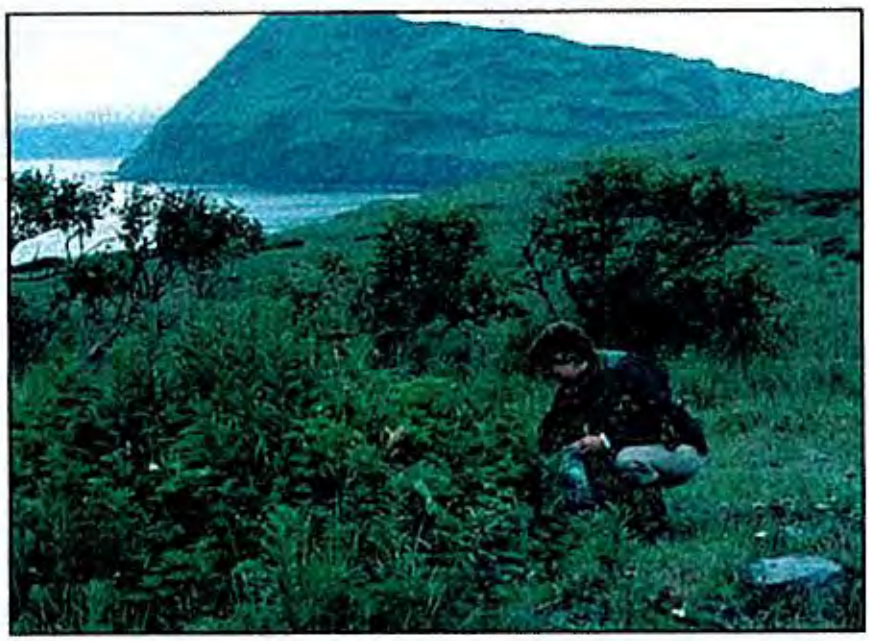
Trip to South-Central Alaska to Collect Small Fruit Genera for the USDA-ARS National Clonal Germplasm Repository

28 July through 7 August 1996



Kim E. Hummer, Research Leader/Curator
USDA-ARS NCGR, 33447 Peoria Road
Corvallis, OR 97333

Catherine I. Wright, Horticulturist
P.O. Box 3996
Palmer, AK 99645

Supported by a 1996 Exploration Grant from
USDA-ARS National Genetic Resources Laboratory
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The authors express their appreciation to the many individuals who helped to make this trip a reality. Mr. Dan Logan, U.S. Forest Service, Cordova Ranger District, was very helpful in suggesting locations to collect small fruit and generously provided a vehicle for us during the Cordova leg of the trip. Chris Dunlap and Kari Engbloom, both U.S.F.S employees at the Cordova District, provided additional assistance leading us to the Nagoon berries "under the first moose sign" and cajoling us to "Get back to work - instead of picking those berries!"

Mr. Pete Panarese, Chief of Field Operations for Alaska State Parks, Anchorage, provided great assistance for us to obtain a permit needed to collect in the parks throughout the state.

Ms. Robbie Sheidler coordinated a conjunction of botanical stars to guide us, and unsparingly shared her wonderful Kodiak hospitality and knowledge of Alaskan native peoples to aid us in our task. Ms. Anore Jones inspired us with her Kotzebue experiences and native plant lore and uses.

Ms. Carolyn Parker, Mr. Allen Butten, and others at the University of Alaska Herbarium suggested valuable collection locality information.

Mr. Stoney Wright, Manager of the Alaska Plant Materials Center, provided us space for sample preparation and information on plants at Attu Island and others in the Aleutian chain.

Ms. Karen Williams, Botanist at the USDA-ARS Plant Exchange Office, was extremely helpful in the administrative arrangements for coordinating our trip.

To all these folks we express our heartfelt thanks for making our trip a success.

Kim E. Hummer
Corvallis, Oregon

Catherine I. Wright
Palmer, Alaska

September 1996

Executive Summary

Kim E. Hummer, Research Leader/Curator for the USDA-ARS National Clonal Germplasm Repository, and Cathy Wright, Botanist, recently of the Alaska Plant Materials Center, collected small fruit genera throughout South-Central Alaska between 28 July and 7 August 1996. During this 10 day trip, a total of 110 seedlots, plants, and vouchers were collected from 30 different locations. Eleven small fruit genera were collected incompassing 26 taxa. Plant materials were collected from Cordova and the Copper River Delta, the northeast end of Kodiak Island, the Kenai Penninsula, and the vicinity of Anchorage and Wasilla. In addition, the Alaska Plant Materials Center donated 7 strawberry cultivars, bred in Alaska, and 7 *Ribes* cultivars (red and black currants) to the NCGR at Corvallis.

The target species during the expedition was *Fragaria chiloensis* subsp. *pacifica* Staudt. The goal was to collect this species from the northern end of its range. We contacted the University of Alaska Herbarium, Fairbanks, and obtained locality information for *Fragaria chiloensis*. We talked to local botanists We also checked location information as specified in "Flora of Alaska' by Hulten. We chose our route according to this locality information.

In short, we found native *Fragaria chiloensis* subsp. *pacifica* ONLY on the mainland in Cordova vicinity. The locals reported strawberries present on Hinchinbrook Island. A charter boat or plane was needed to reach this island. The weather was inclimant during our stay so we were unable to go out to this island. We had reports of *F. chiloensis* on the Aleutians, Kodiak Island, Kenai Penninsula, and Anchorage vicinity. We visited these locations. We found *Potentilla villosa* Pall., *Potentilla paulustris* (L.) Scop., *Lathyrus maritimus* L., *Sibbaldia procumbens* L., *Ligusticum scoticum* L., each of which, at different localities for a short moment, looked like *Fragaria*. Plants collected on Attu Island and brought to us turned out to be *Potentilla villosa*. Some specimens from the Aleutian Islands have been mistaken several times for *F. chiloensis*.

Fragaria chiloensis subsp. *pacifica* has been found on Kenai, Kodiak Island, and the Aleutian Islands as evidenced by review of the herbarium specimens of the UA Herbarium, Fairbanks. *Fragaria* is "not common" in the locations we visited on the islands. We will work through local Alaskan contacts to attempt to obtain additional localities for northern *Fragaria*. Escaped cultivated strawberries were obtained at two locations on the Kenai Penninsula and Girdwood. For the *Ribes*, five species of native currants were obtained and at one locality, the cultivated European black currant had escaped. Five native *Rubus* taxa and five native *Vaccinium* taxa were collected. Both *Rubus* and *Vaccinium* have diversified in different ecological strata from shrubby to prostrate ground cover.

