

**RESULTS OF THE 1993 RARE PLANT SURVEY
U. S. FOREST SERVICE ALASKA REGION**

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INTRODUCTION

This report summarizes the work undertaken in 1993 by the Alaska Natural Heritage Program as part of a Challenge Cost-Share Agreement with the U. S. Forest Service, Alaska Region to survey USFS lands for the occurrence of rare plant taxa and to maintain a system for tracking these plants.

This program was begun on January 3, 1990, and by the spring of 1993 AKNHP botanist John DeLapp had completed the project's initial phase. This consisted of a comprehensive review of all material necessary to produce an overview of rare vascular plants for USFS Region 10. John's literature search, examination of specimens from major herbaria, and the results of his field trips are documented in "The Rare Vascular Plant Species of the U. S. Forest Service Alaska Region" and its two supplements. It details the specific arrangements of the Cost-Share Agreement, discusses the criteria chosen for determining rare species, and describes each rare plant and its known occurrences.

The project has continued through 1993, consisting of a field survey of USFS Alaska Region lands. The results of this field season have added depth to our understanding of rare plants in the USFS Alaska region. Our objective this summer was to survey areas likely to contain rare plant taxa and document the presence of these rare taxa.

SCOPE

The field season for this region-wide project was divided equally between Chugach National Forest and Tongass National Forest. The Tongass portion of the project was coupled with the AKNHP rare plant survey in Misty Fiords National Monument.

In July, 1993 we completed 10 days of field work in Tongass National Forest. The survey locations were in the Thorne Bay and Wrangell Ranger Districts, with additional surveys on the Ketchikan Ranger District that were performed during the Misty Fiords project. During the month of August, 10 days of field work were completed in Prince William Sound, in the Glacier and Cordova Ranger Districts of Chugach National Forest.

METHODOLOGY

Prior field work and a review of existing references by AKNHP and USFS staff produced a list of 144 plants that have been identified as rare for the USFS Alaska Region (DeLapp, 1993). Twenty-two of these plants have been recognized as Region Ten sensitive species. Occurrences of these plants on Region Ten lands are being tracked by AKNHP.

Survey areas were chosen from locations with high potential for rare plant occurrences. The Prince of Wales Island alpine karst communities were seen as some of the most promising areas for exploration due to their geology and to previous reports of rare plant occurrences. The Stikine River shows marked influences of drier interior habitats. All the outer islands of Prince William Sound were considered significant due to their relative isolation. Montague Island, with its large alpine areas, is of particular interest.

Within the target areas, sites were selected by assessing the potential for finding populations of rare plants. Criteria included the existence of suitable habitat, the geology of the area (some rare plants, such as calciphiles, occur in specific soil types), proximity to documented occurrences of rare plants, and historical records of rare plants in an area that needed to be substantiated. There were also some site-specific criteria: sites in the Wrangell Ranger District were surveyed to provide rare plant information for timber sale environmental analyses and wilderness management reports. Logistical considerations were also important. Often the most promising areas are also the most difficult to access. The availability of a helicopter on Prince of Wales Island proved to be a cost-effective way of reaching many more alpine karst sites than would have been otherwise possible.

Once the sites were selected a basic floristic survey was conducted, with an emphasis on rare plants. Some of the areas visited had never been studied by botanists. Because many of the rare plants are difficult to identify in the field, we collected voucher specimens for final determination by the staff of the University of Alaska Herbarium in Fairbanks.

Our description of the area began with a summary of the plant community and the dominant cover species, followed by a species list (on file at AKNHP office). Location information was recorded, plants collected, and the site photographed. Each rare plant was documented by obtaining a voucher specimen and entering all pertinent information about location and habitat into the AKNHP Biological and Conservation Database (BCD). The BCD describes every known Alaskan occurrence of each tracked plant, referred to as an "element" in the BCD. Element occurrence (EO) records for each rare plant that we found are appended to this report.

Other appendices to this report include maps detailing the survey locations, the photographs of the sites, and a collection list. The specimens themselves have been verified by the staff of the University of Alaska herbarium (ALA) and are archived there. Duplicate specimens are archived at the USFS herbarium in Sitka (TNFS).

The nomenclature used in this report follows that used by the University of Alaska herbarium at Fairbanks. In some cases a taxon name may differ from one used by Hulten (1968). In these instances Hulten's nomenclature is included in parenthesis. Several names have no equivalent in Hulten and represent a revised taxonomic treatment. A listing of botanical references can be found in the Literature Cited section of this report.

RESULTS

During the 20 field days of the 1993 field season, 41 sites were visited in USFS Region 10. A collection of 482 vascular plants was made and 56 element occurrences were recorded of 32 different rare plants. In addition, 60 plants were found outside of their marked ranges in Hulten (1968).

Data collected are presented in chronologic order by geographic area. Each site description includes location information in both legal and Lat.-Long. formats, the location code used in the collection list (Appendix III), a list of rare plants found at the site, and slide numbers of photographs taken (slides on file at AKNHP office). An evaluation of the area surveyed is also given. Specific information on the rare plants themselves is presented in the Discussion section.

LORING AREA

On a weekend trip to Loring, during the Misty Fiords project, two rare plants were found and documented, and several other specimens collected. The area is located in the Ketchikan Ranger District and although the area was not surveyed in detail, the information is included because of the two element occurrences.

Loring Estuary (site R01)

N 55 36 08 W 131 37 34, 0 m

Ketchikan C-5, T72S R90E, S28 SE4NW4, 0'

Lower beach-wet sedge meadow, east of town.

4 July

specimens 218-220

Orton Ranch, Naha River (site R02)

N 55 35 33 W 131 35 03, 0 m

Ketchikan C-5, T72S R90E, S34 NE4NE4, 0'

Riverside scrub, at the ranch.

5 July

specimens 221-223

Spiraea douglasii

Stachys emersonii (= *S. mexicana*)

MARY ISLAND AREA

A stop was made at Mary Island during the Misty Fiords project where we took the opportunity to survey the area for rare plant taxa. Mary Island is a low elevation island with typical muskeg and second growth forests. One rare plant was found there.

Custom House Cove-forest / shore (site R03)

N 55 05 27 W 131 14 08, 15 m

9 July

specimens 409-412

Ketchikan A-4, T78S R94E, S22 S2NW4, 50'
50 year old second growth Sitka spruce forest, upper beach meadow.

Custom House Cove-muskeg (site R04) 9 July
N 55 05 31 W 131 13 55, 15 m specimens 413-421
Ketchikan A-4, T78S R94E, S22 S2NW4, 50'
Woodland / low ericaceous scrub muskeg.
Lycopodium inundatum

PRINCE OF WALES AREA

Prince of Wales Island (Thorne Bay Ranger District) was the site of the field season's most significant surveys. The limestone substrate, high elevation, and geographic proximity to the Queen Charlotte Islands provide unique habitat for several rare taxa and regional endemics. We found these sites similar to drier tundra habitats of the interior, unusual in a coastal rain forest region. The microclimate is due to the drainage features of the karst topography. As one of the most unique geophysical regions of the state, the alpine karst deserves more in-depth study.

Nineteen rare plant occurrences were documented, as well as numerous range extensions.

Prince of Wales Island

Perue Mt. (site R05) 20 July
slides 1-7 specimens 572-646
N 56 14 32 W 133 29 56, 840 m
Petersburg A-5, T65S R77E, S9 SE4SE4, 2750'
Mountain hemlock / sub-alpine fir woodland, low ericaceous scrub, talus slopes, cliffs.
Abies lasiocarpa
Podagrostis thurberiana
Androsace chamaejasme ssp. *lehmanniana*
Cystopteris montana
Draba incerta
Minuartia biflora

Mt. Calder (site R06) 21 July
slides 8-13 specimens 647-680
N 56 13 45 W 133 35 07, 840 m
Petersburg A-5, T65S R76E, S13 S2 center, 2750'
Mountain hemlock / sub-alpine fir woodland, low ericaceous scrub,
talus slopes, cliffs.
Abies lasiocarpa
Androsace chamaejasme ssp. *lehmanniana*
Cystopteris montana
Draba incerta

Cavern Lake pull-off (site R07) 21 July
N 56 09 30 W 133 10 28, 60 m specimens 685,686
Petersburg A-4, T66S R79E, S10 NE4SW4, 200'
Road 27, approx. 2.8 miles east of Forest Service road 20, south side.
Wet sedge pond margin.
Lycopus uniflorus

Neck Lake (site R08) 21 July
N 56 05 50 W 133 08 53, 15 m specimens 681-684
Petersburg A-4, T66S R79E, S35 SE4SW4, 50'
Eastern most end of Neck Lake, on road 25. Muddy lake shore and gravel roadside.
Dulichium arundinaceum
Spiraea douglasii

El Capitan peak (site R09) 22 July
slide 14 specimens 687-692
N 56 11 04 W 133 18 39, 760 m
Petersburg A-4, T65S R78E, S35 SW4SW4, 2500'
Gravelly alpine areas, thin muskeg woodland, creek beds.

Flicker Ridge (site R10) 22 July
N 56 16 25 W 133 32 15, 625 m specimens 730,731
Petersburg B-5, T64S R76E, S34 SW4SW4, 2050'
Recently logged western hemlock forest cliff.
Polystichum setigerum

Heceta Island

Bald Mt. (site R11) 23 July
slides 15-18 specimens 693-726, 729
N 55 43 16 W 133 34 21, 700 m
Craig C-5, T71S R77E, S11 SW4SW4, 2300'
Westernmost peak. Boulder field, talus slopes.
Abies lasiocarpa
Podagrostis thurberiana
Androsace chamaejasme ssp. *lehmanniana*
Romanzoffia unalaschcensis
Senecio moresbiensis

Big wheel muskeg pond (site R12) 23 July
N 55 45 08 W 133 37 10, 135 m specimens 727,728
Craig D-5, T70S R77E, S33 SW4SW4, 450'
Muskeg meadow, roadside.

WRANGELL AREA

In the Wrangell Ranger District, the focus of the rare plant survey was much more specific than other areas. At the request of the District staff, surveys were conducted in areas that are being considered for timber development, looking specifically for the two federally listed Category 2 plants that could possibly occur there: *Calamagrostis crassiglumis* and *Carex lenticularis* var. *dolia*. Neither of these plants were found in those areas. The second focus was to survey areas in the Stikine-LeConte Wilderness that receive high visitor use. While on the Stikine River, we conducted exploratory surveys similar to those in the Thorne Bay Ranger District. A survey was also conducted at Anan Lagoon, another site of intense visitor activity and a historical location for *Ranunculus orthorhynchus* var. *alascensis*, which was confirmed.

Etolin Island

Beach 300m N of Honeymoon Creek (site R13)
slide 19
N 56 19 58 W 132 24 04, 0 m
Petersburg B-2, T64S R83E, S11 NE4SE4, 0'
Beach strand, Sitka spruce / western hemlock forest.

27 July
specimens 734-739

Beach 200m N of Honeymoon Creek (site R14)
slide 20
N 56 19 39 W 132 23 50, 0 m
Petersburg B-2, T64S R83E, S13 NW4NW4, 0'
Beach strand.

27 July
specimens 740-745

Beach .5 miles N, King George Creek (site R15)
N 56 19 27 W 132 32 31, 0 m
Petersburg B-2, T64S R82E, S13 SW4NE4, 0'
Beach strand.

27 July
specimens 746-751

Beach .3 miles N, King George Creek (site R16)
slide 21
N 56 19 16 W 132 32 36, 0 m
Petersburg B-2, T64S R82E, S13 SW4NE4, 0'
Wet sedge meadow.

27 July
specimens 752,753

Bradfield Canal Area

Miner's Creek (site R17)
slides 22-23
N 56 13 28 W 13146 35, 0 m

28 July
specimens 757-767

Bradfield Canal A-6, T65S R88E, S22 NE4NE4, 0'
Beach strand, creek margin.

Campbell Creek (site R18) 28 July
slide 24 specimens 769,770
N 56 13 04 W 131 42 55, 0 m
Bradfield Canal A-6, T65S R89E, S19 NW4SW4, 0'
Beach strand.

Anan Lagoon (site R19) 28 July
slides 25-27 specimens 754-756, 768
N 56 10 59 W 131 53 05, 0 m
Bradfield Canal A-6, T66S R87E, S1 NW4NE4, 0'
Creekbed / marsh / wet sedge meadow at forest margin, approximately .2 mile up the trail, at
the first large creek bridge.
Eleocharis kamtschatica (see discussion section)
Ranunculus orthorhynchus var. *alaschensis*

Stikine River Area

Twin Lakes-east (site R20) 29 July
slides 28-29 specimens 779-803
N 56 42 02 W 132 15 39, 15 m
Petersburg C-1, T60S R83E, S1 SE4NE4, 50'
This lake is known as Twin Lakes to the locals, but is named Figure 8 Lake on the USGS
map. Fresh wet sedge meadow, with some of the specimens found uprooted and floating on
the lake surface.
Lysimachia thyrsiflora

Twin Lakes-west (site R21) 29 July
N 56 42 00 W 132 16 33, 15 m specimens 771-778
Petersburg C-1, T60S R83E, S1 SW4NW4, 50'
Fresh wet sedge meadow, tall scrub margin, and lakeshore aquatics.

Chief Shakes Hot Spring (site R22) 30 July
slides 30-32 specimens 804-819, 899
N 56 43 25 W 132 02 25, 15 m
Petersburg C-1, T59S R85E, S28 SW4SW4, 50'
Hot spring streams and margins, wet sedge meadow.
Crassula aquatica
Lycopus uniflorus

Shakes Glacier (site R23) 30 July
slides 33-34 specimens 820-826
N 56 48 37 W 132 09 23, 150 m

Petersburg D-1, T58S R84E, S27 NE4SE4, 500'

Lateral moraine above the terminus of the ice, which is several miles retreated from what is marked on the USGS map. Sparsely vegetated blocky slope.

Polygonum minimum

Shakes Lake (site R24)

30 July

slide 35

specimens 827-836, 900, 901

N 56 44 46 W 132 07 59, 15 m

Petersburg C-1, T59S R84E, S23 NE4 center, 50'

Tundra - like community on low terminal moraine islands, at south end of lake.

