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[Exhibits & Digital Media](#)

[Research & Collections](#)

[Archaeology](#)

[Earth Science](#)

[Entomology](#)

[Ethnology & History](#)

[Film Center](#)

[Fine Arts](#)

[Genomic Resources](#)

[Herbarium](#)

[Current Projects](#)

[Policy and Loans](#)

[History](#)

[Library](#)

[Herbarium Staff](#)

[Links and References](#)

Herbarium

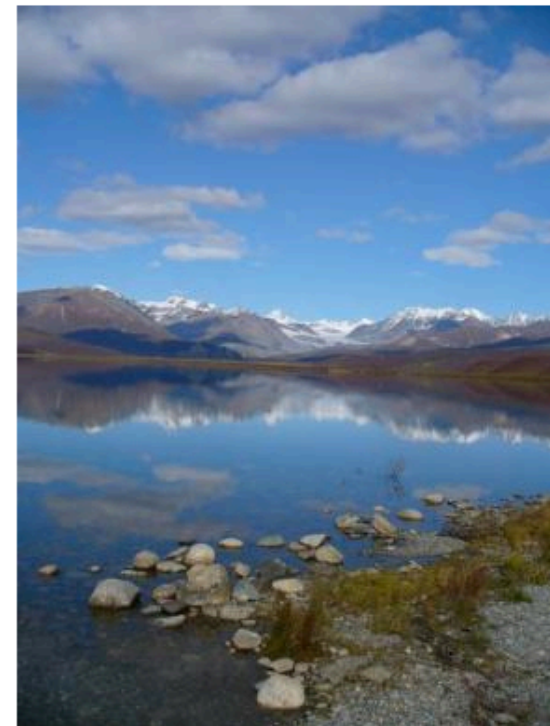
About us:

The Herbarium ([ALA](#)) contains more than 220,000 specimens of non-vascular and vascular plants and is the only major research herbarium in Alaska. The collection also includes plants from other states, Canada, Greenland, Fennoscandia, Japan, and Russia and provides a basis for teaching and research. Our botanical collection can be viewed and searched through the database [ARCTOS](#).

The systematic collection of dried plants is a permanent physical record of Alaska's flora. Specimens are labeled with information about where, when, and by whom each specimen was collected as well as notes on its ecology. These data are computerized, allowing rapid access to information pertaining to the geographic extent, habitats occupied, and associated plants for any species.

Herbarium Overview:

The Herbarium consists of three main plant collections and several ancillary collections. Roughly two-thirds of the specimens are vascular plants (gymnosperms, fern and fern allies, flowering plants) and one-quarter are cryptogams (bryophytes and lichens). The remainder are marine algae and a small collection of fleshy fungi. The specimens have been dried, labeled, mounted, and filed according to widely accepted, international standards. They constitute permanent, physical records of the flora of Alaska, and are the basis for research on the taxonomy, ecology, and geography of Alaskan plants. Exchanges with other herbaria have provided comparative material from other parts of the circumpolar north.



Summit Lake

Arctos Collection Management Information System

Information for Natural History Collections



About Arctos

Arctos is both a community and a comprehensive collection management information system. As a community, it is a collaboration among multiple scientific collections that serves data on over 3M natural history museum records. Approximately half of those records are in a [shared instance](#) hosted at the [Texas Advanced Computing Center](#) ([view institutions and holdings](#)). The remaining specimens and collections are in [MCZBase](#), a single instance at the Museum of Comparative Zoology, Harvard University. Arctos users contribute to data standards, application enhancements, and improved data quality through sharing of authorities for taxonomy, geography, people names, part types, and other data

Arctos Tweets

- Arctos just added over 7500 specimens from the herpetology collection of the Burke Museum, University of Washington (burkemuseum.org/herpetology) 5 days ago

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Arctos, University of Alaska Herbarium search

http://arctos.database.museum/home.cfm#uam

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Arctos
Multi-Institution, Multi-Collection Museum Database

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Arctos is an ongoing effort to integrate access to specimen data, collection-management tools, and external resources on the internet. Read more about Arctos at our [Documentation Site](#), explore some [random content](#), or use the links in the header to search for specimens, media, taxonomy, projects and publications, and more. Sign in or create an account to save preferences and searches.