Alaska is like a undeveloped second world country, bountiful in diversity of natural resources, filled with the lore and customs of native peoples, and seeking recognition for its place in the world. Alaska is rich in the diversity of the secondary genepool of native temperate fruit species. Further attention must be paid to preserve these resources. Additional collecting trips with specific known locality information to obtain the illusive *Fragaria chiloensis* in its beach habitats; to the southeaster region (Juneau and vicinity); and north of the Alaskan range for *Fragaria virginiana* subsp. *glauca* (S. Watts.)Staudt should be planned. Alaska,with its broad national and state park system, extensive Forest Service oversite, and many native peoples corporations would provide excellent opportunities for in situ conservation efforts.

Table 1. Taxa and common names of seed, plants, or herbarium specimens obtained by Kim E. Hummer and Cathy I. Wright in south-central Alaska between 28 July 1996 and 7 August 1996.

Astragalus alpinus L. subsp. *alpinus*	alpine milk vetch
Betula nana L. subsp. *exilis* (Sukatesh.) Hult	dwarf birch
Fragaria chiloensis (L.) Duschesne subsp. *pacifica* Staudt	beach strawberry
Fragaria x *ananassa* Duchesne	cultivated strawberry
Geum calthifolium Menzies	geum
Potentilla villosa Pall.	hairy potentilla
Ribes bracteosum Dougl.	stink currant
Ribes glandulosum Grauer	skunk currant
Ribes hudsonianum Richards	northern black currant
Ribes laxiflorum Pursh	trailing black currant
Ribes nigrum L.	European black currant
Ribes triste Pall.	northern red currant
Rosa acicularis Lindl	rose
Rubus arcticus L. subsp. *stellatus* (Sm.) Boiv emend. Hult	arctic raspberry
Rubus chamaemorus L.	cloudberry
Rubus idaeus L. subsp. *melanolasius* (Dieck) Focke	raspberry
Rubus pedatus Sm.	trailing raspberry, mossberry
Rubus spectabilis Pursh	salmonberry
Sambucus racemosa L. subsp. *pubens* (Michx.) House	elderberry
Sibbaldia procumbens L.	sibbaldia
Vaccinium alaskense How.	blueberry
Vaccinium caespitosum Michx.	dwarf blueberry
Vaccinium ovalifolium Sm.	blueberry
Vaccinium oxycoccus var. *microcarpus* (Turcz.) Fedtsch & Flerov.	little leaf cranberry
Vaccinium uliginosum L. subsp. *alpinum* (Bigel.) Hult	alpine blueberry
Vaccinium vitis-idaea L. subsp. *minus* (Lodd.) Hult.	lingonberry

Travelog of the Expedition

Sunday 28 July 1996

Kim left Corvallis at 9:00 AM and flew from Portland, through Seattle to Anchorage. Through the partly cloudy skies she had excellent views while flying northward. The Alaskan Airline Captain pointed out the Malaspina Glacier (which is larger than the state of Rhode Island) and Bering Glacier. Just north of those ice fields the Copper River washed its great silty flood plane into the Gulf of Alaska. Kim and Cathy would be seeing that drainage up close and personally in the next several days.

Cathy, the shorter red-haired one, met Kim the taller red-haired one, at the Anchorage Airport. They drove to Cathy's house in Wasilla, Alaska. Kim tried out the GPS provided by the Plant Exchange Office and found 5 satellites. The Wasilla location was
61°34' 54.0" N,
149°23' 31.2" W.

Kim was surprised to have the sun set at about 12:15 AM. Cathy moaned about the days being shorter now....

The plant collection trip consisted of several legs:

Cordova vicinity	29-31 July 1996
Kodiak Island	1-3 August 1996
Kenai Penninsula	4-5 August 1996
Palmer PMC	
Anchorage Vicinity	6 August 1996

Monday 29 July 1996

Kim and Cathy packed their camping equipment, herbarium presses, collection bags and several pairs of "southeast sneakers" (rubber boots) into Cathy's truck. Kim tended to be a minimalist in the packing but Cathy complimented well by being fully prepared for every eventuality. For example, Kim brought insect repellant but hadn't thought of the need for "Bear spray" (Pepper-spray for bears. Don't leave home without it!). Cathy had already invested in several canisters. (Federal and state employees aren't allowed to venture out unprotected in the woods of Alaska.) In the morning they visited the Alaska Plant Material's Center, in Palmer, and toured some of the small fruit collections there.

At 5:25 PM they left Anchorage Airport bound for Cordova in an Era Aviation DeHavilland dash 8 prop driven plane. Clouds covered most of the way but somehow the plane found the flats leading to the "Mudhole" Smith Airport in Cordova. Ear plugs certainly do help on those kinds of trips. A sign in the airport parking lot proclaimed "30 day Maximum Parking - no charge." This was quite a different attitude than other airports, such as Portland, where 3 minutes of parking in the wrong spot could cost $25.

Cathy and Kim shuttled into downtown Cordova, population 2,500 in summer and about 5,000 in winter. They arrived too late at night to obtain the Forest Service truck and go out to the Forest Service Cabin. They were taken to The Udder Inn, a quaint up-stairs bed and breakfast place furnished in Moo Motiff.

They dumped their stuff in their room and took a hike down to the waterfront. There, just as predicted, *Fragaria chiloensis* subsp. *pacifica* Staudt was growing on the gravel dockside opposite the AC (Alaska Commercial Company) Grocery.

96-01 Cordova Docks
Locality: on open gravel hillside facing Cordova Docks
Growing in coarse gravel mixed with sandy soil groing with moss
Directly opposite AC Grocery in Cordova, Alaska
About 200" annual precipitation in Cordova

60° 32'41.6" N
145° 45'44.1" W
Elevation 5 m

Associated Plants: *Alnus sinuata, Epilobium angustifolium, Epilobium latifolium, Achillea milifolia*
96-01-01 SD *F. chiloensis* subsp. *pacifica*, open pollinated fruit collected
96-01-02 PL *F. chiloensis* subsp. *pacifica*, clonal selection with many runners collected

96-02-01 Railroad Street, Cordova AK
Locality: understory of road edge; steep slope facing south

60° 32'37.5"N
145° 45'25"W

Associated Plants: *Picea sitchensis, Aruncus sylvester, Geum calthifolium, Ranunculus, Epilobium angustifolium*
96-02-01 SD *Rubus spectabilis* open pollinated fruit collected

<u>Tuesday 30 July 1996</u>

Returned to Cordova Docks to collect herbarium specimen.
96-01-01 H *F. chiloensis* subsp. *pacifica*

96-03 Hartney Bay, Cordova Vicinity

Drove out Whitshed Road 6 miles southwest of Cordova. Directly after bridge over Hartney Bay. Open edge of roadside. Plants collected on southeast side of roadway

60° 30'09.3" N
145° 51'41" W

elevation 5m

Associated plants: *Epilobium angustifolium, Alnus, Picea sitchensis, Potentilla palustris, Fescue, Heracleum lantanum*

96-03-01 SD *F. chiloensis* subsp. *pacifica* open pollinated fruit population sample collected
96-03-02 SD *Ribes hudsonianum* open pollinated fruit sample collected

96-04 Whitshed Road Extended

Rain, rain rain. We are soaked to the skin.
Peat bog on southeast side of road; exposure open to sun, a few scrub spruce scattered throughout.

