RARE VASCULAR PLANTS OF THE

BLM DALTON HIGHWAY UTILITY CORRIDOR

A report by

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August 1995

ACKNOWLEDGEMENTS

This report is a continuation of the cooperative relationship begun in 1990 between the Bureau of Land Management and the Alaska Natural Heritage Program. We would especially like to thank Dave Yokel of the Arctic District, BLM, who conceived this particular project, secured the funding for it, and has evinced continual concern for the rare plants of the District.

Thanks also go to David Murray, Curator Emeritus, and Alan Batten, Research Associate, of the Herbarium of the University of Alaska Museum for their cooperation and assistance. Their collections, database, and literature files provided the basis for this report. David Murray also provided a valuable review of species rankings and taxonomy for some of the taxa in this report.

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INTRODUCTION

BACKGROUND

The Dalton Highway makes a remarkable transect through Interior and Arctic Alaska, crossing most of the boreal, arctic, and alpine communities to be found there. The Utility Corridor, on either side of the Highway, is thus a remarkable and, as yet, relatively undisturbed biological resource for recreation, subsistence, research, and teaching. The Utility Corridor is managed by the U.S. Bureau of Land Management (BLM) and has seen increasing use over the years. With the recent opening of the Dalton Highway to the public, this use is sure to increase.

The vascular flora is an important part of the biodiversity of any area. Knowledge of the locations of threatened, endangered, or rare plant taxa is basic to managing the Dalton Highway Utility Corridor and preserving its biodiversity. This report, funded by the BLM (Arctic District), is intended to provide a tool for managers seeking an initial overview of the rare plants of the Utility Corridor and their significance. The area covered by this report is shown in Figure 1 and includes the Utility Corridor from the Yukon River to just north of Toolik Lake.

The report is part of a continuing effort by the Alaska Natural Heritage Program (AKNHP) and the BLM to integrate a wide variety of information into a permanent, ongoing information database for use in rare plant species management. The purpose is to ensure continuing stewardship of rare plant taxa through basic research, inventory, and monitoring.

The information in this report is excerpted from files in the Heritage Program's Biological and Conservation Database (BCD), a permanent and periodically revised archive of information on elements of biodiversity in Alaska, including rare or unusual taxa. The database is an ongoing project and this report should not be considered a "final product". Although we hope this report is a valuable guide to the currently known rare flora of the area, it is sure to become outdated and we strongly encourage resource managers to contact the AKNHP for the most current information.

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INFORMATION SOURCES AND RANKING OF RARE PLANTS

This report is based on information from existing herbarium collections and literature. No new field work was done in the course of this report but some of the information is based on field notes from earlier studies and the recollections of various investigators.

The Herbarium of the University of Alaska Fairbanks Museum (ALA) undoubtedly contains the most comprehensive plant collections from the Dalton Highway Utility Corridor. These collections were the basis for much of this report and were used to construct initial species lists for the Utility Corridor. All specimen citations, unless otherwise noted, are from ALA. Collections at various other herbaria have been consulted in developing the Heritage Program's Biological Conservation Database from which this report is excerpted. These include:

United States National Herbarium (US);
Gray Herbarium of Harvard University (GH);
National Herbarium of Canada (CAN);
Biosystematics Research Institute, Agriculture Canada (DAO).

While there is little published information specific to rare plants of the study area, there are several important primary sources that were consulted. These include reports on the flora and vegetation of the inner Utility Corridor (Murray et al. 1977, 1978, 1979; Walker et al. 1987, 1989) as well as more general treatments of the flora of Alaska (e.g. Hulten 1941-50, 1968, 1973; Welsh 1974). Monographs and treatments of particular taxa were also used where appropriate.

Information on rare plant taxa within the Utility Corridor was compiled and entered in the Heritage Program's Biological Conservation Database. All locations were checked for accuracy and mapped to the maximum precision allowed for by the data. Locations are stored in manual map files as well as in digital form in an ARC/INFO GIS layer.

We selected taxa for inclusion in this report based on their ranking by the Nature Conservancy and the Alaska Natural Heritage Program. The Nature Conservancy's ranking system assigns each taxon a global and a state rank from 1 - 5 based on several factors such as abundance, range, degree of threat, existing protection, and the number of occurrences. The ranking categories are presented in the following tables:

Alaska Natural Heritage Program Rare Species Global Rankings

Published 08/1995. For Current Information, Please Contact the Alaska Natural Heritage Program in Anchorage.

G1: Critically imperiled globally.
G2: Imperiled globally.
G3: Either very rare and local throughout its range or found locally in a restricted range.
G4: Apparently secure globally.
G5: Demonstrably secure globally.
G#Q: Taxonomically questionable.
G#T#: Global rank of species and global rank of the described variety or subspecies.
G#G#: Global rank of species uncertain, best described as a range between the two ranks.

Alaska Natural Heritage Program Rare Species State Rankings

S1: Critically imperiled in state because of extreme rarity or because of some factor(s) making it especially vulnerable to extirpation from the state.
S2: Imperiled in state because of rarity or because of some factor(s) making it very vulnerable to extirpation from the state.
S3: Rare or uncommon in the state.
S4: Apparently secure in state, with many occurrences.
S5: Demonstrably secure in state, with many occurrences.
SR#: Reported from the state, but not yet verified.
SP: Occurring in nearby state or province; not yet reported in state, but probably will be encountered with further inventory.
S#S#: State rank of species uncertain, best described as a range between the two ranks.

For this report we included taxa of any Global rank that had a State rank of S2 or lower. In practice this usually equates to a taxon that is known from less than 20 locations within Alaska. Taxa with a State rank of S3 were included if their Global rank was no higher than G3. These are taxa that are usually known from less than 100 locations worldwide.

The taxa and their ranks are:

Taxon	**Rank**	
Arenaria chamissonis Maguire	G3	S3
Arenaria longipedunculata Hulten	G3G4Q	S3
Astragalus nutzotinensis Rouss.	G3G4	S3S4
Carex eburnea Boott	G5	S2S3
Carex franklinii Boott	G3G4Q	S2
Claytonia porsildii Yurtsev	G2G4	S2S4

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Cryptogramma stelleri (Gmel.) Prantl		G5	S2S3
Cypripedium calceolus ssp. *parviflorum* (Salisb.) Hulten		G5T5	S2S3
Erigeron muirii Gray	G2	S2	
Glyceria striata var. *stricta* (Scribn.) Fern.	G5T5Q	S2	
Montia bostockii (Porsild) Welsh		G3	S3
Smelowskia calycina var. *porsildii* Drury & Rollins	G4T3	S2S3	
Stellaria alaskana Hulten		G3	S2S3
Thlaspi arcticum Porsild		G3	S3

An additional twelve taxa are not yet known from the Utility Corridor but have been collected in adjacent or nearby areas with similar habitats. These taxa are treated in Appendix I and could potentially occur within the area considered for this report. Two of these taxa (*Aster yukonensis* and *Mertensia drummondii*) are currently listed as Category 2 candidates for threatened or endangered species listing by the U.S. Fish and Wildlife Service. A third, recently described, species (*Poa hartzii* ssp. *alaskana*) is equally rare.

Aphragmus eschscholtzii Andrz.		G3	S2S3
Aster pygmaeus Lindley		G3	S1S2
Aster yukonensis Cronquist	G2	S1S2	
Carex holostoma Drejer		G3G4	S2
Gastrolychnis triflora (R. Br.) Tolm. & Kozhanch.	G4	S1S2	
Koeleria asiatica Domin		G4	S3
Mertensia drummondii (Lehm.) D. Don		G2	S1S2
Oxytropis kokrinensis A. Pors.		G3	S3
Plantago major L. var. *pilgeri* Domin		G5T2T4Q	S2S3
Poa hartzii R. Br. ssp. *alaskana* R.J. Soreng		G3G4T1	S1
Potamogeton subsibericus Hagstr.		G3	S2
Stellaria umbellata Turcz.		G4	S1S2

Please note that the rankings of all taxa are reviewed periodically and often are changed to reflect new findings and information. We expect that some of the taxa in this report will eventually be found to be more common and that additional rare taxa will be found in the Utility Corridor. For current information on rare plants in the Utility Corridor and their rankings, please contact the Alaska Natural Heritage Program at the University of Alaska, Anchorage.

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INFORMATION NEEDS

While the flora of the Inner Utility Corridor is comparatively well known (by Alaskan standards), it has certainly not been overcollected. The Outer Utility Corridor is much less well known and workers in this area should be encouraged to investigate the flora and to make collections. Stony slopes, outcrops, alpine areas, sand and gravel bars and other naturally disturbed areas should all be examined. These sites are the ones that most frequently have taxa of global rarity. Lakes, streams, marshes and other wetland sites are often undercollected and these areas are frequent sources of range extensions or new state records.

Taxa in Appendix I are not yet known from the area of this report, but are known from nearby locations. These taxa should be sought in the appropriate habitats within the Utility Corridor.

Some of the locations in this report are based on historic collections that have vague or ambiguous directions. The rare plant occurrences based on these historic collections need to be located again and their current status evaluated. Rare plant locations that are more precisely known, should also be periodically monitored to ensure their viability.

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ARENARIA CHAMISSONIS

TAXONOMY:

Scientific name: *Arenaria chamissonis* Maguire
Common name: Matted sandwort
Family: Caryophyllaceae

Taxonomic comments:
There is some confusion over the generic disposition of this taxon, which was originally described as *Cherleria dicranoides* by Chamisso and Schlechtendal in 1826. According to Hulten (1941-1950) it differs from *Cherleria* and *Alsine* (= *Minuartia*) by its capsule which opens with six rather than three teeth. Hulten therefore placed it in the genus *Arenaria* as *A. dicranoides* (Cham. & Schlecht.) Hult. This combination was invalid because of the earlier *A. dicranoides* H.B.K. (Hulten 1967, Maguire 1951), and the plant was renamed *A. chamissonis* by Maguire. Hulten (1941, 1968, 1973), Welsh (1974) and others place this taxon within *Arenaria* based on seed, pollen, and floral morphology, while others place it within the genus *Stellaria* (Tolmatchev 1960-1987, Douglas 1981, Kharkevich 1981, Kartesz 1994). Cytological evidence (2n=26) supports its placement in *Stellaria*, where it becomes *S. Dicranoides* (Cham. & Schlecht.) Fenzl.

RANKING:

Global rank: G3
Global ranking reasons:
A distinctive Beringian endemic of limited distribution and restricted habitat. Although it is being found at an increasing number of sites, it is unlikely to be widespread or common.

State rank: S3
State ranking reasons:
This species has been found at an increasing number of sites within Alaska, but it still has a limited distribution and is generally not abundant.

DISTRIBUTION AND ABUNDANCE:

Range:
Global range comments:
Endemic to eastern Beringia: Alaska, the easternmost tip of Chukotka (Russia), and northwestern Yukon Territory.

State range comments:

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Within Alaska this taxon is known from the Seward Peninsula, the central and western Brooks Range west to Cape Thompson, alpine areas near Goodnews Bay, the Alaska Range and the Ogilvie Mountains.

