Dominant arctic Alaska plant communities

Numbered units within the table are plant community types
Braun-Blanquet descriptions, dominant plant functional types and species are listed where data were available. Literature citations (in small font) include unit names, habitat, citation and location.

Major table sections are Tundra Bioclimate Subzones (see inset map on front side)

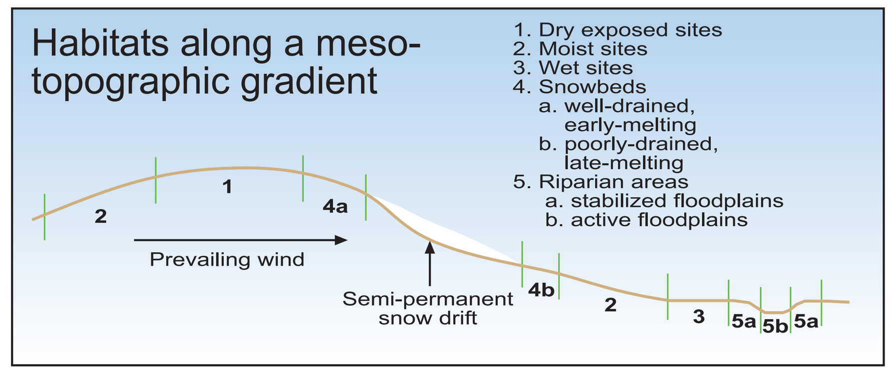
Subzone C | Subzone D | Subzone E

Table columns within the subzone sections separate acidic and non-acidic communities (see inset map on front side)

Blocks of rows are positions along a mesotopographic gradient (see figure to right)

Colored text outlines denote Floristic Provinces (see inset map on front side)

Northern Alaska | Beringian Alaska | Northern Beringian Islands



Subzone C
Northern part of Arctic Coastal Plain

Habitat along the meso-topographic gradient	Acidic substrates (community # 1-7)	Non-acidic substrates (community # 8-12)
Dry exposed sites	**1.** Prostrate dwarf shrub (*Salix rotundifolia*), lichen (*Alectoria nigricans, Bryocaulon divergens, Dactylina arctica*), rush (*Luzula confusa, L. arctica*), grass (*Arctagrostis latifolia*), forb (*Potentilla hyparctica, Pedicularis lanata*), bryophyte (*Polytrichum strictum, Dicranum elongatum, Gymnomitrion corallioides*). Nodum II (Webber 1978); *Sphaerophorus globosus-Luzula confusa* comm. subtype *Salix rotundifolia,* dry beach and river terraces (Elias et al. 1996) (Barrow).	**8.** Prostrate dwarf shrub (*Dryas integrifolia),* sedge *(Carex rupestris), (Lecanora epibryon, Thamnolia subuliformis).* Type B12, coastal dry nonacidic gravelly sites (Walker 1985) (Prudhoe Bay).
Moist sites	**2.** Sedge (*Carex aquatilis, Eriophorum angustifolium*), grass (*Poa arctica, Dupontia fisheri*), rush (*Luzula arctica*), prostrate dwarf- shrub (*Salix rotundifolia*), forb (*Saxifraga cernua, S. hieraciifolia, S. hirculus, Cardamine pratensis, Petasites frigidus, Ranunculus nivalis*), moss (*Oncophorus wahlenbergii, Sarmenthypnum sarmentosum, Aulacomnium turgidum*). Nodum IV (Webber 1978); Type 6 and 7, moist, fine-grained soils (Walker et al. 1977); *Saxifraga cernua-Carex aquatilis* comm. (Elias et al. 1996) (Barrow). **3.** Rush (*Luzula confusa, L. arctica*), grass (*Poa arctica*), forb (*Potentilla hyparctica, Pedicularis lanata*), lichen (*Alectoria nigricans, Sphaerophorus globosus, Dactylina arctica, Cladonia* spp., *Ochrolechia frigida*), moss (*Polytrichastrum alpinum, Polytrichum strictum, Sarmenthypnum sarmentosum*). Nodum 1 (Webber 1978); Type 5, mesic high-centered polygons, zonal vegetation(Walker et al. 1977); *Sphaerophorus globosus-Luzula confusa* comm. subtype *Saxifraga foliolosa,* Elias et al. 1996) (Barrow).	**9.** Sedge (*Carex aquatilis*), prostrate dwarf shrub (*Salix pulchra, S. reticulata, Dryas integrifolia*), moss (*Tomentypnum nitens, Oncophorus wahlenbergii, Campylium stellatum, Distichium capillaceum*). Type U12, moist calcareous coastal meadows (Walker 1985) (Prudhoe Bay).
Wet sites	**4.** Sedge (*Eriophorum angustifolium, Carex aquatilis)*, grass *(Dupontia fisheri, Arctophila fulva*), moss (*Sarmenthypnum sarmentosum, Limprichtia revolvens).* Noda V and VI (Webber 1978); Types 9, 10, 12 and 13 (Walker et al. 1977); *Eriophorum angustifolium-Carex aquatilis* comm., wet sites without standing water (Elias et al. 1996) (Barrow).	**10.** Sedge (*Carex aquatilis, Eriophorum angustifolium*), grass (*Dupontia fisheri)*, moss (*Drepanocladus brevifolius).* Type M10 , wet calcareous coastal meadows (Walker 1985) (Prudhoe Bay).
Snow-beds	**5.** Prostrate dwarf shrub (*Salix rotundifolia*), lichen (*Cetrariella delisei*). *Salix rotundifolia-Cetraria delisei* comm., early-melting snow beds (Elias et al. 1996) (Barrow). **6.** Grass (*Phippsia algida, Alopecurus alpinus*), forb (*Cochlearia groenlandica, Ranunculus pygmaeus, Stellaria humifusa, Saxifraga rivularis).* Nodum VIII (Webber 1978); Type 15, late-melting snow beds (Walker et al. 1977) (Barrow).	**11.** No data. Probably similar to snowbeds in Subzone D.
Riparian areas	**7.** Grass (*Phippsia algida, Alopecurus alpinus*), forb (*Cochlearia groenlandica, Ranunculus pygmaeus, Stellaria humifusa, Saxifraga rivularis*). Nodum VIII (Webber 1978); Type 15, unstable stream margins (Walker et al. 1977) (Barrow).	**12.** Forb (*Epilobium latifolium, Artemisia arctica, A. borealis, Papaver 'lapponicum', Polemonium boreale, Astragalus alpinus, Wilhelmsia physodes, Parrya nudicaulis*). Epilobio latifolii-Salicetum alaxensis ass. prov., coastal active floodplains (Schickhoff et al. 2002) (North Slope).