60° 29'29"N
145° 52'14"W
elevation 10 m

Associated plants: *Vaccinium uliginosum, Spiranthes romanzoffiana, Carex, Vaccinium oxycoccus(Oxycoccus microcarpus* Turcz.*), Vaccinium vitis-idaea, Rubus spectabilis, Drosera rotundifolia , Cornus canadensis, Salix, Alnus*

96-04-01 SD *Vaccinium uliginosum* open pollinated fruit population sample collected
96-04-02 PL *Vaccinium vitis-idaeus* clone collected
96-04-03 PL *Vaccinium oxycoccus* (*Oxycoccus microcarpus* Turcz.)clone collected
96-04-04 SD *Rubus spectabilis* open pollinated fruit population samples collected

96-05 Near Point Whitshed
1 mile on trail after end of Whitshed Road
Peat tussocks

60° 29'29"N
145° 52'30"W
elevation 10 m
Associated plants: *Spiranthes romonzoffiana, Geum calthifolium, Menziesia ferruginea, Petasites frigidus, Festuca, Alnus, Tsuga mertensiana , Betula nana, Tofieldia coccinea*

96-05-01SD *Vaccinium ovalifolium*

96-06 McKinley Cabin
At McKinley Cabin 25 miles southeast of Cordova off Copper River Road.
Along trail edge between road and cabin.
In forest understory.
60° 28' N
145° 20'W
15m

Associated plants: *Tsuga mertensiana, Picea sitchensis, Sambucus racemosa, Echinopanax horridum* (Sm.) Decne. & Pland.

96-06-01 SD, H *Ribes bracteosum* open pollinated fruit from one plant. Fruit was very green and imature. The seeds generally ripen to black-blue color in September.

96-07 Copper River Delta

Collected on Round Island in Copper River Delta just off Copper River Road. Plant growing on silt flood plane of Copper River Delta.

60° 29'N
145° 10W
elevation 5 m

Associated plants: *Salix*

96-07-01 *Astragalus alpinus* subsp. *alpinus*

96-08 Childs Glacier
The Glacier is AMAZING! Pieces fall randomly. It takes 50 - 100 years for the ice to move from the origin of the Glacier to the bottom at Copper. The ice cracking sounds like thunder and echos loudly from side to side. When a large piece falls it causes a great wave to come forward across the river to the overlook.

60° 45'N
145° 05'
elevation 5m

Associated Plants: *Echinopanax horridum, Alnus, Streptopus amplexifolius, Actea rubra, Arunkus sylvester, Sambucus racemosum, Salix, Heracleum lantanum, Artemesia telesii, Dryopteris dilatata, Galium boreal*

96-08-01 SD *Rubus spectabilis*
Most of this fruit was slightly later ripening than those nearer to Cordova. Some large ripe fruits were present, however.

<u>Wednesday 31 July 1996</u>

We spent last night at the USFS McKinley Cabin about 24 miles east of Cordova off Copper River Road.
We hiked up from the cabin toward McKinley Lake

96-09 McKinley Cabin Trail

samples collected for about one mile along trail edge

60° 30'N
145° 20'W
elevation 20m

Associated plants: *Cornus canadensis, Echinopanax horridum, Menziesia ferruginea, Tsuga mertensiana, Picea sitchensis, Lycopodium annotinum, Heuchera glabra, Drypteris dilatata*

96-09-01 SD *Vaccinium ovalifolium* open pollinated fruit sample collected. Fruit presentation was superior to branch, singly borne
96-09-02 SD, H *Vaccinium alaskense*
96-09-03 SD *Rubus spectabilis*
96-09-04 SD, H *Rubus pedatus*
96-09-05 SD, PL *Ribes bracteosum*
96-09-06 PL *Vaccinium caespitosum*

Wednesday 31 July 1996

Beautiful sunny day. On to Alaganik Slough Road

96-10 Alaganic Slough Road
At turnoff with interpretive moose sign. 0.5 miles on Alaganic Slough Road from Copper River Road

60° 28'W
145° 25'N
elevation 5 m

Associated plants: *Epilobium angustifolium, Alnus, Salix alaxensis, Equisetum arvense, Elymus arenarius, Festuca*

96-10-01 *Rubus arcticus* subsp. *stellata* common name : Nagoon Berries

96-11 Pipeline Lake Trail

0.5 mile from Copper River Road on Pipeline Trail on Muskeg; direct sun
sphagnum bog

60° 29'N
145° 25'W
elevation 15 m

Associated plants: *Sphagnum, Empetrum nigrum,Drosera rotundifoli, Elymus arenarius, Fritillaria camschatcensis, Vaccinium uliginosum, Caltha leptosepala, Andromeda polifolia, Spiranthes romanzoffiana* and MOSQUITOS

96-11-01 PL *Vaccinium oxycoccus*

96-12 Muskeg Meander Trail

0.5 m from Copper River Road on Muskeg Meander Trail

60° 29'N
145° 28'W
elevation 15 m

Associated Plants: *Salix alaxensis, Picea sitchensis, Festuca , Rubus spectabilis, Cornus canadensis, Gentian, Epilobium angustifolium*
96-12-01 SD *Vaccinium vitis-idaea* open pollinated fruit collected, population sample
96-12-02 PL *Vaccinium oxycoccus* clone collected

96-13 Cabin Lake
Open edge of woods near the parking lot provided a bountiful location for the collection of many accessions of interest.