Abundance:
Global abundance comments:
This taxon is rarely if ever abundant, but it is known from an increasing number of sites.

Habitat:
Dry rocky ridges, screes, outcrops, alpine fellfields, and *Dryas* mats; limestone talus and carbonate rocks (ALA collections, Hulten 1968).

DOCUMENTED OCCURRENCES WITHIN DALTON HIGHWAY UTILITY CORRIDOR

001 GRAYLING LAKE

Quadname: BETTLES D1 66° 58' 47" N 150° 23' 06" W

Township/Range: T25N R13W **Section:** 22

Mapping Precision:
Precision within a one minute radius, approx. 2.0km, of the mapped location

Directions:
Alpine fellfield ridge system above a birch forest, approximately 1 kilometer north of Grayling Lake and west of the Dalton Highway. This is the alpine portion of Site 78-1 (Murray et al. 1979).

General Description:
Dry alpine fellfield on ridge system; associated with other fellfield species including *Douglasia ochotensis* (Murray et al. 1979).

Elevation: 900 Meters

Date Last Observed: 1978-07-16

Specimens: 1978 MURRAY, D.F. 6725. ALA

LITERATURE:
Douglas, G.W., G.W. Argus, H.L. Dickson, and D.F. Brunton. 1981.
Hulten, E. 1941-1950.

Published 08/1995. For Current Information, Please Contact the Alaska Natural Heritage Program in Anchorage.

Hulten, E. 1968.
Hulten, E. 1973.
Kharkevich, S.S., and N.N. Kachura. 1981.
Kartesz, J. 1994.
Maguire, B. 1951.
Murray, D.F., B.M. Murray, R. Lipkin, and A.W. Johnson. 1979.
Tolmatchev, A.I., and B.A. Yurtzev (eds.). 1960-1987.
Welsh, S.L. 1974.

Published 08/1995. For Current Information, Please Contact the Alaska Natural Heritage Program in Anchorage.

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ARENARIA LONGIPEDUNCULATA

TAXONOMY:

Scientific name: *Arenaria longipedunculata* Hulten
Family: Caryophyllaceae

Taxonomic comments:
Hulten (1966, 1968) and Kartesz (1994) consider this to be a distinct western North American taxon, distinguished from *A. humifusa* Wahlenb. of arctic Canada and Europe by its long peduncles and ovate (vs. cylindrical) capsules. Other authors (Porsild and Cody 1980, Welsh 1974) consider them to be synonymous.

RANKING:

Global rank: G3G4Q
Global ranking reasons:
There are approximately 30 locations known for this easily overlooked taxon. Although it is known from a large area, the locations are generally widely scattered.

State rank: S3
State ranking reasons:
Given its similarity to several other small caryophyll taxa that are more frequently collected, the paucity of collections of *A. longipedunculata* suggest its apparent rarity is real.

DISTRIBUTION AND ABUNDANCE:

Range:
Global range comments:
This is a western North American endemic, limited to interior and northern Alaska and the Canadian Rocky Mountains.

State range comments:
Arenaria longipedunculata is known in Alaska from a few widely scattered sites in the Brooks Range, northern Alaska, Seward Peninsula, and Alaska Range.

Abundance:
Global abundance comments:
Based on the sparse and scattered collections, this taxon appears to be uncommon to rare wherever it occurs.

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Habitat:
Moist sand, gravel, frost boils, rock crevices and moist places in the mountains (Hulten 1968, Porsild and Cody 1980, collections at ALA).

DOCUMENTED OCCURRENCES WITHIN DALTON HIGHWAY UTILITY CORRIDOR

001 SUKAKPAK MOUNTAIN

Quadname: CHANDALAR C6 67° 35' 45" N 149° 46' 34" W

Township/Range: T32N R10W **Section:** 16

Mapping Precision:
Precision within a one minute radius, approx. 2.0km, of the mapped location

Directions:
Mile 201 (approximately) of the Dalton Highway (145 miles North of the Yukon River), on the east side of the road. The site is on a gradual slope leading up to the base of the southern end of Sukakpak Mountain, near the access road to an abandoned materials site. Lower portion of Site 22 (Murray et al. 1978).

General Description:
Taiga, mounds and fens (collection label, Murray and Johnson 6335, ALA). Scattered spruce, moist low shrub tundra disturbed by both frost mounds and road construction (pers. obser., C. Parker).

Elevation: 427m

Date Last Observed: 1977-07-18

Specimens: 1977 MURRAY, D.F.; JOHNSON, A.W. 6335. ALA

002 WISEMAN

Quadname: WISEMAN B1 67° 24' 10" N 150° 07' 02" W

Township/Range: T30N R12W **Section:** 25

Mapping Precision:

Published 08/1995. For Current Information, Please Contact the Alaska Natural Heritage Program in Anchorage.

Precision within 10km of the mapped location, or to place name only.

Directions:

Label information for both collections state only Wiseman as the locality. In addition, one label includes "on Middle Fork of the Koyukuk River, about 67 degrees N, 150 degrees W" (Scamman 2243, ALA). It might be assumed both collectors were within the Wiseman quadrangle, but both may have been collecting widely in the Wiseman area.

General Description:

None offered on labels. The region is mountainous with boreal forests on the lower slopes and river valleys, and shrub to fellfield tundra at high elevations.

Date Last Observed: 1940-08

Specimens: 1939 ANDERSON, J.P.; GASSER, G.W. 5985. ALA
1940 SCAMMAN, E. 2248. ALA

LITERATURE:

Hulten, E. 1966.
Hulten, E. 1968.
Kartesz, 1994.
Murray, D.F., B.M. Murray and A.W. Johnson. 1978.
Porsild, A.E., and W.J. Cody. 1980.
Welsh, S.L. 1974.

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ASTRAGALUS NUTZOTINENSIS

TAXONOMY:

Scientific name: *Astragalus nutzotinensis* Rouss.
Family: Fabaceae

Taxonomic comments:
A striking endemic of Alaska, similar in habit to *A. alpinus* and *A. polaris*, but with distinctive pods that become falcate with age.

RANKING:

Global rank: G3G4
Global ranking reasons:
More than 40 locations documented over a moderate sized area, including many remote locations in at least two widely separated mountain ranges. More locations are likely.

State rank: S3S4
State ranking reasons:
At least 30 locations documented, including many remote locations in two widely separated mountain systems (Brooks Range to the north, and Alaska Range, Chugach and Wrangell Mountains to the south). More locations are likely.

DISTRIBUTION AND ABUNDANCE:

Range:
Global range comments:
An endemic of Alaska, extending into southwesternmost Yukon Territory and the northwestern corner of British Columbia.

State range comments:
Mainly in mountains of Southcentral Alaska including the Alaska Range, Chugach, and Wrangell Mountains, disjunct to the Brooks Range.

Abundance:
Global abundance comments:
Estimated to be over 10,000 based on the number of sites and reported abundance at several of them.

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State abundance comments:
Estimated to be thousands based on the number of known sites and its known abundance at several of them.

Habitat:
"Sandy soil, gravel bars, in the mountains to about 1000 meters" (Hulten 1968). Gravel bars, moraine, alpine fellfield, screes, road banks, woodland (ALA collections).

DOCUMENTED OCCURRENCES WITHIN DALTON HIGHWAY UTILITY CORRIDOR

001 MT. HULTEN

Quadname: PHILIP SMITH MOUNTAINS B4 68° 26' 43" N 149° 19' 22" W

Township/Range: T11S R12E **Section:** 33

Mapping Precision:
Precision within a one minute radius, approx. 2.0km, of the mapped location

Directions:
Dalton Highway, north of Fairbanks. Mt. Hulten is a limestone mountain on the east side of the highway, ca. 1 mile north of Pump Station 4 and on the southeast side of Atigun River where it turns northeast into Atigun Gorge. This includes the alpine scree portion of Site 36 (Murray 1982) or Site 40 (Murray 1977).

General Description:
"Limestone scree" (collection label, Murray 9015, ALA). "Limestone outcrops and tundra slopes" (collection label, Murray and Johnson, 6069, ALA). The species is found growing only in active talus on the uppermost slopes above the continuously vegetated zone (pers. obser., C. Parker).

Elevation: 1100m

Date Last Observed: 1986-08-02

Comments:
This locality is less than 0.5 mile outside BLM Pipeline Utility Corridor (PBUC) at a point where the boundary with the Arctic National Wildlife Refuge comes to within 1 mile of the highway. The southern alpine portion of Mt. Hulten is within PBUC and *Astragalus nutzotinensis* would be expected to be found there.

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Specimens: 1976 MURRAY, D.F.; JOHNSON, A.W. 6069. ALA
1986 MURRAY, D.F. 9015. ALA

LITERATURE:

Douglas, G.W., G.W. Argus, H.L. Dickson, and D.F. Brunton. 1981.
Hulten, E. 1941-1950.
Hulten, E. 1967.
Hulten, E. 1968.
Straley, G.B., R.L. Taylor, and G.W. Douglas. 1985.
Welsh, S.L. 1974.

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CAREX EBURNEA

TAXONOMY:

Scientific name: *Carex eburnea* Boott
Family: Cyperaceae

RANKING:

Global rank: G5
Global ranking reasons:
Widespread across Canada and also found in northern U.S. Apparently common in suitable habitat.

State rank: S2S3
State ranking reasons:
Fewer than 20 sites are known in Alaska, but this species is probably undercollected and more sites are likely in appropriate habitat.

DISTRIBUTION AND ABUNDANCE:

Range:
Global range comments:
Restricted to North America, but fairly common and widespread across Canada, extending into the northern U.S. and disjunctly to the southern U.S.

State range comments:
Know from several widely scattered localities in interior and southcentral Alaska.

Abundance:

Global abundance comments:
Apparently common across much of its range in appropriate habitat. Estimate of at least 3,000 to over 10,000 is based on the geographic range of the species.

State abundance comments:
Estimate of 1,000 - 3,000 is based on number of known occurrences (less than 20).

Habitat:

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Dry sand, rocky places, or dry hillsides, preferably on calcareous soil (Hulten 1968, Welsh 1974, Porsild and Cody 1980 describe it as a "woodland species confined mainly to calcareous soils. Collections at ALA from gravel bars, dry terrace, dry exposed limestone ridge, white spruce-*Hypnum* forest.

DOCUMENTED OCCURRENCES WITHIN DALTON HIGHWAY UTILITY CORRIDOR

002 WISEMAN

Quadname: WISEMAN B1 67° 26' 54" N 150° 03' 04" W

Township/Range: T30N R11W **Section:** 05,08

Mapping Precision:
Precision within a one minute radius, approx. 2.0km, of the mapped location

Directions:
Dalton Highway, ca. 2 km northeast of turnoff to Wiseman. The site is in *Populus* stands along the river on the east side of the highway. USFS-INF Extensive Survey Stand 342.

General Description:
"Old river bars. Successional *Populus balsamifera* stands. *Sheperdia canadensis*, *Arctostaphylos rubra*, and seedlings of *Picea glauca* common" (collection label, Foote 3409, ALA).

