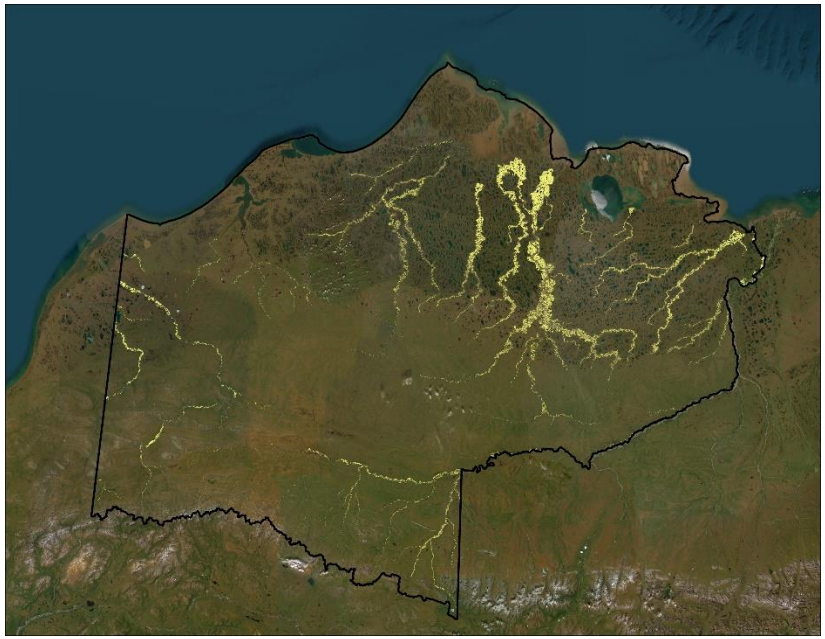
Arctic Floodplain Wetland



Stratum code: AFPD

Number of plots sampled: 34

Physiography: riverine (Floodplain physiographic unit)

Geomorphology: floodplain

Landforms: inactive floodplain, abandoned channel, oxbow, and terrace

Hydrology: hygric to aquatic, poorly drained to flooded **Classification**: An herbaceous wetland type. Average cover of obligate wetland plant species is 35.4%. Average cover of aquatic mosses 20.4%. Average shrub cover is 19.7%. Surface water is present during the growing season and averages 16.5% cover.

Site characteristics: Occurring at low elevations on low gradient, relatively inactive floodplains that are not constrained by valley sideslopes. Ice-rich permafrost retards the infiltration of surface waters, resulting in a hydric moisture regime. Depth of seasonal thaw is consistent and moderately deep, averaging 47.0 cm. A relatively homogenous type where shrub thickets punctuate the broader matrix of wetland.

Soil characteristics: Soils are predominantly organic with layers of flood-deposited silts interspersed. The mean thickness of moss and duff combined is 4.0 cm with underlying organic soils averaging 28.0 cm. A silty mineral horizon typically extends to depth. Average soil water pH measured at 10 cm depth is 6.7.

Vegetation: Species composition is variable and no single species dominates the composition. Wetland sedges including *Carex aquatilis, Eriophorum angustifolium, Eriophorum russeolum,* and

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Carex chordorrhiza and species in the *Equisetum* genus dominate the type. Bryophytes are abundant and diverse with average cover approaching 50% and 30 taxa representing the stratum. Indicated by obligate wetland sedges and the aquatic moss, *Scorpidium*. Differentiated by other wetland types within NPRA by the floodplain-associated dwarf shrub, *Dryas integrifolia*, the dry-site dwarf willow, *Salix reticulata*, and fen-associated bryophytes in the *Tomentypnum, Calliergon,* and *Meesia* genera. These differential species are reflective of greater flow of water and availability of nutrients in Floodplain Wetlands. Mean vascular plant richness is 26 taxa.

Dominant species (greater than 25% average cover):

- *Carex aquatilis* (only 23%)

Indicator species: Taxa with significant potential ($p<0.0002$) to indicate wetlands (listed in decreasing order of indication) include:

- *Carex aquatilis*
- *Carex chordorrhiza*
- *Scorpidium* aquatic moss

Differential species: Taxa with significant potential to differentiate the Arctic Floodplain Wetland from other wetland strata include:

- *Tomentypnum* moss*
- *Dryas integrifolia**
- *Salix richardsonii**
- *Calliergon* aquatic moss*
- *Meesia* moss*
- *Equisetum variegatum**
- *Salix reticulata**

*high value of indication (>20) but not significant

Succession and disturbance: A mid-succession type where riparian processes are the main disturbance. Low energy flooding may transport and deposit silt, but generally does not scour or remove wetland vegetation. Aggradation of sediment or channel migration away from sites can move them out of the elevational range or lateral reach of floodwaters thereby allowing development of seral tundra types. Conversely, erosion of sediment and channel migration towards sites can move them into the active floodplain.