60° 30'N
145° 30'W
elevation 15m

96-13-01 SD, PL *Fragaria chiloensis* subsp. *pacifica* clone collected. We suspect this clone to be introduced from wild material closer to the beach. This was an upland sight and not the usual beach habitat for native *Fragaria chiloensis*.
96-13-02 SD *Rubus arcticus* subsp. *stellata* open pollinated fruit population sample collected
96-13-03 SD *Vaccinium ovalifolium* open pollinated fruit population sample collected
96-13-04 SD *Rubus pedatus* open pollinated fruit population sample collected
96-13-05 SD, H *Vaccinium vitis-idaea* open pollinated fruit population sample collected
96-13-06 SD, PL, H *Ribes laxiflorum*, known as trailing blackcurrant. glandular black fruit with bloom open pollinated fruit population sample collected; clone collected
96-13-07 PL *Vaccinium caespitosum* clone collected

96-14 Hartney Bay - Town side
collection from just before bridge to Hartney Bay about 5.5 miles southwest of Cordova
Plants collected from pull-offs on northwest side of road before bridge.

60° 30' N
145° 51'W
elevation 5 meters

96-14-01 SD, PL, H *Fragaria chiloensis* subsp. *pacifica* clone collected with many runners

96-14-02 SD *Ribes hudsonianum* open pollinated fruit population sample collected

Thursday 1 August 1996

Travel day. Left Cordova in morning. Obtained plant collecting permit from the Alaska State Parks and Recreation Department in Anchorage. Sent first shipment of plants back to NCGR through Federal Express. Flew to Kodiak Island.

96-15 Chiniak Bay overlook

Brinker point on Chiniak Bay, an extension of "Twin Creeks Beach"
Plants growing on cliffs overlooking the bay.

57° 40'N
152° 10'W
elevation 20 m

96-15-01 PL, H *Potentilla villosa*

Friday 2 August 1996

96-16 Kalsin Bay

Open field adjacent to an old PMC Cooperative Trial Site. Mile 30.5 on Chiniak Highway

57° 35'N
152° 25'W
elevation: 0 m - sea level

Associated Plants: *Salix alaxensis, Epilobium angustifolium, Solidago, Sangosorba stipulata, Lupinus nutkatensis, Polenonium pulcherrmn, Trifolium, Festuca*

96-16-01 SD PL *Rubus arcticus* subsp. *stellata* open pollinated fruit population sample and clone were collected.

96-17 Pasagshak
Off Pasagshak Bay Road
near cattle ranch

57° 28'N
152° 28'W
elevation 30 m

Associated Plants: *Heracleum lantanum, Lupine nootkatensis, Epilobium angustifolium, Fescue, Salix alaxensis, Achillea borealis, Alnus, Solidago, Geranium airianthum, Spiranthes romanzoffiana*

Fig. 1. *Potentilla villosa* Pall. growing at location 96-15 Chiniak, Kodiak Island, Alaska. This plant looks at first glance like a *Fragaria chiloensis* Duchesne however the adaxial and particularly the abaxial leaf surfaces are very pubescent. The *Potentilla* flowers are yellow rather than white, as are those of *Fragaria*. The white flowers in front are those of *Parnassia palustris* L., Grass-of-Parnassus. The photograph was taken by Kim E. Hummer on 1 August 1996.

96-17-01 SD *Rubus spectabilis* open pollinated fruit population sample collected

96-18 Loran Coast Guard Station
about 1 mile west of station, boggy area near edge of road

57° 28N
152° 20'W
elevation 30 m

96-18-01 SD *Vaccinium vitis-idaea*

96-19 Loran Coast Guard Statioin
about 2 miles past Loran Station , boggy ara near edge of road

57° 28N
152° 18'W
elevation 30 m

96-19-01 SD, PL *Vaccinium uliginosum*

Saturday 3 August 1996

96-20 Anton Larsen Bay, Kodiak Island
about 0.5 mile on trail past the end of Anton Larsen Bay Road

57° 50'N
152° 40'W
elevation 30 m

Associated Plants: *Rosa woodsii, Spirea beuvardiana, Veratrum viride, Epilobium angustifolium, Trentellis europaea, Salix alaxensis, Viola, Sambucus racemosum*

96-20-01 SD *Rubus spectabilis* open pollinated fruit population sample collected. Red and orange fruit mixed
96-20-02 SD *Sambucus racemosa* open pollinated fruit population sample collected.

96-21 Pillar Mountain
boggy basins at the top of Pillar Mountain, about 5 miles west of Kodiak

57° 35'N
152° 41'W
elevation 802 m

Associated Plants: *Empetrum nigrum, Aconitum delphinifolium, Epilobium angustifolium, Campanula, Polygonum, Achillea borealis, Cornus canadensis, Geranium, Solidago, Potentilla villosa, Eriophorum scheuchzeri*

96-21-01 SD *Vaccinium vitis-idaea*

96-22 Island Lake
on southeast shore off Island Lake about 2 miles North of Kodiak
collected in open woods. Plant growing in understory.

57° 40'N
152° 25'W
elevation 30 meters

Associated plants: *Picea sitchensis, Alnus, Epilobium angustifolium, Rumex arcticus*

96-22-01 *Vaccinium ovalifolium*

Flew back to Anchorage in the evening.

Sunday 4 August 1996

Driving down onto the Kenai Penninsula

96-23 Kenai National Wildlife Refuge Headquarters, Soldotna
Plants were collected from nature trails around the Kenai National Wildlife Refuge, Skihill Road, Soldotna.

60° 25'N
151° 05'W
elevation 30 meters
Plants were collected while walking down the nature trail to the lake.
Associtated Plants: *Betula nana, Ledum palustris subsp. groenlandicum, Andromeda polifolia, Geacaulon lividum, Empetrum nigrum, Vaccinium vitis-idaea*

96-23-01 SD *Rubus idaeus* subsp. *melanilasius* open pollinated fruit taken from a few plants. These were the only ripe berries found
96-23-02 SD *Rubus chamaemorus* open pollinated fruit population sample collected
96-23-03 SD, PL *Vaccinium oxycoccus* open pollinated fruit population sample collected, clone collected
96-23-04 SD, PL *Vaccinium vitis-idaea* open pollinated fruit population sample collected
96-23-05 SD *Vaccinium uliginosum* open pollinated fruit population sample collected
96-23-06 SD *Rubus pedatus* open pollinated fruit population sample collected
96-23-07 SD *Rosa acicularis* open pollinated fruit population sample collected
96-23-08 SD, PL *Ribes triste* open pollinated fruit collected from a few plants; clone also collected

96-24 Kalifonski Beach Road, Kenai Penninsula
pull-off to west of Kalifonski Beach Road
open parking lot edge looking out to Cook Inlet overlook.

