		
<i>Epilobium palustre</i>				0.02							0	0	0	0	10	10
<i>Epilobium</i> sp., sens lat						0.06					0	0	0	0	10	10
<i>Equisetum arvense</i>	0.22	0.64		4.6			0.62	0.2		X	1	1	0	5	60	61
<i>Equisetum fluviatile</i>				0.02		1.6					0	0	0	2	20	20
<i>Equisetum palustre</i>		X		0.02		0.42				0.46	0	0	0	0	40	40
<i>Equisetum sylvaticum</i>				0.2							0	0	0	0	10	10
<i>Equisetum variegatum</i>						1.04					0	0	0	1	10	10
<i>Eriophorum angustifolium</i>	0.62	0.82	7.8	2.8	3.6	0.64	1		0.62	0.2	2	2	0	8	90	92
<i>Eriophorum chamissonis</i>						0.02				X	0	0	0	0	20	20
<i>Eriophorum scheuchzeri</i>			0.04		0.02						0	0	0	0	20	20
<i>Eriophorum viridicarinatum</i>					X			X	X		0	0	0	0	30	30
<i>Gentiana douglasiana</i>	X	X		0.6			0.04			0.02	0	0	0	1	50	50
<i>Iris setosa</i>								X			0	0	0	0	10	10
<i>Juncus stygius</i>	X										0	0	0	0	10	10
<i>Lupinus polyphyllus</i>									X		0	0	0	0	10	10
<i>Malaxis paludosa</i>	X	X					X		X		0	0	0	0	40	40
<i>Menyanthes trifoliata</i>						9					1	1	0	9	10	11
<i>Parnassia palustris</i>						0.08				X	0	0	0	0	20	20
<i>Pedicularis groenlandica</i>										2	0	0	0	2	10	10
<i>Pedicularis labradorica</i>	0.22	0.62	0.04		0.02		0.06	0.06	0.06	0.02	0	0	0	1	80	80
<i>Pedicularis</i> sp.				0.2		1.4					0	0	0	1	20	20
<i>Pinguicula villosa</i>		0.02	X		0.02		0.02				0	0	0	0	40	40
<i>Platanthera aquilonis</i>				X							0	0	0	0	10	10
<i>Platanthera dilatata</i>				0.42		0.2	X			0.06	0	0	0	0	40	40
<i>Polemonium acutiflorum</i>						X				0.8	0	0	0	1	20	20
<i>Pyrola asarifolia</i>										1.42	0	0	0	1	10	10
<i>Pyrola minor</i>				0.6							0	0	0	1	10	10
<i>Pyrola</i> sp., sens lat						0.22					0	0	0	0	10	10
<i>Sanguisorba canadensis</i>										X	0	0	0	0	10	10
<i>Spiranthes romanzoffiana</i>	X	X	0.04		X	X	0.04	X		X	0	0	0	0	80	80
<i>Triantha occidentalis</i> ssp. <i>brevistyla</i>						0.22					0	0	0	0	10	10
<i>Trichophorum alpinum</i>						X					0	0	0	0	10	10
<i>Trichophorum cespitosum</i>	X	X	1.24				X	X	1		0	0	0	1	60	60
<i>Trientalis europaea</i>	0.04	X		X				0.04			0	0	0	0	40	40
<i>Triglochin palustre</i>						0.2					0	0	0	0	10	10
<i>Viola epipsila</i>	X	X		0.2						X	0	0	0	0	40	40
Total Herb Values:											30	35				
Community Total:											85	100				
Richness Measures											Avg		Min	Max		
Total Number of Species:	32	25	22	32	19	27	23	26	22	38	27		19	38		
Number of Tree Species:	0	0	1	0	1	0	1	2	2	1	1		0	2		
Number of Shrub Species:	9	8	6	8	7	5	8	9	8	11	8		5	11		
Number of Herb Species:	23	17	15	24	11	22	14	15	12	26	18		11	26		

¹ Relative Importance = relative cover + constancy.

X - Found outside plot.

Ericaceous Scrub - 10 plots

Plant species	Total Plants by Plot										Density Values				Constancy (%)
	1169	1170	2023	2177	2178	2179	3021	5007	5013	5023	Average Plants/ 2000 ft ²	Average Plants/ Acre	Average Relative (%)	Max/ 2000 ft ²	
Tree															
<i>Picea glauca</i>			4				6	56	23	13	10	222	0	56	50
<i>Picea mariana</i>					NA			54	4		6	140	0	54	30
Total Tree Values:											17	363			
Shrub															
<i>Alnus incana</i> ssp. <i>tenuifolia</i>										8	1	17	0	8	10
Total Shrub Values:											1	17			
Community Total:											17	382			

NA - Species was present but density was not counted because of height. For this species, this plot is excluded from the average density calculations, and that is indicated by the average densities being shown in italicized font. The average densities are included in the total density calculations.

Fireweed Meadow - 15 plots

Plant Species	Absolute Cover by Plot															Cover Values				Constancy (%)	Relative Importance ¹ (0-200)
	1163	1165	1175	1176	1179	1180	1181	2111	3024	3028	3029	3030	3051	3053	5003	Average Absolute (%)	Average Relative (%)	Abs Min	Abs Max		
Tree																					
<i>Betula kenaica</i>	11			7	17			6							0	3	2	0	17	33	35
<i>Picea glauca</i>			X	X	5			22								2	1	0	22	27	28
Total Tree Values:																5	3				
Shrub																					
<i>Alnus viridis ssp. sinuata</i>								X								0	0	0	0	7	7
<i>Oplopanax horridus</i>								1								0	0	0	1	7	7
<i>Ribes glandulosum/laxiflorum</i>														X		0	0	0	0	7	7
<i>Ribes laxiflorum</i>								X								0	0	0	0	7	7
<i>Ribes triste</i>					0			X								0	0	0	0	13	13
<i>Rosa acicularis</i>			X													0	0	0	0	7	7
<i>Rubus arcticus</i>	2.6			1	3.2	X	8		1.22	6.4	1.4				17	3	2	0	17	60	62
<i>Rubus arcticus ssp. stellatus</i>	0.22		0.22	7.2	0.04		1.6					2.4	1			1	1	0	7	47	47
<i>Rubus idaeus</i>	1.22	1.4	5.6	0.8		5.42	10.4	0.2	0.02	1	1.2	3.4	7.8	0	6.2	3	2	0	10	93	95
<i>Rubus pedatus</i>														X		0	0	0	0	7	7
<i>Salix barclayi</i>			X													0	0	0	0	13	13
<i>Salix sp.</i>														X		0	0	0	0	7	7
<i>Sambucus racemosa</i>				0				X		0						0	0	0	0	27	27
<i>Sorbus scopulina</i>				X												0	0	0	0	7	7
<i>Spiraea stevenii</i>	X															0	0	0	0	7	7
<i>Viburnum edule</i>					7			1							X	1	0	0	7	20	20
Total Shrub Values:																7	5				
Herb																					
<i>Aconitum delphinifolium</i>					0.8			1					X			0	0	0	1	20	20
<i>Actaea rubra</i>	5															0	0	0	5	7	7
<i>Adoxa moschatellina</i>							0.02	0.6								0	0	0	1	13	13
<i>Angelica genuflexa</i>	0.6				X										1.6	0	0	0	2	20	20
<i>Athyrium filix-femina</i>	X	1.6	7		11		23		X					0.2		3	2	0	23	47	49
<i>Botrychium lunaria</i>			0.04													0	0	0	0	7	7
<i>Bromus ciliatus</i>	2		0.22													0	0	0	2	13	13
<i>Calamagrostis canadensis</i>	10.8	5.6	29	49	34.4	42.4	31	33	12.6	49.6	20.8	47.4	32.6	36	46.6	32	23	6	50	100	123
<i>Carex brunnescens</i>	1.4						3.6									0	0	0	4	20	20
<i>Carex mertensii</i>			2.4													0	0	0	2	7	7
<i>Castilleja unalaschcensis</i>	0.2															0	0	0	0	7	7
<i>Chamerion angustifolium</i>	38.4	83	50	73	75	29.8	28.8	26	68	60	48	64.4	73.8	69	73	57	41	26	83	100	141
<i>Conioselinum gmelinii</i>			1.4													0	0	0	1	7	7
<i>Cornus canadensis</i>														X		0	0	0	0	7	7
<i>Dryopteris expansa</i>		7						6	X			X		7.8		1	1	0	8	33	34
<i>Equisetum arvense</i>	6.2	3	0.42	8.22	3.02	3.62	0.62	8.2	6.02	4.2	3	10.8	6	2.4	1.22	4	3	0	11	100	103
<i>Equisetum pratense</i>			X													0	0	0	0	7	7
<i>Equisetum sylvaticum</i>				0.6				1.02						X		0	0	0	1	20	20
<i>Galium boreale</i>			4.62													0	0	0	5	7	7
<i>Galium kamtschaticum</i>							0.02									0	0	0	0	7	7
<i>Galium trifidum</i>		0.4		0.02	0.2		0.02						X			0	0	0	0	33	33
<i>Galium triflorum</i>	3.2	1	1	5.4	1.42	2.22	1	19.6	X	0.02	0.6	1.4	X		X	2	2	0	20	93	95
<i>Geranium erianthum</i>	4.2		6.8	1.8	5.2	2	5		X		2.4	2.4	0.82		1.2	2	2	0	7	73	75

Fireweed Meadow - 15 plots

Plant Species	Absolute Cover by Plot															Cover Values				Constancy (%)	Relative Importance ¹ (0-200)
	1163	1165	1175	1176	1179	1180	1181	2111	3024	3028	3029	3030	3051	3053	5003	Average Absolute (%)	Average Relative (%)	Abs Min	Abs Max		
<i>Gymnocarpium dryopteris</i>	8		0.2		13.6	17.4	11.6	1	X		5.4					4	3	0	17	53	56
<i>Heracleum maximum</i>	X		2.6	0.4	X	7.6	X	8.6	X	X	8				X	2	1	0	9	73	75
<i>Lupinus polyphyllus</i>			9.2													1	0	0	9	7	7
<i>Lycopodium annotinum</i>							1							0.1		0	0	0	1	13	13
<i>Mertensia paniculata</i>	4.6		17	11.4	0.2	3.6	4.2	1.8	9	4.6	5.2	5.2	1.4		X	5	3	0	17	87	90
<i>Moehringia lateriflora</i>	1.62	0.4	0.02	0.22	1.6	0.24	5.22	0.4	2.02	0.26	0.6	1.4	7.6	0.6	0.82	2	1	0	8	100	101
<i>Rhinanthus minor</i> ssp. <i>groenlandicus</i>																0	0	0	0	7	7
<i>Sanguisorba canadensis</i>			1.4			1.6	1.2			21					X	2	1	0	21	40	41
<i>Solidago lepida</i>			12.8													1	1	0	13	7	7
<i>Stellaria borealis</i> ssp. <i>sitchana</i>									X							0	0	0	0	7	7
<i>Streptopus amplexifolius</i>	2.6	1.6				X		2							X	0	0	0	3	33	34
<i>Thalictrum sparsiflorum</i>	0.4		0.4													0	0	0	0	13	13
<i>Trientalis europaea</i>	1.64	1.02	0.04	0.42	2.42	0.84	2.04	1.8	0.26	3.02	1	7.2	3.2	1.04	0.46	2	1	0	7	100	101
<i>Veratrum viride</i>	9.4	11	1.6		8.6	30.4	10		X	X	17.6	1.6	3.2		X	6	4	0	30	80	84
<i>Viola epipsila</i>	0.4	4.4							X	2	0.2		X		X	0	0	0	4	47	47
<i>Viola selkirkii</i>				0.4					X		0.04					0	0	0	0	20	20
<i>Viola</i> sp.					0.6	X	0.44	0.6								0	0	0	1	27	27
Total Herb Values:																129	92				
Community Totals:																140	100				
Richness Measures	Number of Species by Plot															Avg	Min	Max			
Total Number of Species:	25	13	27	19	22	16	22	24	18	14	15	12	15	17	19	19		12	27		
Number of Tree Species:	1	0	1	2	2	0	0	2	0	0	0	0	0	1	0	1		0	2		
Number of Shrub Species:	4	1	4	5	4	2	3	7	2	3	2	2	2	5	4	3		1	7		
Number of Herb Species:	20	12	22	12	16	14	19	15	16	11	13	10	13	11	15	15		10	22		

¹ Relative Importance = relative cover + constancy.

X - Found outside plot.