Indicators of change: Change in structure or composition; change in surface hydrologic regime.

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Table 3. Cover and constancy of plant taxa occurring in the Arctic Floodplain Wetland stratum. Species listed by habit, in decreasing order of percent cover.

Habit	Scientific Name	Average Cover (%)	Standard Deviation (%)	Minimum Cover (%)	Maximum Cover (%)	Constancy (%)
tall shrub	*Salix richardsonii*	13.1	13.4	1.3	36.7	38
	Salix glauca	12.7	11.3	4.7	20.7	6
	Salix pulchra	7.1	4.5	1.3	15.3	32
	Salix niphoclada	6.7	na	6.7	6.7	3
	Alnus alnobetula ssp. *fruticosa*	6.7	na	6.7	6.7	3
	Betula nana	4.3	3.1	1.3	9.3	21
	Salix alaxensis	2.7	1.9	1.3	4.0	6
low shrub	*Salix fuscescens*	17.3	na	17.3	17.3	3
	Salix arctica	2.4	0.5	2.0	2.7	6
	Rhododendron tomentosum ssp. *decumbens*	2.2	0.7	1.4	2.7	9
	Vaccinium uliginosum	1.6	0.4	1.3	2.0	9
dwarf shrub	*Arctous rubra*	8.4	9.3	2.0	22.0	12
	Salix phlebophylla	7.3	na	7.3	7.3	3
	Dryas integrifolia	7.2	6.6	1.3	27.3	53
	Vaccinium vitis-idaea	4.7	4.9	1.3	12.0	12
	Kalmia procumbens	3.5	1.7	2.3	4.7	6
	Cassiope tetragona	3.4	2.2	1.3	8.7	32
	Salix reticulata	3.1	3.4	1.3	12.7	38
	Andromeda polifolia	1.8	0.6	1.3	2.7	12
	Arctous alpina	1.3	na	1.3	1.3	3
	Salix ovalifolia	1.3	na	1.3	1.3	3
graminoid	*Carex aquatilis*	23.7	18.6	1.3	71.4	79
	Eriophorum angustifolium	13.4	11.2	1.3	40.0	71
	Eriophorum russeolum	9.5	9.1	1.3	34.7	32
	Carex chordorrhiza	7.8	3.3	2.0	14.7	50
	Carex bigelowii ssp. *ensifolia*	6.5	6.2	1.3	22.7	44
	Carex capillaris	6.0	na	6.0	6.0	3
	Eriophorum vaginatum	5.3	5.4	2.0	18.7	26
	Festuca rubra	4.7	2.7	2.0	7.3	12
	Carex rotundata	4.5	3.9	1.3	11.3	26

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Habit	Scientific Name	Average Cover (%)	Standard Deviation (%)	Minimum Cover (%)	Maximum Cover (%)	Constancy (%)
	Arctophila fulva	4.0	3.8	1.3	6.7	6
	Carex saxatilis	3.8	2.1	1.3	6.8	18
	Eriophorum chamissonis	3.3	na	3.3	3.3	3
	Carex williamsii	3.1	3.1	1.3	6.7	9
	Eriophorum scheuchzeri	3.1	1.6	1.3	4.0	9
	Arctagrostis latifolia	3.0	1.8	1.3	6.0	18
	Carex krausei	2.7	na	2.7	2.7	3
	Luzula multiflora ssp. *frigida*	2.7	na	2.7	2.7	3
	Poa arctica	2.7	na	2.7	2.7	3
	Trisetum spicatum	2.7	na	2.7	2.7	3
	Carex atrofusca	2.7	1.2	1.3	4.0	12
	Carex fuliginosa ssp. *misandra*	2.4	0.5	2.0	2.7	6
	Carex vaginata	2.3	1.4	1.3	3.3	6
	Carex microglochin	2.0	na	2.0	2.0	3
	Calamagrostis inexpansa	1.3	na	1.3	1.3	3
	Luzula confusa	1.3	na	1.3	1.3	3
	Carex rariflora	1.3	0.0	1.3	1.3	6
	Dupontia fisheri	1.3	na	1.3	1.3	3
	Festuca brachyphylla	1.3	na	1.3	1.3	3
forb	*Astragalus alpinus*	6.5	4.9	2.7	12.0	9
	Comarum palustre	6.2	3.0	3.3	9.3	9
	Ranunculus gmelinii	4.0	na	4.0	4.0	3
	Utricularia intermedia	3.3	na	3.3	3.3	3
	Pyrola grandiflora	2.8	1.8	1.3	5.3	15
	Lupinus arcticus	2.0	1.0	1.3	2.7	6
	Bistorta plumosa	2.0	0.9	1.3	2.7	6
	Caltha palustris	2.0	na	2.0	2.0	3
	Parnassia palustris	2.0	na	2.0	2.0	3
	Rubus chamaemorus	1.4	0.1	1.3	1.4	6
	Astragalus umbellatus	1.3	na	1.3	1.3	3
	Saussurea angustifolia	1.3	na	1.3	1.3	3
	Tephroseris frigida	1.3	na	1.3	1.3	3
	Petasites frigidus	1.3	0.0	1.3	1.3	6