Arctos is currently 1712855 specimens and observations in 54 collections. Following the search links below will set your preferences to filter by a specific collection or portal. You may click [\[search all collections \]](#) at any time to re-set your preferences.

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UAM Bird Collection <small>UAM bird collection</small>	Search 7066 Specimens	Collection Home Page [x]	no loan policy
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UAM Fish Observation Collection <small>Fish Observations</small>	Search 0 Specimens	no home page	no loan policy
UAM Fishes Collection <small>UAM fish collection</small>	Search 4632 Specimens	Collection Home Page [x]	no loan policy
UAM Herbarium Collection <small>Herbarium ALA Vascular Plants</small>	Search 193546 Specimens	Collection Home Page [x]	Collection Loan Policy [x]
UAM Herpetology Collection <small>Amphibians and reptiles at the University of Alaska Museum of the North.</small>	Search 338 Specimens	Collection Home Page [x]	no loan policy
UAM Insect Observation Collection <small>Insect Observations</small>	Search 27471 Specimens	no home page	no loan policy
UAM Insects Collection <small>UAM insect collection</small>	Search 147760 Specimens	Collection Home Page [x]	Collection Loan Policy [x]
UAM Insects and Observations Portal	Search Specimens	no home page	no loan policy
UAM Invertebrates Collection <small>UAM Invertebrate (except Insects) collection</small>	Search 8072 Specimens	no home page	no loan policy
UAM Mamm Observation Collection <small>Mammal Observations</small>	Search 149 Specimens	Collection Home Page [x]	no loan policy
UAM Mammals Collection <small>University of Alaska Museum, Mammal Collection</small>	Search 114832 Specimens	Collection Home Page [x]	no loan policy


Museum of Southwestern Biology [\[x\]](#)

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University of Alaska Museum of the North

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Access to 193,546 records

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[J. A. Cook, A. L. Bidlack, Christopher J. Conroy, J. R. Demboski, M. A. Fleming, A. M. Runck, K. D. Stone, S. O. MacDonald. 2001. A phylogeographic perspective on endemism in the Alexander Archipelago of southeast Alaska. Biological Conservation 97:215-227.](#)

[Hemiptera](#)

[MSB Birds 19753 *Molothrus ater*](#)

[Bousquet, Y., Bouchard, P., Davies, A., Sikes, D. S. in prep. Checklist of beetles \(Coleoptera\) of Canada and Alaska. Second Edition. Pensoft Publishers](#)



[John W. Hardy. 1967. A partially albino *Turdus fuscator* from](#)

Search for collections of *Salix alaxensis* in University of Alaska Herbarium

Arctos, University of Alaska Herbarium search

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Herbarium (ALA)
University of Alaska Museum of the North

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319 of these 445 records have coordinates and can be displayed with [BerkeleyMapper](#) [BerkeleyMapper+Rangemaps](#) [What's this?](#) [Google Earth/Maps](#) [Problems viewing](#)