Arnica mollis

Carex lenticularis var. *dolia* (including *C. enanderi*)

Shakes Slough (site R25)

30 July

slides 36-39

specimens 837-843

N 56 43 44 W 132 07 20, 15 m

Petersburg C-1, T59S R84E, S25 SW4NW4, 50'

Riverside forb / graminoid meadow.

The Desert (site R26) 31 July

slides 40-42

specimens 844-861

N 56 41 18 N 132 12 49, 15 m

Petersburg C-1, T60S R84E, S8 NW4NE4, 50'

This area is referred to as the Desert, or the "new" Desert, by the locals, as the dunes marked "the Desert" on the USGS map have now been almost entirely covered by vegetation. The active sand dunes that we surveyed are referred to on the map as "Andrew Island." Bare sand and open tall willow / alder scrub.

Salix interior

Sergief Island (site R27)

31 July

slides 43-46

specimens 862-866, 902

N 56 34 41 W 132 25 13, 0 m

Petersburg C-2, T61S R83E, S14 SW4SW4, 0'

Southwest part of island. Brackish marsh meadow.

REVILLAGIGEDO ISLAND ALPINE AREA

Although formally a part of the Misty Fiords rare plant survey, the inventories described here were performed on the boundary of the Monument to access the wilderness area alpine by helicopter. Plants were collected from the Misty side but occurred on both sides of the boundary.

A similar survey was performed in the Quartz Hill area of Misty Fiords. This area is almost completely granitic and the vegetation relatively uniform. The Revillagigedo Island alpine survey was in an area with a greater diversity of substrates. A greater percentage of sedimentary and volcanic substrates characterizes these peaks. The Revillagigedo Island alpine vegetation was in

fact different from that of the adjacent mainland, especially on Mt. Reid. The survey yielded occurrences of several rare plants and some range extensions of other species.

Peak above Marble Creek (site M42) 1 August
slides 47-48 specimens 867-884
N 55 30 31 W 131 11 39, 1040 m
Ketchikan C-4, T73S R94E, S30 NW4SW4, 3400'
Low ericaceous scrub, talus slope.
Carex lenticularis var. *dolia* (including *C. enanderi*)
Poa leptocoma

Peak above Lake Grace (site M43) 1 August
slides 49-50 specimens 885-888
N 55 38 51 W 131 07 29, 1235 m
Ketchikan C-4, T72S R93E, S10 NE4NE4, 4050'
Low ericaceous scrub, graminoid / forb meadow.

Mt. Reid (site M44) 1 August
slides 51-54 specimens 889-898
N 55 42 30 W 131 15 32, 1160 m
Ketchikan C-4, T71S R92E, S14 SW4SE4, 3800'
Gravelly dwarf scrub, low forb meadow.
Cassiope lycopodioides

PRINCE WILLIAM SOUND AREA

Of the many potential survey sites on the Chugach National Forest, the Prince William Sound area was chosen because of an opportunity to access the more remote islands. The Glacier District ecology crew was scheduled to use the M/V *Auklet* for its habitat study, and a berth was available for the trip. The Montague Island alpine, an area that is difficult to reach, was a high priority for the rare plant survey, especially since it had been little studied. While the ecology crew performed their studies, we surveyed the alpine and muskeg communities of the outer islands. Several rare plant occurrences were documented, with a substantial amount of information gathered about one rare plant, *Platanthera chorisiana*.

Montague Island

MacLeod Harbor beach (site R28) 12 August
N 59 53 04 W 147 45 17, 0 m specimens 1004,1005
Blying Sound D-3, T3S R10E, S29 SE4SE4, 0'
Gravel beach, tall alder scrub.

Montague-MacLeod Harbor muskeg (site R29) 12 August

slides 55-57
N 59 53 14 W 147 42 54, 165 m
Blying Sound D-1&2, T3S R10E, S27 NE4SW4, 550'
Open muskeg meadow.
Platanthera chorisiana

specimens 955-957, 1003, 1006

MacLeod Harbor alpine (site R30)
slides 59-62
N 59 53 19 W 147 40 39, 425 m
Blying Sound D-1&2, T3S R10E, S26 SW4NE4, 1400'
gravelly areas, low ericaceous scrub / forb meadow, creek sides.
Podagrostis thurberiana (= *Agrostis thurberiana*)
Campanula lasiocarpa
Carex lenticularis var. *dolia* (including *C. enanderi*)
Primula eximia (= *P. tschuktschorum*, in part)

12 August

specimens 958-1002

North of Hanning Bay, alpine (site R31)
slides 63-76
N 60 01 41 W 147 31 57, 290 m
Seward A-2, T2S R11E, S3 SW4SE4, 950'
Gravelly areas, low ericaceous scrub / forb meadow, creek sides.
Carex lenticularis var. *dolia* (including *C. enanderi*)
Viola sempervirens

13 August

specimens 1011-1026

North of Hanning Bay, pond (site R32)
N 60 01 10 W 147 34 04, 76 m
Seward A-2, T2S R11E, S9 center, 250'
Pond margin aquatics, surrounding muskegs.
Atriplex alaskana (beach near R32)
Platanthera chorisiana

13 August

specimens 1027-1033

Mainland-Whale Inlet area

Humpback Cove, lake (site R33)
slides 77-86
N 60 11 53 W 148 18 06, 6 m
Seward A-4, T1N R7E, S7 NE4NW4, 20'
Tall Salix scrub, wet meadow, low ericaceous scrub, lakeside aquatic.

14 August

specimens 1034-1041

Humpback Cove, beach area (site R34)
N 60 12 21 W 148 17 31, 0 m
Seward A-4, T1N R7E, S6 NE4SE4, 0'
Upper and lower beach meadow, saltpan.
Carex lenticularis var. *dolia* (including *C. enanderi*)

14 August

specimens 1042-1052

Elrington Island

North Twin Bay (site R35)

slides 87-94

N 59 58 33 W 148 11 16, 6 m

Blying Sound D-4, T2S R7E, S26 SE4NE4, 20'

Cliff face, gravelly beach.

Draba borealis var. *maxima*

Malaxis monophylla

15 August
specimens 1053-1066

Fox Farm Cove (site R36)

N 59 58 09 W 148 08 30, 0 m

Blying Sound D-4, T2S R8E, S30 SE4SW4, 0'

Wet sedge meadow.

15 August
specimen 1067

Evans Island

Squirrel Bay (site R37)

slides 95-104

N 60 00 38 W 148 06 51, 335 m

Seward A-3, T2S R8E, S17 NE4NW4, 1100'

Boulder field, low forb meadow, muskeg.

Cassiope lycopodioides

Platanthera chorisiana

16 August
specimens 1068-1086

Knight Island

Iron Mt. (site R38)

slides 105-117

N 60 22 13 W 147 39 23, 440 m

Seward B-2, T3N R10E, S11 NE4NE4, 1450'

Boulder field, cliffs, muskeg.

Podagrostis thurberiana (= *Agrostis thurberiana*)

Cassiope lycopodioides

Platanthera chorisiana

17 August
specimens 1090-1099

Mainland-Unakwik Inlet area

Mueller Cove (site R39)

slides 118-120

N 60 53 43 W 147 38 22, 30 m

Seward D-2, T9N R10E, S2 SW4SW4, 100'

Rocky shore, muskeg.

18 August
specimens 1100,1101

Brilliant Glacier Area (site R40)

slides 121-129

N 61 06 03 W 147 29 04, 685 m

Anchorage A-2, T12N R11E, S27 NE4SW4, 2250'

Low ericaceous meadows, gravel areas.

Arnica lessingii ssp. *norbergii*

Cassiope lycopodioides

19 August
specimens 1102-1110

Perry Island

West Twin Bay (site R41)

slides 130-131

N 60 42 35 W 147 57 08, 30 m

Seward C-3, T7N R9E, S7 NE4SW4, 100'

Muskeg meadows, scrubby forest margins.

Platanthera chorisiana

20 August
specimens 1111-1117

DISCUSSION

Several criteria were used in considering the rarity of a given plant. Some are rare on a global level, while others are rare only within the state. AKNHP uses geographic range, population size, and habitat specificity to rank rare species. DeLapp (1993) also considered patterns of geographical distribution to describe the rare plants within USFS Region 10. Rare plants can be grouped into four general distribution patterns: peripheral species (those occurring in USFS Region 10 that are at or near the limit of their range), disjunct species (those occurring as isolated populations), sporadic species (plants that have widespread but scattered ranges), and endemic species (those known only from the Alaska area).

The Regional Forester has recently placed 22 rare plants on the Region Ten sensitive species list. This list can be found in Appendix I.

The 56 tracked rare plant occurrences documented this season represent the full range of rarity and distribution pattern. One (*Carex lenticularis* var. *dolia*) is a federally listed Category 2 plant. This and several other taxa are on the Alaska Region sensitive species list. Two taxa collected (*Dulichium arundinaceum* and *Polygonum minimum*) have been collected in Alaska only once before. And a small group of occurrences represent taxa that AKNHP is tracking elsewhere in the state and were hitherto unknown from Forest Service lands.

Some of the species treated by DeLapp (1991, 1992, 1993) were not considered for this survey. *Chamaecyparis nootkatensis*, *Caltha biflora*, *Castilleja miniata*, and *Thuja plicata* are peripherals that are abundant in appropriate habitats in the southern Tongass but rare in other areas of the state (none were observed in the Prince William Sound area.)

In addition to the tracked species, a number of common plants were found beyond the ranges published in Hulten (1968). While helpful, these range maps represent an old and incomplete view of vascular plant distributions in the region, one that is constantly being updated as more field work is completed. Some of these range extensions have been previously documented, especially those on Prince of Wales Island (Jaques, 1973; Perkins, 1982). The range extensions and disjuncts that we recorded are noted in the collection list (Appendix III).

The following section details the significant features of each rare plant found, outlining the global and state ranks, notes on its biology, questions of taxonomy, and other relevant information gathered from this survey. The ranking system, for both global (G) and state (S) levels is based on a scale of 1 to 5, from rare to abundant. Subspecific taxa are ranked with an additional global rank (T). Taxonomically questionable plants are ranked with a (Q). For a more detailed description, see DeLapp (1993).

Sub-alpine fir was common in the krumholtz forest zones of alpine karst sites on Prince of Wales Island, and was observed as a tree of 15 meters at lower elevations on Heceta Island. This puts it slightly west of the range mapped in Hulten (1968).

Androsace chamaejasme Host ssp. *lehmanniana* (Spreng.) Hult. G5T5 S5

Rock jasmine is a common plant of drier alpine environments, especially in the interior of the state; it is rare on USFS lands. It was consistently found in the alpine karst of Prince of Wales and Heceta Islands; these populations are disjunct from the broad distribution found in the rest of the state.

Arnica lessingii Greene ssp. *norbergii* Hult. & Maguire G5T1Q S1

The material from Unakwik Inlet fits, if poorly, into Hulten's description of this taxon. There is no material of the taxon in the herbarium at Fairbanks. However, there are several specimens there which are similarly robust and yet fit well into *Arnica lessingii* ssp. *lessingii*. While the variety is poorly defined, until a formal review sheds some light on this taxon it is perhaps best to continue to track any material that might fit this description.

Arnica mollis Hook. G4 S1

Although occurrences of this plant are tracked by AKNHP, it was not treated in DeLapp (1993) because it had not been reported nor was it expected on USFS lands. Hulten (1968) records one Alaskan occurrence of this Rocky Mountains species. It was found growing on a low gravelly island in Shakes Lake, near the Stikine River. These islands are the remains of the terminal moraine of the Shakes Glacier, and though low in elevation were extremely similar to high alpine tundra. Very cold winds sweep off the glacier over the lake. Other plants growing here include several *Saxifraga* spp., *Sibbaldia procumbens*, *Carex lenticularis* var. *dolia*, and a dwarf *Salix* species.

Atriplex alaskana S. Wats. G3G4Q S3S4

This entire genus is still not completely understood in Alaska, but this taxon is regarded as distinct by several authors. And though it was speculated by DeLapp (1993) that it might be more widespread than previously thought, it was found at only one location on Montague Island, with *Atriplex gmelinii* being much more common in both Prince William Sound and Southeast Alaska survey sites.

Campanula lasiocarpa Cham. G5 S5

This species of harebell is common in the interior and western part of Alaska, and is being tracked because it is rare in Southeast. Still, this record for Montague Island represents a small range extension to the south.

Carex lenticularis var. *dolia* (M. E. Jones) Standley

G5T2

S2

This was the only federally listed Category 2 plant found this field season.

There is still some confusion about the taxonomic placement of this plant. All the material we collected this summer was determined by Dr. David Murray of ALA to fit well into *Carex enanderi*, which is described in Hulten (1968). In the most recent treatment of the *Acutae* group of the genus *Carex*, this taxon has been incorporated, with *C. plectocarpa*, into *C. lenticularis* var. *dolia* (Standley, 1981). Of the two, *C. plectocarpa* is the more rare and is the form most closely associated with variety *dolia*, but *C. enanderi* is not common. We are considering *C. enanderi* to be included in *C. lenticularis* var. *dolia* and are tracking it as such. However, we are noting its taxonomic status and Dr. Murray's comments in the BCD files. More work needs to be done to clarify this group's taxonomy and range information.

Most of the specimens were collected from high alpine communities, growing in the typical wet gravelly-late melting snowbed habitat with other *Carex* and *Saxifraga* spp. The Shakes Lake collection was at a low elevation, but in a community almost identical to the high alpine (see description under *Arnica mollis*). The Whale Inlet specimen was collected at sea level from a sparsely vegetated portion of a brackish sedge meadow.

Cassiope lycopodioides (Pall.) D. Don

G4G5

S4

We found this plant in suitable habitat throughout Prince William Sound. It was not common at any site but seemed to favor drier alpine situations such as rock crevices and boulder fields. It was also collected from Mt. Reid, on Revillagigedo Island near Ketchikan, and the Boca de Quadra area. These sites represent a range extension south for the Alaska populations.