Fireweed Meadow - 15 plots

Plant Species	Total Plants by Plot															Density Values				Constancy (%)
	1163	1165	1175	1176	1179	1180	1181	2111	3024	3028	3029	3030	3051	3053	5003	Average Plants/ 2000 ft ²	Average Plants/ Acre	Min/ 2000 ft ²	Max/ 2000 ft ²	
Tree																				
<i>Betula kenaica</i>	0			1	2			2						6		1	16	0	6	33
<i>Picea glauca</i>			X	X	1			8								1	13	0	8	27
Total Tree Values:																1	29			
Shrub																				
<i>Oplopanax horridus</i>								6								0	9	0	6	7
<i>Ribes triste</i>					2			X								0	3	0	2	13
<i>Salix barclayi</i>			X											5		0	7	0	5	13
<i>Sambucus racemosa</i>				1				X		1						0	3	0	1	27
<i>Viburnum edule</i>					12			1								1	19	0	12	20
Total Shrub Values:																2	41			
Community Totals:																3	70			

X - Found outside of plot.

NA - Species was present but density was not counted because of height. For this species, this plot is excluded from the average density calculations, and that is indicated by the average densities being shown in italicized font. The average densities are included in the total density calculations.

Mixed Forb Meadow - 2 plots

Plant Species	Absolute Cover by Plot		Cover Values				Constancy (%)	Relative Importance ¹ (0-200)
	1097	5010	Average Absolute (%)	Average Relative (%)	Abs Min	Abs Max		
Tree								
None present			0	0	0	0	0	0
Total Tree Values:			0	0				
Shrub								
<i>Rubus arcticus</i>	12.02	2.42	7	4	2	12	100	104
<i>Vaccinium caespitosum</i>		0.8	0	0	0	1	50	50
Total Shrub Values:			8	5				
Herb								
<i>Achillea millefolium</i>	16.4	2.8	10	6	3	16	100	106
<i>Aconitum delphinifolium</i>	0.8	3.6	2	1	1	4	100	101
<i>Agrostis scabra</i>		0.42	0	0	0	0	50	50
<i>Agrostis</i> sp.	0.02		0	0	0	0	50	50
<i>Allium schoenoprasum</i>	1.02		1	0	0	1	50	50
<i>Arabis drummondii</i>	0.02		0	0	0	0	50	50
<i>Botrychium lanceolatum</i>	0.02		0	0	0	0	50	50
<i>Botrychium lunaria</i>	0.02		0	0	0	0	50	50
<i>Bromus ciliatus</i>	2.42	2.24	2	1	2	2	100	101
<i>Calamagrostis canadensis</i>	7	25.62	16	10	7	26	100	110
<i>Cardamine oligosperma</i> var. <i>kamtsch</i>	0.04		0	0	0	0	50	50
<i>Carex macrochaeta</i>	0.4		0	0	0	0	50	50
<i>Carex pachystachya</i>	2.62		1	1	0	3	50	51
<i>Castilleja unalaschcensis</i>	0.4	0.84	1	0	0	1	100	100
<i>Chamerion angustifolium</i>	18.2	5.4	12	7	5	18	100	107
<i>Deschampsia cespitosa</i>		1.84	1	1	0	2	50	51
<i>Elymus trachycaulus</i>	0.02	1.4	1	0	0	1	100	100
<i>Equisetum arvense</i>	0.2		0	0	0	0	50	50
<i>Festuca altaica</i>		16.2	8	5	0	16	50	55
<i>Galium boreale</i>	29.4	3.8	17	10	4	29	100	110
<i>Galium trifidum</i>		0.22	0	0	0	0	50	50
<i>Gentianella amarella</i>		0.4	0	0	0	0	50	50
<i>Geranium erianthum</i>	6.4		3	2	0	6	50	52
<i>Heracleum maximum</i>	50.4		25	16	0	50	50	66
<i>Lupinus nootkatensis</i>	3		2	1	0	3	50	51
<i>Lupinus polyphyllus</i>		6.4	3	2	0	6	50	52
<i>Luzula multiflora</i>		0.22	0	0	0	0	50	50
<i>Mertensia paniculata</i>	11.4	3.62	8	5	4	11	100	105
<i>Moehringia lateriflora</i>	8.8	1.2	5	3	1	9	100	103
<i>Phleum alpinum</i>	0.02		0	0	0	0	50	50
<i>Poa palustris</i>	3.62		2	1	0	4	50	51
<i>Poa pratensis</i>		2.6	1	1	0	3	50	51
<i>Polemonium acutiflorum</i>		0.42	0	0	0	0	50	50
<i>Ranunculus abortivus</i>	0.4		0	0	0	0	50	50
<i>Rhinanthus minor</i> ssp. <i>groenlandicus</i>	0.02	2.4	1	1	0	2	100	101
<i>Sanguisorba canadensis</i>	9.8	9.8	10	6	10	10	100	106
<i>Solidago lepida</i>	19	16.4	18	11	16	19	100	111

Mixed Forb Meadow - 2 plots

Plant Species	Absolute Cover by Plot		Cover Values				Constancy (%)	Relative Importance ¹ (0-200)
	1097	5010	Average Absolute (%)	Average Relative (%)	Abs Min	Abs Max		
<i>Thalictrum sparsiflorum</i>	0.2	0.22	0	0	0	0	100	100
<i>Trientalis europaea</i>	4.8	0.02	2	1	0	5	100	101
<i>Vahlodea atropurpurea</i>		0.02	0	0	0	0	50	50
<i>Veronica wormskjoldii</i>	0.04	0.42	0	0	0	0	100	100
<i>Viola adunca</i>	2.8	1.4	2	1	1	3	100	101
<i>Viola epipsila</i>		0.26	0	0	0	0	50	50
Total Herb Values:			155	95				
Community Totals:			163	100				
Richness Measures	Number of Species by Plot		Avg	Min	Max			
Total Number of Species:	33	30	32	30	33			
Number of Tree Species:	0	0	0	0	0			
Number of Shrub Species:	1	2	2	1	2			
Number of Herb Species:	32	28	30	28	32			

¹ Relative Importance = relative cover + constancy.

X - Found outside plot.

Sedge bog meadow - 8 plots

Plant Species	Absolute Cover by Plot								Cover Values				Constancy (%)	Relative Importance ¹ (0-200)
	1089	2180	3054	5006	5014	5021	9000	9007	Average Absolute (%)	Average Relative (%)	Abs Min	Abs Max		
Tree														
<i>Betula hybrid</i>							0		0	0	0	0	13	13
<i>Picea mariana</i>							X		0	0	0	0	13	13
<i>Picea glauca</i>							0		0	0	0	0	13	13
Total Tree Values:									0	0				
Shrub														
<i>Alnus incana ssp. tenuifolia</i>							3		0	1	0	3	13	13
<i>Andromeda polifolia</i>	4.6	2	0.44	0.1	0.22	0.02	1.62	2.42	1	4	0	5	100	104
<i>Betula nana ssp. exilis</i>	X		9.4	X			2.02	1.2	2	4	0	9	63	67
<i>Chamaedaphne calyculata</i>								0.02	0	0	0	0	13	13
<i>Dasiphora fruticosa ssp. floribunda</i>								X	0	0	0	0	13	13
<i>Empetrum nigrum</i>	X		0.6				0.02		0	0	0	1	38	38
<i>Ledum palustre ssp. decumbens</i>	X						X		0	0	0	0	25	25
<i>Myrica gale</i>		X		X		0.02		10.8	1	3	0	11	50	53
<i>Rubus chamaemorus</i>				X					0	0	0	0	13	13
<i>Salix fuscescens</i>	2.40	3.00		0.44		X	4.64		1	3	0	5	63	66
<i>Salix pulchra</i>						X	0		0	0	0	0	25	25
<i>Vaccinium oxycoccos</i>	1.02	13	2.2	0.06	0.04	7	2.04	0.24	3	8	0	13	100	108
<i>Vaccinium uliginosum</i>	X			X					0	0	0	0	25	25
Total Shrub Values:									9	24				
Herb														
<i>Calamagrostis canadensis</i>	X			X		X	0.82	0.02	0	0	0	1	63	63
<i>Carex aquatilis var. aquatilis</i>				2	0.82	0.62		X	0	1	0	2	50	51
<i>Carex aquatilis var. dives</i>							15.2		2	5	0	15	13	17
<i>Carex buxbaumii</i>								X	0	0	0	0	13	13
<i>Carex canescens</i>							X		0	0	0	0	13	13
<i>Carex chordorrhiza</i>	X		0.2	16.4	3	X	1.26	4	3	8	0	16	88	95
<i>Carex limosa</i>	37	X		3	4	7.4		18.8	9	22	0	37	75	97
<i>Carex livida</i>								6	1	2	0	6	13	14
<i>Carex magellanica ssp. irrigua</i>	X	13		0.04			0.62		2	4	0	13	50	54
<i>Carex pauciflora</i>			0.8				X		0	0	0	1	25	25
<i>Carex pluriflora</i>			12.4				X		2	4	0	12	25	29
<i>Carex rostrata</i>				X					0	0	0	0	13	13
<i>Carex rotundata</i>					0.62			X	0	0	0	1	25	25
<i>Carex tenuiflora</i>								13.84	2	4	0	14	13	17
<i>Comarum palustre</i>	X			4.62		0.64	6.2		1	4	0	6	50	54
<i>Drosera anglica</i>			1.8		1			0.42	0	1	0	2	38	39
<i>Drosera rotundifolia</i>	X	X	1.02	0.02		0.1	0.64	0.66	0	1	0	1	88	88
<i>Epilobium palustre</i>							0.02		0	0	0	0	13	13
<i>Equisetum arvense</i>				X	0.02		X		0	0	0	0	38	38
<i>Equisetum fluviatile</i>							0.04	0.04	0	0	0	0	25	25
<i>Eriophorum angustifolium</i>	0.84	2	18	0.44		0.22		0.8	3	7	0	18	75	82
<i>Eriophorum chamissonis</i>		X		0.24					0	0	0	0	25	25
<i>Eriophorum gracile</i>								0.64	0	0	0	1	13	13
<i>Eriophorum viridicarinatum</i>	X				2.44			0.02	0	1	0	2	38	38
<i>Iris setosa</i>								X	0	0	0	0	13	13

Sedge bog meadow - 8 plots

Plant Species	Absolute Cover by Plot								Cover Values				Constancy (%)	Relative Importance ¹ (0-200)
	1089	2180	3054	5006	5014	5021	9000	9007	Average Absolute (%)	Average Relative (%)	Abs Min	Abs Max		
<i>Juncus stygius</i>			0.6		1.44				0	1	0	1	25	26
<i>Malaxis paludosa</i>			0.02	X					0	0	0	0	25	25
<i>Menyanthes trifoliata</i>	X	6	0.02	1.02	1.8	3.2	2.02	5.6	2	6	0	6	100	106
<i>Pedicularis parviflora</i>		1	4.64			2.6		0.8	1	3	0	5	50	53
<i>Sparganium hyperboreum</i>					0.02				0	0	0	0	13	13
<i>Trichophorum alpinum</i>								0.22	0	0	0	0	13	13
<i>Trientalis europaea</i>				X		X	0.2	0.2	0	0	0	0	50	50
<i>Triglochin palustre</i>								0.02	0	0	0	0	13	13
<i>Utricularia intermedia</i>								0.02	0	0	0	0	13	13
<i>Utricularia minor</i>								0.06	0	0	0	0	13	13
<i>Viola epipsila</i>						0.02	0.2	1.6	0	1	0	2	38	38
Total Herb Values:									30	76				
Community Totals:									39	100				
Richness Measures	Number of Species by Plot								Avg	Min	Max			
Total Number of Species:	16	11	14	21	12	16	26	29	18		11	29		
Number of Tree Species:	0	0	0	0	0	0	3	0	0		0	3		
Number of Shrub Species:	7	4	4	7	2	5	8	6	5		2	8		
Number of Herb Species:	9	7	10	14	10	11	15	23	12		7	23		

¹ Relative Importance = relative cover + constancy.

X - Found outside plot.

Sedge bog meadows - 8 plots

Plant Species	Total Plants by Plot								Density Values				Constancy (%)
	1089	2180	3054	5006	5014	5021	9000	9007	Average Plants/ 2000 ft ²	Average Plants/ Acre	Min/ 2000 ft ²	Max/ 2000 ft ²	
Tree													
<i>Betula hybrid</i>							1		0	3	0	1	13
<i>Picea glauca</i>								1	0	3	0	1	13
Total Tree Values:									0	5			
Shrub													
<i>Alnus incana ssp. tenuifolia</i>								6	1	16	0	6	13
<i>Salix pulchra</i>								X 5	1	14	0	5	25
Total Shrub Values:									1	30			
Community Totals:									2	35			

X - Found outside of plot.