60° 25'N
151° 05'W
elevation 25 meters

96-24-01 SD, PL *Rubus idaeus* open pollinated seed collected from a few plants, clone also collected
96-24-02 SD, PL, H *Ribes glandulosum* seed collected from one plant; clone collected

96-25 Homer
behind the Bay View Inn, off Sterling Highway,
behind cabin on slope facing south towards Kachemak Bay of Cook Inlet

59° 39'N
151° 33'W
elevation 35 meters

96-25-01 SD *Fragaria* x *ananassa* cultivars escaped from planting possibly 40 years ago. Sitka hybrids? open pollinated fruit collected
96-25-02 PL *Fragaria* x *ananassa* clone collected with many runners

Monday 5 August 1996

Spent night at the Skyline trail parking lot. Drove to Seward. Found *Potentilla villosa* on the dock. Seward is a town of Princess Line Cruise Ships and coal piles.

96-26 Seward
8 miles north of the city on Golden Finn Trail on west side about 0.5 mile from the Seward Highway.

60° 09'N
149° 10'W
elevation 100 meters

96-26-01 SD *Rubus arcticus* subsp. *stellata* open pollinated fruit population sample collected
96-26-02 PL *Rubus pedatus* clone collected
96-26-03 SD *Vaccinium ovalifolium* open pollinated fruit collected

Drove north to Portage. Took train from Portage to Whittier. Large oil storage tanks present in Whittier. Very windy at Whittier. Overlooks Prince William Sound.

96-27 Whittier
about 1 mile south of city towards Whittier Creek near camping area. Plant collected over large area on edge of woods.

60° 45'N
148° 40'W
elevation 75 meters

96-27-01 SD *Rubus spectabilis* open pollinated fruit population sample collected
96-27-02 SD, PL *Ribes bracteosum* open pollinated fruit only a few plants available with immature fruit. Plants were green and healthy in appearance.
96-27-03 SD *Vaccinium ovalifolium* open pollinated fruit collected on hill behind rad to Salmon Run
96-27-04 SD, PL, H *Rubus pedatus* open pollinated fruit population sample collected
96-27-05 PL *Vaccinium uliginosum* clone collected
96-27-06 PL *Vaccinium oxycoccus* clone collected
96-27-07 H *Sibbaldia procumbens* clone collected
96-27-08 H *Geum calthifolium* clone collected

Took train back to Portage. Drove to Girdwood

96-28 Girdwood

collected at Moose Meadows bog at the end of Alberg Street in Girdwood, AK

60° 55'N
149° 00W
elevation 100 meters

96-28-01 PL *Fragaria* x *ananassa* clones growing along Alberg Street. Escapes from cultivation.
96-28-02 SD *Vaccinium uliginosum* open pollinated fruit population sample collected
96-28-03 SD *Betula nana* open pollinated seed collected; this B. nana atypical; may be hybrid.
96-28-04 PL *Vaccinium oxycoccus* clone collected
96-28-05 SD, H *Rubus chamaemorus* open pollinated fruit population sample collected

Tuesday 6 August 1996
Drove from Wasilla to the Alaska Plant Materials Center, Palmer. Talked to Mr. Stoney Wright, Manager. He showed sample of Potentilla villosa that was collected on Attu Island, the furthest most American Island in the Aleutian chain. Shemya Island also has Potentilla villosa. We were begininning to wonder if any of the Aleutian Islands have any Fragaria on them. Were the reports of Fragaria in Hulten and at the University of Alaska, Fairbanks Herbarium, incorrect? We had more than 6 locations reported for strawberries and none of the locations panned out! The dots on Hulten's map were definitely at locations where no strawberries were present.

We checked the following locations and were UNABLE to find previously reported native *Fragaria chiloensis*:

Kodiak Island
Chiniak Bay, Kalsin Bay, Middle Bay, Women's Bay, Pasagshak, Pillar Mountin, Near Island, Island Lake, Beaver Lake, Bell's Flats, Anton Larson Bay

Kenai Penninsula
Soldotna, Nilnilchik, Homer, Seward, Portage, Whittier, Girdwood

Anchorage - 1st and D Street, 700 block extended.

96-29 Klatt Bog, Anchorage
This bog is endangered. Construction of a new subdivision for houses will make an end to this bog within a year.

61° 10'N
150° 05'W
elevation 30 meters

Associated Plants: *Alnus, Festuca, Potentilla palustris, Picea sitchensis, Betula papyrifera, Betula nana, Salix, Potentilla fruiticosa, Myrica gale, Ledum palustris, Vaccinium vitis-idaea, Hordeum jubatum*

96-29-01 SD, PL *Ribes triste* open pollinated fruit population sample collected
96-29-02 SD *Betula* nana
96-29-03 SD *Rosa acicularis* open pollinated fruit population sample collected
96-29-04 SD *Ribes nigrum* 'Swedish Black' open pollinated fruit from one plant collected; this plant must be an escape from cultivation. This was on the road edge of the bog. A plant nursery used to be located nearby, before the construction began.
96-29-05 PL *Rubus chamaemorus* plants were collected. No fruits were found
96-29-06 SD *Vaccinium uliginosum* open pollinated fruit population sample collected

96-30 Wasilla
wooded area, marshy, by Cottonwood Creek
dark organic soil

61° 34'54"
149° 23'31"
elevation 100 m

96-30-01 PL *Rubus idaeus* clone collected
96-30-02 PL *Rubus arcticus* subsp. *stellata* clone collected

Wednesday 7 August 1996

Kim returned to Corvallis.

Table 2. Clones received from Alaska Plant Materials Center, Palmer

Fragaria x ananassa Cultivars

Sitka Hybrids

In 1905, Charles Georgeson began a strawberry breeding program at the Sitka Experiment Station using the wild beach strawberry, *F. chiloensis* subsp. *pacifica* Staudt in crosses with F. x ananassa Duchesne. By 1910 the Sitka station began distributing the very best hybrids to homesteaders. Until 1968, the Sitka hybrids were the only reliably hardy strawberry grown in the Interior.

There are many fruit types among the Sitka hybrids, but none compare favorably with other varieties. The fruit is large but soft, pale pink with white or pale pink flesh. The plants are not big producers but the fruit is pretty sweet.