Elevation: 335m

Date Last Observed: 1977-07-18

Comments:
This locality, as well as the one from the Middle Fork Koyukuk River crossing (Lipkin 80-52), represent a slightly northward range extension for this taxon which is also known from the Serpentine Slide area of the White Mountains and a few widely scattered low-elevation Alaska Range sites. The locality descriptions suggest the two sites are within 2 miles of each other.

Specimens: 1977 FOOTE, M. JOAN. 3409. ALA

003 WISEMAN-MIDDLE FORK

Quadname: WISEMAN B1 67° 26' 29" N 150° 05' 00" W

Published 08/1995. For Current Information, Please Contact the Alaska Natural Heritage Program in Anchorage.

Township/Range: T30N R11W **Section:** 07

Mapping Precision:
Precision within a one minute radius, approx. 2.0km, of the mapped location

Directions:
Dalton Highway, by the Middle Fork Koyukuk River crossing north of Wiseman, near side road to Wiseman.

General Description:
"Floodplain, vegetated gravel bar with *Salix alaxensis, S. glauca, Sheperdia, Aster sibiricus, Zygadenus, Alnus, Betula, Dryas drummondii, D. integrifolia, Epilobium angustifolium, Antennaria pulcherrima, Picea glauca, Populus balsamifera, Pentaphylloides floribunda, Hedysarum mackenzii, Juniperus communis, Arctostaphylos uva-ursi, Arctous alpina*" (R. Lipkin, pers. comm.).

Elevation: 365m

Date Last Observed: 1980-07-09

Comments:
This locality, as well as the one from the USFS-INF Extensive Survey Stand, represent a slightly northward range extension for this taxon.

Specimens: 1980 LIPKIN, R. 80-52. ALA

LITERATURE:
Hulten, E. 1941-1950.
Hulten, E. 1968.
Juday, G.P. 1989.
Porsild, A.E., and W.J. Cody. 1980.
Welsh, S.L. 1974.

Published 08/1995. For Current Information, Please Contact the Alaska Natural Heritage Program in Anchorage.

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CAREX FRANKLINII

TAXONOMY:

Scientific name: *Carex franklinii* Boott
Common name: Franklin sedge
Family: Cyperaceae

Taxonomic comments:
This taxon is part of the section *Frigidae* and is closely related to *Carex petricosa* Dewey of the Rocky Mountains. A recently published treatment of this complex (Ball and Zoladz 1994) places *C. franklinii* within *Carex petricosa* based on multivariate analyses of morphology. It had been recognized as a distinct species by Kartesz (1994), Hulten (1968), and Porsild & Cody (1980), and treated as a synonym of *C. petricosa* by Welsh (1974). Differences between the two taxa are discussed by Gjaerevoll (1958) and by Hulten (1967) who finds the difference between the two in Alaska to be obscure.

RANKING:

Global rank: G3G4Q
Global ranking reasons:
Wide geographic range of species; reportedly predominant in some places. Range may include populations in eastern Canada and Asia. Perhaps best treated as a form of the more widespread *C. petricosa* Dewey. Sixteen element occurrences known from Alaska and Western Canada.

State rank: S2
State ranking reasons:
Only four sites are known in Alaska, but the species is reported to be abundant on White Mountain Limestone Ridge. Additional inventory may lower rank.

DISTRIBUTION AND ABUNDANCE:

Range:
Global range comments:
If the taxon is defined narrowly, sensu Porsild 1980, it is, a "Northern cordilleran foothill species, north to Mackenzie Mts., Y.T. and Alaska". If taken in a broader sense to include *C. misandroides,* and *C. macrogyna,* (as in Hulten 1968), its range would also include eastern Canada and sites in Asia.

State range comments:
Known from Brooks Range, Toolik R., Bettles R. and White Mountains.

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Abundance:

Global abundance comments:

Gjaerevoll (1958) describes as one of the most conspicuous species in the uppermost part of the spruce forest and about 200m above timberline.

State abundance comments:

Estimate. Gjaerevoll (1958) describes it as one of the most conspicuous species from the uppermost part of the spruce forest to 200m above timberline in the White Mountains.

Habitat:

Steep slopes, up to 4,000 ft. elevation; open grassy flats and open gravelly limestone flats (ALA collections). "Alpine slopes, preferably on calcareous soil" (Hulten 1968). Calcareous sandy river banks and alluvial flats (Moss 1959, Porsild 1980).

DOCUMENTED OCCURRENCES WITHIN DALTON HIGHWAY UTILITY CORRIDOR

002 BETTLES RIVER

Quadname: CHANDALAR

Mapping Precision:

Precision within 10km of the mapped location, or to place name only.

Directions:

"Bettles River, 20 miles NE of Wiseman" (Raymond 1952, Hulten 1967) is the only description known.

General Description:

The region is mountainous with forested broad river valleys and lower slopes, and shrub to alpine tundra at higher elevations. No specific site description is known.

Date Last Observed: 1952-Pre

Specimens: 1952 JORDAL. 2271. ALA

LITERATURE:

Ball, P. W. and M. Zoladz. 1994.

Published 08/1995. For Current Information, Please Contact the Alaska Natural Heritage Program in Anchorage.

Hulten, E. 1941-1950.
Hulten, E. 1967.
Hulten, E. 1968.
Gjaerevoll, O. 1958.
Kartesz, J. 1994.
Moss, E. H. 1959.
Porsild, A.E., and W.J. Cody. 1980.
Raymond, M. 1952.
Welsh, S.L. 1974.

Published 08/1995. For Current Information, Please Contact the Alaska Natural Heritage Program in Anchorage.

Published 08/1995. For Current Information, Please Contact the Alaska Natural Heritage Program in Anchorage.

CLAYTONIA PORSILDII

TAXONOMY:

Scientific name: *Claytonia porsildii* Yurtsev
Family: Portulacaceae

Taxonomic comments:
The taxonomy of this recently named spring beauty remains unclear. Porsild (1975) originally referred collections to *Claytonia arctica* Adams, and Murray et al. (1978) referred them to *Claytonia* cf. *arctica* Adams. Comparison with material of *C. arctica* from Russia and the Aleutian Islands show this is not the same taxon, but shows affinities instead to *C. sarmentosa* and *C. scammaniana*. It is imperfectly distinguished from the later taxa by its well-developed fleshy taproot and multiple flowers (2-4 (5) per stem). Yurtsev (1980) described it as a new taxon, but distinguished it principally from *C. arctica*. Its exact range remains unclear and depends on how the taxon is circumscribed.

RANKING:

Global rank: G2G4
Global ranking reasons:
The rank of this taxon is dependant upon resolution of its taxonomy.

State rank: S2S4
State ranking reasons:
The rank of this taxon will depend upon clarification of its taxonomy.

DISTRIBUTION AND ABUNDANCE:

Range:
Global range comments:
The range of this species is unclear until its taxonomy is resolved, but it is known from at least several sites in northern Alaska as well as the Ogilvie Mountains, Yukon Terr. If it is broadly defined it would include additional sites in interior Alaska as well.

State range comments:
Within Alaska, this taxon is documented from several sites in the Brooks Range, as well as Cape Lisburne. If broadly defined it could also include sites in the Alaska Range, White Mountains, and southwest Alaska.

Abundance:

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Global abundance comments:
This taxon is known to be abundant at some sites, but any statements on abundance are preliminary until its taxonomy is resolved.

Habitat:
Seasonally wet serpentine barrens, wet meadows, seepage areas and marshy sites (ALA collections).

DOCUMENTED OCCURRENCES WITHIN DALTON HIGHWAY UTILITY CORRIDOR

001 GALBRAITH LAKE-STEERE RIDGE

Quadname: PHILIP SMITH MOUNTAINS C5 68° 31' 09" N 149° 27' 12" W

Township/Range: T11S R11E **Section:** 01

Mapping Precision:
Precision within a one minute radius, approx. 2.0km, of the mapped location

Directions:
Mile 221 of the Dalton Highway, on a west-facing mountain slope northeast of Galbraith Lake. The site is east of the road and just north of Steere Ridge. Site 77-8 (Murray et al. 1978).

General Description:
Margin of rivulet in mineral soil (Murray et al. 1978) "Alpine tundra, W-facing slope and summit. Prostrate shrub-subshrub meadow and fellfield, predominately *Dryas*" (collection label, Murray and Johnson 6366, 7007, ALA). "Growing along small stream, with moss in mud. Moist to wet tundra on vegetated talus" (collection label, Lipkin 80-87, ALA).

Elevation: 920m

Date Last Observed: 1980-07-12

Comments:
The coordinates on the Lipkin specimen are 6834N, 14930W, slightly NW of the Murray-Johnson specimens, but are included within this occurrence. Lipkin was given directions to the original locality by Murray and subsequently found this collection (Murray, pers. comm.).

Specimens: 1977 MURRAY, D.F.; JOHNSON, A.W. 6366. ALA
1979 MURRAY, D.F.; JOHNSON, A.W. 7007. ALA
1980 LIPKIN, R. 80-87. ALA

Published 08/1995. For Current Information, Please Contact the Alaska Natural Heritage Program in Anchorage.

002 GALBRAITH LAKE

Quadname: PHILIP SMITH MOUNTAINS B4 68° 25' N 149° 25' W

Mapping Precision:
Precision within 10km of the mapped location, or to place name only.

Directions:
Dalton Highway, vicinity of Galbraith Lake. The label coordinates are for the general lake area and the collector did not furnish specific site information. This occurrence may be very close to, or essentially the same as, the Murray and Johnson occurrence.

General Description:
"Well-drained W-facing slope. Not too steep. Area is mossy." (collection label, Anderson 0067).

Elevation: 975m

Date Last Observed: 1970-07-13

Specimens: 1970 ANDERSON, R. 0067. ALA

003 ATIGUN RIVER VALLEY

Quadname: PHILIP SMITH MOUNTAINS A5 68° 15' N 149° 24' W

Mapping Precision:
Precision within 10km of the mapped location, or to place name only.

Directions:
Dalton Highway, east of road. The exact location of this collection is uncertain, however it is south of the Galbraith Lake occurrences.

General Description:
No label description is given. Region is mountainous with tundra slopes and gravelly stream channels.

Date Last Observed: 1981-07-18

Specimens:1981 KHOKHRYAKOV, A.P.; YURTSEV, B.A.; MURRAY, D.F. 6557. ALA

LITERATURE:

Published 08/1995. For Current Information, Please Contact the Alaska Natural Heritage Program in Anchorage.

Murray, D.F., B.M. Murray and A.W. Johnson. 1978.
Porsild, A.E. 1975.
Yurtsev, B.A. 1980.

Published 08/1995. For Current Information, Please Contact the Alaska Natural Heritage Program in Anchorage.

CRYPTOGRAMMA STELLERI

TAXONOMY:

Scientific name: *Cryptogramma stelleri* (Gmel.) Prantl
Common name: Fragile rockbrake
Family: Adiantaceae

RANKING:

Global rank: G5
Global ranking reasons:
This species is extremely widespread, with a large number of locations, although its abundance may not be great at any single site.

State rank: S2S3
State ranking reasons:
There are few well-documented locations in Alaska and the species seems to be rare where it occurs.