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Cat Num	Identification	Specific Locality	Verbatim Date	Dec. Lat.	Dec. Long.
Herbarium ALA Vascular Plants 3842 Media	<i>Salix alaxensis</i>	Yakutat Foreland, Harlequin Lake - Dangerous River area	1991/06/22	59.43	-138.93
Herbarium ALA Vascular Plants 70048 Media	<i>Salix alaxensis</i> var. <i>alaxensis</i>	Alaska Range, Phelan Cr., Richardson Hwy.	1957/07/20	63.16	-145.5
Herbarium ALA Vascular Plants 88321 Media	<i>Salix alaxensis</i> var. <i>longistylis</i>	Tanana Valley, Tanana R. at Gerstle R., TANANA R., NEAR MOUTH OF GERSTLE R.	1963/08/13	64.05	-145.13
Herbarium ALA Vascular Plants 107966 Media	<i>Salix alaxensis</i> var. <i>longistylis</i>	No specific locality recorded.	not recorded		
Herbarium ALA Vascular Plants 133707 Media	<i>Salix alaxensis</i> var. <i>longistylis</i>	Brooks Range, Mancha Cr.	06-Jun-1979	68.68333333	-141.216667
Herbarium ALA Vascular Plants 42763 Media	<i>Salix alaxensis</i> var. <i>alaxensis</i>	Coast Mts., Fords Terror, NW Arm, T48S, R75E, S13	1981/09/17	57.7	-133.16
Herbarium ALA Vascular Plants 54032 Media	<i>Salix alaxensis</i> var. <i>alaxensis</i>	Bristol Bay Lowlands, Dillingham Airport	1972/07/07	59.05	-158.51
Herbarium ALA Vascular Plants 54065 Media	<i>Salix alaxensis</i> var. <i>longistylis</i>	Bristol Bay Lowlands, Mosquito Point, SE end Lake Aleknagik	1969/08/06	59.3	-158.61
Herbarium ALA Vascular Plants 28863 Media	<i>Salix alaxensis</i>	Lynn Canal, Warm Pass valley, monolith, T27S, R61E, S8	1988/08/30	59.55	-135.06
Herbarium ALA Vascular Plants 28865 Media	<i>Salix alaxensis</i>	Alaska Peninsula, Chignik	1985/07/24	56.33	-158.5
Herbarium ALA Vascular Plants 50485 Media	<i>Salix alaxensis</i>	Angayucham Mts., Lake Selby, NE shore of lake	2002/08/08	66.86	-155.65
Herbarium ALA Vascular Plants 46575 Media	<i>Salix alaxensis</i> var. <i>longistylis</i>	Kodiak I., Old Harbor	1964/ /	57.21	-153.3
Herbarium ALA Vascular Plants 59733 Media	<i>Salix alaxensis</i>	Alaska Range, Max Lake, just E of lake	2002/07/15	61.37	-152.86
Herbarium ALA Vascular Plants 67801 Media	<i>Salix alaxensis</i>	Alaska Peninsula, Iliamna, vic. E of town	2003/06/12	59.75	-154.91
Herbarium ALA Vascular Plants 57137 Media	<i>Salix alaxensis</i> var. <i>longistylis</i>	Kenai Peninsula, Mile 137 Sterling Hwy., Deep Cr. (8 km S of Ninilchik)	1967/06/13	60.03	-151.68
Herbarium ALA Vascular Plants 61632 Media	<i>Salix alaxensis</i> var. <i>alaxensis</i>	Chugach Mts., Worthington Gl., 29 Mile Richardson Hwy.	1961/06/05	61.16	-145.71

List of all 445 collections of *Salix alaxensis* in University of Alaska Herbarium