The rarer *Cassiope lycopodioides* ssp. *crispilosa* (Calder & Taylor) is considered merely a variation of the typical plant by Hulten (1968). Calder and Taylor (1968) consider this subspecies taxonomically distinct, endemic to the Queen Charlotte Islands. Carolyn Parker of the University of Alaska herbarium examined our collections. Her evaluation of our material revealed the presence of small, rust-colored hairs at the apices of leaves at the growing tips. Calder and Taylor consider this to be a distinguishing feature of ssp. *crispilosa*. This characteristic was found not only on the Revillagigedo Island specimens (as might be expected due to the geographic proximity to the Queen Charlotte Islands) but on all the material from Prince William Sound as well. Carolyn also found the hairs on material from her studies on Afognak Island. All the University of Alaska Museum Herbarium specimens of this taxon were on loan and could not be used for comparison. The type specimen and other material will need to be examined to resolve the identity of the Alaska specimens.

Crassula aquatica (L.) Schonl.

G5

S3

This diminutive species is often overlooked. It was found in the warm creek at Shakes Hot Spring on the Stikine River, growing with *Callitriche* sp., *Eleocharis acicularis*, and *Potamogeton foliosus*.

Cystopteris montana (Lam.) Bernh.

G4

S3

Found in the high alpine karst of Prince of Wales Island in well-drained calcareous soil, this plant is a good example of a disjunct population thriving in relative isolation due to favorable local conditions.

Draba borealis var. *maxima* (Hult.) Welsh

G5T2Q

S2

This robust rockcress was found growing on gravelly cliffs at the north end of North Twin Bay, Elrington Island, about 3 meters above the beach. There were approximately a dozen plants scattered over the 100 meters of accessible cliffs, in open alder scrub, with *Campanula rotundifolia*, *Dodecatheon pulchellum*, *Anaphalis margaritacea*, *Malaxis monophylla*, and other tall forbs.

Draba incerta Payson

G4

S2S3

A species more common in the Rocky Mountains, this rockcress was found in the alpine karst of Prince of Wales Island. It is a plant often found on calcareous scree slopes. This occurrence is the first documented population in Southeast Alaska.

This small and easily overlooked rockcress was growing on south and southwest facing rock faces with *Stellaria borealis*, *Trisetum spicatum*, *Cystopteris fragilis* and *C. montana*, *Dryas drummondii*, and *Anemone parviflora*.

Dulichium arundinaceum (L.) Britt.

G5

S1

The only references to this species in Alaska are in a doctoral dissertation by Perkins (1982) and in Stensvold's Vascular Plant List of Southeastern Alaska (Muller, 1982). No material was found in the herbaria at Sitka or Fairbanks. This population is far removed from its normal range of southern British Columbia and further south.

Approximately 50 plants were observed near the road in the muddy margin of eastern most Neck Lake, growing with *Carex* and *Juncus* spp., *Sanguisorba* spp., and *Spiraea douglasii*. None of the plants were in flower.

It is possible that this plant is adventive to the site. Amy Russell of the Thorne Bay Ranger District said that the company that built the road might have been a Seattle company, and it is possible that it brought its own machinery to the island, complete with seeds or living rhizomes. The absence of flowers could also indicate its nature as an introduction, although it appears to be well established. An in-depth survey of the wetlands of the area is needed.

Eleocharis kamtschatica (C. A. Mey.) Kom.

G4

S2

Our material was tentatively placed here by Carolyn Parker of ALA, who felt that it was too undeveloped to positively separate it from *E. uniglumis*. *E. kamtschatica* has been recorded from near Anan Lagoon; if it is *E. uniglumis* it would be a small range extension south.

The plant was common at the site, growing in the brackish margins of the lagoon with *Ranunculus orthorhynchus* var. *alascensis*, and could easily be collected again next year, as the site is very popular with visitors and therefore frequented by USFS staff. The best time to collect it would be mid to late August. The specimen from Montague Island represents a new location, as neither *E. uniglumis* nor *E. kamtschatica* has been previously recorded from that area.

Lycopodium inundatum L.

G5

S3

A peripheral species, found growing in a muddy spot next to a small pond in a red cedar - yellow cedar muskeg meadow. The southern part of Southeast Alaska is this species' northwestern range limit in North America.

Lycopus uniflorus Michx.

G5

S3

This plant was found growing in wet stream and lake margins with *Carex* spp., *Veronica americana*, and *Mentha arvensis*. Both the Stikine site and the Prince of Wales site are just beyond the range boundary marked in Hulten (1968).

Lysimachia thyrsiflora L.

G5

S4

Widely scattered populations occur all over Alaska, and this location on the Stikine is the farthest south in the state. It was found growing with *Carex* spp., *Viburnum edule*, and *Calamagrostis canadensis* in an open, wet tall willow scrub.

Malaxis monophylla (L.) Sw.

G5T5

S3S4

Although Hulten describes this as a plant of marshes and bogs, it is often found on gravelly and surprisingly dry slopes, and on the forest margins of creeks and muskeg. Several plants

were growing in a cluster on an eroding slope at the northern end of the beach at North Twin Bay, Elrington Island, at the roots of an alder with *Campanula rotundifolia*, *Aruncus sylvester*, and *Conioselinum pacificum*. Previously known from scattered populations in southeast, Kodiak Island, and the Eklutna area, this is the first Prince William Sound record. Referred to in Welsh (1974) and DeLapp (1993) as *Malaxis monophyllos* (L.) Sw.

Minuartia biflora (L.) Schinz & Thell.

G5

S2

Found growing on dry, gravelly talus below a cliff, with a northwest aspect near *Arabis lyrata*, *Anemone parviflora*, *Minuartia rubella*, and *Epilobium anagallidifolium*. This location in the Prince of Wales alpine karst seems to represent a disjunct population well removed from the interior sites that characterize this species.

Platanthera chorisiana (Cham.) Rchb.

G2G3

S2

The Choris rein-orchid was the most consistently found rare plant on our survey. All the occurrences were in Prince William Sound. It has been collected there before, although it is more common in Southeast Alaska. This survey expanded the range of this species in the Sound.

It was found mostly in open bog meadows (one site was a wet woodland-alder scrub, where it was growing among grasses, sedges, and salmonberries). The bog sites were usually dominated by *Sphagnum* spp. and *Trichophorum caespitosum*. On occasion a *Racomitrium*-like species was the dominant moss. Other associated species include *Carex pauciflorum*, *Fauria crista-gallii*, *Selaginella selaginoides*, *Gentiana douglasiana*, *Spiranthes romanzoffiana*, and *Coptis* spp.

Even though the plants were often found in appropriate habitat, it was not common at any site. Sometimes it was not seen at all, even when the habitat looked appropriate. On the average, about three to five plants were seen per thirty acres of bog meadow surveyed, with individual plants scattered throughout. One unusual site on Knight Island, however, contained approximately forty plants in a three square meter area. Very few of these had flower stalks.

A systematic survey of this plant may reveal that it has a larger range than once believed, but it still appears to be sporadic and uncommon within it.

Poa leptocoma Trin. (= *P. paucispicula* Scribn. & Merr.)

G5

S2

This small bluegrass was found on the mountain peak above Marble Creek on Revillagigedo Island, on a gentle north facing talus slope where a snow bank had only recently melted. Carolyn Parker described it as being more like *P. paucispicula* due to its purple color, but this characteristic is not diagnostic. More study is needed for this particular specimen, and

Carolyn added that the taxonomic distinction between these two plants is small. In his supplement to the Flora of Alaska, Hulten (1973) refers all of the Alaska material that he reviewed to *P. paucispicula*. Welsh (1974) lumps *P. paucispicula* and *P. merrilliana* together under the name *P. leptocoma*. A more thorough review of this group needs to be done. It would be helpful if more material were gathered from the area.

Podagrostis thurberiana (Hitc.) Hult.

G5

S2

Found at high elevation in Prince William Sound, in thin, moist gravelly soil with *Carex* spp., *Saxifraga ferruginea*, and *Aconitum delphinifolium*. Found also in the alpine karst of Prince of Wales and Heceta Islands, in talus meadows with northwest aspects. This taxon is referred to by some as *Agrostis thurberiana* A. S. Hitchc..

Polygonum minimum Wats.

G5

S1

This is another plant that is little known from Alaska. Hulten (1968, 1973) does not include it. Welsh (1974) notes that it was only known as a weed from Haines, regarding it as adventive.

This specimen was found growing on the sparsely vegetated rocky lateral moraine of the Shakes Glacier. It was well established and growing with *Cystopteris fragilis*, *Poa* sp., *Epilobium latifolium*, *Stellaria borealis*, and small *Salix sitchensis* sprouts. It is unlikely that it was introduced here. The habitat is similar to its natural habitat from British Columbia southward. This could be the first state record for the species as a native plant.

Polystichum setigerum (Presl) Presl

G3

S2

This rare sword fern was not treated in Hulten (1968) nor in Welsh (1974), but can be found described in more recent floras and fern guides (Lellinger, 1985; Cody & Britton, 1989). One occurrence was recorded in a freshly logged area of Flicker ridge, northern Prince of Wales Island. Although it can be a large plant, this one had fronds about a foot long, with few sporangia only on the terminal pinnae. It was growing on a rocky cliff with *Adiantum pedatum*, *Polypodium vulgare*, *Thelypteris phegopteris*, *Heuchera glabra*, *Coptis aspleniifolia*, and *Actaea rubra* in what used to be a north facing hemlock forest. It is almost identical to a plant found in the Hyder area during the Misty Fiords survey. While uncommon, it is within its range (Wagner, 1979).

Primula eximia Greene

G5

S4

At least fifty individuals of this beautiful primrose were observed in a wet gravelly alpine area above MacLeod Harbor, Montague Island. They were found growing with *Carex* spp., *Luetkea pectinata*, *Ranunculus cooleyae*, *Saxifraga* spp., and *Juncus* spp. Only one other

collection is known from Prince William Sound (Hinchinbrook Island). This plant is included in *Primula tschuktschorum* Kjellm. var. *arctica* (Koidz.) Fern in Hulten (1968).

Ranunculus orthorhynchus Hook. var. *alascensis* (Bens.) Hult. G5T2Q S2

The distinctive beak of the achenes of these specimens is diagnostic, as the lower leaves were somewhat uncharacteristic. Previously reported from Anan Lagoon, individuals of this taxon were found to be common in the highest part of the brackish marsh at the forest's edge, next to the trail. Associated species included *Eleocharis* sp., *Cicuta douglasii*, *Oenanthe sarmentosa*, *Potentilla egedii*, and *Rumex* sp. It was most common in the sparsely vegetated muddy area. The only other *Ranunculus* in the area was *R. bongardii*. This variety is endemic to southeast Alaska and neighboring British Columbia.

Romanzoffia unalascensis Cham. G2G3 S2S3

Once known only from the Kodiak area west through the Aleutians, this collection from Heceta Island is the southeasternmost documented occurrence of the species. About a dozen individuals were found growing on a north facing blocky talus slope under a tall limestone cliff. Associated species included *Phleum commutatum*, *Polystichum lonchitis*, *Saxifraga oppositifolia*, *Saxifraga adscendens*, *Senecio moresbiensis*, *Salix reticulata*, and *Thalictrum alpinum*.

Salix interior Rowlee G5 S4

A distinctive willow with linear leaves. As the name implies, this willow is more commonly known from the interior where it occurs on river bars and shores. This location on the Stikine River is typical for the species' sandy habitat but very unusual in Southeast Alaska. Previously collected on the Stikine by Mary Stensvold, it was found to be well-established at The Desert (Andrew's Island).

Senecio moresbiensis (Cald. & Tay.) Doug. & Ruyle-Doug. G3 S1

Once thought to be endemic to the Queen Charlotte Islands, this rare plant has more recently been found in appropriate habitat on the outer islands of southern Southeast Alaska. It was locally abundant in the talus meadows of the north facing slopes of Bald Mountain on Heceta Island (see site description under *Romanzoffia unalascensis*).

Spiraea douglasii Hook. G5 S2

This beautiful shrub is a peripheral species found only in the southern part of southeast Alaska. It was often seen in suitable habitat along fresh lake and river shores. The collection

from Neck Lake, Prince of Wales Island is a slight extension north of the range mapped in Hulten (1968), but it has also been collected on Kuiu and Wrangell Islands.

Stachys emersonii Piper

G5

S1

A peripheral species collected from the shrubby border of the Naha River on Revillagigedo Island, where it was well established and growing with *Spiraea douglasii*. Revillagigedo Island is the northern limit of its range. Also known as *S. mexicana* Benth.

Viola sempervirens Greene

G5

S1

It is surprising to find the redwood violet in Southcentral Alaska. There is only one other documented occurrence in Alaska, that in southernmost Southeast. If truly *V. sempervirens*, it would be the northernmost documented occurrence of this species. It was found growing in the muddy margin of a stream flowing through low ericaceous scrub on Montague Island, approximately 3 kilometers north of Hanning Bay, in the lower alpine zone. Growing near *Empetrum nigrum*, *Luetkea pectinata*, *Fauria crista-gallii*, *Juncus arcticus*, and *Lycopodium sabinaefolium*.

CONCLUSION

The 1993 field season of rare plant inventory has been a very successful one. Almost three dozen rare plants have been documented, many of these being range extensions. Exceptionally good weather allowed many sites to be inventoried, some for the first time. Two plants, *Dulichium arundinaceum* and *Polygonum minimum*, were found that have been collected only once before in the state. Others (*Arnica mollis* and *Salix interior*) were found growing at considerable distance from other known populations. These taxa, along with the plants noted in previous Alaska Natural Heritage Program Rare Plant reports, are being tracked by AKNHP.

This study was one of several plant surveys that were being performed in USFS Region 10 during the 1993 field season. A similar study was conducted in Misty Fiords National Monument. USFS Regional botanist Mary Stensvold also completed field work that included surveys for rare plants. These various surveys, when taken together, will represent a substantial increase in our knowledge of the rare plants of National Forest lands in Alaska.

RECOMMENDATIONS

Further study of rare plants on Alaska Forest Service lands can be focused in two different ways. The areas inventoried in 1993 represent only a small percentage of Forest Service land, and new areas can be suggested for preliminary surveys. In addition, sites inventoried this year can be revisited for specific quantitative, with in-depth surveys of the rare plants known to occur there.