Sedge wet meadow - 3 plots

Plant Species	Absolute Cover by Plot			Cover Values				Constancy (%)	Relative Importance ¹ (0-200)
	2007	5019	9002	Average Absolute (%)	Average Relative (%)	Abs Min	Abs Max		
Tree									
<i>Betula kenaica</i>	0			0	0	0	0	33	33
<i>Picea glauca</i>	4			1	2	0	4	33	35
Total Tree Values:				1	2				
Shrub									
<i>Alnus incana ssp. Tenuifolia</i>				0	0	0	0	0	0
<i>Andromeda polifolia</i>				0	0	0	0	0	0
<i>Betula nana ssp. exilis</i>	1			0	1	0	1	33	34
<i>Empetrum nigrum</i>				0	0	0	0	0	0
<i>Ledum palustre ssp. decumbens</i>				0	0	0	0	0	0
<i>Rubus arcticus</i>	2.02			1	1	0	2	33	34
<i>Salix barclayi</i>	2			1	1	0	2	33	34
<i>Salix fuscescens</i>				0	0	0	0	0	0
<i>Salix pulchra</i>	5		X	2	3	0	5	67	69
<i>Salix sitchensis</i>	0			0	0	0	0	33	33
<i>Spiraea stevenii</i>	1.6	X		1	1	0	2	67	68
<i>Vaccinium oxycoccos</i>				0	0	0	0	0	0
<i>Viburnum edule</i>	0			0	0	0	0	33	33
Total Shrub Values:				4	6				
Herb									
<i>Agrostis alaskana</i>		1.22		0	1	0	1	33	34
<i>Calamagrostis canadensis</i>	0.02		X	0	0	0	0	67	67
<i>Carex aquatilis var. aquatilis</i>		33.2		11	17	0	33	33	51
<i>Carex aquatilis var. dives</i>	21.4			7	11	0	21	33	45
<i>Carex canescens</i>			2.44	1	1	0	2	33	35
<i>Carex chordorrhiza</i>		0.02		0	0	0	0	33	33
<i>Carex diandra</i>		0.2		0	0	0	0	33	33
<i>Carex lenticularis var. lipocarpa</i>			X	0	0	0	0	33	33
<i>Carex limosa</i>		5	11.8	6	9	0	12	67	75
<i>Carex magellanica ssp. irrigua</i>			0.2	0	0	0	0	33	33
<i>Carex pauciflora</i>				0	0	0	0	0	0
<i>Carex pluriflora</i>				0	0	0	0	0	0
<i>Carex saxatilis</i>			X	0	0	0	0	33	33
<i>Carex utriculata</i>			30.4	10	16	0	30	33	49
<i>Chamerion angustifolium</i>	0.02			0	0	0	0	33	33
<i>Cicuta virosa</i>		2.8	1.02	1	2	0	3	67	69
<i>Comarum palustre</i>			43.4	14	23	0	43	33	56
<i>Cornus suecica</i>	0.6			0	0	0	1	33	34
<i>Drosera rotundifolia</i>				0	0	0	0	0	0
<i>Eleocharis mamillata</i>			X	0	0	0	0	33	33
<i>Epilobium palustre</i>		0.84		0	0	0	1	33	34
<i>Equisetum arvense</i>	0.02		X	0	0	0	0	67	67
<i>Equisetum fluviatile</i>		9.6		3	5	0	10	33	38
<i>Equisetum palustre</i>		0.82		0	0	0	1	33	34
<i>Eriophorum chamissonis</i>		X	0.04	0	0	0	0	67	67

Sedge wet meadow - 3 plots

Plant Species	Absolute Cover by Plot			Cover Values				Constancy (%)	Relative Importance ¹ (0-200)
	2007	5019	9002	Average Absolute (%)	Average Relative (%)	Abs Min	Abs Max		
<i>Eriophorum gracile</i>	1.8			1	1	0	2	33	34
<i>Galium trifidum</i>			X	0	0	0	0	33	33
<i>Gentiana douglasiana</i>		X		0	0	0	0	33	33
<i>Geranium erianthum</i>	0.02			0	0	0	0	33	33
<i>Juncus filiformis</i>			X	0	0	0	0	33	33
<i>Menyanthes trifoliata</i>		6	X	2	3	0	6	67	70
<i>Pedicularis labradorica</i>				0	0	0	0	0	0
<i>Pedicularis parviflora</i>		0.42		0	0	0	0	33	34
<i>Potamogeton alpinus</i>			X	0	0	0	0	33	33
<i>Pyrola asarifolia</i>	0.6			0	0	0	1	33	34
<i>Sparganium hyperboreum</i>			X	0	0	0	0	33	33
<i>Trientalis europaea</i>		0.02		0	0	0	0	33	33
<i>Triglochin maritimum</i>		0.22		0	0	0	0	33	33
<i>Viola epipsila</i>	0.62	0.02	X	0	0	0	1	100	100
Total Herb Values:				58	92				
Community Totals:				63	100				
Richness Measures	Number of Species by Plot			Avg	Min	Max			
Total Number of Species:	17	18	19	18	17	19			
Number of Tree Species:	2	0	0	1	0	2			
Number of Shrub Species:	7	1	1	3	1	7			
Number of Herb Species:	8	17	18	14	8	18			

¹ Relative Importance = relative cover + constancy.

X - Found outside plot.

Sedge wet meadow - 3 plots

Plant Species	Total Plants by Plot			Density Values				Constancy (%)
	2007	5019	9002	Average Plants/ 2000 ft ²	Average Plants/ Acre	Min/ 2000 ft ²	Max/ 2000 ft ²	
Tree								
<i>Betula kenaica</i>	5			2	36	0	5	33
<i>Picea glauca</i>	5			2	36	0	5	33
Total Tree Values:				3	73			
Shrub								
<i>Salix barclayi</i>	84			28	610	0	84	33
<i>Salix pulchra</i>	104		X	35	755	0	104	67
<i>Salix sitchensis</i>	1			0	7	0	1	33
<i>Viburnum edule</i>	1			0	7	0	1	33
Total Shrub Values:				63	1379			
Community Totals:				67	1452			

X - Found outside of plot.

NA - Species was present but density was not counted because of height. For this species, this plot is excluded from the average density calculations, and that is indicated by the average densities being shown in italicized font. The average densities are included in the total density calculations.

Shrub Swamp - 13 plots

Plant Species	Absolute Cover by Plot													Cover Values				Constancy (%)	Relative Importance ¹ (0-200)
	1010	1068	1092	1182	1199	1202	1203	1502	2016	2034	3022	3071	5022	Average Absolute (%)	Average Relative (%)	Abs Min	Abs Max		
Tree																			
<i>Betula kenaica</i>		1		1	7	16		13	2	1				3	2	0	16	54	56
<i>Picea glauca</i>				X	1	2				1		2		0	0	0	2	38	39
Total Tree Values:														4	2				
Shrub																			
<i>Alnus incana</i> ssp. <i>tenuifolia</i>	35	83	61	46		57	58	40	61		40	60	X	42	27	0	83	85	112
<i>Alnus viridis</i> ssp. <i>sinuata</i>										23				2	1	0	23	8	9
<i>Betula nana</i> ssp. <i>exilis</i>	6			12				6		0.2				2	1	0	12	31	32
<i>Menziesia ferruginea</i>								0						0	0	0	0	8	8
<i>Myrica gale</i>				5						13				1	1	0	13	15	16
<i>Oplopanax horridus</i>		10											0	1	0	0	10	15	16
<i>Ribes glandulosum/laxiflorum</i>				X									0	0	0	0	0	15	15
<i>Ribes laxiflorum</i>									7				0.2	1	0	0	7	15	16
<i>Ribes triste</i>		1.6		1	3	1.4	1		5	0.8	1.4	3.82	0.4	1	1	0	5	77	78
<i>Rosa acicularis</i>		1.8												0	0	0	2	8	8
<i>Rubus arcticus</i>	0.02	X	11	6.2	0.2								0.6	1	1	0	11	54	55
<i>Rubus arcticus</i> ssp. <i>stellatus</i>				0.82		0.02				2.4				0	0	0	2	23	23
<i>Rubus chamaemorus</i>				3.2										0	0	0	3	8	8
<i>Rubus idaeus</i>									2					0	0	0	2	8	8
<i>Rubus pedatus</i>												0.4		0	0	0	0	8	8
<i>Salix barclayi</i>				26		5	X		0	52	36	12	77	16	10	0	77	62	72
<i>Salix fuscescens</i>	1.82							9.6						1	1	0	10	15	16
<i>Salix pulchra</i>	X		0		63			6	19				0	7	4	0	63	46	51
<i>Salix sitchensis</i>										11				1	1	0	11	8	8
<i>Sambucus racemosa</i>						0	0		X		0	0		0	0	0	0	38	38
<i>Spiraea stevenii</i>			5	19	3.4	X		5		5				3	2	0	19	46	48
<i>Vaccinium ovalifolium</i>					4.2									0	0	0	4	8	8
<i>Vaccinium oxycoccos</i>	X							0.42						0	0	0	0	15	15
<i>Vaccinium uliginosum</i>								6.6						1	0	0	7	8	8
<i>Viburnum edule</i>		7			1					0	0	4	X	1	1	0	7	46	47
Total Shrub Values:														81	52				
Herb																			
<i>Aconitum delphinifolium</i>		X												0	0	0	0	15	15
<i>Actaea rubra</i>													X	0	0	0	0	8	8
<i>Adoxa moschatellina</i>							0.02		1.44					0	0	0	1	15	15
<i>Anemone richardsonii</i>					2.22					0.02		2		0	0	0	2	23	23
<i>Angelica genuflexa</i>		X												0	0	0	0	8	8
<i>Angelica lucida</i>												1.6		0	0	0	2	8	8
<i>Athyrium filix-femina</i>		27.8	X		4.8	65	47		1.22	1.6	35	21	5.4	16	10	0	65	77	87
<i>Calamagrostis canadensis</i>	42	0.6	71	23.4	16.4	21.6	25.2	5.66	5.4	16.2	13.62	13.6	15	21	13	1	71	100	113
<i>Cardamine oligosperma</i> var. <i>kamtschatica</i>					0.4		0.02		X					0	0	0	0	23	23
<i>Cardamine pratensis</i>													X	0	0	0	0	8	8
<i>Carex aquatilis</i> var. <i>aquatilis</i>	X			14.6				2.6		2				1	1	0	15	31	32
<i>Carex brunnescens</i>					0.2		1.6							0	0	0	2	15	15
<i>Carex chordorrhiza</i>	X													0	0	0	0	8	8

Shrub Swamp - 13 plots

Plant Species	Absolute Cover by Plot													Cover Values				Constancy (%)	Relative Importance ¹ (0-200)
	1010	1068	1092	1182	1199	1202	1203	1502	2016	2034	3022	3071	5022	Average Absolute (%)	Average Relative (%)	Abs Min	Abs Max		
<i>Carex disperma</i>											0.6		0.2	0	0	0	1	15	15
<i>Carex pluriflora</i>	X						0.6							0	0	0	1	15	15
<i>Carex tenuiflora</i>										3				0	0	0	3	8	8
<i>Carex utriculata</i>	X	7.4								0.02			4.22	1	1	0	7	31	31
<i>Chamerion angustifolium</i>					2.4		X		0.4	0.6	X	0.2	1.6	0	0	0	2	54	54
<i>Chrysosplenium tetrandrum</i>									X					0	0	0	0	8	8
<i>Circaea alpina</i>		0.24				1.04	0.22		0.06		4.4	2.4		1	0	0	4	46	47
<i>Comarum palustre</i>	15.6	0.22	7.4	1.22				28.8		1.6				4	3	0	29	46	49
<i>Cornus canadensis</i>					1.4							0.2		0	0	0	1	15	15
<i>Cornus suecica</i>								0.2		2.4				0	0	0	2	15	16
<i>Dryopteris expansa</i>								16.6		X				1	1	0	17	15	16
<i>Epilobium ciliatum</i>			X										0.02	0	0	0	0	15	15
<i>Epilobium sp., sens lat</i>		0.04												0	0	0	0	8	8
<i>Equisetum arvense</i>		4.8	8.2	1.4	20	4.4	3	0.8	2.4	14.84	5.6	6.8	24.6	7	5	0	25	92	97
<i>Equisetum fluviatile</i>	4.42		1.2					1.4						1	0	0	4	31	31
<i>Equisetum palustre</i>							X							0	0	0	0	8	8
<i>Equisetum sylvaticum</i>		1				X	X		17.4		0.82	7		2	1	0	17	46	47
<i>Galium kamtschaticum</i>					X	0.02	0.02							0	0	0	0	23	23
<i>Galium trifidum</i>		0.06	X	0.2	0.02	0.02	0.2				0.02	1.02		0	0	0	1	62	62
<i>Galium triflorum</i>		X			1.02	X	0.2		0.02		0.62	0.22	1.6	0	0	0	2	62	62
<i>Geranium erianthum</i>												X		0	0	0	0	8	8
<i>Geum macrophyllum</i>							0.2						X	0	0	0	0	15	15
<i>Gymnocarpium dryopteris</i>									2		9.6	6		1	1	0	10	23	24
<i>Heracleum maximum</i>							X		X		X			0	0	0	0	23	23
<i>Impatiens noli-tangere</i>			X								1			0	0	0	1	15	15
<i>Matteuccia struthiopteris</i>											42			3	2	0	42	8	10
<i>Menyanthes trifoliata</i>	10.4													1	1	0	10	8	8
<i>Mertensia paniculata</i>		1.4	X			0.6	0.2		X				0.02	0	0	0	1	46	46
<i>Mimulus guttatus</i>														0	0	0	0	8	8
<i>Moehringia lateriflora</i>										0.02				0	0	0	0	8	8
<i>Orthilia secunda</i>		X		0.82	0.04							0.2		0	0	0	1	31	31
<i>Phegopteris connectilis</i>			X											0	0	0	0	8	8
<i>Platanthera dilatata</i>	0.02													0	0	0	0	8	8
<i>Polemonium acutiflorum</i>	0.4	X	0.2	0.04	0.02								0.2	0	0	0	0	46	46
<i>Pyrola asarifolia</i>	X													0	0	0	0	15	15
<i>Rorippa palustris</i>			X											0	0	0	0	8	8
<i>Sanguisorba canadensis</i>		0.02		5.6	4.4				X	0.6		0.4	3.2	1	1	0	6	54	55
<i>Solidago lepida</i>														0	0	0	0	8	8
<i>Sphagnum</i>										0.6				0	0	0	1	8	8
<i>Stellaria borealis ssp. sitchana</i>						0.02								0	0	0	0	8	8
<i>Stellaria crispa</i>						0.04			0.02		X	0.2		0	0	0	0	31	31
<i>Streptopus amplexifolius</i>		3.6				X	0.8		7.8	X	3.6	1		1	1	0	8	54	55
<i>Thalictrum sparsiflorum</i>		0.02	1.04	X	X		1		0.6		1		0.2	0	0	0	1	62	62
<i>Trientalis europaea</i>	0.02	0.22	1.84	0.84	0.08	0.04	X	0.2	0.42	1.82	0.4	0.6	0.04	1	0	0	2	100	100
<i>Urtica dioica ssp. gracilis</i>						3	9.2		2		7.22	1		2	1	0	9	38	40
<i>Valeriana capitata</i>	X			0.02										0	0	0	1	23	23