Arctos, University of Alaska Herbarium search

<http://arctos.database.museum/home.cfm#uam>



BerkeleyMapper Information

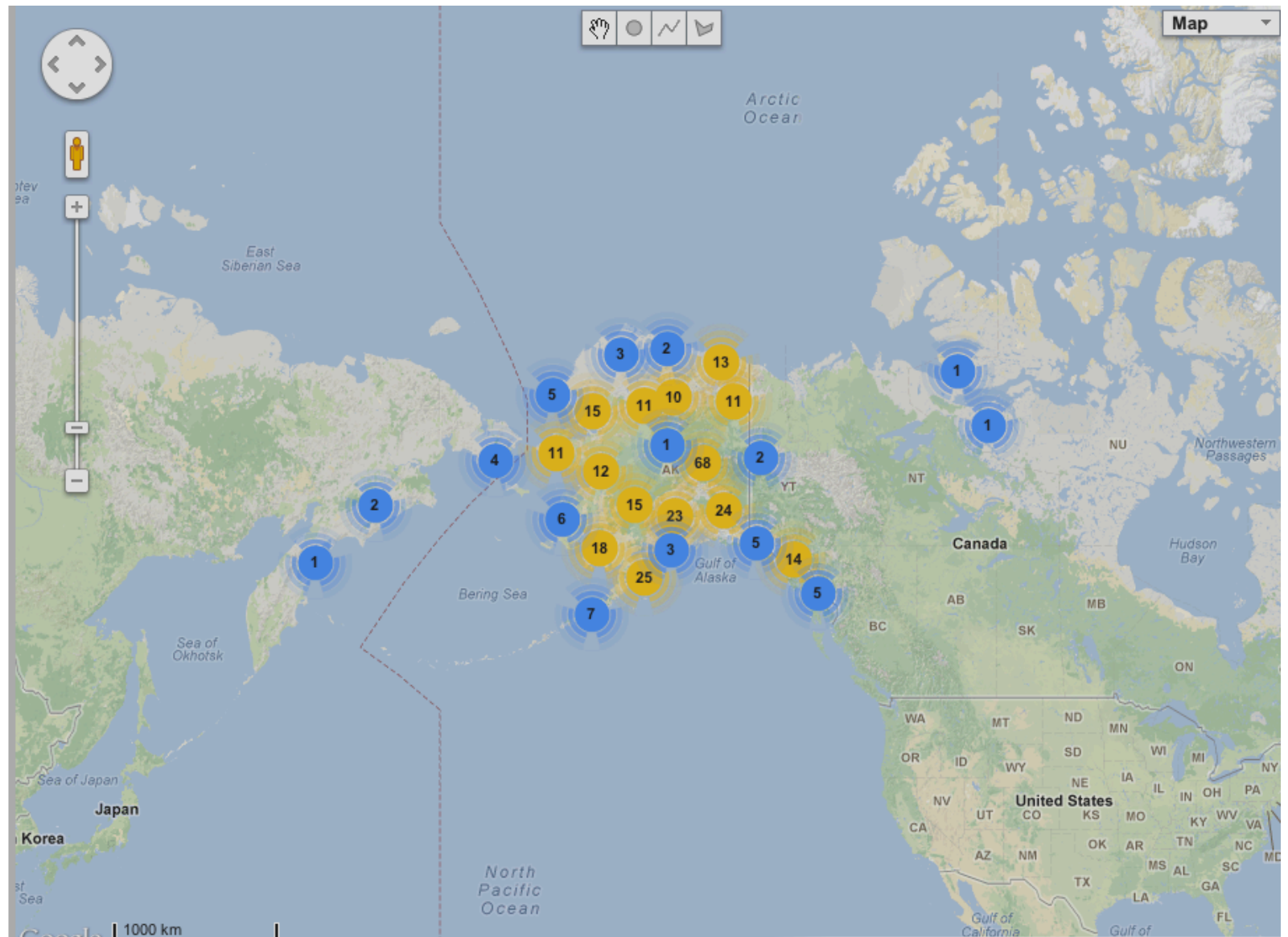
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Display: MarkerClusterer



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Locations of 319 collections of *Salix alaxensis* with coordinates in University of Alaska Herbarium.