The information gathered in 1993 gives an increased understanding of the distribution of several plant taxa. The taxonomic status of some of those that we are tracking are in need of review. *Arnica lessingii* spp. *norbergii* and *Cassiope lycopodioides* spp. *crista-pilosa* are not recognized as valid taxa by the University of Alaska Museum Herbarium. A formal taxonomic review of these taxa should determine their inclusion in the BCD, as well as the inclusion of *Arnica lessingii* spp. *norbergii* in the Region Ten sensitive species list.

The Prince of Wales Island alpine area was the most important area surveyed this year. The alpine karst environment is unique in Alaska and supports a community of plants unlike anywhere else on Forest Service lands. The alpine caves are receiving increased attention from speleologists, geologists, and paleontologists. The ecological communities on the surface are also deserving of closer study.

The Challenge Cost-Share Agreement between the U. S. Forest Service has produced a significant amount of relevant information in its three year history, and has provided a solid basis for understanding rare plants in USFS Region 10. Future field work will help provide a clearer picture of the status of rare plants in Southcentral and Southeast Alaska.

RECOMMENDATIONS FOR NEW SITES TO BEGIN PRELIMINARY SURVEYS

Tongass National Forest

1. Prince of Wales Island: Alpine areas of the central and southern parts of the island, especially limestone karst and wetlands.
2. Dall, Long, and Coronation Islands: Alpine areas, especially limestone karst and the western and southernmost portions of these islands, where Queen Charlotte Islands rare plants are likely to occur.
3. Stikine River: Uppermost riparian areas, close to the border, which exhibit a strong interior continental influence, and alpine areas, especially around glaciers.

4. Etolin Island : Alpine areas.

Chugach National Forest

1. Seward Ranger District: Alpine areas.
2. Montague Island: Cape Clear alpine, glaciated areas of the north.
3. Other areas in Cordova Ranger District: Suckling Hills area, Kayak Island.

AREAS WHERE NUMEROUS RARE PLANTS WERE FOUND AND WHICH MERIT A MORE QUANTITATIVE ANALYSIS

Tongass National Forest

1. Prince of Wales Island: Alpine karst on the northern end of the island; wetland areas to assess the status of the population of *Dulichium arundinaceum* and *Ceratophyllum demersum* (reported on Prince of Wales Island by Perkins (1982) from "brackish pools in muskegs").
2. Stikine River: Shakes Glacier and Shakes Lake areas.

Chugach National Forest

1. Montague Island: Alpine area of the southern end. Setting up a base camp at Site R30, near MacLeod Harbor, and intensively surveying the area should prove fruitful.
2. Quantitative surveys for *Platanthera chorisiana* to determine specific distribution patterns and possibly reconsider its ranking as a level 2 taxon.

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APPENDIX I:
USFS ALASKA REGION SENSITIVE PLANT LIST

1. *Aphragmus eschscholtzianus*
2. *Arnica lessingii* ssp. *norbergii*
3. *Carex lenticularis* var. *dolia*
4. *Cirsium edule*
5. *Dodecatheon pulchellum* ssp. *alaskanum*
6. *Draba borealis* var. *maxima*
7. *Draba kamtschatica*
8. *Draba kananaskis*
9. *Glyceria leptostachya*
10. *Hymenophyllum wrightii*
11. *Isoetes truncata*
12. *Ligusticum calderi*
13. *Papaver alboroseum*
14. *Platanthera chorisiana*
15. *Platanthera gracilis*
16. *Poa laxiflora*
17. *Puccinellia glabra*
18. *Puccinellia kamtschatica*
19. *Ranunculus orthorhynchus* var. *alascensis*
20. *Romanzoffia unalascensis*
21. *Senecio moresbiensis*
22. *Stellaria ruscifolia* ssp. *aleutica*

APPENDIX II
ELEMENT OCCURRENCES, 1993 RARE PLANT
SURVEY-REGIONAL PROJECT

CATEGORY 2 PLANTS

COLL #	NAME	LOC.	DESCRIP.
93-0900	<i>Carex lenticularis</i> var. <i>dolia</i>	R24	Shakes Lake
93-0958	<i>Carex lenticularis</i> var. <i>dolia</i>	R30	Montague, MacLeod
93-1026	<i>Carex lenticularis</i> var. <i>dolia</i>	R31	Montague, Hanning
93-1048	<i>Carex lenticularis</i> var. <i>dolia</i>	R34	Whale Inlet beach

RARE TAXA NEW TO THE BCD AND / OR USFS LANDS

COLL #	NAME	LOC.	DESCRIP.
93-0827	<i>Arnica mollis</i>	R24	Shakes Lake
93-0602	<i>Draba incerta</i>	R05	Perue Mountain
93-0664	<i>Draba incerta</i>	R06	Mt. Calder
93-0684	<i>Dulichium arundinaceum</i>	R08	Neck Lake
93-0822	<i>Polygonum minimum</i>	R23	Shakes Glacier
93-0858	<i>Salix interior</i>	R26	The Desert

SIGNIFICANT DISJUNCT POPULATIONS

COLL #	NAME	LOC.	DESCRIP.
93-0588	<i>Androsace chamaejasme</i> ssp. <i>lehmanniana</i>	R05	Perue Mountain
93-0669	<i>Androsace chamaejasme</i> ssp. <i>lehmanniana</i>	R06	Mt. Calder
93-0706	<i>Androsace chamaejasme</i> ssp. <i>lehmanniana</i>	R11	Bald Mountain
93-0817a	<i>Crassula aquatica</i>	R22	Shakes Hot Spring
93-0603	<i>Cystopteris montana</i>	R05	Perue Mountain
93-0672	<i>Cystopteris montana</i>	R06	Mt Calder

93-0780	<i>Lysimachia thyrsoiflora</i>	R20	Twin Lakes
93-1057	<i>Malaxis monophylla</i>	R35	Elrington Island
93-0595	<i>Minuartia biflora</i>	R05	Perue Mountain
93-0694	<i>Romanzoffia unalaschcensis</i>	R11	Bald Mountain
93-0696	<i>Senecio moresbiensis</i>	R11	Bald Mountain
93-0724	<i>Senecio moresbiensis</i>	R11	Bald Mountain
93-1022	<i>Viola sempervirens</i>	R31	Montague, Hanning

OTHER RARE TAXA

COLL #	NAME	LOC.	DESCRIP.
93-0597	<i>Podagrostis thurberiana</i>	R05	Perue Mountain
93-0712	<i>Podagrostis thurberiana</i>	R11	Bald Mountain
93-0970	<i>Podagrostis thurberiana</i>	R30	Montague, MacLeod
93-1095	<i>Podagrostis thurberiana</i>	R38	Knight Island
93-1108	<i>Arnica lessingii</i> ssp. <i>norbergii</i>	R40	Brilliant Glacier
93-1010	<i>Atriplex alaskana</i>	R32	Montague, Hanning
93-0991	<i>Campanula lasiocarpa</i>	R30	Montague, MacLeod
93-0889	<i>Cassiope lycopodioides</i>	M44	Mt. Reid
93-1068	<i>Cassiope lycopodioides</i>	R37	Evans Island
93-1092	<i>Cassiope lycopodioides</i>	R37	Knight Island
93-1110	<i>Cassiope lycopodioides</i>	R40	Brilliant Glacier
93-0754	<i>Eleocharis kamtschatica?</i>	R19	Anan Lagoon
93-1047	<i>Eleocharis kamtschatica?</i>	R34	Whale Inlet
93-1065	<i>Draba borealis</i> var. <i>maxima</i>	R35	Elrington Island
93-0955	<i>Platanthera chorisiana</i>	R29	Montague, MacLeod
93-1032	<i>Platanthera chorisiana</i>	R32	Montague, Hanning
93-1087	<i>Platanthera chorisiana</i>	R37	Evans Island
93-1096	<i>Platanthera chorisiana</i>	R38	Knight Island
93-1097	<i>Platanthera chorisiana</i>	R38	Knight Island
93-1116	<i>Platanthera chorisiana</i>	R41	Perry Island

93-0730	<i>Polystichum setigerum</i>	R10	Flicker Ridge
93-0961	<i>Primula eximia</i>	R30	Montague Island
93-0755	<i>Ranunculus orthorhynchus</i> var. <i>alascensis</i>	R19	Anan Lagoon
93-0756	<i>Ranunculus orthorhynchus</i> var. <i>alascensis</i>	R19	Anan Lagoon

PERIPHERAL SPECIES

COLL #	NAME	LOC.	DESCRIP.
93-0646	<i>Abies lasiocarpa</i>	R05	Perue Mountain
93-0680	<i>Abies lasiocarpa</i>	R06	Mt. Calder
	<i>Abies lasiocarpa</i>	R11	Bald Mountain
93-0413	<i>Lycopodium inundatum</i>	R04	Mary Island
93-0685	<i>Lycopus uniflorus</i>	R07	Cavern Lake
93-0804	<i>Lycopus uniflorus</i>	R22	Shakes Hot Spring
93-0221	<i>Spiraea douglasii</i>	R02	Loring, Naha River
93-0682	<i>Spiraea douglasii</i>	R08	Neck Lake
93-0222	<i>Stachys emersonii</i>	R02	Naha River

APPENDIX III
COLLECTION LIST, 1993 RARE PLANT SURVEY-
REGIONAL PROJECT

* = tracked taxon RE = range extension or disjunct <RE = small range ext. (RE)= range edge

Note	Coll. #	Taxon Name	Site	Habitat
Division LYCOPHYTA				
LYCOPODIACEAE				
	R93-1041	<i>Lycopodium alpinum</i>	R33	tall forb / eric. meadow
*	R93-0413	<i>Lycopodium inundatum</i>	R04	muskeg
	R93-1019	<i>Lycopodium sabinaefolium</i>	R31	talus meadow
SELAGINELACEAE				
	R93-0670	<i>Selaginella selaginoides</i>	R06	talus meadow
ISOETACEAE				
	R93-1029	<i>Isoetes muricata</i> (= <i>Isoetes echinospora</i>)	R32	lake edge, 6" deep
	R93-0773	<i>Isoetes muricata</i> ssp. <i>maritima</i> (= <i>Isoetes maritima</i>)	R21	uprooted, at lake margin
EQUISETACEAE				
	R93-0791	<i>Equisetum arvense</i>	R20	marshy lake margin
	R93-0850	<i>Equisetum fluviatile</i>	R26	sand dunes
RE	R93-0785	<i>Equisetum palustre</i>	R20	marshy lake margin
	R93-0663	<i>Equisetum variegatum</i>	R06	talus meadow
Division PTEROPHYTA				
ADIANTACEAE				
	R93-1054	<i>Adiantum pedatum</i>	R35	scrubby cliff
ASPLENIACEAE				
(RE)	R93-0981	<i>Athyrium distentifolium</i> ssp. <i>americanum</i>	R30	talus meadow
	R93-0607	<i>Asplenium viride</i>	R05	rock face
	R93-0676	<i>Asplenium viride</i>	R06	gravel
*RE	R93-0603	<i>Cystopteris montana</i>	R05	talus meadow
*RE	R93-0672	<i>Cystopteris montana</i>	R06	talus meadow
	R93-0608	<i>Cystopteris fragilis</i>	R05	rock face
	R93-0823	<i>Cystopteris fragilis</i>	R23	rocky lateral moraine
	R93-1056	<i>Cystopteris fragilis</i>	R35	scrubby cliff
	R93-1090	<i>Cystopteris fragilis</i>	R38	cliff face / overhang
	R93-1091	<i>Cystopteris fragilis</i>	R38	cliff face / overhang
	R93-0729	<i>Polystichum braunii</i>	R11	roadside gravel

	R93-1007	<i>Polystichum braunii</i>	*	open forest, 2 miles NE of R28
	R93-0679	<i>Polystichum lonchitis</i>	R06	cave entrance
	M93-0868	<i>Polystichum lonchitis</i>	M42	talus meadow
*	R93-0730	<i>Polystichum setigerum</i>	R10	logged rocky slope

ADIANTACEAE

	R93-0690	<i>Cryptogramma acrostichoides</i> (= <i>C. crispa</i>)	R09	rock face
	R93-1001	<i>Cryptogramma acrostichoides</i> (= <i>C. crispa</i>)	R30	talus meadow

Division CONIFEROPHYTA

CUPRESSACEAE

*	R93-0414	<i>Chamaecyparis nootkatensis</i>	R04	muskeg
*	R93-0415	<i>Thuja plicata</i>	R04	muskeg

PINACEAE

*	R93-0680	<i>Abies lasiocarpa</i>	R06	krumholtz thicket
*	R93-0646	<i>Abies lasiocarpa</i>	R05	talus meadow
	R93-0637	<i>Tsuga mertensiana</i>	R05	talus meadow

Division ANTHOPHYTA

MONOCOTYLEDONAE

ARACEAE

	R93-1100	<i>Lysichiton americanum</i> (sprouts)	R39	bog meadow, streamside
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CYPERACEAE

	R93-1106	<i>Carex anthoxanthea</i>	R40	gravelly tundra meadow
	R93-0828	<i>Carex brunnescens</i> <i>ssp. pacifica</i>	R24	low moraine island
	M93-0895	<i>Carex circinnata</i>	M44	talus meadow
	R93-1069	<i>Carex circinnata</i>	R37	blocky fellfield
	R93-0995	<i>Carex dioica</i> <i>ssp. gynocrates</i> (male)	R30	talus meadow
RE	R93-0660	<i>Carex glacialis</i>	R06	talus meadow
	R93-0762	<i>Carex gmelinii</i>	R17	rocky beach meadow
	R93-0815	<i>Carex kelloggii</i>	R22	wet meadow
	R93-1098	<i>Carex kelloggii</i>	R38	bog meadow margin
*	M93-0867	<i>Carex lenticularis</i> var. <i>dolia</i> (including <i>C. enanderi</i>)	M42	wet gravel
*	R93-0900	<i>Carex lenticularis</i> var. <i>dolia</i> (including <i>C. enanderi</i>)	R24	terminal moraine island
*	R93-0958	<i>Carex lenticularis</i> var. <i>dolia</i> (including <i>C. enanderi</i>)	R30	wet gravelly meadow
*	R93-1026	<i>Carex lenticularis</i> var. <i>dolia</i> (including <i>C. enanderi</i>)	R21	talus meadow
*	R93-1048	<i>Carex lenticularis</i> var. <i>dolia</i> (including <i>C. enanderi</i>)	R34	salt pan