Shrub Swamp - 13 plots

Plant Species	Absolute Cover by Plot													Cover Values				Constancy (%)	Relative Importance ¹ (0-200)
	1010	1068	1092	1182	1199	1202	1203	1502	2016	2034	3022	3071	5022	Average Absolute (%)	Average Relative (%)	Abs Min	Abs Max		
<i>Veratrum viride</i>									X					0	0	0	0	8	8
<i>Viola epipsila</i>			X		3.2	1.4	0.4		X		0.8		1.22	1	0	0	3	54	54
<i>Viola renifolia</i>				2.6										0	0	0	3	8	8
<i>Viola selkirkii</i>										X				0	0	0	0	8	8
<i>Viola sp.</i>		2.04									8		1.8	1	1	0	8	23	24
Total Herb Values:														70	45				
Community Totals:														155	100				
Richness Measures	Number of Species by Plot													Avg	Min	Max			
Total Number of Species:	19	27	20	23	25	23	25	17	30	26	27	31	29	25	17	31			
Number of Tree Species:	0	1	0	2	2	2	0	1	1	2	0	1	0	1	0	2			
Number of Shrub Species:	6	6	5	9	6	6	4	8	7	8	6	11	5	7	4	11			
Number of Herb Species:	13	20	15	12	17	15	21	8	22	16	21	19	24	17	8	24			

¹ Relative Importance = relative cover + constancy.

X - Found outside plot.

Shrub Swamp - 13 plots

Plant Species	Total Plants by Plot													Density Values				Constancy (%)
	1010	1068	1092	1182	1199	1202	1203	1502	2016	2034	3022	3071	5022	Average Plants/ 2000 ft ²	Average Plants/ Acre	Min/ 2000 ft ²	Max/ 2000 ft ²	
Tree																		
<i>Betula kenaica</i>		1		1	3	3		2	0	14				2	40	0	14	54
<i>Picea glauca</i>				X	5	1				4		1		1	18	0	5	38
Total Tree Values:														3	59			
Shrub																		
<i>Alnus incana</i> ssp. <i>tenuifolia</i>	72	42	59	113		43	24	73	55		29	55	X	43	947	0	113	85
<i>Alnus viridis</i> ssp. <i>sinuata</i>										16				1	27	0	16	8
<i>Menziesia ferruginea</i>								2						0	3	0	2	8
<i>Oplopanax horridus</i>		18											1	1	32	0	18	15
<i>Ribes glandulosum/laxiflorum</i>			X										5	0	8	0	5	15
<i>Ribes laxiflorum</i>									131				NA	11	238	0	131	15
<i>Ribes triste</i>		NA		NA	NA	NA	NA		54	NA	NA	26	NA	16	348	0	54	77
<i>Rubus idaeus</i>									2					0	3	0	2	8
<i>Salix barclayi</i>				91		8	X		2	288	54	12	134	45	987	0	288	62
<i>Salix pulchra</i>	X		6		70			64	13				1	12	258	0	70	46
<i>Salix sitchensis</i>											10			1	17	0	10	8
<i>Sambucus racemosa</i>						1	1		X		1	2		0	8	0	2	38
<i>Spiraea stevenii</i>			44	NA	NA	X		49		155				23	491	0	155	46
<i>Viburnum edule</i>		15			0					25	1	5	X	4	77	0	25	46
Total Shrub Values:														158	3445			
Community Totals:														161	3503			

X - Found outside of plot.

NA - Species was present but density was not counted because of height. For this species, this plot is excluded from the average density calculations, and that is indicated by the average densities being shown in italicized font. The average densities are included in the total density calculations.

Spruce-Birch Forest - 15 plots

Plant Species	Absolute Cover by Plot															Cover Values				Constancy (%)	Relative Importance ¹ (0-200)
	1001	1002	1004	1005	1011	1127	2000	2008	2026	2029	2123	2124	3001	3034	9001	Average Absolute (%)	Average Relative (%)	Abs Min	Abs Max		
Tree																					
<i>Betula hybrid</i>											8					1	0	0	8	7	7
<i>Betula kenaica</i>	21	25	18	22	7	59	28	21	34	9	20	56	76	33	33	31	18	7	76	100	118
<i>Picea glauca</i>	14	18	9	35	16	0	2	11	17	9	17	20	12	33	13	15	9	0	35	100	109
<i>Picea mariana</i>											11		3			1	1	0	11	13	14
<i>Populus balsamifera</i>	3		0	12			12			X					3	2	1	0	12	40	41
<i>Populus tremuloides</i>																0	0	0	0	7	7
<i>Populus balsamifera</i> ssp. <i>trichocarpa</i>															X	0	0	0	0	7	7
Total Tree Values:																49	29				
Shrub																					
<i>Alnus incana</i> ssp. <i>tenuifolia</i>			50								27					5	3	0	50	13	16
<i>Alnus viridis</i> ssp. <i>sinuata</i>								68						1		5	3	0	68	13	16
<i>Menziesia ferruginea</i>	73						57	20			3				0	10	6	0	73	33	39
<i>Oplopanax horridus</i>	4		0		9		1	15	X		X	25	2	1	21	5	3	0	25	73	76
<i>Ribes glandulosum/ laxiflorum</i>			0								X			X		0	0	0	0	20	20
<i>Ribes hudsonianum</i>						0.4										0	0	0	0	7	7
<i>Ribes laxiflorum</i>		0	4			X							0.4			0	0	0	4	27	27
<i>Ribes triste</i>	2	5	5	3	3		X		X	7.6	X	0.04		1	10	2	1	0	10	80	81
<i>Rosa acicularis</i>	0	6		X		5	0.4			1	X	X			14	2	1	0	14	60	61
<i>Rosa nutkana</i>															X	0	0	0	0	7	7
<i>Rubus arcticus</i>		0.88		0.24	0.2	0.04					1.2		X	2.4	X	0	0	0	2	53	54
<i>Rubus arcticus</i> ssp. <i>stellatus</i>							0.02			3.4						0	0	0	3	13	13
<i>Rubus chamaemorus</i>								X								0	0	0	0	7	7
<i>Rubus idaeus</i>		1	X		0	1										0	0	0	1	27	27
<i>Rubus pedatus</i>	0.26	0.66	0.02	0.2			0.04	0.04	X	0.8	1.4	3	7.42	27.2	3.22	3	2	0	27	87	88
<i>Rubus spectabilis</i>								X								0	0	0	0	7	7
<i>Salix barclayi</i>		2	20	25	X	11				44	8			0		7	4	0	44	53	58
<i>Salix bebbiana</i>	1	0												0		0	0	0	1	20	20
<i>Salix pulchra</i>						9		0	0		4					1	1	0	9	27	27
<i>Salix scouleriana</i>													0		0	0	0	0	0	13	13
<i>Salix sitchensis</i>															0	0	0	0	0	7	7
<i>Sambucus racemosa</i>			1		X											0	0	0	1	13	13
<i>Sorbus scopulina</i>	4	2	4	2	9		1	5	X	1	0	10	2	13	1	4	2	0	13	93	95
<i>Spiraea stevenii</i>		0						2	X	4	5		1.8	5		1	1	0	5	47	47
<i>Vaccinium ovalifolium</i>	0	4	0	16	0		2	14		X	11	4		12	0	4	2	0	16	80	82
<i>Vaccinium uliginosum</i>										0.2			0.6			0	0	0	1	13	13
<i>Vaccinium vitis-idaea</i>	0.02						0.02				X		0.02			0	0	0	0	27	27
<i>Viburnum edule</i>	38	15	10	32	22	1	39	0	0	30	4	47		6	42	19	11	0	47	93	104
Total Shrub Values:																70	41				
Herb																					
<i>Aconitum delphinifolium</i>		0.16			0.2					0.24		X				0	0	0	0	27	27
<i>Actaea rubra</i>					X											0	0	0	0	7	7
<i>Adoxa moschatellina</i>			0.22							0.06		X				0	0	0	0	20	20
<i>Angelica genuflexa</i>								0.02								0	0	0	0	7	7
<i>Athyrium filix-femina</i>		0.38	14		X	23		X	X		X	16.6			X	4	2	0	23	60	62
<i>Calamagrostis canadensis</i>		16.14	14	1.24	18.02	45.6	1.22	2.82	67	3.22	5.8	0.02	3	6.8	10.02	13	8	0	67	93	101