Arctos, University of Alaska Herbarium search

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BerkeleyMapper Information

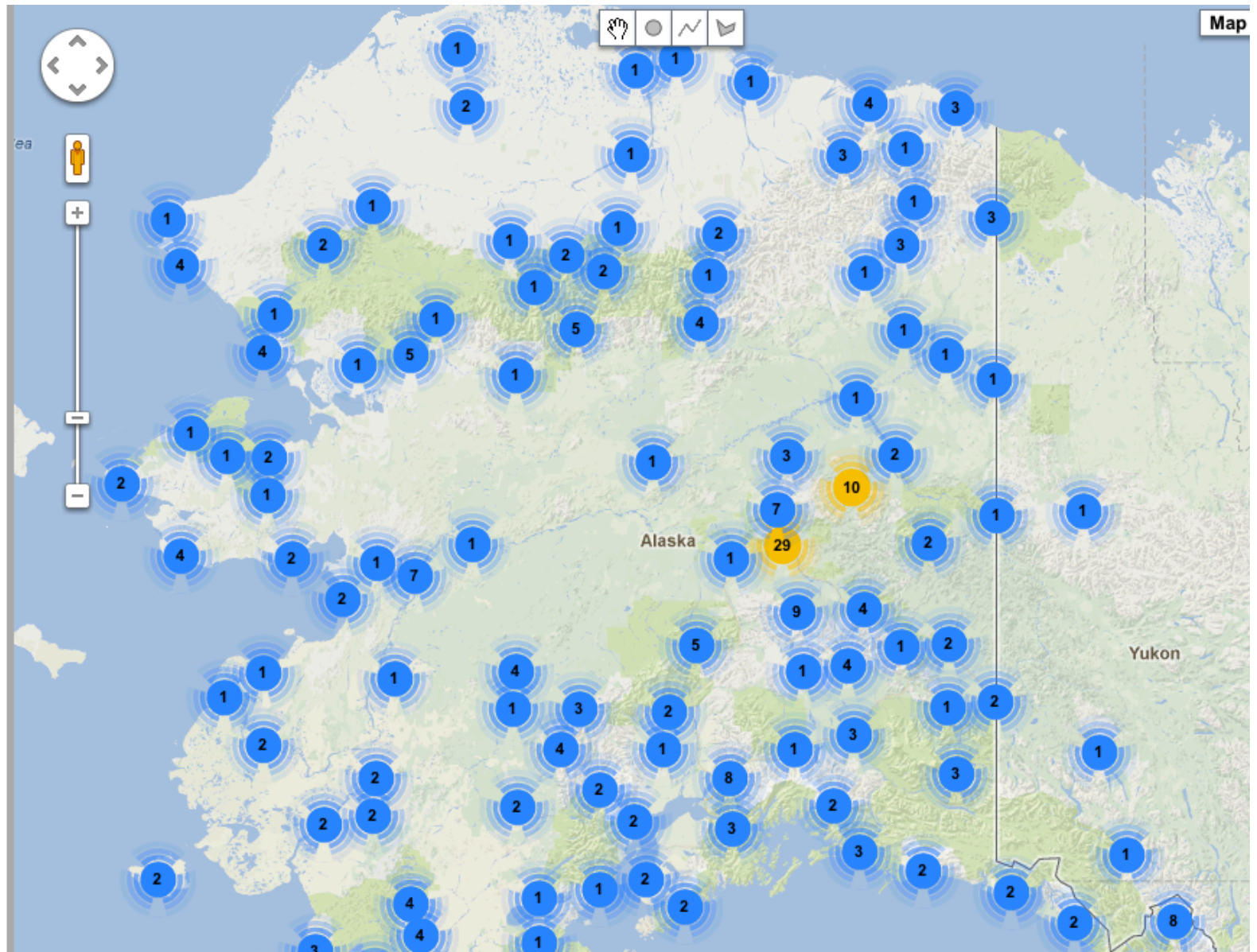
Toggle print view

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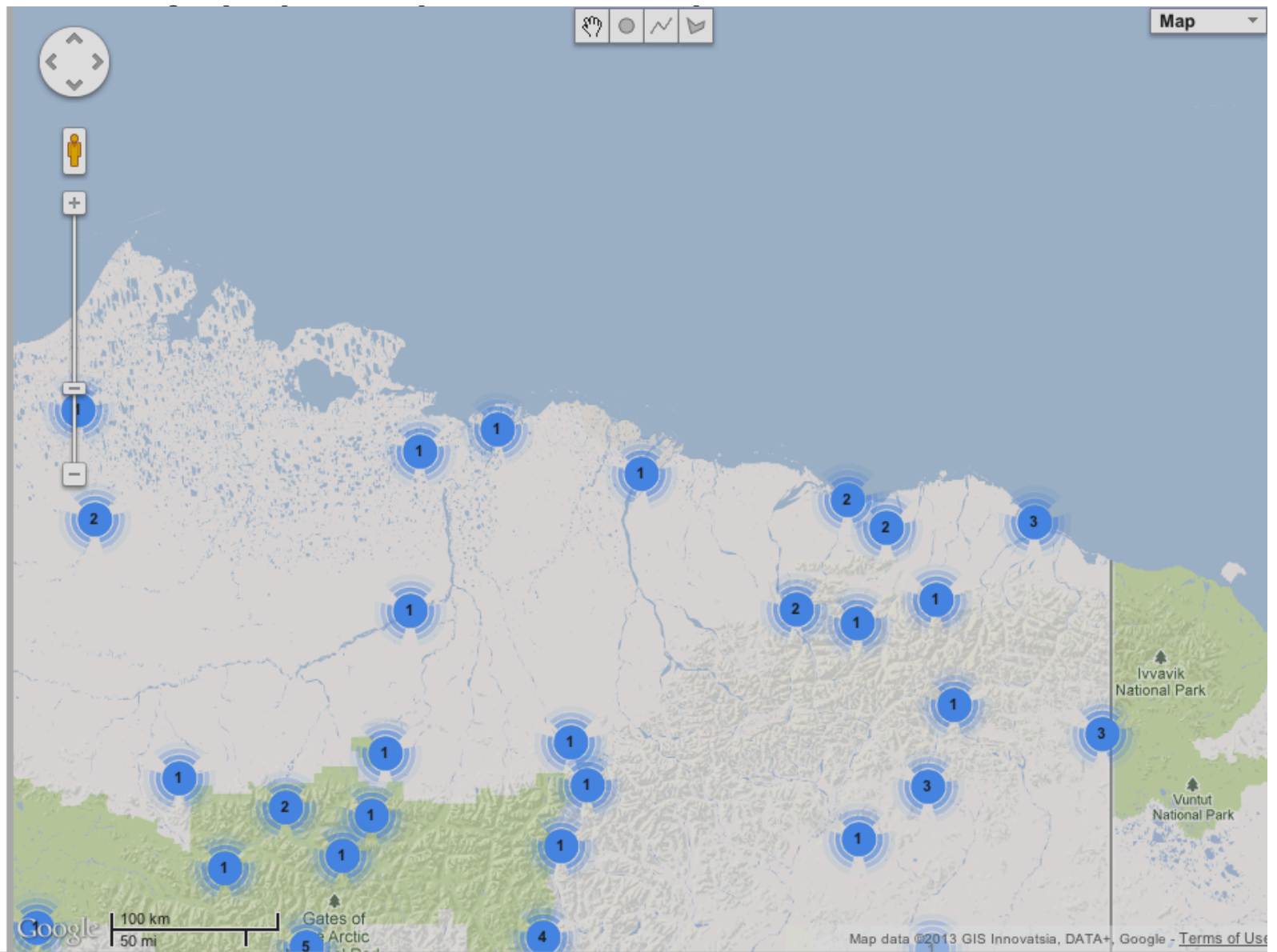


BerkeleyMapper Information
 Toggle print view

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Related Information	Scientific Name	Event Type	Verbatim Date	Specific Locality	Latitude	Longitude	ErrorRadiusInMeters	Datum
UAM:Herb:28856	Salix alaxensis	accepted place of collection	1974/07/17	Arctic Coastal Plain, vic. Prudhoe Bay	70.130000000	-148.450000000	3615	unknown