	R93-0409	<i>Carex lyngbyaei</i>	R03	beach meadow
	R93-0735	<i>Carex lyngbyaei</i>	R13	rocky beach meadow
	R93-1051	<i>Carex lyngbyaei</i>	R34	salt pan
	R93-0591	<i>Carex macrochaeta</i>	R05	talus meadow
	R93-1012	<i>Carex macrochaeta</i>	R31	talus slope
	R93-0692	<i>Carex micropoda</i> (= <i>C. pyrenaica</i> ssp. <i>micropoda</i>)	R09	gravelly streambed
	M93-0880	<i>Carex micropoda</i> (= <i>C. pyrenaica</i> ssp. <i>micropoda</i>)	M42	talus
	R93-0965	<i>Carex micropoda</i> (= <i>C. pyrenaica</i> ssp. <i>micropoda</i>)	R30	talus meadow
	R93-0975	<i>Carex micropoda</i> (= <i>C. pyrenaica</i> ssp. <i>micropoda</i>)	R30	talus meadow
	R93-0977	<i>Carex micropoda</i> (= <i>C. pyrenaica</i> ssp. <i>micropoda</i>)	R30	talus meadow
	R93-0996	<i>Carex micropoda</i> (= <i>C. pyrenaica</i> ssp. <i>micropoda</i>)	R30	talus meadow
	R93-1081	<i>Carex micropoda</i> (= <i>C. pyrenaica</i> ssp. <i>micropoda</i>)	R37	talus meadow
	R93-1084	<i>Carex micropoda</i> (= <i>C. pyrenaica</i> ssp. <i>micropoda</i>)	R37	talus meadow
	R93-0691	<i>Carex nigricans</i>	R09	gravelly streambed
	R93-1025	<i>Carex nigricans</i>	R21	talus meadow
	R93-0742	<i>Carex pluriflora</i>	R14	rocky beach meadow
	R93-1112	<i>Carex pluriflora</i>	R41	bog meadow
	R93-0801	<i>Carex cf. saxatilis</i>	R20	emergent, lake (shallow)
	R93-0802	<i>Carex CF saxatilis</i>	R20	emergent, lake (shallow)
	R93-1042	<i>Carex saxatilis</i> ssp. <i>laxa</i>	R34	marshy lake margin
	R93-0592	<i>Carex scirpoidea</i>	R05	talus meadow
	R93-0617	<i>Carex scirpoidea</i>	R05	talus meadow
	R93-0649	<i>Carex scirpoidea</i>	R06	talus meadow
	R93-0795	<i>Carex sitchensis</i>	R20	marshy lake margin
	R93-1109	<i>Carex stylosa</i>	R40	gravelly tundra meadow
	R93-1113	<i>Carex stylosa</i>	R41	bog meadow
	R93-1114	<i>Carex stylosa</i>	R41	bog meadow
	R93-1050	<i>Carex</i> sp.	R34	salt pan
	R93-1083	<i>Carex</i> sp.	R37	talus meadow
*RE!	R93-0684	<i>Dulichium arundinaceum</i>	R08	muddy lake margin
	R93-0812	<i>Eleocharis acicularis</i>	R22	in hot spring
	R93-0816	<i>Eleocharis acicularis</i>	R22	in hot spring
(RE)	R93-0754	<i>Eleocharis</i> sp. <i>E. kamtschatica</i> or <i>E. uniglumis</i> , too undeveloped to tell	R19	marsh in brackish lagoon
(RE)	R93-1047	<i>Eleocharis</i> sp. <i>E. kamtschatica</i> or <i>E. uniglumis</i> , too undeveloped to tell	R34	salt pan
	R93-1027	<i>Eleocharis palustris</i>	R32	lake edge, emergent
	R93-1040	<i>Eriophorum russeolum</i>	R33	lake margin, emergent

	R93-0810	<i>Scirpus microcarpus</i>	R22	wet meadow
JUNCACEAE				
	R93-0746	<i>Juncus arcticus</i> ssp. <i>sitchensis</i>	R15	rocky beach meadow
	R93-1011	<i>Juncus arcticus</i>	R31	talus meadow
	R93-0902	<i>Juncus bufonius</i>	R27	mud flat
	R93-0619	<i>Juncus drummondii</i>	R05	talus meadow
	R93-0972	<i>Juncus drummondii</i>	R30	talus meadow
	R93-0787	<i>Juncus ensifolius</i>	R20	marshy lake margin
	R93-0797	<i>Juncus filiformis</i>	R20	marshy lake margin
	R93-0811	<i>Juncus filiformis</i>	R22	wet meadow
	R93-0899	<i>Juncus cf. filiformis</i>	R22	in hot spring
	R93-0618	<i>Juncus mertensianus</i>	R05	talus meadow
	M93-0879	<i>Juncus mertensianus</i>	M42	talus
	R93-1000	<i>Juncus mertensianus</i>	R30	talus meadow
	R93-0957	<i>Juncus oreganus</i>	R29	muddy bog pond
	R93-1031	<i>Juncus oreganus</i>	R32	lake edge, emergent
	R93-1085	<i>Luzula arcuata</i> ssp. <i>unalaschcensis</i>	R37	talus meadow
	R93-1086	<i>Luzula arcuata</i> ssp. <i>unalaschcensis</i>	R37	talus meadow
	M93-0886	<i>Luzula wahlenbergii</i> (= <i>Luzula wahlenbergii</i> ssp. <i>piperi</i> sensu Hulten)	M43	tundra
	R93-1018	<i>Luzula wahlenbergii</i> (= <i>Luzula wahlenbergii</i> ssp. <i>piperi</i> sensu Hulten)	R31	talus slope
IRIDACEAE				
	R93-0411	<i>Iris setosa</i>	R03	beach meadow
LILIACEAE				
	R93-0587	<i>Lloydia serotina</i>	R05	talus meadow
RE	R93-0627	<i>Tofieldia coccinea</i>	R05	gravel
RE	R93-0693	<i>Tofieldia coccinea</i>	R11	talus meadow
ORCHIDACEAE				
*RE	R93-1057	<i>Malaxis monophylla</i>	R35	scrubby cliff
*<RE	R93-0955	<i>Platanthera chorisiana</i>	R29	open bog meadow
*	R93-1032	<i>Platanthera chorisiana</i>	R32	bog meadow
*	R93-1087	<i>Platanthera chorisiana</i>	R37	bog meadow
*	R93-1096	<i>Platanthera chorisiana</i>	R38	bog meadow margin
*	R93-1097	<i>Platanthera chorisiana</i>	R38	wet open forest
*<RE	R93-1116	<i>Platanthera chorisiana</i>	R41	bog meadow
	R93-0710	<i>Platanthera dilatata</i>	R11	talus meadow
RE	R93-1082	<i>Platanthera hyperborea</i> var. <i>hyperborea</i>	R37	talus meadow
	R93-0412	<i>Platanthera stricta</i> (= <i>Platanthera saccata</i>)	R03	forest
POACEAE				
	R93-0737	<i>Agrostis alaskana</i>	R13	rocky beach meadow

	R93-0796	<i>Agrostis alaskana</i>	R20	marshy lake margin
	R93-0667	<i>Agrostis mertensii</i>	R06	talus meadow
	R93-0711	<i>Agrostis mertensii</i>	R11	talus meadow
	R93-0825	<i>Agrostis mertensii</i>	R23	rocky lateral moraine
	R93-1080	<i>Agrostis mertensii</i>	R37	talus meadow
	R93-1105	<i>Agrostis mertensii</i>	R40	gravelly tundra meadow
	R93-0736	<i>Agrostis exarata</i>	R13	rocky beach meadow
	R93-0740	<i>Agrostis exarata</i>	R14	rocky beach meadow
	R93-0747	<i>Agrostis exarata</i>	R15	rocky beach meadow
	R93-0769	<i>Agrostis exarata</i>	R18	rocky beach meadow
	R93-0792	<i>Agrostis scabra</i>	R20	marshy lake margin
	R93-0793	<i>Alopecurus aequalis</i>	R20	emergent, lake (shallow)
	R93-1039	<i>Alopecurus aequalis</i>	R33	lake margin, emergent
	R93-0794	<i>Calamagrostis canadensis</i> ssp. <i>langsdorffii</i>	R20	marshy lake margin
	R93-1067	cf. <i>Calamagrostis</i> sp.	R36	fresh Carex marsh
<RE	R93-1115	<i>Danthonia intermedia</i>	R41	bog meadow
	R93-0800	<i>Deschampsia caespitosa</i> ssp. <i>caespitosa</i>	R20	emergent, lake (shallow)
	R93-0847	<i>Elymus glaucus</i>	R26	sand dunes
	R93-0707	<i>Elymus hirsutus</i>	R11	talus meadow
RE	R93-0848	<i>Elymus trachycaulus</i> ssp. <i>major</i> (= <i>Agropyron pauciflorum</i> ssp. <i>majus</i>)	R26	sand dunes
	R93-0824	<i>Festuca brachyphylla</i>	R23	rocky lateral moraine
	R93-0836	<i>Festuca brachyphylla</i>	R24	low moraine island
	M93-0894	<i>Festuca brachyphylla</i>	M44	talus meadow
	R93-0739	<i>Festuca rubra</i>	R13	rocky beach meadow
	R93-0741	<i>Festuca rubra</i>	R14	rocky beach meadow
	R93-1046	<i>Festuca rubra</i>	R34	lower beach meadow
	R93-0799	<i>Glyceria borealis</i>	R20	emergent, lake (shallow)
RE	R93-0798	<i>Glyceria maxima</i> ssp. <i>grandis</i>	R20	emergent, lake (shallow)
	R93-0998b	<i>Hierochloa alpina</i>	R30	talus meadow
	R93-0410	<i>Hierochloa odorata</i>	R03	beach meadow
	R93-0866	<i>Hierochloa odorata</i>	R27	wet brackish meadow
	R93-0803	<i>Phalaris arundinacea</i>	R20	emergent, lake (shallow)
RE	R93-0589	<i>Poa alpina</i>	R05	talus meadow
RE	R93-0611	<i>Poa alpina</i>	R05	talus meadow
	R93-0666	<i>Poa arctica</i> type-viviparous	R06	talus meadow
	R93-0857	<i>Poa arctica</i>	R26	sand dunes
	R93-0986	<i>Poa arctica</i> type-viviparous	R30	talus meadow
	R93-0748	<i>Poa eminens</i>	R15	rocky beach meadow
RE	R93-0851	<i>Poa glauca</i>	R26	sand dunes
RE	R93-0856	<i>Poa glauca</i>	R26	sand dunes
	R93-0642	<i>Poa palustris</i>	R05	talus meadow
	R93-0763	<i>Poa palustris</i>	R17	rocky beach meadow
	R93-0809	<i>Poa palustris</i>	R22	wet meadow, dominant

	R93-0829	<i>Poa paucispicula</i>	R24	low moraine island
	M93-0878	<i>Poa</i> sp. (<i>paucispicula</i> ?)	M42	talus
	R93-0979	<i>Poa paucispicula</i>	R30	talus meadow
	R93-0605	<i>Poa stenantha</i>	R05	talus meadow
	R93-0826	<i>Poa stenantha</i>	R23	rocky lateral moraine
	R93-1016	<i>Poa</i> sp.-viviparous	R31	talus slope
	R93-1094	<i>Poa</i> sp. (small anther group)	R38	blocky fellfield
	R93-0416	<i>Podagrostis aequivalvis</i>	R04	muskeg
*RE	R93-0597	<i>Podagrostis thurberiana</i> (= <i>Agrostis thurberiana</i>)	R05	talus meadow
*RE	R93-0712	<i>Podagrostis thurberiana</i> (= <i>Agrostis thurberiana</i>)	R11	talus meadow
*<RE	R93-0970	<i>Podagrostis thurberiana</i> (= <i>Agrostis thurberiana</i>)	R30	talus meadow
*<RE	R93-1095	<i>Podagrostis thurberiana</i> (= <i>Agrostis thurberiana</i>)	R38	blocky fellfield
	R93-0738	<i>Puccinellia nutkaensis</i>	R13	rocky beach meadow
	R93-1043	<i>Puccinellia nutkaensis</i>	R34	lower beach meadow
	R93-1044	<i>Puccinellia nutkaensis</i>	R34	salt pan
	R93-1009	<i>Puccinellia nutkaensis</i>	R31	gravelly beach
	R93-0713	<i>Trisetum cernuum</i>	R11	talus meadow
	R93-0590	<i>Trisetum spicatum</i> ssp. <i>alaskanum</i>	R05	talus meadow
	R93-0616	<i>Trisetum spicatum</i> ssp. <i>alaskanum</i>	R05	talus meadow
	R93-0629	<i>Trisetum spicatum</i> ssp. <i>alaskanum</i>	R05	gravel
	R93-0650	<i>Trisetum spicatum</i> ssp. <i>alaskanum</i>	R06	talus meadow
	R93-0643	<i>Vahlodea atropurpurea</i>	R05	talus meadow
	R93-0733	<i>Vahlodea atropurpurea</i>	R11	talus meadow
	R93-0971	<i>Vahlodea atropurpurea</i>	R30	talus meadow
	R93-0645	<i>Vahlodea atropurpurea</i> ssp. <i>latifolia</i>	R05	talus meadow
	M93-0877	<i>Vahlodea atropurpurea</i> ssp. <i>latifolia</i>	M42	talus meadow
	M93-0885	<i>Vahlodea atropurpurea</i> ssp. <i>latifolia</i>	M43	tundra
	R93-0998a	<i>Vahlodea atropurpurea</i> ssp. <i>latifolia</i>	R30	talus meadow
	R93-0999	<i>Vahlodea atropurpurea</i> ssp. <i>latifolia</i>	R30	talus meadow
POTAMOGETONACEAE				
	R93-0782	<i>Potamogeton alpinus</i> ssp. <i>tenuifolius</i>	R20	lake (shallow)
	R93-0781	<i>Potamogeton gramineus</i>	R20	lake (shallow)