Clone	Additional Information
***F. chiloensis* subsp. *pacifica* Staudt**	
Sitka	first in the series
K1	seedling selection
S1	seedling selection
Matared	developed from the 'Sitka Hybrids' in Mat-Su Valley from 1951 to 1964. breeder: Curtis Dearborn Fruit is large, deep-red and good tasting. Plants have a moderate everbearing tendency, especially when August is warm but late fruits seldom ripen. Winter hardiness is fair. No disease problem
Skwentna	
Talkeetna	named for Talkeetna Mountain.
Toklat	Released in 1977 from the Fairbanks Experiment station. Fruit larger than 'Pioneer' bud susceptible to gray mold. Calyx is difficult to remove. This is slowly replacing 'Pioneer' as a standard home-grown Alaskan variety.
***Ribes nigrum* L. cultivars**	
Erkheikki	
Jankisjani	
Melalahti	*Ribes nigrum* selection from Finland. One of the main cultivars for production.
Nikkiala X	
Stella I	
Sunderbyn II	selection from wild *R. nigrum* in Sweden. This cultivated in Sweden, Russia, and Poland.
Willoughby	origin Parkside, Saskatchewan, Canada, by Walter Willoughby, Sr. Introduced in 1953. Parantage unknown.
***Ribes rubrum* L. cultivars**	
Holland Longbunch	(Holland), Old red currant cultivar; described in Small Fruit of New York (Hedrick, 1925) as a synonym of 'Prince Albert,' a cultivar introduced in America from France about 1850.
Honeywood	Released by Honeywood Nursery in Canada

Table 3. Total mileage in Alaska, during the 1996 expedition

	Mileage
Road Miles (truck and car)	
Cordova vicinity	100
Kodiak Island	220
Anchorage, Palmer and Kenai	1572
Plane flights, (2) round trip	900
Train	25

No ferryboats were taken during the trip - although they were originally scheduled.

Participant	Total Cost
Kim Hummer	
Plane Flight Alaska Air (federal rates)	317.00
(Including Portland - Anchorage - Kodiak - Anchorage - Portland)	
Plane Flight Anchorage - Cordova - Anchorage	183.00
Airport Limosine, parking	10.00
Train	32.00
Car Rental Kodiak	164.00
Per Diem 11 days	755.00
Miscellaneous supplies	45.00
(telephone calls, pens, plastic bags, maps)	
Subtotal	1506.00
Cathy's Expenses (These are estimates - not taken from receipts)	
Plane flight Anchorage - Cordova - Anchorage	183.00
Plane flight Anchorage - Kodiak - Anchorage	338.00
Airport Limosine, parking	45.00
Personally owned vehicle 1572 miles @ $0.31	487.32
Per diem for 10 days	700.00
Miscellaneous supplies	60.00
Subtotal	1813.00
Total (estimate) for both participants	3319.00
Total number of Seedlot + plant accessions	92

Price / Accession 3319 / 92 = $36.08 per accession

Table 4. Collection Identification numbers for items obtained by Kim Hummer and Catherine Wright in Alaska between 28 July and 7 August 1996.

COLLECTION NUMBER	TYPE[z]	SPECIES	LOCATION
KHCW 96-01-01	SD, H	*Fragaria chiloensis* subsp. *pacifica*	Cordova
KHCW 96-01-02	PL	*Fragaria chiloensis* subsp. *pacifica*	
KHCW 96-02-01	SD	*Rubus spectabilis*	
KHCW 96-03-01	SD	*Fragaria chiloensis* subsp. *pacifica*	Hartney Bay
KHCW 96-03-02	SD	*Ribes hudsonianum*	
KHCW 96-04-01	SD, H	*Vaccinium uliginosum*	Whitshed Road
KHCW 96-04-02	PL	*Vaccinium vitis-idaea*	
KHCW 96-04-03	PL	*Vaccinium oxycoccus*	
KHCW 96-04-04	SD	*Rubus spectabilis*	
KHCW 96-05-01	SD	*Vaccinium ovalifolium*	Whitshed Rd Ext.
KHCW 96-06-01	SD, H	*Ribes bracteosum*	McKinley Cabin
KHCW 96-07-01	SD, PL, H	*Astragalis alpinus*	Copper River
KHCW 96-08-01	SD	*Rubus spectabilis*	Childs Glacier
KHCW 96-09-01	SD, H	*Vaccinium ovalifolium*	McKinley C. Trail
KHCW 96-09-02	SD, H	*Vaccinium alaskense*	
KHCW 96-09-03	SD	*Rubus spectabilis*	
KHCW 96-09-04	SD, H	*Rubus pedatus*	
KHCW 96-09-05	SD, PL	*Ribes bracteosum*	
KHCW 96-09-06	PL	*Vaccinium caespitosum*	
KHCW 96-10-01	SD, H	*Rubus arcticus* subsp. *stellata*	Alaginik Slough
KHCW 96-11-01	PL	*Vaccinium oxycoccus*	Pipeline Lakes
KHCW 96-12-01	SD	*Vaccinium vitis-idaea*	Muskeeg Meander
KHCW 96-12-02	PL	*Vaccinium oxycoccus*	
KHCW 96-13-01	SD, PL	*Fragaria chiloensis* subsp. *pacifica*	Cabin Lake
KHCW 96-13-02	SD	*Rubus arcticus* subsp. *stellata*	
KHCW 96-13-03	SD	*Vaccinium ovalifolium*	
KHCW 96-13-04	SD	*Rubus pedatus*	
KHCW 96-13-05	SD, H	*Vaccinium vitis-idaea*	
KHCW 96-13-06	SD, PL, H	*Ribes laxiflorum*	
KHCW 96-13-07	PL	*Vaccinium caespitosum*	
KHCW 96-14-01	SD, PL, H	*Fragaria chiloensis* subsp. *pacifica*	
KHCW 96-14-02	SD	*Ribes hudsonianum*	Hartney Bay
KHCW 96-15-01	PL, H	*Potentilla villosa*	Chiniak
KHCW 96-15-02	PL, H	*Rubus arcticus* subsp. *stellata*	Chiniak
KHCW 96-16-01	SD, PL	*Rubus arcticus* subsp. *stellata*	Kalsin Bay
KHCW 96-17-01	SD	*Rubus spectabilis*	Pasagshak
KHCW 96-18-01	SD	*Vaccinium vitis-idaea*	Loran Guard Station
KHCW 96-19-01	SD, PL	*Vaccinium uliginosum*	Loran Guard Station
KHCW 96-20-01	SD	*Rubus spectabilis*	Antone Larsen Bay