Subzone D
Arctic Coastal Plain, northern Seward Peninsula, St. Lawrence Island

Habitat along the meso-topographic gradient	Acidic substrates (community # 13-23)	Non-acidic substrates (community # 24-34)
Dry exposed sites	**13.** Prostrate dwarf shrub (*Dryas integrifolia, Salix phlebophylla, Arctous rubra, Diapensia lapponica*), lichen (*Alectoria nigricans*). Map 2, Unit 6, evergreen dwarf shrub, dry stabilized sand dune crests (Komarkova & Webber 1980) (Atqasuk). **14.** Graminoid (*Arctagrostis latifolia, Carex microchaeta* ssp. *nesophila, Hierochloe alpina, Trisetum spicatum*), prostrate dwarf shrub (*Salix phlebophylla, S. polaris*), forb (*Minuartia arctica, Potentilla* spp., *Oxytropis nigrescens, Pedicularis lanata, Artemisia* spp.). Vegetation of alpine areas and fell-fields (Young 1971) (St. Lawrence Island). **15.** Prostrate dwarf shrub (*Salix ovalifolia, S. fuscescens, Dryas octopetala*), lichen (*Cladina stellaris, Sphaerophorus globosus, Flavocetraria cucullata),* graminoid *(Carex microchaeta* ssp. *nesophila).* Dry flats, ridge tops & benches (Klein 1959) (St.Matthew Island).	**24.** Prostrate dwarf shrub (*Dryas integrifolia, Salix reticulata*), sedge (*Carex rupestris*), forb (*Oxytropis nigrescens*), lichen (*Lecanora epibryon*, *Pertusaria* spp., *Thamnolia subuliformis*). Stand Type B1 (Walker 1985); Stand Type *Dryas integrifolis – Oxytropis nigrescens*, dry calcareous gravelly soils (Walker 1990) (Prudhoe Bay). **25.** Prostrate dwarf shrub (*Dryas integrifolia),* lichen. Devil's Upland (Joregenson 2001) (Seward Peninsula). **26.** Prostrate dwarf shrub, forb, lichen. (dry limestone slopes, York Mtns., Seward Peninsula). no data - probably similar to Subzone E, community 73, this table.
Moist sites	**16.** Tussock sedge (*Eriophorum vaginatum)*, erect dwarf shrub (*Ledum decumbens, Vaccinium vitis-idaea)*, lichen (*Cladina rangiferina, Ochrolechia frigida*), moss (*Dicranum* spp., *Sphagnum compactum).* Map 2, Unit 8, mesic stabilized sands (Komarkova & Webber 1980) (Atqasuk). **17.** Tussock sedge (*Eriophorum vaginatum, Carex bigelowii*), dwarf shrub (*Ledum palustre* ssp. *decumbens*), moss (*Polytrichum* spp., *Sphagnum* spp.), lichen (*Cetraria* spp., *Cladina* spp.). 42B- low shrub cottongrass tussock tundra (Swanson & Schuman 1985) (Seward Peninsula). **18.** Graminoid (*Calamagrostis canadensis* var. *langsdorfii, Juncus castaneus*), prostrate dwarf shrub *(Rubus arcticus*), forb (*Comarum palustris, Epilobium anagallidifolium).* Vegetation of mesic tundra (Young 1971) (St. Lawrence Island). **19.** Sedge (*Carex microchaeta* ssp. *nesophila, Alopecurus alpinus, Arctagrostis latifolia*), prostrate dwarf shrub (*Salix rotundifolia, S. reticulata*), forb. Moist well-drained meadows (Klein 1959) (St. Matthew Island).	**27.** Sedge (*Carex bigelowii, Eriophorum angustifolium* ssp. *triste, E. vaginatum, C. membranacea, C. aquatilis*), prostrate dwarf shrub (*Dryas integrifolia, Salix reticulata*), erect dwarf shrub (*Salix richardsonii*), forb (*Tephroseris frigida, Eutrema edwardsii, Papaver macounii* ssp. *discolor, Leucanthemum integrifolium, Pedicularis lanata, Tofieldia pusilla*), moss (*Tomentypnum nitens, Drepanocladus brevifolius, Distichium capillaceum, Ditrichum flexicaule, Hypnum bambergeri*), lichen (*Thamnolia subuliformis, Flavocetraria cucullata, Cetraria islandica).* Stand Type U3, mesic nonacidic loess (Walker 1985) (Prudhoe Bay). **27 (cont).** Map unit 42A - low shrub water sedge tussock tundra (Swanson & Schuman 1985) (Seward Peninsula). **28.** Graminoid (*Deschampsia caespitosa, Juncus biglumis, Luzula confusa)*, shrub (*Salix phlebophylla, Salix polaris),* forb (*Huperzia selago, Oxyria digyna, Saxifraga nelsoniana, Rhodiola integrifolia, Cassiope tetragona, Primula tschuktschorum, Artemisia arctica).* Vegetation of alpine areas and fell- fields (Young 1971) (St. Lawrence Island).