RE	R93-0819	<i>Potamogeton foliosus</i>	R22	in hot spring
	R93-0218	<i>Zostera marina</i>	R01	below high tide line
	R93-0753	<i>Zostera marina</i>	R16	floating offshore
	R93-1049	<i>Zostera marina</i>	R34	low low tide zone
	R93-1111	<i>Zostera marina</i>	R41	low low tide zone

SPARGANIACEAE

	R93-0783	<i>Sparganium angustifolium</i>	R20	lake (shallow)
RE	R93-1030	<i>Sparganium minimum</i>	R32	lake edge, 1' deep

Division ANTHOPHYTA

DICOTYLEDONAE

APIACEAE

	R93-0596	<i>Conioselinum pacificum</i> (= <i>C. chinense</i>)	R05	talus meadow
	R93-0620	<i>Conioselinum pacificum</i> (= <i>C. chinense</i>)	R05	talus meadow
	R93-0698	<i>Conioselinum pacificum</i> (= <i>C. chinense</i>)	R11	talus meadow
	R93-0988	<i>Conioselinum pacificum</i> (= <i>C. chinense</i>)	R30	talus meadow
	R93-0749	<i>Ligusticum scoticum</i>	R15	rocky beach meadow
	R93-0989	<i>Osmorhiza purpurea</i>	R30	talus meadow

ASTERACEAE

	R93-0864	<i>Achillea borealis</i>	R27	wet brackish meadow
RE	R93-1061	<i>Anaphalis margaritacea</i>	R35	scrubby cliff
	R93-0671	<i>Antennaria alpina</i>	R06	talus meadow
	R93-0835	<i>Antennaria alpina</i>	R24	low moraine island
	M93-0898	<i>Antennaria alpina</i>	M44	talus meadow
	R93-1102	<i>Antennaria alpina</i>	R40	gravelly tundra meadow
	R93-0420	<i>Microseris borealis</i> (= <i>Apargidium boreale</i>)	R04	muskeg
	R93-1006	<i>Microseris borealis</i> (= <i>Apargidium boreale</i>)	R29	bog meadow
	R93-1020	<i>Microseris borealis</i> (= <i>Apargidium boreale</i>)	R31	talus meadow
	R93-0764	<i>Arnica lanceolata</i> ssp. <i>amplexicaulis</i> (= <i>Arnica amplexicaulis</i>)	R17	rocky beach meadow
	R93-0683	<i>Arnica chamissonis</i> ssp. <i>chamissonis</i>	R08	lake margin / roadside
	R93-0638	<i>Arnica latifolia</i>	R05	talus meadow
	M93-0887	<i>Arnica latifolia</i>	M43	tundra
	R93-0573	<i>Arnica lessingii</i> ssp. <i>lessingii</i>	R05	talus meadow
	R93-1108	<i>Arnica lessingii</i>	R40	gravelly tundra meadow
RE	R93-0827	<i>Arnica mollis</i>	R24	low moraine island

	R93-0677	<i>Artemisia arctica</i> with fungal (?) infection	R06	gravel
	M93-0897	<i>Artemisia arctica</i> ssp. <i>arctica</i>	M44	talus meadow
	R93-1023	<i>Artemisia arctica</i> ssp. <i>arctica</i>	R31	tundra meadow
	R93-0777	<i>Aster modestus</i>	R21	lake margin
	R93-0770	<i>Aster subspicatus</i>	R18	rocky beach meadow
	R93-1003	<i>Aster subspicatus</i>	R29	bog meadow
RE	R93-0575	<i>Erigeron humilis</i>	R05	talus meadow
RE	R93-0609a	<i>Erigeron humilis</i>	R05	gravel
	R93-0717	<i>Erigeron humilis</i>	R11	talus meadow
	R93-0727	<i>Erigeron peregrinus</i> ssp. <i>callianthemus</i>	R12	open muskeg
	R93-0572	<i>Erigeron peregrinus</i> ssp. <i>peregrinus</i>	R05	karst, alpine heath
	R93-1089	<i>Erigeron peregrinus</i>	R37	bog meadow
	R93-0635	<i>Hieracium triste</i>	R05	talus meadow
	R93-0644	<i>Hieracium triste</i>	R05	talus meadow
	M93-0881	<i>Hieracium triste</i>	M42	talus
	R93-0987	<i>Petasites nivalis</i> (= <i>Petasites hyperboreus</i>)	R30	talus meadow
RE	R93-0574	<i>Senecio lugens</i>	R05	talus meadow
RE	R93-0659	<i>Senecio lugens</i>	R06	talus meadow
*RE	R93-0696	<i>Senecio moresbiensis</i>	R11	talus meadow
*RE	R93-0724	<i>Senecio moresbiensis</i>	R11	talus meadow
	R93-0725	<i>Senecio triangularis</i>	R11	talus meadow
RE	R93-0844	<i>Solidago canadensis</i>	R26	sand dunes
	R93-0681	<i>Solidago lepida</i>	R08	lake margin / roadside
	R93-0675	<i>Solidago multiradiata</i>	R06	gravel
RE	R93-0604	<i>Taraxacum ceratophorum</i>	R05	talus meadow
RE	R93-0709	<i>Taraxacum ceratophorum</i>	R11	talus meadow
BETULACEAE				
	R93-0843	<i>Alnus viridis</i> ssp. <i>crispa</i> (= <i>A. crispa</i> ssp. <i>sinuata</i>)	R25	slough bank
	R93-0853	<i>Alnus viridis</i> ssp. <i>crispa</i> (= <i>A. crispa</i> ssp. <i>sinuata</i>)	R26	sand dunes
BORAGINACEAE				
	R93-1064	<i>Mertensia maritima</i>	R35	gravelly beach
BRASSICACEAE				
	R93-1059	<i>Arabis hirsuta</i>	R35	scrubby cliff
	R93-0846	<i>Arabis hirsuta</i> ssp. <i>eschsoltziana</i>	R26	sand dunes
	R93-1066	<i>Arabis hirsuta</i> ssp. <i>eschsoltziana</i>	R35	gravelly beach
	R93-0594b	<i>Arabis lyrata</i>	R05	talus meadow

	R93-0615	<i>Arabis lyrata</i> ssp. <i>kamchatica</i>	R05	talus meadow
	R93-0640	<i>Arabis lyrata</i> ssp. <i>kamchatica</i>	R05	talus meadow
	R93-0678	<i>Arabis lyrata</i>	R06	gravel
	R93-0708	<i>Arabis lyrata</i>	R11	talus meadow
	R93-0849	<i>Barbarea orthoceras</i>	R26	sand dunes
	R93-0959	<i>Barbarea orthoceras</i>	R30	blocky fellfield
<RE	R93-1014	<i>Cardamine bellidifolia</i>	R31	talus slope
<RE	R93-1093	<i>Cardamine bellidifolia</i>	R38	blocky fellfield
	R93-0807	<i>Cardamine pennsylvanica</i>	R22	hot spring bank
	R93-0223	<i>Cardamine umbellata</i>	R02	rock face
	R93-0594a	<i>Cardamine umbellata</i>	R05	talus meadow
	R93-0641	<i>Cardamine umbellata</i>	R05	talus meadow
	R93-0966	<i>Cardamine umbellata</i>	R30	talus meadow
	R93-0978	<i>Cardamine umbellata</i>	R30	talus meadow
	R93-1035	<i>Cardamine umbellata</i>	R33	lake margin
	R93-1062	<i>Cardamine umbellata</i>	R35	scrubby cliff
*	R93-1065	<i>Draba borealis</i> var. <i>maxima</i>	R35	scrubby cliff
	R93-0613	<i>Draba lonchocarpa</i> var. <i>vestita</i>	R05	rock face
	R93-0705	<i>Draba lonchocarpa</i> var. <i>vestita</i>	R11	rock face
	R93-0715	<i>Draba lonchocarpa</i> var. <i>vestita</i>	R11	sinkhole
	R93-0723	<i>Draba lonchocarpa</i> var. <i>vestita</i>	R11	rock face
*RE	R93-0602	<i>Draba incerta</i>	R05	rock face
*RE	R93-0664	<i>Draba incerta</i>	R06	rock face
	R93-0776	<i>Rorippa palustris</i> (= <i>R. islandica</i>)	R21	marshy lake margin
	R93-0845	<i>Rorippa palustris</i> (= <i>R. islandica</i>)	R26	sand dunes
	R93-0772	<i>Subularia aquatica</i>	R21	uprooted, at lake margin
CALLITRICHACEAE				
	R93-0775	<i>Callitriche anceps</i>	R21	at lake margin
	R93-0817b	<i>Callitriche verna</i>	R22	in hot spring
CAMPANULACEAE				
	R93-1055	<i>Campanula rotundifolia</i>	R35	scrubby cliff
*<RE	R93-0991	<i>Campanula lasiocarpa</i>	R30	talus meadow
CARYOPHYLLACEAE				
	R93-0621	<i>Cerastium arvense</i>	R05	talus meadow
RE	R93-0609b	<i>Cerastium beerianum</i>	R05	gravel
	R93-0714	<i>Cerastium beerianum</i>	R11	talus meadow
	R93-1053	<i>Cerastium beerianum</i>	R35	scrubby cliff

RE	R93-0630	<i>Gastrolychnis apetala</i> (= <i>Melandrium apetalum</i>)	R05	gravel
*RE	R93-0595	<i>Minuartia biflora</i>	R05	gravel
RE	R93-0632	<i>Minuartia rubella</i>	R05	gravel
RE	R93-0720	<i>Minuartia rubella</i>	R11	rock face
	R93-0759	<i>Sagina maxima</i> ssp. <i>crassicaulis</i> (= <i>S. crassicaulis</i>)	R17	rocky beach meadow
	R93-1058	<i>Sagina maxima</i> ssp. <i>crassicaulis</i> (= <i>S. crassicaulis</i>)	R35	scrubby cliff
RE	M93-0893	<i>Silene acaulis</i> ssp. <i>acaulis</i>	M44	talus meadow
	R93-0220	<i>Spergularia canadensis</i>	R01	lower beach meadow
	R93-1101	<i>Spergularia canadensis</i>	R39	rocky, oily shoreline
	R93-0757	<i>Stellaria borealis</i> var. <i>borealis</i>	R17	rocky beach meadow
	R93-0821	<i>Stellaria borealis</i> (= <i>S. sitchana</i>)	R23	rocky lateral moraine
	R93-0614	<i>Stellaria calycantha</i>	R05	talus meadow
	R93-0830	<i>Stellaria calycantha</i>	R24	low moraine island
	R93-0985	<i>Stellaria calycantha</i>	R30	talus meadow
	R93-0744	<i>Stellaria humifusa</i>	R14	rocky beach meadow
	R93-1045	<i>Stellaria humifusa</i>	R34	lower beach meadow
	R93-1052	<i>Stellaria cf. humifusa</i>	R34	salt pan
	R93-1038	<i>Stellaria monantha</i>	R33	gravel bar
CHENOPODIACEAE				
*	R93-1010	<i>Atriplex alaskensis</i>	R31	gravelly beach
	R93-0219	<i>Atriplex gmelinii</i>	R01	lower beach meadow
	R93-0750	<i>Atriplex gmelinii</i>	R15	rocky beach meadow
	R93-0751	<i>Atriplex gmelinii</i>	R15	rocky beach meadow
	R93-1099	<i>Atriplex gmelinii</i>	R38	low on gravelly beach
<RE	R93-0854	<i>Chenopodium capitatum</i>	R26	sand dunes
CORNACEAE				
	R93-0779	<i>Swida stolonifera</i> (= <i>Cornus stolonifera</i>)	R20	lake margin
CRASSULACEAE				
*RE	R93-0817a	<i>Crassula aquatica</i>	R22	in hot spring
	R93-0651	<i>Rhodiola integrifolia</i> (= <i>Sedum rosea</i>)	R06	gravel
	R93-0655	<i>Rhodiola integrifolia</i> (= <i>Sedum rosea</i>)	R06	gravel
	R93-0700	<i>Rhodiola integrifolia</i> (= <i>Sedum rosea</i>)	R11	talus meadow
	R93-0701	<i>Rhodiola integrifolia</i> (= <i>Sedum rosea</i>)	R11	talus meadow
	R93-1037	<i>Rhodiola integrifolia</i>	R33	tall forb / eric meadow

		(= <i>Sedum rosea</i>)		
DROCERACEAE	R93-0417	<i>Drosera anglica</i>	R04	muskeg
EMPETRACEAE				
RE	M93-0892	<i>Empetrum hermaphroditum</i>	M44	talus meadow
ERICACEAE				
RE	R93-0626	<i>Arctous rubra</i> (= <i>Arctostaphylos rubra</i>)	R05	gravel
RE	R93-0652	<i>Arctous rubra</i> (= <i>Arctostaphylos rubra</i>)	R06	gravel
*RE	M93-0889	<i>Cassiope lycopodioides</i>	M44	talus meadow / rock face
*	R93-1068	<i>Cassiope lycopodioides</i>	R37	blocky fellfield
*	R93-1092	<i>Cassiope lycopodioides</i>	R38	blocky fellfield
*	R93-1110	<i>Cassiope lycopodioides</i>	R40	rock face
	R93-0418	<i>Loiseleuria procumbens</i>	R04	muskeg
	R93-0654	<i>Phyllodoce aleutica</i> ssp. <i>glanduliflora</i>	R06	krumholtz thicket
	M93-0869	<i>Phyllodoce aleutica</i>	M42	thick tundra
FABACEAE				
<RE	R93-0668	<i>Astragalus alpinus</i>	R06	talus meadow
	R93-0760	<i>Lathyrus maritimus sprout</i>	R17	rocky beach meadow
	R93-0863	<i>Lathyrus palustris</i> ssp. <i>pilosus</i>	R27	wet brackish meadow
	R93-0661	<i>Oxytropis campestris</i>	R06	talus meadow
GENTIANACEAE				
	R93-0622	<i>Gentiana amarella</i> ssp. <i>acuta</i>	R05	talus meadow
	R93-0647	<i>Gentiana amarella</i> ssp. <i>acuta</i>	R06	talus meadow
	R93-0665	<i>Gentiana amarella</i> ssp. <i>acuta</i>	R06	talus meadow
	R93-0598	<i>Gentiana platypetala</i>	R05	talus meadow
	R93-0658	<i>Swertia perennis</i>	R06	talus meadow
HALAGORACEAE				
	R93-0582	<i>Hippuris montana</i>	R05	talus meadow
	R93-0774	<i>Hippuris vulgaris</i>	R21	uprooted, at lake margin
	R93-1028	<i>Hippuris vulgaris</i>	R32	lake edge, 6" deep
HYDROPHYLLACEAE				
	R93-0577	<i>Romanzoffia sitchensis</i>	R05	wet gravel creekbed
	R93-0585	<i>Romanzoffia sitchensis</i>	R05	wet gravel creekbed
	R93-0689	<i>Romanzoffia sitchensis</i>	R09	gravelly streambed
	R93-0834	<i>Romanzoffia sitchensis</i>	R24	low moraine island
	M93-0873	<i>Romanzoffia sitchensis</i>	M42	talus
	R93-0964	<i>Romanzoffia sitchensis</i>	R30	talus meadow
*RE	R93-0694	<i>Romanzoffia unalaschcensis</i>	R11	talus meadow
LAMIACEAE				