DISTRIBUTION AND ABUNDANCE:

Range:
Global range comments:
Nearly circumpolar. Northern North America, Europe, Asia. Seward Peninsula east through central AK to westcentral Yukon and the Mackenzie, disjunctly eastward to Alberta and southern mountains (Welsh 1974, Porsild and Cody 1980).

State range comments:
Known from the Seward Peninsula east through central Alaska, and northernmost Southeast Alaska. There are few collections of this fern from Alaska, but it may easily be overlooked given its small delicate habit.

Abundance:
Global abundance comments:
Usually rare and scattered (Hulten, 1968), very local and restricted to limestone outcrops (Porsild and Cody, 1980).

State abundance comments:
This fern is usually reported as rare or very rare and scattered (Hulten 1968, Porsild and Cody 1980).

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Habitat:
"Crevices in calcareous rocks in shaded localities with dripping water" (Hulten 1968). Also known from hot springs, wooded hillsides, under alder, moist moss (ALA collections).

DOCUMENTED OCCURRENCES WITHIN DALTON HIGHWAY UTILITY CORRIDOR

003 WIEHL MOUNTAIN

Quadname: CHANDALAR C6 67° 38' 25" N 149° 41' 39" W

Township/Range: T33N R10W **Section:** 36

Mapping Precision:
Precision within a one minute radius, approx. 2.0km, of the mapped location

Directions:
Northwestern flank of Wiehl Mountain, on steep west facing slopes ca. 1km east of Dalton Highway and north of the Bettles River. Site 24 (Murray et al. 1977).

General Description:
"Irrigated W-facing limestone cliff" (collection label, Murray and Johnson 6278, ALA). "Limestone ledges at base of small waterfall" (Murray et al. 1977)

Elevation: 763m

Date Last Observed: 1976-07-27

Specimens: 1976 MURRAY, D.F.; JOHNSON, A.W. 6278. ALA

004 COLDFOOT

Quadname: WISEMAN 67° 15' N 150° 11' W

Mapping Precision:
Precision within 10km of the mapped location, or to place name only.

Directions:
Literature reference (Hulten 1941-1950) cites location only as "Coldfoot". Coldfoot is on the Middle

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Fork of the Koyukuk River, approximately 18 km south of Wiseman.

Date Last Observed: 1908

Comments:
Hulten (1940) notes that collector Charles Heideman was in the Coldfoot area in 1908.

Specimens: 1908 HEIDEMAN. 262. US

LITERATURE:
Hulten, E. 1941-1950.
Hulten, E. 1968.
Murray, D.F., B.M. Murray and A.W. Johnson. 1977
Porsild, A.E., and W.J. Cody. 1980.
Welsh, S.L. 1974.

Published 08/1995. For Current Information, Please Contact the Alaska Natural Heritage Program in Anchorage.

Published 08/1995. For Current Information, Please Contact the Alaska Natural Heritage Program in Anchorage.

CYPRIPEDIUM CALCEOLUS ssp. *PARVIFLORUM*

TAXONOMY:

Scientific name: *Cypripedium calceolus* ssp. *parviflorum* (Salisb.) Hulten
Common name: Yellow ladyslipper
Family: Orchidaceae

Taxonomic comments:
Kartesz (1994) considers this ladyslipper to be a distinct species, *C. parviflorum* Salisb., while Welsh (1974) treats it as *C. calceolus* var. *pubescens* (Willd.) Correll. This group is being revised by C. Sheviak at the New York State Museum, Albany, and modifications may be forthcoming in both its taxonomy and nomenclature.

RANKING:

Global rank: G5T5
Global ranking reasons:
Widespread in North America, apparently with thousands of occurrences. There remains some question about the taxonomy of this species complex.

State rank: S2S3
State ranking reasons:
Presently known from at least 6-8 sites over a wide geographic area. Likely in more sites in appropriate habitat, but this is a distinctive species and not likely to be overlooked.

DISTRIBUTION AND ABUNDANCE:

Range:
Global range comments:
Alaska to Nova Scotia, south to Nebraska and Georgia. This is a widespread species complex whose taxonomy is being revised. The global range of the subspecies found in Alaska cannot now be determined with confidence from the literature.

State range comments:
Known from the south side of the Brooks Range, the Ogilvie Mountains near the Black River and Glacier Bay in Southeast Alaska.

Abundance:
Global abundance comments:

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Common to occasional in appropriate habitat.

State abundance comments:
Not well known, but not obviously abundant; several locations had less than 100 plants.

Habitat:
Open woods and moist to wet areas, often calcareous.

DOCUMENTED OCCURRENCES WITHIN DALTON HIGHWAY UTILITY CORRIDOR

001 BETTLES RIVER

Quadname: CHANDALAR C6 67° 36' 10" N 149° 37' 32" W

Township/Range: T32N R9W **Section:** 18

Mapping Precision:
Precision within a one minute radius, approx. 2.0km, of the mapped location

Directions:
Bettles River area, 5 miles from Middle Fork Koyukuk River, east of Sukakpak Mountain, ca. 20 miles northeast of Wiseman (Brockman s.n., ALA).

General Description:
At well-drained, somewhat rocky base of limestone knoll; thin spruce woods (Collection label, Brockman, ALA).

Date Last Observed: 1962-06-26

Comments:
This location may need to be redetermined based on the label description; the coordinates on the label are noted as approximate. This collection was the first ALA record of this taxon for Alaska.

Specimens: 1962 BROCKMAN, R. S.N. ALA

LITERATURE:
Hulten, E. 1941-1950.
Hulten, E. 1967.
Hulten, E. 1968.
Kartesz, J. 1994.

Published 08/1995. For Current Information, Please Contact the Alaska Natural Heritage Program in Anchorage.

Porsild, A.E. 1951.
Welsh, S.L. 1974.

Published 08/1995. For Current Information, Please Contact the Alaska Natural Heritage Program in Anchorage.

ERIGERON MUIRII

TAXONOMY:

Scientific name: *Erigeron muirii* Gray
Family: Asteraceae

Taxonomic comments:
A distinctive Beringian species, endemic to northern Alaska. It is most closely related to *E. caespitosus* Nuttall, *E. hyperboreus* E.L. Greene and *E. grandiflorus* W.J. Hooker (Murray 1980).

RANKING:

Global rank: G2
Global ranking reasons:
A distinctive species that is known from less than 15 locations. If future surveys reveal additional populations, this rank should be revised.

State rank: S2
State ranking reasons:
A distinctive species that is known from less than 15 locations. If future surveys reveal additional populations, this rank should be revised.

DISTRIBUTION AND ABUNDANCE:

Range:
Global range comments:
Endemic to northern Alaska. An early report of this taxon from Wrangell Island, Russia, (Hulten 1941-1950) has not been confirmed and is probably based on a mislabeled specimen from Cape Thompson, Alaska. Reports from Herschel Island, Canada, are based on more pubescent forms of *E. grandiflorus* (Murray, 1980).

State range comments:
Known from sites in the eastern and central Brooks Range as well as Cape Thompson in northwest Alaska.

Abundance:
Global abundance comments:
Reported as common at several sites with 500 to 1,000 individuals.

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Habitat:
Dry, south-facing fellfields, bluffs, terraces, alluvial fans, gravels and sandstone outcrops. Usually in sparsely vegetated communities.

DOCUMENTED OCCURRENCES WITHIN DALTON HIGHWAY UTILITY CORRIDOR

002 SAGWON UPLANDS

Quadname: SAGAVANIRKTOK B3 69° 25' 58" N 148° 36' 57" W

Township/Range: T01N R14E **Section:** 26

Mapping Precision:
Precision within a one minute radius, approx. 2.0km, of the mapped location

Directions:
Vicinity of Sagwon, off the Dalton Highway from Fairbanks to Prudhoe Bay.

General Description:
'Bluffs and ancient river terraces, Dry gravel barrens' (Murray and Johnson 6497,ALA)

Elevation: 300 Meters

Date Last Observed: 1977-07-24

Specimens: 1976 MURRAY, D.F.; JOHNSON, A.W. 6180. ALA
1977 MURRAY, D.F.; JOHNSON, A.W. 6497. ALA

006 IMNAVAIT CREEK, R4D SITE

Quadname: PHILIP SMITH MOUNTAINS C4 68° 37' 12" N 149° 18' 32" W

Township/Range: T09S R12E **Section:** 33,34

Mapping Precision:
Precision within a one minute radius, approx. 2.0km, of the mapped location

Directions:

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East side of the Dalton Highway, in vicinity of MS117, near Toolik Lake. NW-SE trending drainage with adjacent ridges. Dept. of Energy R4D research site.

General Description:

Dry *Dryas octopetala, Kobresia myosuroides, Anemone drummondii, Smelowskia calycina, Thamnolia subuliformis, Cetraria spp., Cornicularia divergens* prostrate-shrub, forb, tundra, on exposed sandstone outcrop, south-facing slope (Walker et al. 1987).

Elevation: 948 Meters

Date Last Observed: 1987-07-05

Specimens:
1985 WALKER, D.A. 85-98. ALA
1986 MURRAY, D.F. 8986. ALA
1986 MURRAY, D.F. 8986. ALA
1987 WALKER, D.A.; LEDERER, N. 87-2. ALA

LITERATURE:

Dawe, J.C., and D.F. Murray. 1981.
Hulten, E. 1941-1950.
Hulten, E. 1967.
Hulten, E. 1968.
Murray, D.F. 1980.
Murray, D.F. and R. Lipkin. 1987.
Walker, D.A., P.J. Webber, N.D. Lederer, and M.D. Walker. 1987.
Walker, D.A., E. Binnian, B.M. Evans, N.D. Lederer, E. Nordstrand, and P.J. Webber. 1989.
Welsh, S.L. 1974.
Wiggins, I.L., and J.H. Thomas. 1962.

Published 08/1995. For Current Information, Please Contact the Alaska Natural Heritage Program in Anchorage.

Published 08/1995. For Current Information, Please Contact the Alaska Natural Heritage Program in Anchorage.

GLYCERIA STRIATA var. *STRICTA*

TAXONOMY:

Scientific name: *Glyceria striata* var. *stricta* (Scribn.) Fern.
Common name: Fowl mannagrass
Family: Poaceae

Taxonomic comments:
Although questions remain about the taxonomy of the species as a whole, this is the only representative of the complex in Alaska and the Yukon.

RANKING:

Global rank: G5T5Q
Global ranking reasons:
Widespread and occasional in much of northern North America, with thousands of occurrences. A poorly defined variety.

State rank: S2
State ranking reasons:
Uncommon to rare, with fewer than 20 documented occurrences.

DISTRIBUTION AND ABUNDANCE:

Range:
Global range comments:
Widespread in continental, boreal, North America. The Alaskan locations represent a fragmented western extension of this broad range.

State range comments:
Limited to isolated populations near two hot springs in interior Alaska, and several populations in coastal southeastern and southcentral Alaska.

Abundance:
Global abundance comments:
Common in appropriate habitat.

State abundance comments:

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Uncommon; known from less than 8 locations.