[z] SD = Seedlot, PL = Plant, H = Herbarium Voucher

Table 4. continued

COLLECTION NUMBER	TYPE	SPECIES	LOCATION
KHCW 96-20-02	SD	*Sambucus racemosa*	Antone Larsen Bay
KHCW 96-21-01	SD	*Vaccinium vitis-idaea*	Pillar Mountain
KHCW 96-22-01	SD	*Vaccinium ovalifolium*	Island Lake
KHCW 96-23-01	SD	*Rubus idaeus*	Soldotna, Kenai
KHCW 96-23-02	SD, PL	*Rubus chamaemorus*	
KHCW 96-23-03	SD, PL	*Vaccinium oxycoccus*	Soldotna
KHCW 96-23-04	SD, PL	*Vaccinium vitis-idaea*	
KHCW 96-23-05	SD	*Vaccinium uliginosum*	
KHCW 96-23-06	H	*Rubus pedatus*	
KHCW 96-23-07	SD	*Rosa acicularis*	
KHCW 96-23-08	SD, PL	*Ribes triste*	
KHCW 96-24-01	SD, PL	*Rubus idaeus*	Kalifonski Beach Rd
KHCW 96-24-02	PL, H	*Ribes glandulosum*	
KHCW 96-25-01	SD	*Fragaria* x *ananassa*	
KHCW 96-25-02	PL	*Fragaria* x *ananassa*	
KHCW 96-26-01	SD	*Rubus arcticus* subsp. *stellata*	Seward
KHCW 96-26-02	SD, PL	*Rubus pedatus*	
KHCW 96-26-03	SD	*Vaccinium ovalifolium*	
KHCW 96-27-01	SD, H	*Rubus spectabilis*	Whittier
KHCW 96-27-02	SD, PL, H	*Ribes bracteosum*	
KHCW 96-27-03	SD, H	*Vaccinium ovalifolium*	
KHCW 96-27-04	SD, PL, H	*Rubus pedatus*	
KHCW 96-27-05	PL	*Vaccinium uliginosum*	
KHCW 96-27-06	PL	*Vaccinium oxycoccus*	
KHCW 96-27-07	H	*Sibbaldia procumbens*	
KHCW 96-27-08	PL, H	*Geum calthifolium*	
KHCW 96-28-01	PL	*Fragaria* x *ananassa*	Girdwood
KHCW 96-28-02	SD	*Vaccinium uliginosum*	
KHCW 96-28-03	SD	*Betula nana*	
KHCW 96-28-04	PL	*Vaccinium oxycoccus*	
KHCW 96-28-05	SD, H	*Rubus chamaemorus*	
KHCW 96-29-01	SD, PL	*Ribes triste*	Klatt Bog
KHCW 96-29-02	SD	*Betula* x *nana*	
KHCW 96-29-03	SD	*Rosa acicularis*	
KHCW 96-29-04	SD	*Ribes nigrum* 'Swedish Black'	
KHCW 96-29-05	PL	*Rubus chamaemorus*	
KHCW 96-29-06	SD	*Vaccinium uliginosum*	
KHCW 96-30-01	PL	*Rubus idaeus*	Wasilla
KHCW 96-30-02	PL	*Rubus arcticus* subsp. *stellata*	

TOTAL		
	Seedlots	57
	Plants	35
	Herbarium Vouchers	21
	TOTAL ITEMS	113

Table 5. Summary of locations, seedlots, plants, and herbarium vouchers for each genus collected by Kim Hummer and Catherine Wright in Alaska between 28 July and 7 August 1996.

	Locations	Seedlots	Plants	Herbarium Vouchers	Totals
Astragalis alpinus subsp. *alpinus*[z]	1	1	1	1	3
Betula nana[y]	2	2	0	0	2
Fragaria chiloensis subsp. *pacifica*	5	4	3	1	8
Fragaria x *ananassa*	2	1	2	0	3
Geum calthifolium	1	0	1	1	2
Potentilla villosa	1	0	1	1	2
Ribes bracteosum	3	3	2	2	7
Ribes glandulosum	1	0	1	1	2
Ribes hudsonianum	2	2	0	0	2
Ribes laxiflorum	1	1	1	1	3
Ribes nigrum ' Swedish Black OP'	1	1	0	0	1
Ribes triste	2	2	2	0	4
Rosa acicularis[y]	2	2	0	0	2
Rubus arcticus subsp. stellata	6	4	3	2	9
Rubus chamaemorus	3	2	2	1	5
Rubus idaeus	3	2	2	0	4
Rubus pedatus	5	4	2	3	9
Rubus spectabilis	7	7	0	1	8
Sambucus racemosa	1	1	0	0	1
Sibbaldia procumbens	1	0	0	1	1
Vaccinium alaskense	1	1	0	1	2
Vaccinium caespitosum	2	0	2	0	2
Vaccinium ovalifolium	6	6	0	2	8
Vaccinium oxycoccus	5	1	6	0	7
Vaccinium uliginosum	6	5	2	1	8
Vaccinium vitis-idaea	6	5	2	1	8
Total Items Collected	(30)	57	35	21	113

[z]Deposited at the Regional Plant Introduction Station, Pullman, WA.

[y] Retained to Cathy Wright for development of ornamentals in Alaska. Other items deposited at the USDA-ARS National Clonal Germplasm Repository at Corvallis, Oregon.

Table 6. Corvallis Repository Local Number Cross-reference.