*<RE	R93-0685	<i>Lycopus uniflorus</i>	R07	lake margin
*<RE	R93-0804	<i>Lycopus uniflorus</i>	R22	hot spring bank
	R93-0818	<i>Mentha arvensis</i>	R22	wet meadow
*<RE	R93-0222	<i>Stachys emersonii</i> (= <i>S. mexicana</i>)	R02	river edge
LENTIBULARIACEAE				
	R93-0695	<i>Pinguicula vulgaris</i> ssp. <i>macroceras</i>	R11	talus meadow
	R93-0771	<i>Utricularia intermedia</i>	R21	uprooted, at lake margin
	R93-0784	<i>Utricularia minor</i>	R20	lake (shallow)
NYMPHACEAE				
	R93-0421	<i>Nuphar polysepalum</i>	R04	muddy muskeg puddle
ONAGRACEAE				
	R93-0731	<i>Epilobium ciliatum</i> ssp. <i>adenocaulon</i> (= <i>Epilobium adenocaulon</i>)	R10	logged rocky slope
	R93-0758	<i>Epilobium ciliatum</i> ssp. <i>adenocaulon</i> (= <i>Epilobium adenocaulon</i>)	R17	rocky beach meadow
	R93-0790	<i>Epilobium ciliatum</i> ssp. <i>adenocaulon</i> (= <i>Epilobium adenocaulon</i>)	R20	marshy lake margin
	R93-0805	<i>Epilobium ciliatum</i> ssp. <i>adenocaulon</i> (= <i>Epilobium adenocaulon</i>)	R22	hot spring bank
	R93-0852	<i>Epilobium ciliatum</i> ssp. <i>adenocaulon</i> (= <i>Epilobium adenocaulon</i>)	R26	sand dunes
	R93-0593	<i>Epilobium anagallidifolium</i>	R05	talus meadow
	R93-0612	<i>Epilobium anagallidifolium</i>	R05	talus meadow
	R93-0703a	<i>Epilobium anagallidifolium</i>	R11	talus meadow
	R93-0732	<i>Epilobium anagallidifolium</i>	R11	talus meadow
	R93-0820	<i>Epilobium anagallidifolium</i>	R23	rocky lateral moraine
	R93-0982	<i>Epilobium anagallidifolium</i>	R30	talus meadow
	R93-1002	<i>Epilobium anagallidifolium</i>	R30	talus meadow
	R93-0984	<i>Epilobium hornemannii</i> ssp. <i>behringianum</i> (= <i>E. behringianum</i>)	R30	talus meadow
	R93-1075	<i>Epilobium hornemannii</i> ssp. <i>hornemannii</i>	R37	talus meadow
	R93-1063	<i>Epilobium leptocarpum</i>	R35	scrubby cliff
	R93-0983	<i>Epilobium luteum</i>	R30	talus meadow
	R93-0703b	<i>Epilobium sertulatum</i>	R11	talus meadow
	R93-1024	<i>Epilobium sertulatum</i>	R31	tundra meadow
PLANTAGINACEAE				
	R93-0806	<i>Plantago major</i>	R22	hot spring bank
POLEMONIACEAE				
RE	R93-0855	<i>Polemonium pulcherrimum</i>	R26	sand dunes
POLYGONACEAE				
	R93-0990	<i>Bistorta vivipara</i> (= <i>Polygonum viviparum</i>)	R30	talus meadow

	R93-1005	<i>Polygonum fowleri</i>	R28	gravelly beach
RE!	R93-0822	<i>Polygonum minimum</i>	R23	rocky lateral moraine
	R93-0778	<i>Rumex fenestratus</i>	R21	marshy lake margin
	R93-1008	<i>Rumex transitorius</i>	R31	gravelly beach
PRIMULACEAE				
*RE	R93-0588	<i>Androsace chamaejasme</i> ssp. <i>lehmanniana</i>	R05	talus meadow
*RE	R93-0669	<i>Androsace chamaejasme</i> ssp. <i>lehmanniana</i>	R06	talus meadow
*RE	R93-0706	<i>Androsace chamaejasme</i> ssp. <i>lehmanniana</i>	R11	talus meadow
	R93-0419	<i>Dodecatheon jeffreyi</i>	R04	muskeg
	R93-0973	<i>Dodecatheon jeffreyi</i>	R30	talus meadow
	R93-0862	<i>Dodecatheon pulchellum</i>	R27	wet brackish meadow
	R93-1060	<i>Dodecatheon pulchellum</i>	R35	scrubby cliff
*RE	R93-0780	<i>Lysimachia thyrsoflora</i>	R20	marshy lake margin
<RE	R93-0962	<i>Primula cuneifolia</i> ssp. <i>saxifragifolia</i>	R30	talus meadow
<RE	R93-0993	<i>Primula cuneifolia</i> ssp. <i>saxifragifolia</i>	R30	talus meadow
	R93-0994	<i>Trientalis europaea</i>	R30	talus meadow
PYROLACEAE				
	R93-0734	<i>Monotropa hypopitys</i>	R13	closed forest
	R93-1004	<i>Pyrola minor</i>	R28	open tall scrub
RANUNCULACEAE				
RE	R93-0586b	<i>Anemone parviflora</i>	R05	talus meadow
	R93-0728	<i>Ranunculus bongardii</i>	R12	roadside gravel
	R93-0752	<i>Ranunculus bongardii</i>	R16	rocky beach meadow
	R93-0761	<i>Ranunculus bongardii</i>	R17	rocky beach meadow
<RE	R93-1015	<i>Ranunculus cooleyae</i>	R31	talus slope
<RE	R93-1077	<i>Ranunculus cooleyae</i>	R37	talus meadow
<RE	R93-0610	<i>Ranunculus eschscholtzii</i>	R05	talus meadow
<RE	R93-0624	<i>Ranunculus eschscholtzii</i>	R05	talus meadow
	M93-0876	<i>Ranunculus eschscholtzii</i>	M42	talus
	M93-0896	<i>Ranunculus eschscholtzii</i>	M44	talus meadow
	R93-0901	<i>Ranunculus eschscholtzii</i>	R24	terminal moraine island
	R93-1013	<i>Ranunculus eschscholtzii</i>	R31	talus meadow
	R93-1078	<i>Ranunculus eschscholtzii</i>	R37	talus meadow
*	R93-0755	<i>Ranunculus orthorhynchus</i> var. <i>alaschensis</i>	R19	marsh in brackish lagoon
*	R93-0756	<i>Ranunculus orthorhynchus</i> var. <i>alaschensis</i>	R19	marsh in brackish lagoon
RE	R93-0578	<i>Thalictrum alpinum</i>	R05	talus meadow
ROSACEAE				
RE	R93-0673	<i>Dryas drummondii</i>	R06	gravel
	R93-1117	<i>Malus fusca</i>	R41	scrubby bog margin

RE	M93-0891	<i>Potentilla hyparctica</i>	M44	talus meadow
	R93-0657	<i>Potentilla uniflora</i>	R06	rock face
	R93-0788	<i>Rubus stellatus</i> (= <i>R. arcticus</i> ssp. <i>stellatus</i>)	R20	marshy lake margin
<RE	R93-1079	<i>Sibbaldia procumbens</i>	R37	talus meadow
	R93-1033	<i>Sorbus sitchensis</i>	R32	muskeg scrub margin
*	R93-0221	<i>Spiraea douglasii</i>	R02	river edge
*<RE	R93-0682	<i>Spiraea douglasii</i>	R08	lake margin / roadside
RUBIACEAE				
	R93-0745	<i>Galium trifidum</i> ssp. <i>trifidum</i>	R14	rocky beach meadow
	R93-0789	<i>Galium trifidum</i> ssp. <i>trifidum</i>	R20	marshy lake margin
SALICACEAE				
	R93-0859	<i>Salix alaxensis</i>	R26	sand dunes
	R93-0860	<i>Salix alaxensis</i>	R26	sand dunes
	R93-0628	<i>Salix arctica</i>	R05	gravel
	R93-0832	<i>Salix arctica</i>	R24	low moraine island
	R93-0963	<i>Salix arctica</i>	R30	talus meadow
	R93-0786	<i>Salix barclayi</i>	R20	marshy lake margin
	R93-1034	<i>Salix barclayi</i>	R33	closed tall scrub
RE!	R93-0858	<i>Salix interior</i>	R26	sandy river bank
	R93-0813	<i>Salix lucida</i> ssp. <i>lasiandra</i> (= <i>Salix lasiandra</i>)	R22	wet meadow
	R93-0861	<i>Salix lucida</i> ssp. <i>lasiandra</i> (= <i>Salix lasiandra</i>)	R26	sand dunes
RE	M93-0890	<i>Salix polaris</i>	M44	talus meadow
	R93-0980	<i>Salix</i> sp. (<i>cf polaris</i>)	R30	talus meadow
RE	R93-0599	<i>Salix reticulata</i> ssp. <i>reticulata</i>	R05	talus meadow
RE	R93-0674	<i>Salix reticulata</i> ssp. <i>reticulata</i>	R06	gravel
RE	R93-0702	<i>Salix reticulata</i> ssp. <i>reticulata</i>	R11	talus meadow
	R93-0686	<i>Salix sitchensis</i>	R07	roadside
	R93-0600	<i>Salix stolonifera</i>	R05	talus meadow
	R93-0625	<i>Salix stolonifera</i>	R05	gravel
	R93-0631	<i>Salix stolonifera</i>	R05	gravel
	R93-0653	<i>Salix stolonifera</i>	R06	gravel
	R93-0656	<i>Salix stolonifera</i>	R06	gravel
	R93-0719	<i>Salix stolonifera</i>	R11	rock face
	R93-1103	<i>Salix</i> sp. (<i>cf stolonifera</i>)	R40	gravelly tundra meadow
	R93-0814	<i>Salix</i> sp.	R22	wet meadow
	R93-1107	<i>Salix</i> sp.	R40	gravelly tundra meadow
SAXIFRAGACEAE				
	R93-0580	<i>Mitella pentandra</i>	R05	talus meadow

	R93-0704	<i>Mitella pentandra</i>	R11	talus meadow
	R93-0721	<i>Mitella pentandra</i>	R11	rock face
	R93-0837	<i>Mitella pentandra</i>	R25	slough bank
	R93-0974	<i>Mitella pentandra</i>	R30	talus meadow
	R93-0699	<i>Parnassia fimbriata</i>	R11	talus meadow
RE	R93-0865	<i>Parnassia palustris</i>	R27	wet brackish meadow
RE	R93-0586a	<i>Saxifraga adscendens</i>	R05	wet gravel creekbed
RE	R93-0623b	<i>Saxifraga adscendens</i>	R05	alpine gravel mountaintop
RE	R93-0716	<i>Saxifraga adscendens</i>	R11	talus meadow
RE	R93-0601	<i>Saxifraga caespitosa</i>	R05	gravel mountaintop
RE	R93-0623a	<i>Saxifraga caespitosa</i>	R05	gravel mountaintop
RE	R93-0662	<i>Saxifraga caespitosa</i>	R06	gravel mountaintop
	R93-0687	<i>Saxifraga ferruginea</i>	R09	gravelly streambed
	R93-1072	<i>Saxifraga ferruginea</i>	R37	talus meadow
	R93-0634	<i>Saxifraga lyallii</i> ssp. <i>hultenii</i>	R05	gravel
	R93-0688	<i>Saxifraga lyallii</i> ssp. <i>hultenii</i>	R09	gravelly streambed
	M93-0872	<i>Saxifraga lyallii</i> ssp. <i>hultenii</i>	M42	talus
	R93-0968	<i>Saxifraga lyallii</i> ssp. <i>hultenii</i>	R30	talus meadow
	R93-0976	<i>Saxifraga lyallii</i> ssp. <i>hultenii</i>	R30	talus meadow
	R93-1104	<i>Saxifraga lyallii</i> ssp. <i>hultenii</i>	R40	gravelly tundra meadow
	R93-0579	<i>Saxifraga mertensiana</i>	R05	rock face
	M93-0870	<i>Saxifraga mertensiana</i>	M42	rock face
	R93-0967	<i>Saxifraga mertensiana</i>	R30	talus meadow
	R93-0633	<i>Saxifraga nelsoniana</i> (= <i>S. punctata</i>)	R05	gravel
	R93-0833	<i>Saxifraga nelsoniana</i> (= <i>S. punctata</i>)	R24	low moraine island
	M93-0882	<i>Saxifraga nelsoniana</i> (= <i>S. punctata</i>)	M42	talus
	R93-0969	<i>Saxifraga nelsoniana</i> (= <i>S. punctata</i>)	R30	talus meadow
	R93-1074	<i>Saxifraga nelsoniana</i> (= <i>S. punctata</i>)	R37	talus meadow
	R93-1073	<i>Saxifraga nelsoniana</i> ssp. <i>pacifica</i> (= <i>S. punctata</i> ssp. <i>pacifica</i>)	R37	talus meadow
RE	R93-0718	<i>Saxifraga oppositifolia</i> ssp. <i>oppositifolia</i>	R11	rock face
	M93-0871	<i>Saxifraga rivularis</i> var. <i>flexuosa</i>	M42	talus