Spruce-Birch Forest - 15 plots

Plant Species	Absolute Cover by Plot															Cover Values				Constancy (%)	Relative Importance ¹ (0-200)
	1001	1002	1004	1005	1011	1127	2000	2008	2026	2029	2123	2124	3001	3034	9001	Average Absolute (%)	Average Relative (%)	Abs Min	Abs Max		
<i>Cardamine oligosperma</i> var. <i>kamtschatica</i>			X													0	0	0	0	7	7
<i>Carex brunnescens</i>					X						X				X	0	0	0	0	20	20
<i>Carex disperma</i>							X									0	0	0	0	7	7
<i>Carex utriculata</i>									0.02	2						0	0	0	2	13	13
<i>Chamerion angustifolium</i>	0.02	0.78	0.02	2.82	8.22		0.26	X	1	5.8	0.6	0.2	0.02	5.8	4.6	2	1	0	8	93	95
<i>Circaea alpina</i>			0.8					X								0	0	0	1	13	13
<i>Comarum palustre</i>								0.02			0.6					0	0	0	1	13	13
<i>Coptis trifolia</i>							0.02	0.02			0.2		0.6	1		0	0	0	1	33	33
<i>Cornus canadensis</i>						X					0.62	0.02	X			0	0	0	1	27	27
<i>Cornus suecica</i>	0.62	1.15	4	4.8			0.62		X	4.4	X		7.2	9.2		2	1	0	9	67	68
<i>Dryopteris expansa</i>	1	3.75	7.02	2.22	12.4	X	X	10.4	X	2	2	0.4		23.6	8.2	5	3	0	24	93	96
<i>Equisetum arvense</i>		2.25	16.4	0.2	6.42	11.02		10.82	18.6		9.4	X		7.4	3.04	6	3	0	19	73	77
<i>Equisetum pratense</i>		1	X			2	0.04					2.2			0.4	0	0	0	2	40	40
<i>Equisetum sylvaticum</i>		0.04	2.2	0.02	2.2			1.24	X		2	X	9.2	0.2	X	1	1	0	9	73	74
<i>Galium boreale</i>		0.01		X		X				0.42						0	0	0	0	27	27
<i>Galium kamtschaticum</i>												0.02				0	0	0	0	7	7
<i>Galium trifidum</i>						0.22			0.02							0	0	0	0	13	13
<i>Galium triflorum</i>		0.63	0.02		1.6					0.06		X		0.4	0.04	0	0	0	2	47	47
<i>Geocaulon lividum</i>													3.8			0	0	0	4	7	7
<i>Geranium erianthum</i>		0.26	X	3	X		X		0.02	2.8	0.2			0.4	0.02	0	0	0	3	67	67
<i>Gymnocarpium dryopteris</i>	6.6	2.34	11.6	10.82	2.2	X	15.4	4.6	0.4	6.2	14	8.2			32.4	8	4	0	32	87	91
<i>Heracleum maximum</i>			X		X							X				0	0	0	0	20	20
<i>Linnaea borealis</i>	0.42	0.26		0.22							0.2		0.04	0.44		0	0	0	0	40	40
<i>Listera cordata</i>	0.02		X	X								0.02				0	0	0	0	27	27
<i>Lupinus nootkatensis</i>				0.6						1.42						0	0	0	1	13	13
<i>Luzula parviflora</i>										X						0	0	0	0	7	7
<i>Lycopodium annotinum</i>	24	0.29		0.24			2.22	X	X	0.02	9.4	4.2	9.6	5.4	3.6	4	2	0	24	80	82
<i>Mertensia paniculata</i>		0.64			X	X				1		0.02				0	0	0	1	33	33
<i>Moehringia lateriflora</i>		0.14	0.02		0.04		0.02		X	0.02					X	0	0	0	0	47	47
<i>Moneses uniflora</i>											0.2			0.2		0	0	0	0	13	13
<i>Orthilia secunda</i>	0.28	0.39		0.04	X		0.42			X	X	0.02		2	0.04	0	0	0	2	67	67
<i>Phegopteris connectilis</i>						X		X								0	0	0	0	13	13
<i>Polemonium acutiflorum</i>						0.02										0	0	0	0	7	7
<i>Pyrola asarifolia</i>	3.6		X	0.66	0.02		1.84			5.8		3.02				1	1	0	6	47	47
<i>Sanguisorba canadensis</i>		0.25		0.02	X	X		X	1.4	3.22	1				X	0	0	0	3	60	60
<i>Solidago lepida</i>		0.01														0	0	0	0	7	7
<i>Stellaria borealis</i> ssp. <i>sitchana</i>			X													0	0	0	0	7	7
<i>Stellaria crispa</i>			0.02					0.6								0	0	0	1	13	13
<i>Streptopus amplexifolius</i>	0.04	2.5	5.6		5.4		X	2.6	X	X	2	X	X	4	0.02	1	1	0	6	87	88
<i>Thalictrum sparsiflorum</i>		0.03														0	0	0	0	7	7
<i>Trientalis europaea</i>	0.1	0.51	0.6	0.24	0.42	0.66	0.02	0.4	1.82	0.82	0.22	X	3.8	2.64	4.22	1	1	0	4	100	101
<i>Valeriana capitata</i>								1.2								0	0	0	1	7	7
<i>Veratrum viride</i>			1.02	3	3			X	X	3				5		1	1	0	5	47	47
<i>Viola epipsila</i>			X		X	5.04		3.6			1.6					1	0	0	5	33	34
<i>Viola langsдорфii</i>									0.22							0	0	0	0	7	7
<i>Viola selkirkii</i>		0.01	X		X											0	0	0	0	20	20
<i>Viola</i> sp.									0.02			X				0	0	0	0	13	13
Total Herb Values:																52	30				
Community Totals:																171	100				

Spruce-Birch Forest - 15 plots

Plant Species	Absolute Cover by Plot															Cover Values				Constancy (%)	Relative Importance ¹ (0-200)
	1001	1002	1004	1005	1011	1127	2000	2008	2026	2029	2123	2124	3001	3034	9001	Average Absolute (%)	Average Relative (%)	Abs Min	Abs Max		
Richness Measures	Number of Species by Plot															Avg	Min	Max			
Total Number of Species:	24	38	40	29	34	25	27	34	26	36	41	30	25	27	36	31		24	41		
Number of Tree Species:	3	2	3	3	2	2	3	2	2	3	4	2	3	2	5	3		2	5		
Number of Shrub Species:	10	12	12	8	9	8	10	11	7	10	15	7	10	11	12	10		7	15		
Number of Herb Species:	11	24	25	18	23	15	14	21	17	23	22	21	12	14	19	19		11	25		

¹ Relative Importance = relative cover + constancy.
X - Found outside plot.

Spruce-Birch Forest - 15 plots

Plant Species	Total Plants by Plot															Density Values				Constancy (%)
	1001	1002	1004	1005	1011	1127	2000	2008	2026	2029	2123	2124	3001	3034	9001	Average Plants/ 2000 ft ²	Average Plants/ Acre	Min/ 2000 ft ²	Max/ 2000 ft ²	
Tree																				
<i>Betula hybrid</i>											32					2	46	0	32	7
<i>Betula kenaica</i>	10	31	15	13	18	3	13	12	5	10	6	9	33	15	60	17	367	3	60	100
<i>Picea glauca</i>	16	11	7	15	6	2	13	5	9	9	10	14	4	18	8	10	213	2	18	100
<i>Picea mariana</i>											11		5			1	23	0	11	13
<i>Populus balsamifera</i>	1		1	0			1			X						1	12	0	5	40
Total Tree Values:																30	662			
Shrub																				
<i>Alnus incana</i> ssp. <i>tenuifolia</i>			9								70					5	115	0	70	13
<i>Alnus viridis</i> ssp. <i>sinuata</i>								49						2		3	74	0	49	13
<i>Menziesia ferruginea</i>	243						285	105			26				1	44	958	0	285	33
<i>Oplopanax horridus</i>	36		1		31		7	84	X		X	62	13	4	204	29	642	0	204	73
<i>Ribes glandulosum/laxiflorum</i>			32								X				X	2	46	0	32	20
<i>Ribes laxiflorum</i>		38	32				X						NA			5	109	0	38	27
<i>Ribes triste</i>	18	149	67	80	86		X		X	NA	X	NA		NA	138	45	976	0	149	80
<i>Rosa acicularis</i>	12	63		X		92	NA			NA	X	X			115	22	472	0	115	60
<i>Rubus idaeus</i>		0	X		16	NA										1	25	0	16	27
<i>Salix barclayi</i>		11	13	17	X	72				153	42			1		21	449	0	153	53
<i>Salix bebbiana</i>	0	4											1			0	7	0	4	20
<i>Salix pulchra</i>						37		4	1		31					5	106	0	37	27
<i>Salix scouleriana</i>													6		23	2	42	0	23	13
<i>Salix sitchensis</i>															1	0	1	0	1	7
<i>Sambucus racemosa</i>			2		X											0	3	0	2	13
<i>Sorbus scopulina</i>	44	2	2	10	54		14	7	X	0	2	10	11	25	3	12	267	0	54	93
<i>Spiraea stevenii</i>		6						18	X	60	29		NA	NA		9	189	0	60	47
<i>Vaccinium ovalifolium</i>	52	25	16	152	8		26	242		X	74	NA		NA	15	47	1022	0	242	80
<i>Viburnum edule</i>	297	82	51	170	115	61	289	15	6	248	62	282		20	789	166	3611	0	789	93
Total Shrub Values:																419	9116			
Community Totals:																449	9778			

X - Found outside of plot.

NA - Species was present but density was not counted because of height. For this species, this plot is excluded from the average density calculations, and that is indicated by the average densities being shown in italicized font. The average densities are included in the total density calculations.

Sweetgale Fen - 23 plots

Plant Species	Absolute Cover by Plot																						Cover Values				Constancy (%)	Relative Importance ¹ (0-200)									
	1081	1085	1166	1171	1172	1173	1174	1531	2003	2006	2013	2015	2022	2025	2032	2033	2110	2125	3002	3020	9042	9043	9044	Average Absolute (%)	Average Relative (%)	Abs Min			Abs Max								
Tree																																					
<i>Betula kenaica</i>								X						0					0					0	0	0	0	13	13								
<i>Picea glauca</i>							0	1		0	3	3	6		1									1	1	0	6	30	31								
<i>Picea mariana</i>	3							4								5	0						1	1	0	5	17	18									
Total Tree Values:																							1	1													
Shrub																																					
<i>Alnus incana</i> ssp. <i>tenuifolia</i>		1																									0	0	0	1	4	4					
<i>Alnus viridis</i> ssp. <i>sinuata</i>																							0	X	X												
<i>Andromeda polifolia</i>	0.46		5	0.86	0.08	0.04		1.06		5.24	0.06	0.06	0.28	0.22	0.22	0.46	0.28	1.44	6.42	0.66	3.8	3	2.6	1	1	0	6	87	88								
<i>Betula nana</i> ssp. <i>exilis</i>	15	X	5	7.4	4.8	10.2	10.4	14.8	23	6	24.4	19.6	18.4	13	31	12	5.8	13.8	0.6	2.62	0.8	1.8	0.8	10	11	1	31	100	111								
<i>Betula glandulosa</i>																							X														
<i>Chamaedaphne calyculata</i>	0.62																							1.06													
<i>Dasiphora fruticosa</i> ssp. <i>floribunda</i>	9		0.4	0.6	0.02		1			1.22	X		X		3	2.6	3.6	2.2			X	7.62	2.22	1	2	0	9	65	67								
<i>Empetrum nigrum</i>																							4.42				1.22	0.02	17.42	3.42		0.2	0.02				
<i>Ledum palustre</i> ssp. <i>decumbens</i>	0.6																							8.6				0.24	2.84	X		0.02		1			
<i>Myrica gale</i>	52	38	13.4	42	71.2	70.4	81.4	10.4	16.4	18.4	52.4	48	33	41	82	26	71	35.4	53.6	66	22	18	21.4	43	45	10	82	100	145								
<i>Ribes triste</i>																							1.42														
<i>Rosa acicularis</i>																							X														
<i>Rubus arcticus</i>	0.04		X		1.6		1.2		0.84		0.2		X			X		X	X																		
<i>Rubus arcticus</i> ssp. <i>stellatus</i>																							X	X		0.02			2.4	0.2	0.42						
<i>Rubus chamaemorus</i>																							2.42	0.4		X	0.02	0.04		X	X						
<i>Salix barclayi</i>																							1			3		5									
<i>Salix fuscescens</i>																							X	0.4			X	0.6		2							
<i>Salix pulchra</i>		3																							13		X										
<i>Spiraea stevenii</i>		X																							0.62	7		X	X	X	9	2		X			
<i>Vaccinium ovalifolium</i>		0.6																																			
<i>Vaccinium oxycoccos</i>	0.1		0.64	0.1	0.1	0.08	0.26	3.62	0.04	0.02	0.06	0.08	0.1	0.04	0.42	1.02	1.46	1.24	0.02	0.68	2.22	0.08	0.04	1	1	0	4	96	96								
<i>Vaccinium uliginosum</i>																							X	7.4	0.2		0.42	0.04	3.02	2.04		0	5				
<i>Viburnum edule</i>																							1		X												
Total Shrub Values:																							62	66													
Herb																																					
<i>Agrostis alaskana</i>																							X	0.02													
<i>Arctagrostis latifolia</i>																							0.22														
<i>Calamagrostis canadensis</i>	0.28	8.2	0.24		2.2	2.62	7.2	0.4		0.02	13		1.22	1.62	1.04	0.2	1	1.8	0.02																		
<i>Carex aquatilis</i>																							X														
<i>Carex aquatilis</i> var. <i>aquatilis</i>	3.24	16.8	0.04	1.22	4.62	2	4.4		4.6		0.44	5.2																									
<i>Carex aquatilis</i> var. <i>dives</i>																							5.42	4	X												
<i>Carex buxbaumii</i>																							X	4.2			0.2		6.2	0.2							
<i>Carex chordorrhiza</i>	0.04		6.2	2.4	11.4			1	3	10.2		2.82	0.02		0.22	8.02	0.8	1.62																			
<i>Carex echinata</i> ssp. <i>phyllomanica</i>																							0.4														
<i>Carex gynocrates</i>																							4.42			X	X		3.4	1.2		1.2	1.84	1.4			
<i>Carex limosa</i>																							X									23.4	16	1.2	1.04		
<i>Carex livida</i>	0.22			0.02		X			2.2	6.4		6.2	13.4	12.8	3.62																						
<i>Carex magellanica</i> ssp. <i>irrigua</i>																							0.02		X												
<i>Carex pauciflora</i>		14.8	4.8	X		0.4	0.04		X	X	6.04	0.62	0	5.4		4		0.62		X																	