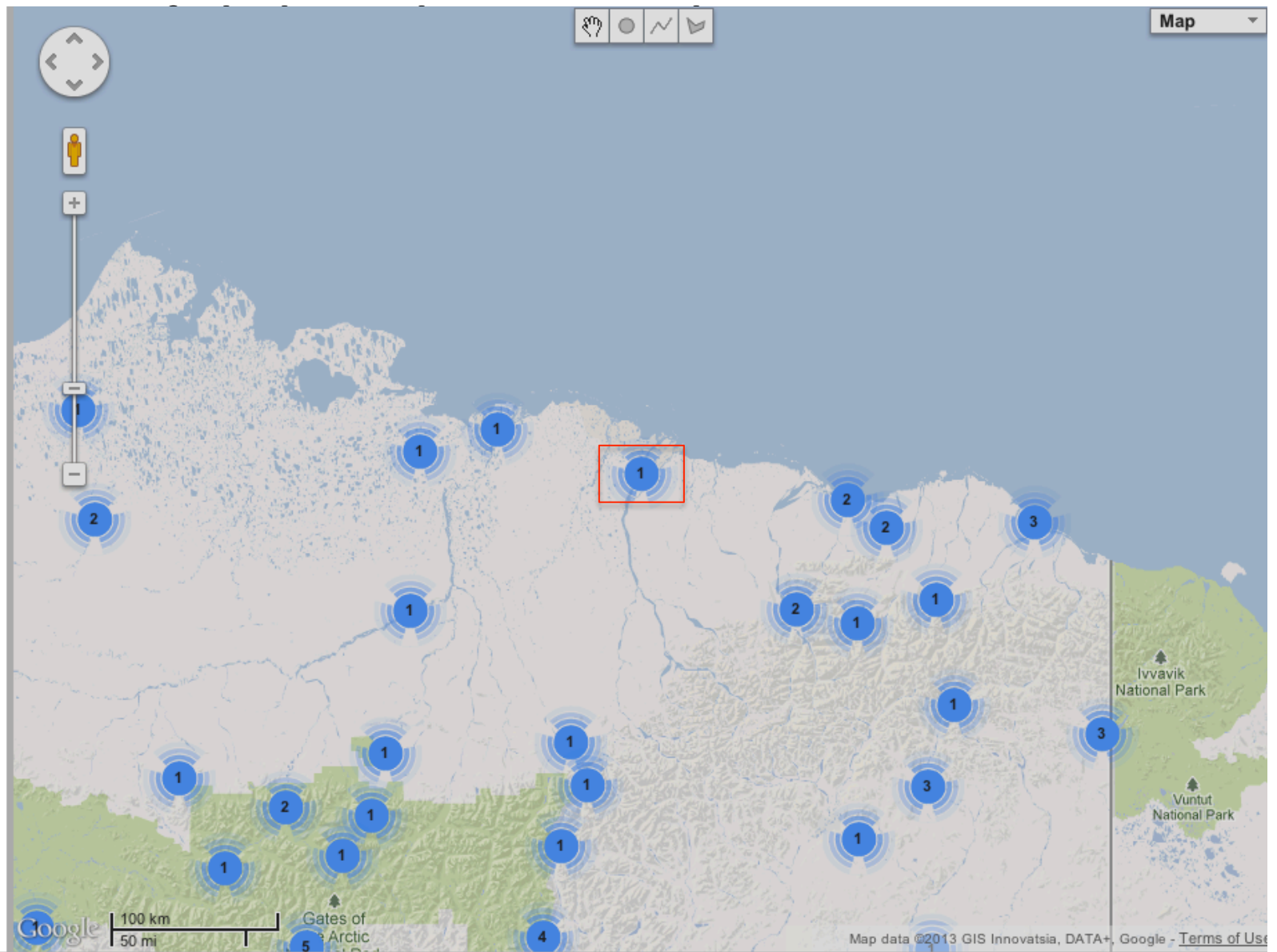


BerkeleyMapper Information
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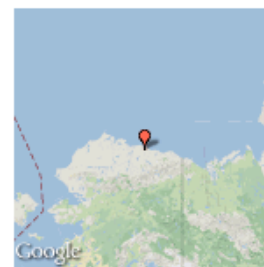


Herbarium ALA Vascular Plants 28856

Arctic Coastal Plain, vic. Prudhoe Bay
North America, United States, Alaska, Beechey Point Quad
1974/07/17

Salix alaxensis

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[Vasculars](#)

Salix alaxensis (Andersson) Coville

Plantae Tracheophyta Magnoliopsida Malpighiales Salicaceae Salix alaxensis
feltleaf willow

Identified by unknown on 2004-10-18

Nature of ID: legacy

Identifiers

ALAAC: V105253
original identifier: 4566

[Details](#)

Part Name	Condition	Disposition	#	Label	Remarks
whole organism	unchecked	unchecked	1	Salix alaxensis	

number of labels: 1

Alan R. Batten, 2004-10-20

Accession

[2004.001.Herb](#)

Media



Determination Type: accepted place of collection

assigned by Alan R. Batten on 2004-10-18

Higher Geography: North America, United States, Alaska, Beechey Point Quad

Specific Locality: Arctic Coastal Plain, vic. Prudhoe Bay

Habitat: IBP Pingo area, beach

Collecting Source: wild caught

Event Date: 1974/07/17

Verification Status: unverified

Event Coordinates: 70.13/-148.45

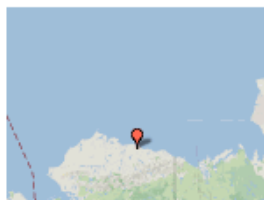
Datum: unknown

Original Coordinate decimal

Format: degrees

Error: 3615 m

Georeference Source: unknown



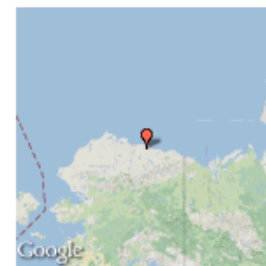


Herbarium ALA Vascular Plants 28856

Salix alaxensis

[Return to results](#)