Habitat:
Wet areas of marshes, meadows, and pond margins. Sandy beaches, tidal flats, and hot springs (ALA collections).

DOCUMENTED OCCURRENCES WITHIN DALTON HIGHWAY UTILITY CORRIDOR

006 KANUTI HOT SPRINGS

Quadname: BETTLES B2 66° 20' 37" N 150° 50' 19" W

Township/Range: T18N R15W **Section:** 31

Mapping Precision:
Precision within a one minute radius, approx. 2.0km, of the mapped location

Directions:
Kanuti Hot Springs lies along the Kanuti River at the southwest base of Caribou Mountain, west of the Dalton Highway between Finger Mountain and Old Man Camp.

General Description:
The area is "generally boggy with areas of sandy and gravelly soil. Trees include white spruce, black spruce, aspen, white birch and alder" (Keller 1987).

Elevation: 300 Meters

Date Last Observed: 1987-06-29

Comments:
This site was visited briefly by Sue Keller and Larry Knapman in June 1987. Several moderate range extensions were found and collected, including this taxon (Keller 1987)

Specimens: 1987 KELLER, S.; KNAPMAN, L. 1365. ALA

LITERATURE:
Hitchcock, C.L., A. Cronquist, M. Ownby, and J.W. Thomson. 1955-1969.
Hulten, E. 1941-1950.
Hulten, E. 1968.
Keller, S. 1987.

Published 08/1995. For Current Information, Please Contact the Alaska Natural Heritage Program in Anchorage.

Murray, D.F., B.M. Murray, R. Lipkin, and A.W. Johnson. 1979
Porsild, A.E., and W.J. Cody. 1980.
Welsh, S.L. 1974.

Published 08/1995. For Current Information, Please Contact the Alaska Natural Heritage Program in Anchorage.

MONTIA BOSTOCKII

TAXONOMY:

Scientific name: *Montia bostockii* (Porsild) Welsh
Common name: Bostock's miner's-lettuce
Family: Portulacaceae

Taxonomic comments:
This taxon is closely related to *M. vassilievii* (Kuzen.) J. McNeill of eastern Asia, and has been combined with that taxon by Hulten (1973). Yurtsev and others maintain them as distinct taxa, distinguishing *M. bostockii* by its petiolate leaves with narrowly oblanceolate blades (not sublinear ones), by its scarcely dilated sheaths, and by its pink (rather than white) petals (Yurtsev, in litt.). Also treated within *Claytonia* as *C. bostockii* Porsildii.

Easily distinguished by its growth habit of long, leafy, stolons from any other member of the *Portulacaceae* in Alaska.

RANKING:

Global rank: G3
Global ranking reasons:
Almost certainly to be found at more than 20 locations.

State rank: S3
State ranking reasons:
Although not yet documented from more than 20 locations, it has been found at an increasing number of sites and almost certainly will be found at additional sites.

DISTRIBUTION AND ABUNDANCE:

Range:
Global range comments:
An endemic of east Beringia, known from Alaska and southwestern Yukon Territory.

State range comments:
Known from four disjunct areas in Alaska: Toolik Lake in the central Brooks Range, Wrangell Mountains, Tetlin Hills, and the Boundary area.

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Abundance:
Global abundance comments:
Described as locally abundant at several sites.

State abundance comments:
Noted to be locally abundant at several sites.

Habitat:
Wet meadows on ridge tops, alpine slopes and by lake shores, as well as frost boils, and wet ridge crest gravels (ALA collections; Hulten 1968).

DOCUMENTED OCCURRENCES WITHIN DALTON HIGHWAY UTILITY CORRIDOR

002 TOOLIK LAKE

Quadname: PHILIP SMITH MOUNTAINS C5 68° 38' 19" N 149° 36' 33" W

Township/Range: T9S R11E **Section:** 29

Mapping Precision:
Precision within a one minute radius, approx. 2.0km, of the mapped location

Directions:
Toolik Lake is located in the foothills of the Brooks Range, off the Dalton Highway. The site is on the north shore of Toolik Lake on the peninsula that juts toward the center of the lake.

General Description:
Growing in rich vegetation mats on deep moist soil close to lake, with mosses, forbs and low shrubs (Murray et al. 1979) "Moist, minerotropic tundra" (collection label, Walker 88-34A, ALA).

Elevation: 700 Meters

Date Last Observed: 1988-07-10

Specimens: 1978 JORGENSON, T. S.N. ALA
1979 MURRAY, D.F.; JOHNSON, A.W. 7002. ALA
1980 LIPKIN, R. 80-90. ALA
1981 KHOKHRYAKOV, A.P.; YURTSEV, B.A.; MURRAY, D.F. 6652. ALA
1988 WALKER, D.A. 88-34. ALA

Published 08/1995. For Current Information, Please Contact the Alaska Natural Heritage Program in Anchorage.

LITERATURE:

Douglas, G.W. 1991.
Hulten, E. 1941-1950.
Hulten, E. 1968.
Hulten, E. 1973.
McNeill, J., and J.N. Findlay. 1971.
Kartesz, J.T. 1989.

Published 08/1995. For Current Information, Please Contact the Alaska Natural Heritage Program in Anchorage.

Published 08/1995. For Current Information, Please Contact the Alaska Natural Heritage Program in Anchorage.

SMELOWSKIA CALYCINA var. *PORSILDII*

TAXONOMY:

Scientific name: *Smelowskia calycina* var. *porsildii* Drury & Rollins
Family: Brassicaceae

Taxonomic comments:
Rollins (1993) distinguishes this variety by its linear to narrow spatulate leaves, petioles longer than blades, and pedicels ascending at an angle of less than 60 degrees from the stem. Considerable variation is seen in these three characters in collections at ALA, and not all specimens can be clearly placed into one of the three varieties (sensu Rollins 1993) found in Alaska. Treated also by other authors as: *S. porsildii* (Drury & Rollins) Jurtsev (pro parte); *S. calycina* ssp. *integrifolia* (Seem.) Hulten var. *porsildii* (Drury and Rollins) Hulten; and *S. jurtzevii* Veliczkin.

RANKING:

Global rank: G4T3
Global ranking reasons:
Known from scattered sites throughout the range of *S. calycina* s. lat., and thus possibly more common.

State rank: S2S3
State ranking reasons:
Known only from scattered sites, but possibly more common.

DISTRIBUTION AND ABUNDANCE:

Range:
Global range comments:
Known from northern, western, and interior Alaska, Yukon Territory, and eastern Chukotka.

State range comments:
The documented occurrences of this variety are found scattered in northern, interior, and western Alaska; throughout the range of *S. calycina* s. lat.

Abundance:
Global abundance comments:
Unknown; presumably at least thousands.

Published 08/1995. For Current Information, Please Contact the Alaska Natural Heritage Program in Anchorage.

State abundance comments:
Unknown; presumably thousands.

Habitat:
Dry upland fellfield, scree, rocky alpine ridge (ALA collections). Gravelly beaches, alluvial fans, gravelly slopes, talus slopes (Rollins 1993).

DOCUMENTED OCCURRENCES WITHIN DALTON HIGHWAY UTILITY CORRIDOR

001 INMAVAIT CREEK, R4D SITE

Quadname: PHILIP SMITH MOUNTAINS C4 68° 37' 12" N 149° 18' 32" W

Township/Range: T09S R12E **Section:** 33,34

Mapping Precision:
Precision within a one minute radius, approx. 2.0km, of the mapped location

Directions:
Dalton Highway, east side of highway in vicinity of MS117. Northwest-southeast trending drainage with adjacent ridges.

General Description:
"Dry, rocky slopes" (collection label, Murray 8988, ALA).

Elevation: 900m

Date Last Observed: 1986-07-30

Specimens: 1986 MURRAY, D.F. 8988. ALA

002 NE OF GALBRAITH LAKE.

Quadname: PHILIP SMITH MOUNTAINS B5 68° 29' 14" N 149° 24' 35" W

Township/Range: T11S R12E **Section:** 18

Mapping Precision:

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Precision within a one minute radius, approx. 2.0km, of the mapped location

Directions:
Dalton Highway, on a steep mountain slope northeast of Galbraith Lake, east of highway. Site 43 (Murray et al. 1977).

General Description:
"Tundra slopes and conglomerate outcrops" (collection label, Murray and Johnson 6125, ALA).

Elevation: 915m

Date Last Observed: 1976-07-20

Specimens: 1976 MURRAY, D.F.; JOHNSON, A.W. 6125. ALA

003 N OF GALBRAITH LAKE.

Quadname: PHILIP SMITH MOUNTAINS C5 68° 31' 09" N 149° 27' 12" W

Township/Range: T11S R11E **Section:** 01

Mapping Precision:
Precision within a one minute radius, approx. 2.0km, of the mapped location

Directions:
Dalton Highway, gentle slopes ca. 2 miles north of north end of Galbraith Lake, Site 77-8 (Murray et al. 1978).

General Description:
"Alpine tundra,..summit fellfield" (collection label, Murray and Johnson 6367, ALA).

Elevation: 920m

Date Last Observed: 1977-07-19

Comments:
This occurrence is approximately 4 miles north of that documented by the Murray and Johnson 6125 collection (Occurrence #1, NE of Galbraith Lake). Two additional ALA collections are from Slope Mountain, ca. 25 miles N of this locality.

Specimens: 1977 MURRAY, D.F.; JOHNSON, A.W. 6367. ALA

Published 08/1995. For Current Information, Please Contact the Alaska Natural Heritage Program in Anchorage.

LITERATURE:

Hulten, E. 1968.
Murray, D.F., B.M. Murray and A.W. Johnson. 1977.
Murray, D.F., B.M. Murray and A.W. Johnson. 1978.
Rollins, R.C. 1993.

Published 08/1995. For Current Information, Please Contact the Alaska Natural Heritage Program in Anchorage.

STELLARIA ALASKANA

TAXONOMY:

Scientific name: *Stellaria alaskana* Hulten
Common name: Alaska starwort
Family: Caryophyllaceae

Taxonomic comments:
Described in Hulten, 1941 as differing from *Stellaria longipes* (s. lat.) "in its large flowers over 1 cm in diameter, in the broad carnose leaves and in the petals only as long as or shorter than the acuminate petals. It resembles *S. ruscifolia* but differs from that species in having large scarious bracts." Accepted by Kartesz (1994) as a distinct species.

RANKING:

Global rank: G3
Global ranking reasons:
An interesting endemic, but almost certainly known from more than 20 locations. Future collections could further lower this rank.

State rank: S2S3
State ranking reasons:
An endemic with few documented locations, but easily overlooked and possibly undercollected in the high alpine screes where it is often found.

DISTRIBUTION AND ABUNDANCE:

Range:
Global range comments:
Alpine sites in interior Alaska to southwestern Yukon Territory and northern Southeast Alaska.

State range comments:
Found in the central Alaska Range, south and east across the Wrangell Mountains and possibly occurring in the White Pass area of northern Southeast Alaska. Also known from isolated occurrences in Brooks Range.

Abundance:
Global abundance comments:
Unknown, probably in thousands.