Wet sites	**20.** Sedge (*Carex aquatilis, Carex* spp., *Eriophorum angustifolium),* moss (*Drepanocladus* spp., *Sphagnum* spp.). Map 2, Unit 16, wet marshes (Komarkova & Webber 1980) (Atqasuk). **20 (cont).** Water sedge wet meadow (Racine and Anderson 1979); Map Unit 55- cottongrass-water sedge, low-centered polygons (Swanson & Schuman 1985) (Seward Peninsula). **20 (cont).** Vegetation Type wet tundra (Young 1971) (St. Lawrence Island).	**29.** Sedge (*Carex aquatilis, Eriophorum angustifolium, Carex* spp.), moss (*Drepanocladus brevifolius, Scorpidium scorpioides, Cinclidium latifolium, Meesia triquetra, Catoscopium nigritum, Distichium capillaceum).* Stand Type M2, wet calcareous meadows, ice-wedge polygon centers, lake margins (Walker 1985) (Prudhoe Bay).
Snowbeds	**21.** Hemiprostrate dwarf shrub (*Cassiope tetragona*), forb (*Boykinia richardsonii*). *Boykinia richardsonii-Cassiope tetragona* comm. Map 2, Unit 11, early-melting snow beds (Komarkova and Webber 1980) (Atqasuk).	**30.** Hemiprostrate dwarf shrub (*Cassiope tetragona*), prostrate dwarf shrub (*Dryas integrifolia, Salix reticulata*), sedge (*Carex scirpoidea*), forb (*Pedicularis capitata, Bistorta vivipara, Silene acaulis, Papaver macounii* ssp. *discolor*), moss (*Ditrichum flexicaule, Sanionia uncinata, Tomentypnum nitens*), lichen (*Cetraria cucullata, Masonhalea richardsonii, C. nivalis, Peltigera canina*). Stand Type U6 ; Stand type *Cassiope tetragona-Dryas integrifolia*, early melting nonacidic snowbeds on pingos(Walker 1990) (Prudhoe Bay). **31.** Prostrate dwarf shrub (*Salix rotundifolia*), sedge (*Carex aquatilis, Eriophorum angustifolium* ssp. *triste*), horsetail (*Equisetum scirpoides, E. variegatum*), moss (*Distichium capillaceum, Ditrichum flexicaule*). Stand Type U7 (Walker 1985) ; Facies *Salix rotundifolia-Eriophorum triste,* late-melting nonacidic snowbeds (Walker 1990) (Prudhoe Bay).
Riparian areas	**22.** Low shrub (*Salix alaxensis, S. richardsonii, S. glauca, S. pulchra*), forb (*Eurybia sibirica, Astragalus alpinus, Tanacetum bipinnatum, Bistorta vivipara, Pedicularis capitata, Equisetum variegatum, E. arvense*). Map 2 Unit 17, Decidious scrub, sandy floodplains (Komarkova and Webber 1980) (Atqasuk). **23.** Low shrub (*Salix pulchra*), moss (*Hylocomium splendens*), lichen (*Cetraria islandica, Cladina* spp.). Low-medium willow shrub thicket (Racine and Anderson 1979); Map unit 34- low shrub - floodplain (Swanson and Schuman 1985) (Seward Peninsula).	**32.** Forb (*Epilobium latifolium, Artemisia arctica, A. borealis, Papaver 'lapponicum', Polemonium boreale, Astragalus alpinus, Wilhelmsia physodes, Parrya nudicaulis, Castilleja caudata, Hedysarum alpinum, H. mackenziei*), dwarf shrub (*Salix alaxensis*). Stand Type B4, active floodplains (Walker 1985) (Prudhoe Bay); Epilobio-Salicetum alaxensis (Schickhoff et al. 2002) (Sagavanirktok River). **33.** Low shrub (*Salix richardonii, S. alaxensis, S. glauca*), sedge (*Carex aquatilis, Eriophorum angustifolium*), forb *Polemonium acutiflorum,Cardamine microphylla* ssp. *blaisdellii, Pedicularis albolabiata.* Stand Type U8, moist streamsides on fine grained soils (Walker 1985) (Prudhoe Bay); Anemeno-Salicetum richardsonii (Schickhoff et al. 2002) (Sagavanirktok River). **34.** Prostrate dwarf shrub (*Dryas integrifolia, Arctous rubra, Salix reticulata*), erect dwarf shrub (*Salix richardsonii, Vaccinium uliginosum*), forb (*Anemone parviflora, Bistorta vivipara, Castilleja caudata, Lupinus arcticus, Oxytropis campestris, Pedicularis capitata*), sedge (*Carex scirpoidea, C. rupestris*), horsetail (*Equisetum variegatum*), moss (*Rhytidium rugosum*), lichen (*Flavocetraria cucullata, F. nivalis, Cladonia pocillum, Dactylina arctica, Masonhalea richardsonii, Peltigera canina, Thamnolia subuliformis).* *Dryas integrifolia-Lupinus arcticus* comm., dry river terraces (Walker et al. 1997) (Happy Valley). Dryas terrace comm. (Jorgenson pers.comm.) (Arctic NWR).