Sweetgale Fen - 23 plots

Plant Species	Absolute Cover by Plot																						Cover Values				Constancy (%)	Relative Importance ¹ (0-200)	
	1081	1085	1166	1171	1172	1173	1174	1531	2003	2006	2013	2015	2022	2025	2032	2033	2110	2125	3002	3020	9042	9043	9044	Average Absolute (%)	Average Relative (%)	Abs Min			Abs Max
<i>Carex pluriflora</i>				6.8	12	16	2.4				5.02				0.4	7.4								2	2	0	16	30	33
<i>Carex rariflora</i>									1.62	5.82		3.8												0	1	0	6	13	14
<i>Carex rotundata</i>				X	X						X			0.2		X		X		X		1.6		0	0	0	2	35	35
<i>Carex saxatilis</i>					6.4														3.64					0	0	0	6	9	9
<i>Carex sp.</i>								0.2				X		3.2	5.82								0	0	0	6	17	18	
<i>Carex tenuiflora</i>					X										0.6						0.4	0.22		0	0	0	1	17	17
<i>Carex utriculata</i>	X														3.24									0	0	0	3	9	9
<i>Carex vaginata</i>												X												0	0	0	0	4	4
<i>Chamerion angustifolium</i>													0.2											0	0	0	0	4	4
<i>Comarum palustre</i>		25.4	0.02		1.8					0.04	0.02								X	0.04	0.8	X	0.2	1	1	0	25	43	45
<i>Coptis trifolia</i>								0.6	X	0.02	0.2	X	0.06				0.04							0	0	0	1	30	30
<i>Corallorrhiza trifida</i>										0.02														0	0	0	0	4	4
<i>Cornus suecica</i>			10.8					0.6	0.04	1.02	0.02	0.4	0.6		1.8	1							1	1	0	11	39	40	
<i>Deschampsia cespitosa</i>			9.02	5.2	2.42	0.28	0.2			5.4	0.02	0.02		0.04	0.62	2.06	2.64		6		0.22	X	1	2	0	9	65	67	
<i>Drosera anglica</i>											X										0.22	X	0.02	0	0	0	0	17	17
<i>Drosera rotundifolia</i>			0.1	0.06				0.42	0.02	0.04	0.02	0.06		0.04	1	0.24	0.06		0.1	2	0.62	0.02	0	0	0	2	65	65	
<i>Equisetum arvense</i>							0.64	X		0.8	0.02	X	0.28		0.02		0.82	X					0	0	0	1	39	39	
<i>Equisetum fluviatile</i>	0.26	16.4													0.02	2.64							1	1	0	16	17	18	
<i>Equisetum palustre</i>	0.04			0.02	1.24		1.02			0.1				0.26	1.04	0.02	X						0	0	0	1	39	39	
<i>Equisetum variegatum</i>															0.02									0	0	0	0	4	4
<i>Erigeron peregrinus</i>			1							0	X	1.42	4.4	X		X	X		X				0	0	0	4	39	39	
<i>Eriophorum angustifolium</i>			0.02	0.6	X				7.02	0.04	8.42	1.82			X	X			0.8	0.04	16.8	14.2	2	2	0	17	57	59	
<i>Eriophorum chamissonis</i>								0.02							0	0.02							0	0	0	0	17	17	
<i>Eriophorum scheuchzeri</i>												0.02											0	0	0	0	4	4	
<i>Eriophorum sp.</i>						0.02																	0	0	0	0	4	4	
<i>Eriophorum viridicarinatum</i>	X							4								1.44				X		0.6	0	0	0	4	22	22	
<i>Fritillaria camschatcensis</i>														X									0	0	0	0	4	4	
<i>Galium boreale</i>																	X						0	0	0	0	4	4	
<i>Gentiana douglasiana</i>			1	0.24				X		0.22	0.02		X	0.2	0.24	0.04			0.02				0	0	0	1	43	44	
<i>Geocaulon lividum</i>																					0.02			0	0	0	0	4	4
<i>Geranium erianthum</i>														0.02									0	0	0	0	4	4	
<i>Grass sp.</i>									4.4														0	0	0	4	4	5	
<i>Hierochloa odorata</i>										0.02													0	0	0	0	4	4	
<i>Iris setosa</i>								X		0.04	X	0.22						X		X			0	0	0	0	26	26	
<i>Juncus stygius</i>																					0.02			0	0	0	0	4	4
<i>Lycopodium annotinum</i>									X														0	0	0	0	4	4	
<i>Malaxis paludosa</i>					X											X	X		0.06	0.04	0.02	X	0	0	0	0	30	30	
<i>Menyanthes trifoliata</i>	2		X		0.6					X	X				4.2			1.2	9.2	3.6	3.6		1	1	0	9	43	45	
<i>Nuphar polysepalum</i>											X												0	0	0	0	4	4	
<i>Orthilia secunda</i>	0.04																						0	0	0	0	4	4	
<i>Pedicularis labradorica</i>			0.02					X				X											0	0	0	0	13	13	
<i>Pedicularis parviflora</i>																					0.8		0	0	0	1	9	9	
<i>Pedicularis sp.</i>													0.02										0	0	0	0	4	4	
<i>Pinguicula villosa</i>												X											0	0	0	0	4	4	
<i>Platanthera aquilonis</i>										X													0	0	0	0	4	4	
<i>Platanthera dilatata</i>			X	0.02	0.02	X				X	0.02		0.02			0.02	0.02			X	X		0	0	0	0	48	48	
<i>Polemonium acutiflorum</i>	0.02							X		X					0.04					X	0.04		0	0	0	0	26	26	
<i>Rhynchospora alba</i>																							0	0	0	0	4	4	
<i>Sanguisorba canadensis</i>				X		0.22		1.2				X	2.6	2.02	X		X						0	0	0	3	35	35	
<i>Selaginella selaginoides</i>									0.02														0	0	0	0	4	4	

Sweetgale Fen - 23 plots

Plant Species	Absolute Cover by Plot																						Cover Values				Constancy (%)	Relative Importance ¹ (0-200)	
	1081	1085	1166	1171	1172	1173	1174	1531	2003	2006	2013	2015	2022	2025	2032	2033	2110	2125	3002	3020	9042	9043	9044	Average Absolute (%)	Average Relative (%)	Abs Min			Abs Max
<i>Senecio</i> sp.	0.02																							0	0	0	0	4	4
<i>Solidago multiradiata</i>				X											0.6	X								0	0	0	1	13	13
<i>Solidago</i> sp.						1																		0	0	0	1	4	4
<i>Spiranthes romanzoffiana</i>		X															X		X					0	0	0	0	13	13
<i>Swertia perennis</i>										X							X		X			0.02		0	0	0	0	17	17
<i>Symphyotrichum subspicatum</i>		X	0.2	X	0.02	4.4									X	4.04								0	0	0	4	30	31
<i>Thalictrum alpinum</i>															0.04									0	0	0	0	4	4
<i>Trichophorum alpinum</i>			0						1.04						0.4	X			X	0.4	X			0	0	0	1	30	31
<i>Trichophorum cespitosum</i>	0.2	7.6	9.6				0.44	26	X	X	X	5	X	6.4	0.2		6.2	1.2	7	1			3	3	0	26	70	73	
<i>Trientalis europaea</i>	0.08	2		0.44	0.64	1.4		0.02	0.26	0.04	0.26	0.64	0.44	1.82	1.2	0.46		0.04		0.08	0.02		0	0	0	2	74	74	
<i>Triglochin maritimum</i>																					X			0	0	0	0	4	4
<i>Triglochin palustre</i>														0.8							0.04	0.2		0	0	0	1	13	13
<i>Utricularia intermedia</i>																				5.62	X	0.02		0	0	0	6	13	13
<i>Utricularia macrorhiza</i>																				X				0	0	0	0	4	4
<i>Utricularia minor</i>																				0.42				0	0	0	0	4	4
<i>Valeriana capitata</i>															0.42	X								0	0	0	0	9	9
<i>Viola epipsila</i>		0.8		2.8	0.64			1.8	1.4	0.64	0.62	0.02				1.42		6.22	0.06		0.42		1	1	0	6	52	53	
<i>Viola langsdorfii</i>										X		X	0.8					3						0	0	0	3	17	18
<i>Viola pallens</i>																					1			0	0	0	1	4	4
<i>Viola renifolia</i>	1.02																							0	0	0	1	4	4
<i>Viola</i> sp.			0.24			1.42								1.6	2.2	0.6		X	X					0	0	0	2	30	31
Total Herb Values:																								31	33				
Community Totals:																								94	100				
Richness Measures	Number of Species by Plot																						Avg	Min	Max				
Total Number of Species:	24	10	25	22	29	17	23	22	23	17	36	34	36	34	21	29	32	42	18	26	28	30	30	26		10	42		
Number of Tree Species:	1	0	0	0	0	0	1	1	2	0	1	1	1	2	0	1	1	1	1	0	0	0	0	1		0	2		
Number of Shrub Species:	8	6	6	5	8	5	8	10	11	5	11	10	12	13	8	10	5	11	8	5	6	5	5	8		5	13		
Number of Herb Species:	15	4	19	17	21	12	14	11	10	12	24	23	23	19	13	18	26	30	9	21	22	25	25	18		4	30		

¹ Relative Importance = relative cover + constancy.
X - Found outside plot.

Sweetgale Fen - 23 plots

Plant Species	Total Plants by Plot																				Density Values				Constancy (%)			
	1081	1085	1166	1171	1172	1173	1174	1531	2003	2006	2013	2015	2022	2025	2032	2033	2110	2125	3002	3020	9042	9043	9044	Average Plants/ 2000 ft ²		Average Plants/ Acre	Min/ 2000 ft ²	Max/ 2000 ft ²
Tree																												
<i>Betula kenaica</i>									X						1				7					0	8	0	7	13
<i>Picea glauca</i>							7		1		3	13	41	48		3								5	110	0	48	30
<i>Picea mariana</i>	33																	28	8				4	94	0	33	17	
Total Tree Values:																									10	211		
Shrub																												
<i>Alnus viridis ssp. sinuata</i>											5	X		X									0	5	0	5	13	
<i>Salix barclayi</i>									9							19							2	34	0	19	13	
<i>Salix fuscescens</i>					X		NA						X	NA									<i>1</i>	<i>13</i>	0	13	22	
<i>Salix pulchra</i>		NA							102														5	<i>101</i>	0	102	13	
<i>Spiraea stevenii</i>		X						NA	67		X	X	X	76	111				X				<i>12</i>	<i>251</i>	0	111	39	
<i>Viburnum edule</i>									0					X									0	0	0	0	9	
Total Shrub Values:																									19	405		
Community Totals:																									28	616		

X - Found outside of plot.

NA - Species was present but density was not counted because of height. For this species, this plot is excluded from the average density calculations, and that is indicated by the average densities being shown in italicized font. The average densities are included in the total density calculations.

Vegetated Ponds - 2 plots

Plant Species	Absolute Cover by Plot		Cover Values				Constancy (%)	Relative Importance ¹ (0-200)
	3003	3004	Average Absolute (%)	Average Relative (%)	Abs Min	Abs Max		
Tree								
<i>Picea mariana</i>	X		0	0	0	0	50	50
Total Tree Values:			0	0				
Shrub								
<i>Andromeda polifolia</i>	0.22		0	0	0	0	50	50
<i>Betula nana ssp. exilis</i>	X		0	0	0	0	50	50
<i>Ledum palustre ssp. decumbens</i>	X		0	0	0	0	50	50
<i>Myrica gale</i>	11		6	24	0	11	50	74
<i>Rubus chamaemorus</i>	X		0	0	0	0	50	50
<i>Vaccinium oxycoccos</i>	0.04		0	0	0	0	50	50
Total Shrub Values:			6	25				
Herb								
<i>Calamagrostis canadensis</i>	X		0	0	0	0	50	50
<i>Carex chordorrhiza</i>	3.42		2	8	0	3	50	58
<i>Carex livida</i>	10.2		5	23	0	10	50	73
<i>Carex pauciflora</i>	X		0	0	0	0	50	50
<i>Carex pluriflora</i>	X		0	0	0	0	50	50
<i>Chamaedaphne calyculata</i>	X		0	0	0	0	50	50
<i>Comarum palustre</i>	X		0	0	0	0	50	50
<i>Drosera anglica</i>	4.24		2	9	0	4	50	59
<i>Drosera rotundifolia</i>	0.02		0	0	0	0	50	50
<i>Equisetum variegatum</i>	X		0	0	0	0	50	50
<i>Eriophorum angustifolium</i>	0.4		0	1	0	0	50	51
<i>Juncus bufonius</i>	0.02		0	0	0	0	50	50
<i>Juncus stygius</i>	0.62		0	1	0	1	50	51
<i>Menyanthes trifoliata</i>	2.82		1	6	0	3	50	56
<i>Nuphar polysepalum</i>		4	2	9	0	4	50	59
<i>Potamogeton natans</i>	1	2.4	2	8	1	2	100	108
<i>Rhynchospora alba</i>	X		0	0	0	0	50	50
<i>Sparganium hyperboreum</i>	X		0	0	0	0	50	50
<i>Utricularia macrorhiza</i>	3.8		2	8	0	4	50	58
<i>Utricularia minor</i>	0.8		0	2	0	1	50	52
Total Herb Values:			17	75				
Community Totals:			23	100				
Richness Measures								
	Number of Species by Plot		Avg		Min	Max		
Total Number of Species:	26	2	14		2	26		
Number of Tree Species:	1	0	1		0	1		
Number of Shrub Species:	6	0	3		0	6		
Number of Herb Species:	19	2	11		2	19		

¹ Relative Importance = relative cover + constancy.
X - Found outside plot.