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State abundance comments:
Reported as fairly common in Kluane region (D. Murray, pers. comm.); otherwise unknown.

Habitat:
Rocky alpine, scree, moraine, ridge tops, dry gravels (ALA collections). Stony slopes in the mountains, above 1000 m (Hulten 1968).

DOCUMENTED OCCURRENCES WITHIN DALTON HIGHWAY UTILITY CORRIDOR

001 ATIGUN PASS

Quadname: PHILIP SMITH MOUNTAINS A5 68° 07' 36" N 149° 29' 25 W

Township/Range: T15S R11E **Section:** 24

Mapping Precision:
Precision within a one minute radius, approx. 2.0km, of the mapped location

Directions:
Dalton Highway, Atigun Pass, at the highest point on the highway. In the cirque area east of the road.

General Description:
"Alpine tundra and rocky slopes" (collection label, Parker and Murray 2215, ALA).

Elevation: 1280m

Date Last Observed: 1989-08-05

Comments:
The Parker-Murray specimen was collected at the summit of Atigun Pass. A Murray specimen, cited below, was collected 1.5 miles N of the pass but is considered within this occurrence. The additional label data from that specimen is: Philip Smith Mountains A5, 6809N, 14926W, (T15S, R12E, Sect. 7) 1280 m., shrub-grass-sedge-forb tundra. Site 36 (76-36). 4 Aug 1982. These together with the Wiseman collection represent a considerable northward range extension for this taxon.

Specimens: 1982 MURRAY, D.F. 8587. ALA
1989 PARKER, C.; MURRAY, D.F. 2215. ALA

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002 WISEMAN

Quadname: WISEMAN

Mapping Precision: Unmappable

Directions: "Wiseman" is only information on label.

General Description:
"Alpine" (collection label, Anderson and Gasser 5887, ALA). The region is mountainous with boreal forests on the lower slopes and river valleys, and shrub to fellfield tundra at high elevations.

Date Last Observed: 1939-08-01

Comments:
The area immediately around the village of Wiseman is not alpine, we must assume the collectors traveled widely in the area and may have gone outside the PBUC (BLM Pipeline Utility Corridor) boundaries.

Specimens: 1939 ANDERSON, J.P.; GASSER, G.W. 5887. ALA

LITERATURE:
Hulten, E. 1941-1950.
Hulten, E. 1968.
Kartesz, J. 1994.
Welsh, S.L. 1974.

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THLASPI ARCTICUM

TAXONOMY:

Scientific name: *Thlaspi arcticum* Porsild
Common name: Arctic pennycress
Family: Brassicaceae

Taxonomic comments:
A member of a complex of Asian and North American species which includes *T. cochleariforme* DC, *T. kamtchaticum* Karavaev, *T. montanum* L., *T. exauriculatum* Komarov, and *T. japonicum* Boiss. Holmgren (1971) and Murray (1988) recognize this taxon at the species level (as does Kartez, 1994), distinguished by its wingless silicles and styles less than 1 mm long.

Easily identified in fruit by its distinctive club-shaped fruits.

RANKING:

Global rank: G3
Global ranking reasons:
This easily overlooked species is being found at an increasing number of sites, although it is still usually found in small populations or as scattered individuals.

State rank: S3
State ranking reasons:
This easily overlooked species is being found at an increasing number of sites, although it is still usually found in small populations or as scattered individuals. Oil development in Arctic National Wildlife Refuge could endanger some of the only known large populations.

DISTRIBUTION AND ABUNDANCE:

Range:
Global range comments:
Found on the Arctic slope of Alaska south to northern southeast Alaska and southwest Yukon Territory; east to Victoria Island, Canada, west to northeastern Russia.

State range comments:
Known from (usually) widely scattered sites on the Arctic slope, central Alaska Range, Chugach Mountains, Kenai Peninsula, Kagati L., Wood-Tikchik Lakes, and northern

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Southeast Alaska.

Abundance:
Global abundance comments:
Often occurring in small populations. Most locations outside of ANWR are of small populations or isolated individuals and few large populations are known. It is, however, a very early flowering species and easily overlooked later in the season.

State abundance comments:
Most locations outside of ANWR consist of small populations or isolated individuals; few large populations are known.

Habitat:
"Well-drained sites on alpine slopes, dry ridges, and especially in the sands and gravels of low river terraces and on the active flood plain" (Murray and Lipkin, 1987).

DOCUMENTED OCCURRENCES WITHIN DALTON HIGHWAY UTILITY CORRIDOR

007 KANUTI RIVER, SOUTH OF OLD MAN CAMP

Quadname: BETTLES B2 66° 26' 20" N 150° 38' 03" W

Township/Range: T19N R14W **Section:** 30

Mapping Precision:
Precision within a one minute radius, approx. 2.0km, of the mapped location

Directions:
Kanuti River, ca. 2 miles south of Old Man Camp along Alaska Oil pipeline. Dalton Highway, ca. mile 313 (probably from Prudhoe Bay; Welsh and Hansen 20057,ALA).

General Description:
"Dwarf birch-sedge community, tussock tundra and gravel outcrop" (Welsh and Hansen 20057,ALA).

Elevation: 427 Meters

Date Last Observed: 1980-08-15

Comments:
The locality description and township/range (T19N R14W) on label did not agree. The township and range listed here (T19N R14W) is based on the description; that on the label was T19N, R49W, Sect.3, a point considerably W of the highway. The mile 313 on this same label may refer to miles

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from Prudhoe Bay.

Specimens: 1980 WELSH, S.L.; HANSEN, D. 20057. ALA

009 ATIGUN RIVER VALLEY

Quadname: PHILIP SMITH MOUNTAINS B4 68° 25' N 149° 10' W

Township/Range: T12S R13E

Mapping Precision:
Precision within 10km of the mapped location, or to place name only.

Directions:
Upper Roche Montonne [sic] Creek and coordinates (68° 25' N, 149° 10' W) on collection label (Hansen s.n. 1986, ALA) are the only information for this occurrence.

General Description:
No habitat description on label except elevation: 1370 m. Entire area is rugged alpine terrain. See "comments" below.

Elevation: 1370m

Date Last Observed: 1986-06-16

Comments:
The creek name is not on any USGS maps, but is on a sign near the Highway (correct spelling should be Roche Montonne). The coordinates indicate a northward-draining stream flowing into the Atigun River Gorge, but the actual location may more likely be along Upper Roche Montonne Creek. This locality is immediately outside the PBUC (BLM Pipeline Utility Corridor) on the E side of Mt. Hulten, but is close enough to the highway to be included here.

Specimens: 1986 HANSEN, M. S.N. ALA

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APPENDIX I

The following taxa are currently on the Alaska Natural Heritage Program's "tracking list" as rare taxa. Based on collections at the University of Alaska Museum (ALA) and literature citations (Hulten 1941-50, 1967; Wiggins and Thomas 1962), these taxa could potentially occur within the area of the Utility Corridor considered for this report; they should be actively sought.

Aphragmus eschscholtzii Andrz.

Ranks: G3 S2S3

Collections:

ALA: Arrigetch Creek valley, D. Cooper 1053

This is the only northern Alaska collection known for this small, and often overlooked species. It represents a significant range extension from its known interior and coastal alpine distribution within Alaska.

Aster pygmaeus Lindley

Ranks: G3 S1S2

Collections:

ALA: Brooks Range, 50 miles N of Wiseman (vic. Ulo Mtn.), W.L. Cheney s.n. (determined by D.F. Murray,1987)

This taxon is closely related to *A. yukonensis* (see below) and until it can be compared with suitable material from arctic Canada, its taxonomy and relationship with *A. yukonensis* will remain unclear. See treatment in Murray and Lipkin (1987) for *A. yukonensis.*

Aster yukonensis Cronquist [Yukon Aster]

Ranks: G1G2 S1 C2

Collections:

ALA: Koyukuk R., ca. 2 miles N of Bettles, K.J. Stone 602a (determined by E. Hulten)

ALA: Koyukuk R., 7 miles above Bettles, S. Holly s.n.

This Category 2 candidate species is now known from several collections on the Koyukuk River above Bettles and should be actively sought on gravel and sand bars along this river. It has previously been searched for (but not found) in the vicinity of the junction of the road to Wiseman and the Koyukuk River bridge #3 (Murray et al. 1979a). See Murray and Lipkin (1987) for description and treatment.

Carex holostoma Drejer

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Ranks: G3G4 S2

Collections

ALA: Kavik airstrip, Kavik R., M. Emers 92-18

This uncommon sedge has a circumpolar distribution with several widely scattered collection sites (Hulten 1968).

Gastrolychnis triflora (R. Br.) Tolm. & Kozhanch. [= *Melandrium triflorum* (R. Br.) J. Vahl]

Ranks: G4 S1S2

Collections:

Hulten (1967): Umiat, E. Hulten

This is the sole record for this species in Alaska and it is possible that it is based on a misidentification (D. Murray, pers. comm.). The species is otherwise known from Greenland and the Canadian arctic.

Koeleria asiatica Domin

Ranks: G4 S3

Collections:

ALA: There are several collections from the area around Meade River Village (Atkasuk). Additional specimens come from Fish Creek, Pic Dunes, Ketik River, Ikpikpuk River, and the Koluktak, Inigok, East Kealok and Kogru River Test Well sites.

Mertensia drummondii (Lehm.) D. Don [Drummond's Bluebell]

Ranks: G1Q S1 C2

Collections:

ALA: West of Dogbone Lake (16 miles N of Umiat), M. See NS-120

ALA: 3 collections from Meade River Village (Atkasuk)

In Alaska, this Category 2 candidate species has only been found in sand dunes along the Meade River and the Kogosukruk River (north of Umiat). It is otherwise known only from a few gravelly or sandy sites along the Canadian arctic coast. It should continue to be sought in sand dunes along other river systems in northern Alaska.

Oxytropis kokrinensis A. Pors.

Ranks: G3 S3 3C

Collections:

ALA: Upper Etivluk R., D.F. Murray 6889

ALA: Ray Mts., Kanuti Kilolitna R., Kassler 252

ALA: Ray Mts., Spooky Valley and Mt. Eakin, Juday

Wiggins and Thomas (1962): Howard Pass, Spetzman 2293 (US)

This species is a distinctive alpine endemic of central to western Interior Alaska and the Brooks

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Range.

Plantago major L. var. *pilgeri* Domin

Ranks: G5T2T4Q S2S3

Collections:

ALA: Bettles, Middle Fork Koyukuk R., E. Hulten (determined by Batten)

The taxonomy of *P. major* s.l. is unclear (see Hulten 1941-1950: 1340-41). A confident determination of this material cannot be made without comparison to the type specimen or a complete description. Keller (1987) lists var. *pilgeri* from Kanuti Hot Springs, but the specimen at ALA (Keller & Knapman 1337) appears to be var. *major*.

Poa hartzii R. Br. ssp. *alaskana* R.J. Soreng

Ranks: G3G4T1 S1

Collections:

ALA: Meade River, Murray & Johnson 7153 (Isotype)

ALA: Meade River delta, T. Rothe 45

ALA: Atkasuk, 4.75 km E of Meade R. camp, Komarkova & Duffy 595

This recently described Alaskan endemic is now known only from the sands along the middle and lower Meade River and from a site near Lake Peters (Soreng 1991). It should be sought at other sites in northern Alaska, especially on sand bars and riparian dunes.