Subzone E
Arctic Foothills, Seward Peninsula, and southwestern Alaska

Habitat along the meso-topographic gradient	Acidic substrates (community # 35-49)	Non-acidic substrates (community # 71-76)
Dry exposed sites	**35.** Prostrate dwarf shrub (*Vaccinium uliginosum, Salix phlebophylla, Loiseleuria procumbens, Vaccinium vitis-idaea, Dryas octopetala*), graminoid (*Hierochloe alpina, Carex microchaeta),* forb *(Androsace chamaejasme),* moss *(Rhacomitrium lanuginosum).* Vaccinio uliginosi-Salicetum phlebophyllae Assoc. 43, prostrate vegetation of ridgetops on acidic soils (Cooper 1986) (Arrigetch Mtns.). **36.** Prostrate dwarf shrub (*Dryas octopetala, Vaccinium uliginosum*), graminoid (*Carex scirpoidea, C. microchaeta, Festuca altaica*), lichen (*Cladina* spp., *Flavocetraria* spp.). Carici scirpoideae-Vaccinietum uliginosi, Assoc. 18 (Cooper 1986) (Arrigetch Mtns.). **37.** Prostrate dwarf shrub (*Dryas octopetala, D. drummondii*), forb (*Antennaria alpina, Minuartia obtusiloba, Oxytropis nigrescens, Artemisia arctica*), lichen (*Alectoria nigrescens, Bryocaulon divergens, Hypogymnia subobscura, Ochrolechia upsaliensis*), moss (*Polytrichum piliferum, Tortula ruralis*). Selaginello sibiricae-Dryadetum octopetalae, dry gravelly soils (Walker et al. 1994) (Imnavait Creek). **38.** Prostrate dwarf shrub (*Arctous alpina, Vaccinium vitis-idaea, V. uliginosum, Salix phlebophylla*), grass (*Hierochloe alpina*), lichen (*Flavocetraria cucullata, Sphaerophorus globosus, Alectoria ochroleuca, Cladina arbuscula*), moss (*Polytrichum strictum, Dicranum elongatum).* Salici phlebophyllae-Arctoetum alpinae, dry acidic organic soils (Walker et al. 1994) (Imnavait Creek). **39.** Prostrate dwarf shrub (*Loiseleuria procumbens, Arctous alpina, Empetrum nigrum, Rhododendron camtschaticum, Salix phlebophylla),* lichen (*Bryocaulon divergens, Pseudephebe pubescens, Cladina* spp., *Thamnolia* spp.). Map units 65 lichen slope and 70 lichen granitic slope (Swanson and Schuman 1985); Vegetation type dwarf-shrub tundra (Racine and Anderson 1979); Releves C13, QC35, QC36 (Raynolds et al. 2002) (Seward Peninsula). **40.** Prostrate and erect dwarf shrub *(Dryas integrifolia, Empetrum nigrum*), lichen (*Cladina rangiferina, Cladina* spp*., Alectoria ochroleuca).* Sites V1,4,5 (Talbot et al. 1985); Map unit 4 ; description of Askinuk Mtns.(McCaffery and Harwood 1997); Map Units D1a, M11 (Tande and Jennings 1986), lowland moist low scrub (Jorgenson 2000) (Yukon-Kuskokwim Delta).	**71.** Prostate dwarf shrub (*Dryas octopetala, D. drummondii*), forb (*Antennaria alpina, Minuartia obtusiloba, Oxytropis nigrescens, Smelowskia calycina, Artemisia arctica*), lichen (*Alectoria nigrescens, Bryocaulon divergens, Hypogymnia subobscura, Ochrolechia upsaliensis*), moss (*Polytrichum piliferum, Tortula ruralis).* Selaginello sibiricae-Dryadetum octopetalae, dry gravelly soils (Walker et al. 1994) (Toolik Lake). **72.** Prostrate dwarf shrub (*Dryas octopetala, Saxifraga oppositifolia*), sedge (*Carex scirpoidea, Carex rupestris*), lichen (*Thamnolia subuliformis, Dactylina beringica, Vulpicida tilesii, Flavocetraria nivalis, F. cucullata, Cetraria islandica*), moss *(Ditrichum flexicaule).* Caricetum scirpoideo-rupestris, Assoc.30, limestone slopes (Cooper 1986) (Arrigetch Mtns.). **73.** Prostrate dwarf shrub (*Dryas octopetala, Rhododendron camtschaticum*), sedge *(Carex nardina*), forb (*Artemisia senjavinensis, A. globularia, Saxifraga oppositifolia, Oxytropis nigrescens, Packera cymbalaria, Smelowskia calycina, Minuartia arctica, Phlox sibirica, Potentilla biflora, P. uniflora, Stellaria dicranoides*), lichen (*Thamnolia subuliformis, Cetraria islandica).* Alpine Dryas stand ; Map units 61 lichen meadow, mountain (Hanson 1953), 71 Dryas limestone slope, and 72 bald limestone slope (Swanson and Schuman 1985); Vegetation type Dryas dwarf-shrub tundra Racine and Anderson 1979); Releves C5, C17, C-H (Raynolds et al. 2002) (Seward Peninsula). **74.** Lichen (*Umbillicaria* spp, *Rhizocarpon geographicum, Cladonia stellaris*), dwarf shrub (*Loiseluria procumbens*). Rock desert , Lava A,B,C (Raynolds et al. 2002) (Seward Peninsula).
Moist sites	**41.** Tussock sedge (*Eriophorum vaginatum, Carex bigelowii*), erect dwarf shrub (*Betula nana, Ledum decumbens, Vaccinium vitis-idaea, Empetrum hermaphroditum, Cassiope tetragona, Rubus chamaemorus*), forb (*Pyrola grandiflora, Bistorta plumosa, Saxifraga nelsoniana*), moss (*Sphagnum* spp., *Hylocomium splendens, Aulacomnium turgidum, Dicranum* spp., *Polytrichum strictum*), lichen (*Cladina* spp., *Cladonia amaurocraea, Cetraria* spp., *Dactylina arctica).* Sphagno-Eriophoretum vaginati, tussock tundra on acidic fine grained soils (Walker et al. 1994) (Imnavait Creek). **41 (cont).