Repository No.		Collection No.	Locality	Plant Name
CFRA	1485	96-01-01	Cordova Dock	*Fragaria chiloensis pacifica*
CFRA	1486	96-01-02	Cordova Dock	*Fragaria chiloensis pacifica*
CFRA	1487	96-03-01	Hartney Bay	*Fragaria chiloensis pacifica*
CFRA	1488	96-13-01	Cabin Lake	*Fragaria chiloensis pacifica*
CFRA	1490	96-14-01	Hartney Bay	*Fragaria chiloensis pacifica*
CFRA	1492	96-25-01	Bay View	*Fragaria ananassa*
CFRA	1493	96-25-02	Bay View	*Fragaria ananassa*
CFRA	1494	96-28-01	Girdwood	*Fragaria ananassa*
CFRA	1489	96-13-01	Cabin Lake	*Fragaria chiloensis pacifica*
CFRA	1491	96-14-01	Hartney Bay	*Fragaria chiloensis pacifica*
CRIB	1091	96-03-02	Hartney Bay	*Ribes hudsonianum*
CRIB	1092	96-06-01	McKinley Cabin	*Ribes bracteosum*
CRIB	1093	96-09-05	McKinley	*Ribes bracteosum*
CRIB	1094	96-13-06	Cabin Lake	*Ribes laxiflorum*
CRIB	1095	96-14-02	Hartney Bay	*Ribes hudsonianum*
CRIB	1096	96-23-08	Soldotna	*Ribes triste*
CRIB	1097	96-24-02	Kalifonski	*Ribes glandulosum*
CRIB	1098	96-27-02	Whittier	*Ribes bracteosum*
CRIB	1099	96-29-01	Klatt	*Ribes triste*
CRIB	1100	96-29-04	Swedish Black	*Ribes nigrum*
CRIB	1109	96-09-05	McKinley	*Ribes bracteosum*
CRIB	1110	96-13-06	Cabin Lake	*Ribes laxiflorum*
CRIB	1111	96-23-08	Soldotna	*Ribes triste*
CRIB	1112	96-27-02	Whittier	*Ribes bracteosum*
CRIB	1113	96-29-01	Klatt red	*Ribes triste*
CRIB	1130	96-03-02	Hartney Bay	*Ribes hudsonianum*
CRUB	1875	96-02-01	Cordova	*Rubus spectabilis*
CRUB	1876	96-04-04	Whitshed	*Rubus spectabilis*
CRUB	1877	96-08-01	Childs Glacier	*Rubus spectabilis*
CRUB	1878	96-09-03	McKinley	*Rubus spectabilis*

Table 6. Corvallis Repository Local Number Cross-reference.

Repository No.		Collection No.	Locality	Plant Name
CRUB	1879	96-09-04	McKinley	*Rubus pedatus*
CRUB	1880	96-10-01	Alaganik	*Rubus arcticus stellata*
CRUB	1881	96-13-02	Cabin Lake	*Rubus arcticus stellata*
CRUB	1882	96-13-04	Cabin Lake	*Rubus pedatus*
CRUB	1883	96-15-02	Chiniak	*Rubus arcticus stellata*
CRUB	1884	96-16-01	Kodiak	*Rubus arcticus stellata*
CRUB	1886	96-17-01	Pasagshak	*Rubus spectabilis*
CRUB	1887	96-20-01	Anton Larsen	*Rubus spectabilis*
CRUB	1888	96-23-01	Sodotna	*Rubus idaeus melanilasius*
CRUB	1889	96-23-02	Soldotna	*Rubus chamaemorus*
CRUB	1892	96-24-01	Kalifonski	*Rubus idaeus*
CRUB	1894	96-26-01	Seward	*Rubus arcticus stellata*
CRUB	1895	96-26-02	Seward	*Rubus pedatus*
CRUB	1897	96-27-01	Whittier	*Rubus spectabilis*
CRUB	1898	96-27-04	Whittier	*Rubus pedatus*
CRUB	1900	96-28-05	Girdwood	*Rubus chamaemorus*
CRUB	1901	96-29-05	Klatt	*Rubus chamaemorus*
CRUB	1902	96-30-01	Wasilla	*Rubus idaeus*
CRUB	1903	96-30-02	Wasilla	*Rubus arcticus stellata*
CRUB	1885	96-16-01	Kodiak	*Rubus arcticus stellata*
CRUB	1890	96-23-02	Soldotna	*Rubus chamaemorus*
CRUB	1893	96-24-01	Kalifonski	*Rubus idaeus*
CRUB	1896	96-26-02	Seward	*Rubus pedatus*
CRUB	1899	96-27-04	Whittier	*Rubus pedatus*
CRUB	1939	96-13-04	Cabin Lake	*Rubus pedatus*
CRUB	1940	96-09-04	McKinley	*Rubus pedatus*
CRUB	1941	96-10-01	Alaganik	*Rubus arcticus stellata*
CVAC	1246	96-04-01	Whitshed	*Vaccinium uliginosum*
CVAC	1247	96-04-02	Whitshed	*Vaccinium vitis-idaea*
CVAC	1248	96-04-03	Whitshed	*Vaccinium oxycoccus*

Table 6. Corvallis Repository Local Number Cross-reference.

Repository No.		Collection No.	Locality	Plant Name
CVAC	1249	96-05-01	Whitshed	*Vaccinium ovalifolium*
CVAC	1250	96-09-01	McKinley	*Vaccinium ovalifolium*
CVAC	1251	96-09-02	McKinley	*Vaccinium alaskaense*
CVAC	1252	96-09-06	McKinley	*Vaccinium cespitosum*
CVAC	1253	96-11-01	Pipeline	*Vaccinium oxycoccus*
CVAC	1254	96-12-01	Muskeeg	*Vaccinium vitis-idaea*
CVAC	1255	96-12-02	Muskeeg	*Vaccinium oxycoccus*
CVAC	1256	96-13-03	Cabin Lake	*Vaccinium ovalifolium*
CVAC	1257	96-13-05	Cabin Lake	*Vaccinium vitis-idaea*
CVAC	1258	96-13-07	Cabin Lake	*Vaccinium cespitosum*
CVAC	1259	96-18-01	Loran Guard	*Vaccinium vitis-idaea*
CVAC	1260	96-19-01	Loran Guard	*Vaccinium uliginosum*
CVAC	1262	96-21-01	Pillar Mountain	*Vaccinium vitis-idaea*
CVAC	1263	96-22-01	Island Lake	*Vaccinium ovalifolium*
CVAC	1264	96-23-03	Soldotna	*Vaccinium oxycoccus*
CVAC	1266	96-23-04	Soldotna	*Vaccinium vitis-idaea*
CVAC	1268	96-23-05	Soldotna	*Vaccinium uliginosum*
CVAC	1269	96-26-03	Seward	*Vaccinium ovalifolium*
CVAC	1270	96-27-03	Whittier	*Vaccinium ovalifolium*
CVAC	1271	96-27-05	Whittier	*Vaccinium uliginosum*
CVAC	1272	96-27-06	Whittier	*Vaccinium oxycoccus*
CVAC	1273	96-28-02	Girdwood	*Vaccinium uliginosum*
CVAC	1274	96-28-04	Girdwood	*Vaccinium oxycoccus*
CVAC	1275	96-29-06	Klatt	*Vaccinium uliginosum*
CVAC	1261	96-19-01	Loran Guard	*Vaccinium uliginosum*
CVAC	1265	96-23-03	Soldotna	*Vaccinium oxycoccus*
CVAC	1267	96-23-04	Soldotna	*Vaccinium vitis-idaea*
CVAC	1301	96-12-01	Muskeeg	*Vaccinium vitis-idaea*