Potamogeton subsibericus Hagstr. [= *P. porsildorum* Fern.]

Ranks: G3 S2

Collections:

ALA: N of Slope Mountain, Murray & Johnson 6178

ALA: Dalton Highway Mile 321, Barbar 4306

Collections of this taxon from ALA are currently on loan to Dr. C. Hellquist at NADC for taxonomic revision. Its distribution and abundance can be better determined when this effort is concluded.

Stellaria umbellata Turcz.

Ranks: G4 S1S2

ALA: Kadleroshilik Pingo, M. Walker 86-25

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APPENDIX II

Vascular flora of Utility Corridor based on Dalton Highway Herbarium Collections held at University of Alaska Herbarium, Fairbanks (ALA): Yukon River crossing to Slope Mountain. (May 1994.)

Acomastylis rossii (R. Br.) E. Greene
Aconitum delphinifolium DC.
Aconitum delphinifolium DC. ssp. delphinifolium
Aconitum delphinifolium DC. ssp. paradoxum (Reichb.) Hultén
Agrostis alaskana Hultén
Allium schoenoprasum L.
Alnus tenuifolia Nutt.
Alopecurus alpinus Smith
Alopecurus pratensis L.
Alopecurus cf. geniculatus L.
Amerorchis rotundifolia (Banks) Hultén
Andromeda polifolia L.
Androsace chamaejasme Host
Androsace septentrionalis L.
Anemone drummondii S. Watson
Anemone narcissiflora L.
Anemone parviflora Michaux
Anemone richardsonii Hook.
Antennaria alpina (L.) Gaertner var. media (E. Greene) Jepson
Antennaria friesiana (Trautv.) Ekman
Antennaria friesiana (Trautv.) Ekman ssp. alaskana (Malte) Hultén
Antennaria friesiana (Trautv.) Ekman ssp. friesiana
Antennaria monocephala DC.
Antennaria pulcherrima (Hook.) E. Greene
Antennaria umbrinella Rydb.
Arctagrostis latifolia (R. Br.) Griseb.
Arctagrostis latifolia (R. Br.) Griseb. ssp. arundinacea (Trin.) Griseb.
Arctophila fulva (Trin.) Andersson
Arctostaphylos uva-ursi (L.) Sprengel
Arctous alpina (L.) Niedenzu

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Arctous rubra (Rehder & E. Wilson) Nakai
Arenaria chamissonis Maguire
Arenaria longipedunculata Hultén
Arnica alpina (L.) Olin
Arnica griscomii Fern. ssp. frigida (C. Meyer ex Iljin) S. J. Wolf
Arnica lessingii E. Greene
Artemisia alaskana Rydb.
Artemisia arctica Less.
Artemisia borealis Pallas
Artemisia frigida Willd.
Artemisia glomerata Ledeb.
Artemisia tilesii Ledeb.
Aster alpinus L.
Aster sibiricus L.
Astragalus aboriginum Richardson
Astragalus alpinus L.
Astragalus bodinii E. Sheldon
Astragalus nutzotinensis J. Rouss.
Astragalus polaris Benth.
Astragalus sealei Lepage
Astragalus umbellatus Bunge

Barbarea orthoceras Ledeb.
Betula glandulosa Michaux
Betula hybrids
Betula nana L.
Betula nana L. ssp. exilis (Sukatschew) Hultén
Betula papyrifera Marshall
Bidens cernua L.
Bistorta plumosa (Small) E. Greene
Bistorta vivipara (L.) Gray
Boschniakia rossica (Cham. & Schldl.) B. Fedtsch.
Boykinia richardsonii (Hook.) A. Gray
Braya bartlettiana Jordal
Bromopsis ciliata (L.) Holub
Bromopsis pumpelliana (Scribner) Holub
Bupleurum triradiatum J. Adams

Calamagrostis canadensis (Michaux) P. Beauv.

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Calamagrostis inexpansa A. Gray
Calamagrostis purpurascens R. Br.
Callitriche anceps Fern.
Caltha palustris L.
Campanula lasiocarpa Cham.
Campanula uniflora L.
Cardamine bellidifolia L.
Cardamine digitata Richardson
Cardamine pratensis L.
Cardamine purpurea Cham. & Schldl.
Carex albonigra Mackenzie
Carex aquatilis Wahlenb.
Carex atrofusca Schk.
Carex bigelowii Torrey
Carex capillaris L.
Carex capitata Sol.
Carex chordorrhiza Ehrh.
Carex concinna R. Br.
Carex dioica L.
Carex dioica L. ssp. gynocrates (Wormsk.) Hultén
Carex eburnea Boott
Carex franklinii Boott
Carex glacialis Mackenzie
Carex krausei Boeckeler
Carex lachenalii Schkuhr.
Carex marina Dewey
Carex membranacea Hook.
Carex microchaeta Holm
Carex microchaeta Holm ssp. microchaeta
Carex microglochin Wahlenb.
Carex misandra R. Br.
Carex nardina Fries
Carex obtusata Lilj.
Carex petricosa Dewey
Carex podocarpa R. Br.
Carex rariflora (Wahlenb.) Smith
Carex rostrata Stokes
Carex rotundata Wahlenb.
Carex rupestris All.

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Carex saxatilis L.
Carex scirpoidea Michaux
Carex supina Willd.
Carex tenuiflora Wahlenb.
Carex vaginata Tausch
Cassiope tetragona (L.) D. Don
Castilleja caudata (Pennell) Rebrist.
Castilleja hyperborea Pennell
Cerastium beeringianum Cham. & Schldl.
Chamaedaphne calyculata (L.) Moench
Chrysanthemum bipinnatum L.
Chrysanthemum integrifolium Richardson
Chrysosplenium tetrandrum (N. Lund) T. C. E. Fries
Chrysosplenium wrightii Franchet & P. A. L. Savat.
Circaea alpina L.
Claytonia sarmentosa C. Meyer
Claytonia porsildii Jurtsev
Cnidium cnidiifolium (Turcz.) Schischkin
Comarum palustre L.
Corallorrhiza trifida Chatel.
Cornus canadensis L.
Corydalis pauciflora (Stephan) Pers.
Corydalis sempervirens (L.) Pers.
Crepis elegans Hook.
Crepis nana Richardson
Cryptogramma stelleri (S. Gmelin) Prantl
Cypripedium calceolus L. ssp. parviflorum (Salisb.) Hultén
Cypripedium passerinum Richardson
Cystopteris fragilis (L.) Bernh.

Delphinium chamissonis Pritzel
Delphinium glaucum S. Watson
Deschampsia brevifolia R. Br.
Deschampsia cespitosa (L.) P. Beauv.
Deschampsia paramushirensis Honda
Descurainia sophioides (Fischer) O. Schulz
Dianthus repens Willd.
Diapensia lapponica L.
Diapensia lapponica L. ssp. obovata (F. Schmidt) Hultén

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Dodecatheon frigidum Cham. & Schldl.
Douglasia ochotensis (Willd.) Hultén
Draba alpina L.
Draba cana Rydb.
Draba corymbosa R. Br. ex DC.
Draba crassifolia Graham
Draba fladnizensis Wulfen
Draba lactea J. Adams
Draba lonchocarpa Rydb.
Draba lonchocarpa Rydb. var. lonchocarpa
Draba macounii O. Schulz
Draba nivalis Lilj.
Draba palanderiana Kjellman
Dryas alaskensis A. Pors.
Dryas drummondii Richardson
Dryas integrifolia M. Vahl
Dryas octopetala L.
Dryopteris dilatata (Hoffm.) A. Gray ssp. americana (Fischer) Hulten
Dryopteris fragrans (L.) Schott

Eleocharis palustris (L.) Roemer & Schultes
Elymus alaskanus (Scribner & Merr.) A. Loeve
Elymus alaskanus (Scribner & Merr.) A. Loeve ssp. latiglumis (Scribner & Smith) A. Loeve
Elymus trachycaulus (Link) Gould ex Shinners
Elymus trachycaulus (Link) Gould ex Shinners ssp. violaceus (Hornem.) A. Loeve & D. Loeve
Empetrum hermaphroditum (Lange) Hagerup
Epilobium adenocaulon Haussk.
Epilobium angustifolium L.
Epilobium davuricum Fischer
Epilobium hornemannii Reichb.
Epilobium latifolium L.
Epilobium palustre L.
Equisetum arvense L.
Equisetum fluviatile L. ampl. Ehrh.
Equisetum palustre L.
Equisetum scirpoides Michaux
Equisetum silvaticum L.
Erigeron acris L.

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Erigeron eriocephalus Vahl
Erigeron grandiflorus Hook.
Erigeron humilis Graham
Erigeron mexiae Becker
Erigeron muirii A. Gray
Erigeron purpuratus E. Greene
Eriophorum angustifolium Honck.
Eriophorum angustifolium Honck. ssp. subarcticum (V. Vassiljev) Hultén
Eriophorum brachyantherum Trautv.
Eriophorum callitrix Cham.
Eriophorum russeolum Fries
Eriophorum scheuchzeri Hoppe
Eriophorum triste (Th. Fries) Hadac & A. Loeve
Eriophorum vaginatum L.
Eritrichium aretioides (Cham.) DC.
Eritrichium chamissonis DC.
Erysimum cheiranthoides L.
Erysimum pallasii (Pursh) Fern.
Eutrema edwardsii R. Br.

Festuca altaica Trin.
Festuca auriculata Drobov
Festuca baffinensis Polunin
Festuca brachyphylla Schultes & Schultes F.
Festuca rubra L.
Festuca vivipara (L.) Smith ssp. glabra Frederiksen

Galium boreale L.
Galium trifidum L.
Gastrolychnis affinis (Vahl) Tolm. & Kozhanch.
Gastrolychnis apetala (L.) Tolm. & Kozhanch.
Gastrolychnis macrosperma (A. Pors.) Tolm. & Kozhanch.
Gastrolychnis ostenfeldii (A. Pors.) D. Murray
Gentiana glauca Pallas
Gentiana prostrata Haenke
Gentianella propinqua (Richardson) J. M. Gillett
Gentianella propinqua (Richardson) J. M. Gillett ssp. arctophila (Griseb.) Hultén
Geocaulon lividum (Richardson) Fern.
Glyceria striata (Lam.) A. Hitch. ssp. stricta (Scribner) Hultén

Hedysarum alpinum L.
Hedysarum alpinum L. ssp. americanum (Michaux) B. Fedtsch.
Hedysarum mackenzii Richardson
Hierochloe alpina (Sw.) Roemer & Schultes
Hierochloe odorata (L.) P. Beauv.
Hippuris vulgaris L.
Hordeum jubatum L.
Huperzia selago (L.) C. Martius

Juncus alpinus Villars
Juncus arcticus Willd.
Juncus biglumis L.
Juncus bufonius L.
Juncus castaneus Smith
Juncus filiformis L.
Juncus triglumis L.
Juniperus communis L.