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	Bistorta vivipara	1.3	0.0	1.3	1.3	9
	Pedicularis interior	1.3	0.0	1.3	1.3	6
	Coptidium lapponicum	1.3	na	1.3	1.3	3
	Eurybia sibirica	1.3	na	1.3	1.3	3
	Parnassia kotzebuei	1.3	na	1.3	1.3	3
	Pedicularis lapponica	1.3	na	1.3	1.3	3
	Stellaria crassifolia	1.3	na	1.3	1.3	3
spore-bearing	*Equisetum scirpoides*	12.8	5.4	4.7	19.3	21
	Equisetum arvense	10.4	14.6	1.3	27.3	9
	Equisetum variegatum	10.4	11.2	2.0	32.0	26
moss	moss	12.7	na	12.7	12.7	3
	Hylocomium	12.1	8.1	1.3	26.0	32
	Drepanocladus	12.1	16.0	1.3	36.7	21
	Tomentypnum	11.9	9.9	2.0	36.7	59
	Scorpidium	11.7	10.8	1.3	52.7	94
	Pseudocalliergon	10.5	10.4	2.0	29.3	18
	Sphagnum	8.2	11.1	1.3	29.3	18
	Hamatocaulis	8.2	4.7	4.7	14.7	12
	Rhytidium	7.6	8.1	2.0	21.3	15
	Catoscopium	7.3	na	7.3	7.3	3
	Campylium	6.6	5.4	1.3	18.7	32
	Brachythecium	6.5	6.3	1.3	17.3	18
	Sanionia	5.8	4.0	1.3	12.7	18
	Cinclidium	5.3	4.5	1.3	12.0	21
	Ptychostomum	5.2	2.4	2.0	7.3	15
	Calliergon	4.9	3.5	1.3	10.7	32
	Rhizomnium	4.2	na	4.2	4.2	3
	Meesia	4.0	2.8	1.3	10.0	41
	Dicranum	3.8	1.9	1.3	7.3	24
	Oncophorus	3.5	2.3	1.3	6.7	12
	Polytrichum	3.5	1.7	1.3	6.0	15
	Plagiomnium	3.3	2.0	1.3	5.3	9
	Aulacomnium	3.2	2.3	1.3	8.7	44

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	Hypnum	3.1	0.4	2.7	3.3	15
	Pleurozium	2.7	na	2.7	2.7	3
	Sarmentypnum	2.7	na	2.7	2.7	3
	Distichium	2.6	1.7	1.3	5.3	15
	Loeskypnum	2.0	0.0	2.0	2.0	6
	Climacium	1.3	na	1.3	1.3	3
	Timmia	1.3	na	1.3	1.3	3
	Peltigera	3.3	3.8	1.3	10.0	15
	Thamnolia	2.8	1.6	1.3	6.0	21
	Flavocetraria	2.6	1.9	1.3	5.3	15
	Cladonia	1.3	0.0	1.3	1.3	6
	Sphaerophorus	1.3	na	1.3	1.3	3
lichen	*Cetraria*	1.3	0.0	1.3	1.3	6
	Blepharostoma	3.3	na	3.3	3.3	3
liverwort	liverwort	2.5	1.5	1.3	4.7	21
	Lophozia	1.3	na	1.3	1.3	3
	Ptilidium	1.3	na	1.3	1.3	3
algae	algae	2.0	1.0	1.3	2.7	6
cyanobacteria	cyanobacteria	2.0	na	2.0	2.0	3