White Spruce Forest - 10 plots

Plant Species	Absolute Cover by Plot										Cover Values				Constancy (%)	Relative Importance ¹ (0-200)
	1003	1012	2005	3005	3031	3065	3066	3070	5002	5011	Average Absolute (%)	Average Relative (%)	Abs Min	Abs Max		
Tree																
<i>Betula hybrid</i>					1						0	0	0	1	10	10
<i>Betula kenaica</i>	4	6		6	X	4	4	1	0	3	3	2	0	6	90	92
<i>Picea glauca</i>	13	22	13	11	13	19	12	15	14	24	16	10	11	24	100	110
Total Tree Values:											19	12				
Shrub																
<i>Alnus incana</i> ssp. <i>tenuifolia</i>		0		3						16	2	1	0	16	30	31
<i>Alnus viridis</i> ssp. <i>sinuata</i>			4			0					0	0	0	4	20	20
<i>Betula nana</i> ssp. <i>exilis</i>	7		14.4	2.4	4.6	7.6				6.02	4	3	0	14	60	63
<i>Dasiphora fruticosa</i> ssp. <i>floribunda</i>	0			0.02						2.42	0	0	0	2	30	30
<i>Empetrum nigrum</i>			7.2	X		6					1	1	0	7	30	31
<i>Ledum palustre</i> ssp. <i>decumbens</i>			7.8								1	1	0	8	10	11
<i>Myrica gale</i>	12			12	40.2	1	1			5.6	7	5	0	40	60	65
<i>Ribes triste</i>		2					2	6	X	0.62	1	1	0	6	50	51
<i>Rosa acicularis</i>	0	0				X		4.6	0	0.6	1	0	0	5	60	60
<i>Rubus arcticus</i>	1.03	8.6	0.2	4	1.02	2.8	0.4	2.8	0.6	1.22	2	1	0	9	100	101
<i>Rubus arcticus</i> ssp. <i>stellatus</i>					0.2			0.04	1	0.24	0	0	0	1	40	40
<i>Rubus chamaemorus</i>				1.2	2.4	2.4				0.42	1	0	0	2	40	40
<i>Rubus pedatus</i>	0.01	1	2.02	1.2	1.62				14.42	X	2	1	0	14	70	71
<i>Salix barclayi</i>	5	39	X	0	6	16	19	26	1	39	15	10	0	39	100	110
<i>Salix bebbiana</i>		1								3	0	0	0	3	20	20
<i>Salix fuscescens</i>			X	0.02	0.2						0	0	0	0	30	30
<i>Salix pulchra</i>	10		10	16	1	30	7	0	32	5	11	7	0	32	90	97
<i>Sorbus scopulina</i>	0	1					2	3		1	1	0	0	3	50	50
<i>Spiraea stevenii</i>	2	7	2.02	1	7	X				4	2	2	0	7	70	72
<i>Vaccinium caespitosum</i>		6						0.4		1.62	1	1	0	6	30	31
<i>Vaccinium ovalifolium</i>	14	13		X	1	2.8	2	5		0	4	3	0	14	80	83
<i>Vaccinium oxycoccos</i>						2.02					0	0	0	2	10	10
<i>Vaccinium uliginosum</i>	1.4		14.6	X	1.4	3.8					2	1	0	15	50	51
<i>Vaccinium vitis-idaea</i>			X								0	0	0	0	10	10
<i>Viburnum edule</i>	4	14		2	0	1	14	13	0	13	6	4	0	14	90	94
Total Shrub Values:											65	43				
Herb																
<i>Achillea millefolium</i>										0.44	0	0	0	0	10	10
<i>Aconitum delphinifolium</i>		0.04		0.06						0.1	0	0	0	0	30	30
<i>Adoxa moschatellina</i>					X						0	0	0	0	10	10
<i>Agrostis scabra</i>										0.02	0	0	0	0	10	10
<i>Anemone richardsonii</i>	7.88	0.04		X		0.4	1.6		X	0.2	1	1	0	8	70	71
<i>Angelica geniflexa</i>	0.53	1		6.6			2		X	2.2	1	1	0	7	60	61
<i>Athyrium filix-femina</i>		0.02		9			18	4.6		14	5	3	0	18	50	53
<i>Bromus ciliatus</i>										X	0	0	0	0	10	10
<i>Calamagrostis canadensis</i>	5.9	1.62	1.64	38	21.2	6	30.2	21.2	11.4	5.62	14	9	2	38	100	109
<i>Carex aquatilis</i> var. <i>aquatilis</i>	1.64				13.8	16.2	2			0.8	3	2	0	16	50	52
<i>Carex aquatilis</i> var. <i>dives</i>			6.8	6							1	1	0	7	20	21
<i>Carex brunnescens</i>										0.02	0	0	0	0	10	10

White Spruce Forest - 10 plots

Plant Species	Absolute Cover by Plot										Cover Values				Constancy (%)	Relative Importance ¹ (0-200)
	1003	1012	2005	3005	3031	3065	3066	3070	5002	5011	Average Absolute (%)	Average Relative (%)	Abs Min	Abs Max		
<i>Carex disperma</i>	0.5			2					0.6		0	0	0	2	30	30
<i>Carex leptalea</i>									2		0	0	0	2	10	10
<i>Carex sp.</i>					3.22						0	0	0	3	10	10
<i>Chamerion angustifolium</i>	0.16	1.02	0.44	1	4.4		2.6	12.2	0.42	1.8	2	2	0	12	90	92
<i>Comarum palustre</i>	0.38			0.8		3			0.02		0	0	0	3	40	40
<i>Coptis trifolia</i>	0.13	4.8	1.22	0.2	5.62	1.82	0.8	0.4	2	0.6	2	1	0	6	100	101
<i>Cornus canadensis</i>									11.8	10.4	2	1	0	12	20	21
<i>Cornus suecica</i>		12.82		0.4	2.2	1.2		2.02			2	1	0	13	50	51
<i>Deschampsia cespitosa</i>				0.6							0	0	0	1	20	20
<i>Dryopteris expansa</i>								X		X	0	0	0	0	20	20
<i>Elymus trachycaulus</i>									X	0.02	0	0	0	0	20	20
<i>Epilobium lactiflorum</i>				0.4							0	0	0	0	10	10
<i>Equisetum arvense</i>	7.63	7.64	0.62	13.6	4.6	6.6	14	14.8	6.4	4.82	8	5	1	15	100	105
<i>Equisetum palustre</i>				0.6							0	0	0	1	20	20
<i>Eriophorum angustifolium</i>						1.6					0	0	0	2	10	10
<i>Fritillaria camschatcensis</i>		X									0	0	0	0	10	10
<i>Galium boreale</i>		0.02						0	0.04	0.04	0	0	0	0	40	40
<i>Galium trificum</i>								0.84			0	0	0	1	10	10
<i>Galium triflorum</i>		0.02				0.02	3.4		0.22		0	0	0	3	40	40
<i>Geranium erianthum</i>	0.06	1.6		1.8	X	0.4		0.2	0.4	1	1	0	0	2	80	80
<i>Goodyera repens</i>		X									0	0	0	0	10	10
<i>Gymnocarpium dryopteris</i>	0.63	15	2.4				1.62	4.4	4.6	15.6	4	3	0	16	70	73
<i>Heracleum maximum</i>								2.4			0	0	0	2	10	10
<i>Iris setosa</i>					0.06	0.4	1.2		X		0	0	0	1	40	40
<i>Lathyrus palustris</i>				3.4					X		0	0	0	3	20	20
<i>Linnaea borealis</i>		1.02									0	0	0	1	10	10
<i>Listera cordata</i>		0.04								0.02	0	0	0	0	20	20
<i>Lupinus nootkatensis</i>		0.6			0.2						0	0	0	1	20	20
<i>Lupinus polyphyllus</i>					X			0.02	X	0.22	0	0	0	0	40	40
<i>Lycopodium annotinum</i>		12	0.2			0.8					1	1	0	12	30	31
<i>Mertensia paniculata</i>		X				2.62		6.2	1.4		1	1	0	6	40	41
<i>Orthilia secunda</i>		1.24		0.02	0.2		3.6	1.4	0.04	0.22	1	0	0	4	70	70
<i>Phleum alpinum</i>										0.02	0	0	0	0	10	10
<i>Platanthera dilatata</i>				0.02	0.2						0	0	0	0	20	20
<i>Platanthera obtusata</i>		X							0.02		0	0	0	0	20	20
<i>Polemonium acutiflorum</i>	0.04			0.22					X	0.04	0	0	0	0	40	40
<i>Pyrola asarifolia</i>		2.4				2.22	1	X	5.2		1	1	0	5	50	51
<i>Pyrola minor</i>	0.01	0.02									0	0	0	0	20	20
<i>Ranunculus sp.</i>								X			0	0	0	0	10	10
<i>Sanguisorba canadensis</i>	2.88	0.82	0.02	13.2	11.8	6.4	6.6	5.2	2.2	3.8	5	4	0	13	100	104
<i>Schizachne purpurascens</i>										X	0	0	0	0	10	10
<i>Solidago lepida</i>	0.01	0.8			3.8	X	2.2	X	0.8	7.6	2	1	0	8	80	81
<i>Stellaria borealis ssp. sitchana</i>				X							0	0	0	0	10	10
<i>Streptopus amplexifolius</i>		1.42		4.6			0.6	X	X	X	1	0	0	5	60	60
<i>Swertia perennis</i>				0.22						0.06	0	0	0	0	20	20
<i>Symphyotrichum subspicatum</i>				0.4	1.6	0.8	0.4			X	0	0	0	2	50	50

White Spruce Forest - 10 plots

Plant Species	Absolute Cover by Plot										Cover Values				Constancy (%)	Relative Importance ¹ (0-200)
	1003	1012	2005	3005	3031	3065	3066	3070	5002	5011	Average Absolute (%)	Average Relative (%)	Abs Min	Abs Max		
<i>Thalictrum sparsiflorum</i>				X				X	X	0.02	0	0	0	0	40	40
<i>Trientalis europaea</i>	0.2	0.26	0.66	0.08	0.86	1.42	0.24	1.4	0.06	0.44	1	0	0	1	100	100
<i>Vahlodea atropurpurea</i>										0.02	0	0	0	0	10	10
<i>Valeriana capitata</i>	3.26	0.2		9.8			0.4		0.44	1.42	2	1	0	10	60	61
<i>Veratrum viride</i>		X					4	4		X	1	1	0	4	40	41
<i>Viola epipsila</i>	6.38	0.04		2.4	3	6.82	3		0.4	0.2	2	1	0	7	80	81
<i>Viola langsдорфii</i>		X								X	0	0	0	0	30	30
<i>Viola selkirkii</i>								X		0.4	0	0	0	0	20	20
Total Herb Values:											67	45				
Community Totals:											151	100				
Richness Measures	Number of Species by Plot										Avg	Min	Max			
Total Number of Species:	33	46	22	46	35	33	31	38	51	50	39		22	51		
Number of Tree Species:	2	2	1	2	3	2	2	2	2	2	2		1	3		
Number of Shrub Species:	13	12	12	15	13	14	8	11	13	12	12		8	15		
Number of Herb Species:	18	32	9	29	19	17	21	25	36	36	24		9	36		

¹ Relative Importance = relative cover + constancy.
X - Found outside plot.

White Spruce Forest - 10 plots

Plant Species	Total Plants by Plot										Density Values				Constancy (%)
	1003	1012	2005	3005	3031	3065	3066	3070	5002	5011	Average Plants/ 2000 ft ²	Average Plants/ Acre	Min/ 2000 ft ²	Max/ 2000 ft ²	
Tree															
<i>Betula hybrid</i>					10						1	22	0	10	10
<i>Betula kenaica</i>	9	23		26	X	11	8	2	6	7	9	200	0	26	90
<i>Picea glauca</i>	35	38	43	34	30	37	7	8	31	12	28	599	7	43	100
Total Tree Values:											38	821			
Shrub															
<i>Alnus incana</i> ssp. <i>tenuifolia</i>		2		8						11	2	46	0	11	30
<i>Alnus viridis</i> ssp. <i>sinuata</i>			0			6					1	13	0	6	20
<i>Ribes triste</i>		41					6	50	X	NA	<i>11</i>	<i>235</i>	0	50	50
<i>Rosa acicularis</i>	45	31							NA	4	<i>10</i>	<i>218</i>	0	45	50
<i>Salix barclayi</i>	78	114	X	6	28	60	56	66	21	55	48	1054	6	114	100
<i>Salix bebbiana</i>		4								1	1	11	0	4	20
<i>Salix pulchra</i>	126		91	121	29	320	31	1	147	1	87	1888	0	320	90
<i>Sorbus scopulina</i>	1	9					1	3		1	2	33	0	9	50
<i>Spiraea stevenii</i>	88	126	NA	NA	NA	X				NA	36	777	0	126	70
<i>Vaccinium ovalifolium</i>	66	121		X	53	NA	7	16		3	30	644	0	121	80
<i>Viburnum edule</i>	72	76		3	21	139	106	65	13	33	53	1150	0	139	90
Total Shrub Values:											279	6068			
Community Totals:											316	6889			

X - Found outside of plot.