RE	R93-1021	<i>Saxifraga rivularis</i>	R31	streambed moss meadow
	M93-0884	<i>Saxifraga tolmiei</i>	M42	talus
	R93-0726	<i>Tellima grandiflora</i>	R11	blocky fellfield

SCROPHULARIACEAE

*RE	R93-0583	<i>Castilleja</i> sp. <i>unalaschcensis/miniata</i>	R05	talus meadow
*	R93-0743	<i>Castilleja miniata</i> complex	R14	rocky beach meadow
*	R93-0765	<i>Castilleja miniata</i> complex	R17	rocky beach meadow
*	R93-0766	<i>Castilleja miniata</i> complex	R17	rocky beach meadow
*	R93-0767	<i>Castilleja miniata</i> complex	R17	rocky beach meadow
*	R93-0768	<i>Castilleja miniata</i> complex	R19	meadow in brackish lagoon
*	R93-0841	<i>Castilleja miniata</i>	R25	slough bank
*	R93-0842	<i>Castilleja miniata</i>	R25	slough bank
*RE	R93-0839	<i>Castilleja unalaschcensis</i>	R25	slough bank
*RE	R93-0840	<i>Castilleja unalaschcensis</i>	R25	slough bank
*	R93-1017	<i>Castilleja unalaschcensis</i>	R31	talus slope
	R93-0997	<i>Pedicularis lanata</i> (= <i>Pedicularis kanei</i>)	R30	talus meadow
	R93-0576	<i>Pedicularis oederi</i>	R05	talus meadow
	R93-0584	<i>Pedicularis oederi</i>	R05	talus meadow
	R93-0697	<i>Pedicularis oederi</i>	R11	talus meadow
	R93-1076	<i>Pedicularis oederi</i>	R37	talus meadow
	M93-0883	<i>Pedicularis ornithorhyncha</i>	M42	talus meadow
	R93-0956	<i>Pedicularis parviflora</i> ssp. <i>parviflora</i>	R29	open bog meadow
	R93-1088	<i>Pedicularis parviflora</i> ssp. <i>parviflora</i>	R37	bog meadow
	R93-0808	<i>Veronica americana</i>	R22	hot spring bank
	R93-1036	<i>Veronica serpyllifolia</i>	R33	lake margin
	R93-0581	<i>Veronica wormskjoldii</i>	R05	talus meadow
	R93-0606	<i>Veronica wormskjoldii</i>	R05	talus meadow
	R93-0639	<i>Veronica wormskjoldii</i>	R05	talus meadow
	R93-0722	<i>Veronica wormskjoldii</i>	R11	talus meadow
	R93-0838	<i>Veronica wormskjoldii</i>	R25	slough bank
	M93-0874	<i>Veronica wormskjoldii</i>	M42	talus
	M93-0875	<i>Veronica wormskjoldii</i>	M42	talus
	M93-0888	<i>Veronica wormskjoldii</i>	M43	tundra
	R93-0960	<i>Veronica wormskjoldii</i>	R30	blocky fellfield
	R93-0992	<i>Veronica wormskjoldii</i>	R30	talus meadow
	R93-1070	<i>Veronica wormskjoldii</i>	R37	talus meadow
	R93-1071	<i>Veronica wormskjoldii</i>	R37	talus meadow

VIOLACEAE

RE	R93-0636	<i>Viola biflora</i>	R05	talus meadow
RE	R93-0648	<i>Viola biflora</i>	R06	talus meadow
	R93-0831	<i>Viola langsdorfii</i>	R24	low moraine island
*RE	R93-1022	<i>Viola sempervirens</i>	R31	tundra meadow

RANGE EXTENSIONS FROM HULTEN, 1968:

* = tracked taxon RE = range extension or disjunct <RE = small range ext.(RE)= range edge

ASPLENIACEAE

*RE	R93-0603	<i>Cystopteris montana</i>	R05	talus meadow
*RE	R93-0672	<i>Cystopteris montana</i>	R06	talus meadow

EQUISETACEAE

RE	R93-0785	<i>Equisetum palustre</i>	R20	marshy lake margin
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CYPERACEAE

RE	R93-0660	<i>Carex glacialis</i>	R06	talus meadow
*RE!	R93-0684	<i>Dulichium arundinaceum</i>	R08	muddy lake margin

ORCHIDACEAE

*RE	R93-1057	<i>Malaxis monophylla</i>	R35	scrubby cliff
*<RE	R93-0955	<i>Platanthera chorisiana</i>	R29	open bog meadow
*<RE	R93-1116	<i>Platanthera chorisiana</i>	R41	bog meadow

LILIACEAE

RE	R93-0627	<i>Tofieldia coccinea</i>	R05	gravel
RE	R93-0693	<i>Tofieldia coccinea</i>	R11	talus meadow

POACEAE

*RE	R93-0597	<i>Podagrostis thurberiana</i> (= <i>Agrostis thurberiana</i>)	R05	talus meadow
*RE	R93-0712	<i>Podagrostis thurberiana</i> (= <i>Agrostis thurberiana</i>)	R11	talus meadow
*<RE	R93-0970	<i>Podagrostis thurberiana</i> (= <i>Agrostis thurberiana</i>)	R30	talus meadow
*<RE	R93-1095	<i>Podagrostis thurberiana</i> (= <i>Agrostis thurberiana</i>)	R38	blocky fellfield
<RE	R93-1115	<i>Danthonia intermedia</i>	R41	bog meadow
RE	R93-0848	<i>Elymus trachycaulus</i> ssp. <i>major</i> (= <i>Agropyron pauciflorum</i> ssp. <i>majus</i>)	R26	sand dunes
RE	R93-0798	<i>Glyceria maxima</i> ssp. <i>grandis</i>	R20	emergent, lake (shallow)
RE	R93-0589	<i>Poa alpina</i>	R05	talus meadow
RE	R93-0611	<i>Poa alpina</i>	R05	talus meadow
RE	R93-0851	<i>Poa glauca</i>	R26	sand dunes
RE	R93-0856	<i>Poa glauca</i>	R26	sand dunes

POTAMOGETONACEAE

RE	R93-0819	<i>Potamogeton foliosus</i>	R22	in hot spring
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SPARGANIACEAE

RE	R93-1030	<i>Sparganium minimum</i>	R32	lake edge, 1' deep
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ASTERACEAE

RE	R93-1061	<i>Anaphalis margaritacea</i>	R35	scrubby cliff
RE	R93-0827	<i>Arnica mollis</i>	R24	low moraine island
RE	R93-0575	<i>Erigeron humilis</i>	R05	talus meadow
RE	R93-0609a	<i>Erigeron humilis</i>	R05	gravel

RE	R93-0574	<i>Senecio lugens</i>	R05	talus meadow
RE	R93-0659	<i>Senecio lugens</i>	R06	talus meadow
*RE	R93-0696	<i>Senecio moresbiensis</i>	R11	talus meadow
*RE	R93-0724	<i>Senecio moresbiensis</i>	R11	talus meadow
RE	R93-0844	<i>Solidago canadensis</i>	R26	sand dunes
RE	R93-0604	<i>Taraxacum ceratophorum</i>	R05	talus meadow
RE	R93-0709	<i>Taraxacum ceratophorum</i>	R11	talus meadow
BRASSICACEAE				
<RE	R93-1014	<i>Cardamine bellidifolia</i>	R31	talus slope
<RE	R93-1093	<i>Cardamine bellidifolia</i>	R38	blocky fellfield
*RE	R93-0602	<i>Draba incerta</i>	R05	rock face
*RE	R93-0664	<i>Draba incerta</i>	R06	rock face
CAMPANULACEAE				
*<RE	R93-0991	<i>Campanula lasiocarpa</i>	R30	talus meadow
CARYOPHYLLACEAE				
RE	R93-0609b	<i>Cerastium beeringianum</i>	R05	gravel
*RE	R93-0595	<i>Minuartia biflora</i>	R05	gravel
RE	R93-0632	<i>Minuartia rubella</i>	R05	gravel
RE	R93-0720	<i>Minuartia rubella</i>	R11	rock face
RE	R93-0630	<i>Gastrolychnis apetala</i> (= <i>Melandrium apetalum</i>)	R05	gravel
RE	M93-0893	<i>Silene acaulis</i> ssp. <i>acaulis</i>	M44	talus meadow
CHENOPODIACEAE				
<RE	R93-0854	<i>Chenopodium capitatum</i>	R26	sand dunes
CRASSULACEAE				
*RE	R93-0817a	<i>Crassula aquatica</i>	R22	in hot spring
EMPETRACEAE				
RE	M93-0892	<i>Empetrum hermaphroditum</i> (= <i>Empetrum nigrum</i> ssp. <i>hermaphroditum</i>)	M44	talus meadow
ERICACEAE				
RE	R93-0626	<i>Arctous rubra</i> (= <i>Arctostaphylos rubra</i>)	R05	gravel
RE	R93-0652	<i>Arctous rubra</i> (= <i>Arctostaphylos rubra</i>)	R06	gravel
*RE	M93-0889	<i>Cassiope lycopodioides</i>	M44	talus meadow / rock face
FABACEAE				
<RE	R93-0668	<i>Astragalus alpinus</i>	R06	talus meadow
RE	R93-0661	<i>Oxytropis campestris</i>	R06	talus meadow
HYDROPHYLLACEAE				
*RE	R93-0694	<i>Romanzoffia unalaschcensis</i>	R11	talus meadow
LAMIACEAE				
*<RE	R93-0685	<i>Lycopus uniflorus</i>	R07	lake margin
*<RE	R93-0804	<i>Lycopus uniflorus</i>	R22	hot spring bank
*<RE	R93-0222	<i>Stachys emersonii</i> (= <i>S. mexicana</i>)	R02	river edge
POLEMONIACEAE				

RE	R93-0855	<i>Polemonium pulcherrimum</i>	R26	sand dunes
POLYGONACEAE				
RE!	R93-0822	<i>Polygonum minimum</i>	R23	rocky lateral moraine
PRIMULACEAE				
*RE	R93-0588	<i>Androsace chamaejasme</i> ssp. <i>lehmanniana</i>	R05	talus meadow
*RE	R93-0669	<i>Androsace chamaejasme</i> ssp. <i>lehmanniana</i>	R06	talus meadow
*RE	R93-0706	<i>Androsace chamaejasme</i> ssp. <i>lehmanniana</i>	R11	talus meadow
*RE	R93-0780	<i>Lysimachia thyrsiflora</i>	R20	marshy lake margin
<RE	R93-0962	<i>Primula cuneifolia</i> ssp. <i>saxifragifolia</i>	R30	talus meadow
<RE	R93-0993	<i>Primula cuneifolia</i> ssp. <i>saxifragifolia</i>	R30	talus meadow
*<RE	R93-0961	<i>Primula eximia</i>	R30	blocky fellfield
RANUNCULACEAE				
<RE	R93-1015	<i>Ranunculus cooleyae</i>	R31	talus slope
<RE	R93-1077	<i>Ranunculus cooleyae</i>	R37	talus meadow
<RE	R93-0610	<i>Ranunculus eschscholtzii</i>	R05	talus meadow
<RE	R93-0624	<i>Ranunculus eschscholtzii</i>	R05	talus meadow
RE	R93-0578	<i>Thalictrum alpinum</i>	R05	talus meadow
ROSACEAE				
RE	R93-0673	<i>Dryas drummondii</i>	R06	gravel
RE	M93-0891	<i>Potentilla hyparctica</i>	M44	talus meadow
<RE	R93-1079	<i>Sibbaldia procumbens</i>	R37	talus meadow
*<RE	R93-0682	<i>Spiraea douglasii</i>	R08	lake margin / roadside
SALICACEAE				
RE!	R93-0858	<i>Salix interior</i>	R26	sandy river bank
RE	M93-0890	<i>Salix polaris</i>	M44	talus meadow
RE	R93-0599	<i>Salix reticulata</i> ssp. <i>reticulata</i>	R05	talus meadow
RE	R93-0674	<i>Salix reticulata</i> ssp. <i>reticulata</i>	R06	gravel
RE	R93-0702	<i>Salix reticulata</i> ssp. <i>reticulata</i>	R11	talus meadow
SAXIFRAGACEAE				
RE	R93-0865	<i>Parnassia palustris</i>	R27	wet brackish meadow
RE	R93-0586a	<i>Saxifraga adscendens</i>	R05	wet gravel creekbed
RE	R93-0623b	<i>Saxifraga adscendens</i>	R05	gravel mountaintop
RE	R93-0716	<i>Saxifraga adscendens</i>	R11	talus meadow
RE	R93-0601	<i>Saxifraga caespitosa</i>	R05	gravel mountaintop
RE	R93-0623	<i>Saxifraga caespitosa</i>	R05	gravel mountaintop
RE	R93-0662	<i>Saxifraga caespitosa</i>	R06	gravel mountaintop
RE	R93-0718	<i>Saxifraga oppositifolia</i> ssp. <i>oppositifolia</i>	R11	rock face

RE	R93-1021	<i>Saxifraga rivularis</i>	R31	streambed moss meadow
SCROPHULARIACEAE				
RE	R93-0583	<i>Castilleja unalaschcensis</i>	R05	talus meadow
RE	R93-0839	<i>Castilleja unalaschcensis</i>	R25	slough bank
RE	R93-0840	<i>Castilleja unalaschcensis</i>	R25	slough bank
VIOLACEAE				
RE	R93-0636	<i>Viola biflora</i>	R05	talus meadow
RE	R93-0648	<i>Viola biflora</i>	R06	talus meadow
*RE	R93-1022	<i>Viola sempervirens</i>	R31	tundra meadow

***MAP I:
MAP OF 1993 RARE PLANT SURVEY SITES, TONGASS
NATIONAL FOREST***

***MAP II:
MAP OF 1993 RARE PLANT SURVEY SITES, CHUGACH
NATIONAL FOREST***