** Cottongrass-sedge-dwarf heath shrub complex (Hanson 1953); Tussock dwarf-shrub tundra (Racine and Anderson 1979); 42B- low shrub cottongrass tussock tundra, 60 - lichen tussock tundra (Swanson and Schuman 1985); C2,C8,C19,QC1, QC2,QC45 (Raynolds et al. 2002) (Seward Peninsula). Map Units M11, M14 (Tande and Jennings 1986); Map Unit 71 - lowland moist low-scrub (Jorgenson 2000); Sites BB10-13, MM5,7 (Talbot 1983) (Yukon-Kuskokwim Delta). **42.** Erect dwarf shrub (*Betula nana, Salix pulchra, Ledum decumbens*, *Vaccinium vitis-idaea*), tussock sedge (*Eriophorum vaginatum),* moss (*Sphagnum* spp., *Hylocomium splendens, Aulacomnium turgidum, Dicranum* spp.), lichen (*Cladina* spp., *Cladonia amaurocraea, Cetraria* spp., *Peltigera aphthosa).* Sphagno-Eriophoretum vaginati, *Betula nana* and *Salix pulchra* subtypes, shrub-dominated tussock tundra (Walker & Walker 1996) (Imnavait Creek). **43.** Erect dwarf shrub (*Betula nana, Ledum decumbens*), prostrate dwarf-shrub *(Rubus chamaemorus*, *Vaccinium vitis-idaea*)*,* moss (*Sphagnum* spp.). Sphagno-Eriophoretum vaginati betuletosum nanae, dwarf shrub on palsas and high-centered polygons (Walker et al. 1994) (Imnavait Creek). **44.** Low shrub (*Betula nana, Salix pulchra*), erect dwarf-shrub (*Ledum decumbens*, *Rubus chamaemorus*), grass (*Calamagrostis canadensis*), moss (*Aulacomnium turgidum, Hylocomium splendens*). Sphagno-Eriophoretum vaginati betuletosum nanae, shrub tundra in warmer mesoclimatic oases along water tracks and in basins (Walker et al. 1994) (Imnavait Creek). **44 (cont).** Vegetation Type low-medium shrub thicket (Racine and Anderson 1979); shrub hillside, Map Unit 35 (Swanson and Schuman 1985); Releves C3, C16, QC3, C-C (Raynolds et al. 2002) (Seward Peninsula). Map unit 9 (Talbot et al. 1985); Map Unit M13 (Tande and Jennings 1986) (Yukon-Kuskokwim Delta). **45.** Low shrub (*Alnus viridis* ssp*. fruticosa, Salix richardsonii, Spiraea stevenii*), erect dwarf shrub (*Vaccinium uliginosum, V. vitis-idaea, Pyrola grandiflora*), grass (*Calamagrostis canadensis*), horsetail (*Equisetum arvense*), forb (*Boschniakia rossica, Valeriana capitata*), moss (*Climacium dendroides, Hylocomium splendens, Thuidium philibertii, Timmia austriaca*). *Climacium dendroides-Alnus viridis* comm., open alder shrub in warmer mesoclimatic oases of the foothills (Walker et al. 1997) (Happy Valley). **46.** Tussock sedge (*Eriophorum vaginatum*), grass (*Calamagrostis canadensis, Arctagrostis latifolia*), forb (*Epilobium latifolium, Tephroseris congesta*), bryophyte *(Marchantia polymorpha, Ceratodon purpureus)*. Resprouting tussocks with colonizing liverworts and mosses on burned tussock tundra (Racine 1987) (Seward Peninsula). **47.** Sedge (*Eriophorum vaginatum*), erect dwarf shrub (*Ledum decumbens, Vaccinium vitis-idaea, Rubus chamaemorus*), lichens (*Cladina rangiferina, C. mitis, C. arbuscula, Flavocetraria cucullata, Cetraria islandica*), moss (*Sphagnum* spp.). Map Unit 60 lichen tussock tundra (Swanson and Schuman 1985) (Seward Peninsula). **48.** Erect dwarf shrub (*Betula nana, Ledum decumbens, Empetrum nigrum, Loiseleuria procumbens, Vaccinium uliginosum*), lichen (*Cladina rangiferina, C. stygia, Stereocaulon tomentosum*), moss (*Sphagnum* spp., *Dicranum* spp.). Vegetation type dwarf birch-heath-lichens (Hanson 1953); Vegetation type birch dwarf-shrub tundra (Racine and Anderson 1979); Map Unit 32- mixed shrub tundra,44 - shrub lichen upland (Swanson and Schuman 1985); Releve C14 (Raynolds et al. 2002) (Seward Peninsula). Map Unit M11(Tande and Jennings 1986); Map Unit 71, lowland moist low scrub (Jorgenson 2000) (Yukon-Kuskokwim Delta). **49.** Erect and prostrate dwarf shrub *(Betula nana, Salix fuscescens, Empetrum nigrum, Vaccinium vitis-idaea*), sedge (*Carex bigelowii*), lichen (*Cladina rangiferina, C. arbuscula, Cetraria islandica*). Site 63, 32 (Swanson et al. 1986) (Nunivak Island).	**75.** Sedges (*Carex bigelowii, Eriophorum angustifolium* ssp. *triste, C. membranacea, E. vaginatum*), prostrate dwarf shrub (*Dryas integrifolia, Salix reticulata, Arctous rubra*), erect dwarf shrub (*Salix richardsonii, S. glauca, Vaccinium uliginosum, Rhododendron lapponicum*), forb (*Lupinus arcticus, Oxytropis maydelliana, Pedicularis capitata, Lagotis glauca, Eutrema edwardsii, Tephroseris frigida, Bistorta vivipara, Packera cymbalaria, Pedicularis lanata, Tofieldia pusilla*), horsetail *(Equisetum arvense, E. variegatum*), moss (*Tomentypnum nitens, Hylocomium splendens, Aulacomnium turgidum*), lichen (*Thamnolia subuliformis, Flavocetraria* spp., *Dactylina arctica).* Dryado integrifoliae-Caricetum bigelowii, moist calcareous tundra (Walker et al. 1994) (Toolik Lake). **75 (cont).** Vegetation type Bigelow's sedge tussock dwarf-shrub tundra (Racine and Anderson 1979); Releves R6,7a,33,37,57,58 (Raynolds et al. 2002) (Seward Peninsula). **76.** Low shrub (*Betula nana, Salix pulchra, Salix glauca*), moss (*Pleurozium schreberi, Hylocomium splendens*). 44-shrub lichen upland (Swanson and Schuman 1985); Releve C-C (Raynolds et al. 2002) (Seward Peninsula).