NA - Species was present but density was not counted because of height. For this species, this plot is excluded from the average density calculations, and that is indicated by the average densities being shown in italicized font. The average densities are included in the total density calculations.

Willow Scrub - 3 plots

Plant Species	Absolute Cover by Plot			Cover Values				Constancy (%)	Relative Importance ¹ (0-200)
	2011	2058	5009	Average Absolute (%)	Average Relative (%)	Abs Min	Abs Max		
Tree									
<i>Betula kenaica</i>	13	0		4	3	0	13	67	70
<i>Picea glauca</i>	4	5	6	5	3	4	6	100	103
<i>Populus balsamifera</i>		0		0	0	0	0	33	33
Total Tree Values:				9	7				
Shrub									
<i>Alnus incana ssp. tenuifolia</i>		X		0	0	0	0	33	33
<i>Betula nana ssp. exilis</i>			X	0	0	0	0	33	33
<i>Empetrum nigrum</i>		0.2		0	0	0	0	33	33
<i>Oplopanax horridus</i>	0			0	0	0	0	33	33
<i>Ribes laxiflorum</i>	0			0	0	0	0	33	33
<i>Ribes triste</i>	3	0	0.02	1	1	0	3	100	101
<i>Rosa acicularis</i>		0	0.02	0	0	0	0	67	67
<i>Rubus arcticus</i>	0.4	1.82	3.8	2	1	0	4	100	101
<i>Rubus arcticus ssp. stellatus</i>		0.24		0	0	0	0	33	33
<i>Rubus pedatus</i>			1.8	1	0	0	2	33	34
<i>Salix barclayi</i>	71	61	81	71	50	61	81	100	150
<i>Salix pulchra</i>	3			1	1	0	3	33	34
<i>Sorbus scopulina</i>	9			3	2	0	9	33	35
<i>Spiraea stevenii</i>	1	0		0	0	0	1	67	67
<i>Vaccinium caespitosum</i>		0.2	4.6	2	1	0	5	67	68
<i>Vaccinium ovalifolium</i>	16			5	4	0	16	33	37
<i>Viburnum edule</i>	11	0		4	3	0	11	67	69
Total Shrub Values:				90	63				
Herb									
<i>Achillea millefolium</i>		0.08	2.42	1	1	0	2	67	67
<i>Aconitum delphinifolium</i>	X	0.04	0.24	0	0	0	0	100	100
<i>Allium schoenoprasum</i>		0.02		0	0	0	0	33	33
<i>Anemone richardsonii</i>	0.4			0	0	0	0	33	33
<i>Angelica genuflexa</i>	X			0	0	0	0	33	33
<i>Angelica lucida</i>		X		0	0	0	0	33	33
<i>Arabis drummondii</i>		X		0	0	0	0	33	33
<i>Arnica latifolia</i>		X		0	0	0	0	33	33
<i>Athyrium filix-femina</i>	14.2	0.02	0.02	5	3	0	14	100	103
<i>Bistorta vivipara</i>		X		0	0	0	0	33	33
<i>Botrychium lanceolatum</i>		0.02		0	0	0	0	33	33
<i>Botrychium multifidum</i>		0.02		0	0	0	0	33	33
<i>Bromus ciliatus</i>			1.04	0	0	0	1	33	34
<i>Calamagrostis canadensis</i>	5.2		3.44	3	2	0	5	67	69
<i>Carex brunnescens</i>			0.04	0	0	0	0	33	33
<i>Carex macrochaeta</i>		0.24		0	0	0	0	33	33
<i>Castilleja unalaschcensis</i>		0.8		0	0	0	1	33	34
<i>Chamerion angustifolium</i>	2.4	1.04	3.2	2	2	1	3	100	102
<i>Conioselinum gmelinii</i>		X		0	0	0	0	33	33
<i>Coptis trifolia</i>	0.02	0.04		0	0	0	0	67	67

Willow Scrub - 3 plots

Plant Species	Absolute Cover by Plot			Cover Values				Constancy (%)	Relative Importance ¹ (0-200)
	2011	2058	5009	Average Absolute (%)	Average Relative (%)	Abs Min	Abs Max		
<i>Cornus canadensis</i>		1.6		1	0	0	2	33	34
<i>Cornus</i> sp.	X			0	0	0	0	33	33
<i>Danthonia intermedia</i>		0.04		0	0	0	0	33	33
<i>Deschampsia cespitosa</i>			X	0	0	0	0	33	33
<i>Dryopteris expansa</i>	2			1	0	0	2	33	34
<i>Equisetum arvense</i>	2.84	0.66		1	1	0	3	67	67
<i>Equisetum fluviatile</i>	X			0	0	0	0	33	33
<i>Equisetum sylvaticum</i>	1.4			0	0	0	1	33	34
<i>Fritillaria camschatcensis</i>		0.6		0	0	0	1	33	33
<i>Galium boreale</i>		0.84	1.42	1	1	0	1	67	67
<i>Galium triflorum</i>	0.02			0	0	0	0	33	33
<i>Geranium erianthum</i>	X	8.2	1.82	3	2	2	8	100	102
Grass sp.		2.02		1	0	0	2	33	34
<i>Gymnocarpium dryopteris</i>	8.6	0.64		3	2	0	9	67	69
<i>Heracleum maximum</i>	X	X	X	0	0	0	0	100	100
<i>Listera cordata</i>	X		0.02	0	0	0	0	67	67
<i>Lupinus nootkatensis</i>		2.4		1	1	0	2	33	34
<i>Lupinus polyphyllus</i>			6.4	2	1	0	6	33	35
<i>Lycopodium annotinum</i>	X			0	0	0	0	33	33
<i>Mertensia paniculata</i>	0.4	0.8	0.8	1	0	0	1	100	100
<i>Moehringia lateriflora</i>	0.02	0.28	0.64	0	0	0	1	100	100
<i>Orthilia secunda</i>	0.02	0.02	0.8	0	0	0	1	100	100
<i>Phleum alpinum</i>		0.02	0.02	0	0	0	0	67	67
<i>Platanthera</i> sp.	0.02			0	0	0	0	33	33
<i>Polemonium acutiflorum</i>			0.4	0	0	0	0	33	33
<i>Pyrola asarifolia</i>	X	5.22	3.4	3	2	3	5	100	102
<i>Pyrola minor</i>		0.02		0	0	0	0	33	33
<i>Rhinanthus minor</i> ssp. <i>groenlandicus</i>		0.04		0	0	0	0	33	33
<i>Sanguisorba canadensis</i>	X	4.82	3.02	3	2	3	5	100	102
<i>Senecio triangularis</i>	0.02			0	0	0	0	33	33
<i>Solidago lepida</i>	X	9.22	4	4	3	4	9	100	103
<i>Streptopus amplexifolius</i>	7.02			2	2	0	7	33	35
<i>Swertia perennis</i>		X		0	0	0	0	33	33
<i>Taraxacum officinale</i>		X		0	0	0	0	33	33
<i>Thalictrum sparsiflorum</i>		X	0.6	0	0	0	1	67	67
<i>Trientalis europaea</i>	0.04	1.62	0.08	1	0	0	2	100	100
<i>Vahlodea atropurpurea</i>			0.2	0	0	0	0	33	33
<i>Valeriana capitata</i>	X	1.8	2.82	2	1	2	3	100	101
<i>Veratrum viride</i>	0.4	X	X	0	0	0	0	100	100
<i>Veronica wormskjoldii</i>		0.04	0.2	0	0	0	0	67	67
<i>Viola adunca</i>		1.2		0	0	0	1	33	34
<i>Viola epipsila</i>	0.22	3.2	0.66	1	1	0	3	100	101

Willow Scrub - 3 plots

Plant Species	Absolute Cover by Plot			Cover Values				Constancy (%)	Relative Importance ¹ (0-200)
	2011	2058	5009	Average Absolute (%)	Average Relative (%)	Abs Min	Abs Max		
<i>Viola langsdorfii</i>	X		0.4	0	0	0	0	67	67
<i>Viola selkirkii</i>			0.62	0	0	0	1	33	33
Total Herb Values:				44	31				
Community Totals:				143	100				
Richness Measures	Number of Species by Plot			Avg		Min	Max		
Total Number of Species:	44	56	38	46		38	56		
Number of Tree Species:	2	3	1	2		1	3		
Number of Shrub Species:	10	10	7	9		7	10		
Number of Herb Species:	32	43	30	35		30	43		

¹ Relative Importance = relative cover + constancy.

X - Found outside plot.

Willow Scrub - 3 plots

Plant Species	Total Plants by Plot			Density Values				Constancy (%)
	2011	2058	5009	Average Plants/ 2000 ft ²	Average Plants/ Acre	Min/ 2000 ft ²	Max/ 2000 ft ²	
Tree								
<i>Betula kenaica</i>	11	16		9	196	0	16	67
<i>Picea glauca</i>	5	79	15	33	719	5	79	100
<i>Populus balsamifera</i>		12		4	87	0	12	33
Total Tree Values:				46	1002			
Shrub								
<i>Oplopanax horridus</i>	3			1	22	0	3	33
<i>Ribes laxiflorum</i>	7			2	51	0	7	33
<i>Ribes triste</i>	72	4	NA	38	828	4	72	100
<i>Rosa acicularis</i>		6	NA	3	65	0	6	67
<i>Salix barclayi</i>	89	176	177	147	3209	89	177	100
<i>Salix pulchra</i>	7			2	51	0	7	33
<i>Sorbus scopulina</i>	9			3	65	0	9	33
<i>Spiraea stevenii</i>	10	3		4	94	0	10	67
<i>Vaccinium ovalifolium</i>	138			46	1002	0	138	33
<i>Viburnum edule</i>	94	4		33	711	0	94	67
Total Shrub Values:				280	6098			
Community Totals:				326	7100			

X - Found outside of plot.

NA - Species was present but density was not counted because of height. For this species, this plot is excluded from the average density calculations, and that is indicated by the average densities being shown in italicized font. The average densities are included in the total density calculations.

**Appendix E. Wetland Indicators Observed at Each Wetland
Determination Plot for 2007**

Appendix F. Updated Soil Series Associated with Major Vegetation Community Types

Soil Series Associated with Major Vegetation Community Types

Soil maps provided by the soil investigator, Dr. Chien-Lu Ping, were converted to digital format in a Geographic Information System (GIS), using ArcGIS® software. Discrepancies between wetland mapping and hydric soils mapping were identified and reviewed with Dr. Ping. These differences were resolved to develop final soils and wetlands maps that are consistent with each other.

Final maps of soils and vegetation communities were combined to determine the associations between the major vegetation community types and mapped soil series in the project area. For each major vegetation community, the dominant soil series mapped within that type are represented as a percentage of the community type. The remaining soil series mapped for each community type are summarized based on their hydric status.

Vegetation Community Types	Soil Series	Hydric Status	Total Mapped Acreage	Percent of Community Area
Major community types				
Spruce-Birch Forests	Nancy silt loam, 0-3% slopes	non-hydric	1,794	23%
	Puntilla silt loam, 8-30% slopes	non-hydric	1,422	18%
	Puntilla silt loam, 0-8% slopes	non-hydric	908	11%
	Strandline silt loam, 0- 8% slopes	non-hydric	819	10%
	Sum of remaining soil series	non-hydric	1,604	20%
		hydric	1,359	17%
Alder Scrub	Puntilla silt loam, 8-30% slopes	non-hydric	382	31%
	Puntilla silt loam, 30-50% slopes	non-hydric	191	16%
	Puntilla silt loam, 0-8% slopes	non-hydric	144	12%
	Sum of remaining soil series	non-hydric	302	25%
		hydric	196	16%
Shrub swamp	Typic Cryaquand, 0-12% slopes	hydric	148	21%
	Histic Cryaquand, 0-12% slopes	hydric	122	18%
	Chichantna peat, 0-3% slopes	hydric	98	14%
	Typic Cryaquand-Histic Cryaquand complex, 12-30% slopes	hydric	74	11%
	Sum of remaining soil series	non-hydric	42	6%
		hydric	209	30%
Sweetgale	Chichantna peat, 0-3% slopes	hydric	1,035	82%
	Sum of remaining soil series	non-hydric	13	1%
		hydric	206	16%
Fireweed Meadow	Puntilla silt loam, 8-30% slopes	non-hydric	423	48%
	Puntilla silt loam, 0-8% slopes	non-hydric	189	22%
	Puntilla silt loam, 30-50% slopes	non-hydric	138	16%
	Sum of remaining soil series	non-hydric	111	13%
		hydric	14	2%