Kobresia myosuroides (Villars) Fiori & Paol.
Kobresia sibirica Turcz.
Kobresia simpliciuscula (Wahlenb.) Mackenzie
Koenigia islandica L.

Lagotis glauca P. Gaertner
Ledum groenlandicum Oeder
Ledum palustre L. ssp. decumbens (Aiton) Hultén
Lesquerella arctica (Wormsk.) S. Watson
Leymus innovatus (Beal) Pilger
Linnaea borealis L.
Lloydia serotina (L.) Reichb.
Loiseleuria procumbens (L.) Desv.
Lomatogonium rotatum (L.) E. Fries
Lupinus arcticus S. Watson
Luzula arctica Blytt
Luzula confusa Lindeb.
Luzula kjellmaniana Miyabe & Kudo
Luzula multiflora (Retz.) Lej.
Luzula parviflora (Ehrh.) Desv.

Luzula rufescens Fischer
Luzula wahlenbergii Rupr.
Lycopodium alpinum_x_sitchense Rupr.
Lycopodium annotinum L.
Lycopodium clavatum L.
Lycopodium complanatum L.
Lycopus uniflorus Michaux

Matricaria matricarioides (Less.) Porter
Mentha arvensis L.
Menyanthes trifoliata L.
Minuartia arctica (Steven) Asch. & Graebner
Minuartia elegans (Cham. & Schldl.) Schischkin
Minuartia macrocarpa (Pursh) Ostenf.
Minuartia obtusiloba (Rydb.) House
Minuartia rubella (Wahlenb.) Graebner
Moneses uniflora (L.) A. Gray
Monolepis nuttalliana (Schultes) E. Greene
Montia bostockii (A. Pors.) Welsh
Myosotis alpestris F. W. Schmidt

Novosieversia glacialis (J. Adams) F. Bolle

Orthilia secunda (L.) House
Oxycoccus microcarpus Turcz. ex Rupr.
Oxyria digyna (L.) Hill
Oxytropis borealis DC.
Oxytropis bryophila (E. Greene) Jurtsev
Oxytropis campestris (L.) DC.
Oxytropis campestris (L.) DC. ssp. gracilis (Nelson) Hultén
Oxytropis deflexa (Pallas) DC.
Oxytropis jordalii A. Pors.
Oxytropis koyukukensis A. Pors.
Oxytropis maydelliana Trautv.
Oxytropis mertensiana Turcz.
Oxytropis nigrescens (Pallas) Fischer
Oxytropis scammaniana Hultén
Oxytropis viscida Nutt.

Papaver lapponicum (Tolm.) Nordh.
Papaver macounii E. Greene
Papaver radicatum Rottb.
Parnassia kotzebuei Cham. & Schldl.
Parnassia palustris L.
Parrya nudicaulis (L.) Regel
Parrya nudicaulis (L.) Regel ssp. interior Hultén
Parrya nudicaulis (L.) Regel ssp. septentrionalis Hultén
Pedicularis albolabiata (Hultén) Kozhanch.
Pedicularis capitata J. Adams
Pedicularis labradorica Wirs.
Pedicularis lanata Cham. & Schldl.
Pedicularis langsdorffii Fischer ex Steven
Pedicularis lapponica L.
Pedicularis oederi M. Vahl
Pedicularis sudetica Willd.
Pedicularis sudetica Willd. ssp. interior Hultén
Pedicularis verticillata L.
Pentaphylloides floribunda (Pursh) A. Loeve
Petasites frigidus (L.) Franchet
Petasites sagittatus (Banks) A. Gray
Phalaris arundinacea L.
Phippsia algida (Sol.) R. Br.
Phlox sibirica L.
Picea glauca (Moench) Voss
Picea mariana (Miller) Britton, Sterns, Pogg.
Pinguicula vulgaris L.
Plagiobothrys cognatus (E. Greene) I. M. Johnston
Plagiobothrys hirtus (E. Greene) I. M. Johnston
Plantago major L.
Platanthera obtusata (Pursh) Lindley
Poa abbreviata R. Br. ssp. abbreviata
Poa abbreviata R. Br. ssp. jordalii (A. Pors.) Hultén
Poa alpina L.
Poa arctica R. Br.
Poa glauca M. Vahl
Poa lanata Scribner & Merr.
Poa paucispicula Scribner & Merr.
Poa pseudoabbreviata Rosch.

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Polemonium acutiflorum Willd.
Polemonium boreale J. Adams
Polygonum alaskanum (Small) W. Wight
Populus balsamifera L. ssp. balsamifera
Populus tremuloides Michaux
Potamogeton filiformis Pers.
Potamogeton perfoliatus L.
Potentilla biflora Willd. ex Schldl.
Potentilla egedii Wormsk.
Potentilla hookeriana Lehm.
Potentilla hyparctica Malte
Potentilla nivea L.
Potentilla nivea L. var. tomentosa Nilsson-Ehle
Potentilla norvegica L.
Potentilla rubricaulis Lehm.
Potentilla uniflora Ledeb.
Primula egaliksensis Wormsk.
Pulsatilla patens (L.) Miller ssp. multifida (Pritzel) Zam.
Pyrola asarifolia Michaux
Pyrola chlorantha Sw.
Pyrola grandiflora Radius

Ranunculus eschscholtzii Schlechter
Ranunculus gelidus Karelin & Kir.
Ranunculus gmelinii DC.
Ranunculus nivalis L.
Ranunculus pedatifidus Smith
Ranunculus pedatifidus Smith ssp. affinis (R. Br.) Hultén
Ranunculus pygmaeus Wahlenb.
Ranunculus reptans L.
Ranunculus sulphureus Sol.
Ranunculus trichophyllus Chaix
Rhododendron lapponicum (L.) Wahlenb.
Ribes triste Pallas
Rorippa barbareaefolia (DC.) Kitigawa
Rorippa palustris (L.) Besser
Rosa acicularis Lindley
Rubus arcticus L.
Rubus arcticus L. ssp. arcticus

Rubus chamaemorus L.
Rubus idaeus L.
Rubus idaeus L. ssp. melanolasius (Dieck) Focke
Rumex acetosa L.
Rumex arcticus Trautv.

Salix alaxensis (Andersson) Cov.
Salix alaxensis (Andersson) Cov. var. alaxensis
Salix alaxensis (Andersson) Cov. var. longistylis (Rydb.) C. Schneider
Salix arbusculoides Andersson
Salix arctica Pallas
Salix arctophila Cockerell ex A. A. Heller
Salix barrattiana Hook.
Salix bebbiana Sarg.
Salix brachycarpa Nutt.
Salix brachycarpa Nutt. ssp. niphoclada (Rydb.) Argus
Salix chamissonis Andersson
Salix fuscescens Andersson
Salix glauca L.
Salix glauca L. var. acutifolia (Andersson) C. Schneider
Salix glauca L. var. glauca
Salix hastata L.
Salix lanata L.
Salix lanata L. ssp. richardsonii (Hook.) A. Skvortsov
Salix phlebophylla Andersson
Salix planifolia Pursh ssp. pulchra (Cham.) Argus
Salix polaris Wahlenb.
Salix reticulata L.
Salix reticulata L. ssp. reticulata
Salix rotundifolia Trautv.
Salix rotundifolia Trautv. ssp. dodgeana (Rydb.) Argus
Salix rotundifolia Trautv. ssp. rotundifolia
Salix scouleriana J. Barratt
Sanguisorba officinalis L.
Saussurea angustifolia (Willd.) DC.
Saxifraga bronchialis L.
Saxifraga bronchialis L. ssp. funstonii (Small) Hultén
Saxifraga caespitosa L.
Saxifraga calycina Sternb.

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Saxifraga cernua L.
Saxifraga eschscholtzii Sternb.
Saxifraga flagellaris Willd.
Saxifraga flagellaris Willd. ssp. setigera (Pursh) Tolm.
Saxifraga foliolosa R. Br.
Saxifraga hieracifolia Waldst. & Kit.
Saxifraga hirculus L.
Saxifraga hyperborea R. Br.
Saxifraga nelsoniana D. Don
Saxifraga nivalis L.
Saxifraga oppositifolia L.
Saxifraga razshivinii Zhmylev
Saxifraga reflexa Hook.
Saxifraga rivularis L.
Saxifraga serpyllifolia Pursh
Saxifraga tricuspidata Rottb.
Scirpus microcarpus C. Presl
Selaginella sibirica (Milde) Hieron.
Senecio atropurpureus (Ledeb.) B. Fedtsch.
Senecio atropurpureus (Ledeb.) B. Fedtsch. ssp. frigidus (Richardson) Hultén
Senecio kjellmanii A. Pors.
Senecio lindstroemii (Ostenf.) A. Pors.
Senecio lugens Richardson
Senecio ogotorukensis Packer
Senecio resedifolius Less.
Senecio tundricola Tolm.
Shepherdia canadensis (L.) Nutt.
Silene acaulis L.
Silene repens Patrin
Sisymbrium altissimum L.
Smelowskia borealis (E. Greene) Drury & Rollins
Smelowskia calycina (Stephan) C. Meyer
Smelowskia calycina (Stephan) C. Meyer var. porsildii (Drury & Rollins) Hultén
Solidago canadensis L. var. salebrosa (Piper) M. E. Jones
Solidago multiradiata Aiton
Sparganium angustifolium Michaux
Sparganium hyperboreum Laest.
Sparganium minimum (Hartman F.) Fries
Sparganium multipedunculatum (Morong) Rydb.

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Spergula arvensis L.
Spiraea stevenii (C. Schneider) Rydb.
Spiranthes romanzoffiana Cham.
Stellaria alaskana Hultén
Stellaria crassifolia Ehrh.
Stellaria edwardsii R. Br.
Stellaria laeta Richardson
Stellaria laxmannii Auct. Non Fischer
Stellaria longipes Goldie
Stellaria media (L.) Villars
Stellaria monantha Hultén

Taraxacum ceratophorum (Ledeb.) DC.
Thalictrum alpinum L.
Thalictrum sparsiflorum Turcz.
Thelypteris phegopteris (L.) Slosson
Thlaspi arcticum A. Pors.
Thlaspi arvense L.
Tofieldia coccinea Richardson
Tofieldia pusilla (Michaux) Pers.
Torularia humilis (C. Meyer) O. Schulz
Trichophorum caespitosum (L.) Hartman
Trifolium hybridum L.
Triglochin maritimum L.
Triglochin palustris L.
Trisetum spicatum (L.) K. Richter
Typha latifolia L.

Utricularia intermedia Hayne

Vaccinium uliginosum L.
Vaccinium vitis-idaea L.
Vaccinium vitis-idaea L. ssp. minus (Lodd.) Hultén
Valeriana capitata Pallas
Viburnum edule (Michaux) Raf.
Viola epipsila Ledeb. ssp. repens (Turcz.) W. Becker

Wilhelmsia physodes (Fischer) McNeill
Woodsia alpina (Bolton) Gray

Woodsia glabella R. Br.
Woodsia ilvensis (L.) R. Br.

Zygadenus elegans Pursh

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