Habitat along the meso-topographic gradient	Acidic substrates (community # 50-70)	Non-acidic substrates (community # 77-85)
Moist sites (cont.)	**50.** Low shrub (*Betula nana)*, sedge (*Eriophorum vaginatum*), dwarf shrub (*Ledum decumbens, Rubus chamaemorus, Vaccinium uliginosum, V. vitis-idaea, Empetrum nigrum*), moss (*Sphagnum* spp.), lichen (*Cladina* spp., *Cetraria* spp.). Map Units 1,3 (Talbot et al. 1985); Map Unit M12 (Tande and Jennings 1986); Map Unit L3 (Wibbenmeyer et al. 1982) (Kuskokwim Mtns.). **51.** Low shrub (*Alnus viridis* ssp. *fruticosa, Spiraea stevenii),* grass *(Calamagrostis canadensis*), fern *(Dryopteris expansa).* Alder types ; green alder shrub thicket (Hanson 1953); Map Unit 22 -tall shrub hillside (Racine and Anderson 1979); Releves C15,C18,QC25 (Raynolds et al. 2002) (Seward Peninsula). Map Unit 8, subalpine scrub (Talbot et al. 1985); Map Units D2,D5,F1,F2 (Wibbenmeyer et al. 1982) (Yukon-Kuskokwim Delta).	
Wet sites	**52.** Sedge (*Carex rotundata, C. rariflora, C. chordorrhiza, Eriophorum scheuchzeri*), moss (*Sphagnum orientale).* Sphagnum orientale-Eriophorum scheuchzeri comm., wet microsites in wet acidic tundra in foothills (Walker and Walker 1996) (Imnavait Creek). **53.** Sedge (*Carex rotundata, C. rariflora*), prostrate dwarf shrub (*Salix fuscescens, Andromeda polifolia, Rubus chamaemorus, Betula nana*), moss (*Sphagnum lenense, Sphagnum* spp.). *Sphagnum lenense-Salix fuscescens* comm., raised microsites in acidic wetlands (Walker and Walker 1996) (Imnavait Creek). **54.** Sedge (*Carex aquatilis, Eriophorum scheuchzeri*), erect dwarf shrub (*Ledum palustre* ssp. *decumbens*), moss (*Sphagnum* spp.), lichen (*Cladina* spp., *Cladonia* spp.). Map Unit 55- cottongrass-water sedge (low-centered polygons) (Swanson and Schuman 1985) (Seward Peninsula). **55.** Sedge (*Carex ramenskii, C. rariflora, C. lyngbyaei),* prostrate dwarf shrub (*Salix fuscescens)*, forb (*Comarum palustre).* Map Units W1, W8, W9, M9 (Tande and Jennings 1986); Map Unit 24 slightly brackish wet sedge-shrub meadow (Jorgenson 2000) (Yukon-Kuskokwim Delta). **56.** Graminoid (*Carex aquatilis, C. rariflora, Calamagrostis deschamsioides*), hemiprostrate dwarf shrub (*Empetrum nigrum*), moss (*Sphagnum* spp.). Map Unit W10 (Tande and Jennings 1986) (Yukon-Kuskokwim Delta). **57.** Sedge (*Carex aquatilis, Eriophorum angustifolium, C. rostrata*), forb (*Comarum palustre, Menyanthes trifoliata*), moss (*Sphagnum* spp.). Sites F1,H2,M2B (Talbot 1983); Map Unit 61 - lowland wet sedge meadow (Jorgenson 2000) ; Map Unit W2e,W3e (Tande and Jennings 1986); Map Units 5,18,22 (Talbot et al. 1985) (Yukon-Kuskokwim Delta). **58.** Sedge (*Eriophorum russeolum, Carex aquatilis*), forb (*Comarum palustre*), moss (*Sphagnum* spp.). Map Unit 21, 16 (Talbot et al. 1985); Map Unit W3 (Tande and Jennings 1986) (Yukon-Kuskokwim Delta). **59.** Sedge (*Carex aquatilis*), erect dwarf shrub (*Betula nana, Empetrum nigrum, Ledum palustre* ssp. *decumbens, Vaccinium uliginosum*), moss (*Sphagnum* spp.), lichen (*Cladina* spp*., Flavocetraria* spp.). Map Unit 5, 22 (Talbot et al. 1985); Map Unit W3e, W4 (Tande and Jennings 1986) (Yukon-Kuskokwim Delta). **60.** Erect dwarf shrub (*Andromeda polifolia*), moss (*Sphagnum balticum*). Map Unit 23 (Talbot et al. 1985) (Yukon-Kuskokwim Delta). **61.** Sedge (*Carex aquatilis*, *C. glareosa)*, prostrate dwarf shrub (*Salix fuscescens)*, moss (*Sphagnum* spp.). Type 52 (Swanson et al. 1986) (Nunivak Island).	**77.** Sedge (*Carex aquatilis, C. chordorrhiza Carex* spp., *Eriophorum angustifolium*), moss (*Drepanocladus brevifolius, Scorpidium scorpioides, Cinclidium latifolium, Meesia triquetra, Catascopium nigritum, Distichium capillaceum).* *Eriophorum angustifolium-Carex aquatilis* comm., nonacidic marshes (Walker and Barry 1991) (Toolik Lake). **78.** Graminoid (*Puccinellia phryganodes, Carex ramenskii*). Salt grass meadow (Racine and Anderson 1979); 51- tidal marsh (Swanson and Schuman 1985) (Seward Peninsula). Map Unit 14 (Talbot et al. 1985), Map Unit M15 (Tande and Jennings 1986; Map Unit 13 (Jorgenson 2000) (Yukon-Kuskokwim Delta).
Snowbeds	**62.** Hemiprostrate dwarf shrub (*Cassiope tetragona*), prostrate dwarf shrub (*Salix phlebophylla, Vaccinium vitis-idaea, Pyrola grandiflora, Diapensia lapponica. Ledum decumbens, Vaccinium uliginosum,*), sedge (*Carex microchaeta*), grass (*Hierochloe alpina*), moss (*Hylocomium splendens, Aulacomnium turgidum, Dicranum* spp.), lichen (*Flavocetraria cucullata, F. nivalis, Nephroma arcticum, Stereocaulon alpinum, Sphaerophorus globosus*). *Carex microchaeta-Cassiope tetragona* comm., early-melting acidic snowbeds (Walker et al. 1994) (Imnavait Creek). **63.** Prostrate dwarf shrub (*Salix rotundifolia*)**.** *Salix rotundifolia-Saxifraga nivalis* comm., late-melting snow beds (Walker et al. 1989) (Imnavait Creek). **64.** Hemiprostrate dwarf shrub (*Cassiope tetragona, Loiseleuria procumbens*, *Vaccinium uliginosum*), forb, lichen (*Alectoria nigricans, Sphaerophorus globosus*). Four-angled heather-blueberry type (Hanson 1953); Releve 2000-CC (Raynolds et al. 2002) (Seward Peninsula).	**79.** Hemiprostrate dwarf shrub (*Cassiope tetragona*), prostrate dwarf shrub (*Dryas integrifolia, Salix reticulata, S. arctica),* sedge *(Carex scirpoidea*), forb (*Geum glaciale, Pedicularis lanata, P. oederi, Parrya nudicaulis, Papaver macounii* ssp. *discolor, Silene acaulis, Bistorta plumosa*), moss (*Rhytidium rugosum, Aulacomnium turgidum, Tomentypnum nitens, Ptilidium ciliare*), lichen (*Flavocetraria cucullata, F. nivalis, Cladonia amaurocaea, Dactylina arctica*). *Dryas integrifolia-Cassiope tetragona* comm., early-melting nonacidic snow beds (Walker et al. 1994) (Toolik Lake). **80.** Prostrate dwarf shrub (*Salix rotundifolia*), sedge (*Carex aquatilis, Eriophorum angustifolium* ssp. *triste*), horsetail (*Equisetum scirpoides, E. variegatum*), moss (*Distichium capillaceum, Ditrichum flexicaule*). *Salix rotundifolia-Saxifraga nivalis* comm., late-melting snow beds (Walker et al. 1989) (Toolik Lake). **81.** Dwarf shrub (*Salix reticulata, S. richardsonii*), horsetail (*Equisetum arvense*), moss (*Tomenthypnum nitens*). Early-melting snowbeds, Releve 2000-C-D (Raynolds et al. 2002) (Seward Peninsula).
Riparian areas	**65.** Low shrub (*Salix pulchra, Betula nana*), erect dwarf shrub, sedge (*Eriophorum angustifolium, Carex membranacea*), forb (*Valeriana capitata, Anemone richardsonii, Polemonium acutiflorum, Dodecatheon frigidum*), moss (*Hylocomium splendens, Tomentypnum nitens, Sphagnum* spp., *Sanionia uncinatus, Aulacomnium palustre, Paludella squarrosa*). Valeriano-Salicetum planifoliae ass. nov. (Schickhoff et al. 2002); *Eriophorum angustifolium-Salix pulchra* comm., acidic to circumneutral water tracks, streamsides (Walker et al. 1994) (Imnavait Creek). **66.** Tall shrub (*Salix alaxensis, S. richardsonii, S. glauca*), prostrate shrub (*Dryas integrifolia, Arctous rubra*), forb (*Hedysarum alpinum, Tofieldia pusilla, Parnassia kotzebuei*), horsetail (*Equisetum arvense*), moss (*Ditrichum flexicaule, Tomentypnum nitens, Distichium capillaceum*). *Salicetum glauco-richardsonii* ass. prov., willow shrublands on stable floodplains (Schickhoff et al. 2002) (Imnavait Creek). **67.** Tall shrub (*Alnus viridis* ssp. *fruticosa, Salix richardsonii*), erect dwarf shrub (*Vaccinium uliginosum, V. vitis-idaea, Pyrola grandiflora*), grass (*Calamagrostis canadensis*), horsetail (*Equisetum arvense*), forb (*Boschniakia rossica, Valeriana capitata*), moss (*Climacium dendroides, Hylocomium splendens, Thuidium philibertii, Timmia austriaca*). *Climaceum dendroides-Alnus viridis* comm., alder shrublands floodplains (Walker et al. 1997) (Happy Valley). **68.** Low shrub (*Salix pulchra*), moss (*Hylocomium splendens*), lichen (*Cetraria islandica, Cladina* spp.). Map unit 34-low shrub - floodplain (Swanson and Schuman 1985) (Seward Peninsula). **69.** Low or tall shrub (*Salix alaxensis, S. richardsonii*), forb (*Epilobium latifolium*), moss (*Sphagnum* spp.), lichen (*Thamnolia subuliformis*). Vegetation type tall willow thicket (Racine and Anderson 1979); Map unit 82 - riverwash (Swanson and Schuman 1985) (Seward Peninsula). **70.** Tall shrub (*Salix arbusculoides, S. alaxensis, Alnus viridis* ssp. *fruticosa),* low shrub (*Salix pulchra*), grass (*Calamagrostis canadensis*), moss (*Climacium dendroides*). Map unit W2e (Tande and Jennings 1986); Site G5, 9, 12, 14; MM6, 005, V3 (Talbot 1983) (Yukon-Kuskokwim Delta).	**82.** Forb (*Castilleja caudata, Epilobium latifolium, Hedysarum alpinum, Eurybia sibirica*), low shrub (*Salix alaxensis*). *Epilobio latifolii-Salicetum alaxensis* ass., active floodplains (Schickhoff et al. 2002) (Toolik Lake). **83.** Prostrate dwarf shrub (*Dryas integrifolia, Arctous rubra, Salix reticulata*), erect dwarf shrub (*Salix richardsonii, Vaccinium uliginosum, Rhododendron lapponicum*), forb (*Anemone parviflora, Bistorta vivipara, Castilleja caudata, Lupinus arcticus, Oxytropis campestris, O. borealis, Pedicularis capitata*), sedge (*Carex scirpoidea, C. rupestris*), horsetail (*Equisetum variegatum*), moss (*Rhytidium rugosum, Hylocomium splendens, Tomentypnum nitens*), lichen (*Flavocetraria cucullata, F. nivalis, Cladonia pocillum, Dactylina arctica, Masonhalea richardsonii, Peltigera canina, Thamnolia subuliformis*). *Dryas integrifolia-Lupinus arcticus* comm., dry river terraces (Walker et al. 1997) (Toolik Lake); Dryas terrace comm. (J.C. Jorgenson, 2005 pers. com.) (Arctic NWR). **84.** Tall shrub (*Salix alaxensis, S. richardsonii, S. glauca*), prostrate shrub (*Dryas integrifolia, Arctous rubra*), forb (*Hedysarum alpinum, Tofieldia pusilla, Parnassia kotzebuei*), horsetail (*Equisetum arvense*), moss (*Ditrichum flexicaule, Tomentypnum nitens, Distichium capillaceum*). *Salicetum glauco-richardsonii* ass. prov., willow shrubland on stable floodplains (Schickhoff et al. 2002) (Toolik Lake). **85.** Tall shrub (*Alnus viridis* ssp. *fruticosa, Salix richardsonii*), erect dwarf shrub (*Vaccinium uliginosum, V. vitis-idaea, Pyrola grandiflora*), grass (*Calamagrostis canadensis*), horsetail (*Equisetum arvense*), forb (*Boschniakia rossica, Valeriana capitata*), moss (*Climacium dendroides, Hylocomium splendens, Thuidium philibertii, Timmia austriaca*). *Climaceum dendroides-Alnus viridis* comm., alder shrubland on floodplains (Walker et al. 1997) (Happy Valley).

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