Arctic Coastal Plain, vic. Prudhoe Bay
North America, United States, Alaska, Beechey Point Quad
1974/07/17



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Salix alaxensis (Andersson) Coville

Plantae Tracheophyta Magnoliopsida Malpighiales Salicaceae *Salix alaxensis*
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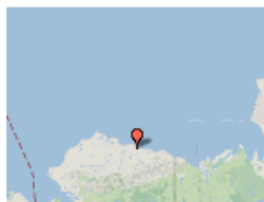
Datum: unknown

Original Coordinate decimal

Format: degrees

Error: 3615 m

Georeference Source: unknown



Contributor: [Stefanie Ickert-Bond](#) 

Submitter: [Dusty McDonald](#) 

Group: UAM

Date Submitted: 2008-06-20

Last Modified: 2008-06-20

Publish Date: 2008-02-16

Description: New Image added to the data base using Excel file



Magnification: NULL

Dimension (px): 3336x5010

Resolution (PPI):

Submitted as: dng

Original File Name: H1149512.dng

Photographer:

View id: [77407](#)

Specimen part: Plant body

Angle: Herbarium Specimen

Technique: Reflected light, macrophotography


Preparation: No preparation

Download: [original \(dng\)](#) (15.24 MB)
[full sized jpeg](#) (7.83 MB)[medium sized jpeg](#) (125.87 KB)

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Arctos, University of Alaska Herbarium search
<http://arctos.database.museum/home.cfm#uam>



Lab 2: Common Low Shrubs (40-200cm tall)

Low shrubs:

Betulaceae

Betula glandulosa

B. nana

Salicaceae

Salix lanata

S. pulchra

S. glauca

S. Interior

Adoxaceae (formerly part of Caprifoliaceae)

Viburnum edule

Eleagnaceae

Shepherdia canadensis

Myricaceae

Myrica gale

Grossulariaceae (formerly part of Saxifragaceae)

Ribes triste

Rosaceae

Dasiphora fruticosa (= *Potentilla fruticosa*, *Pentaphyloides floribunda*)

Rosa acicularis

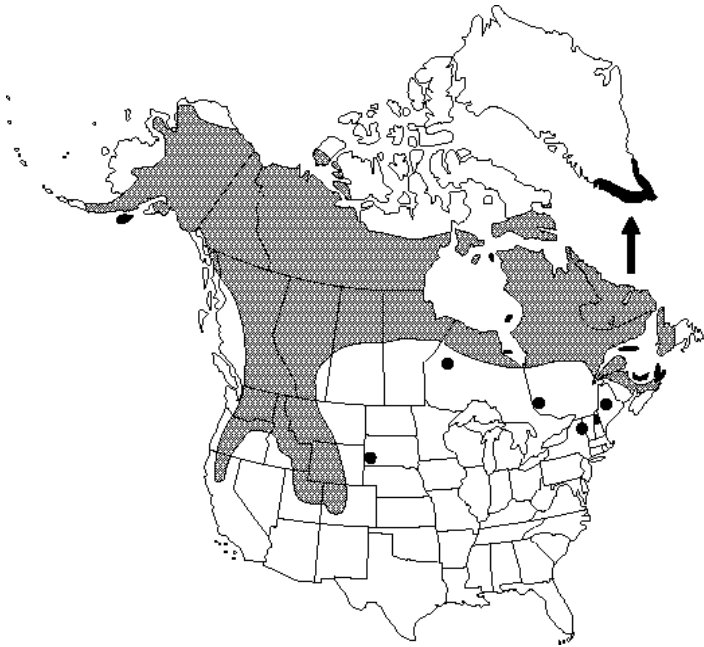
Spiraea beauverdiana

13 species

Betula glandulosa (slide1/2)

Family: Betulaceae

Common name: Shrub Birch



http://www.canadianbiodiversity.mcgill.ca/english/species/plants/plantpages/bet_gla.htm



<http://ww1.clunet.edu/cr/foot/family/fhl-946.htm>

Betula glandulosa (slide 2/2)

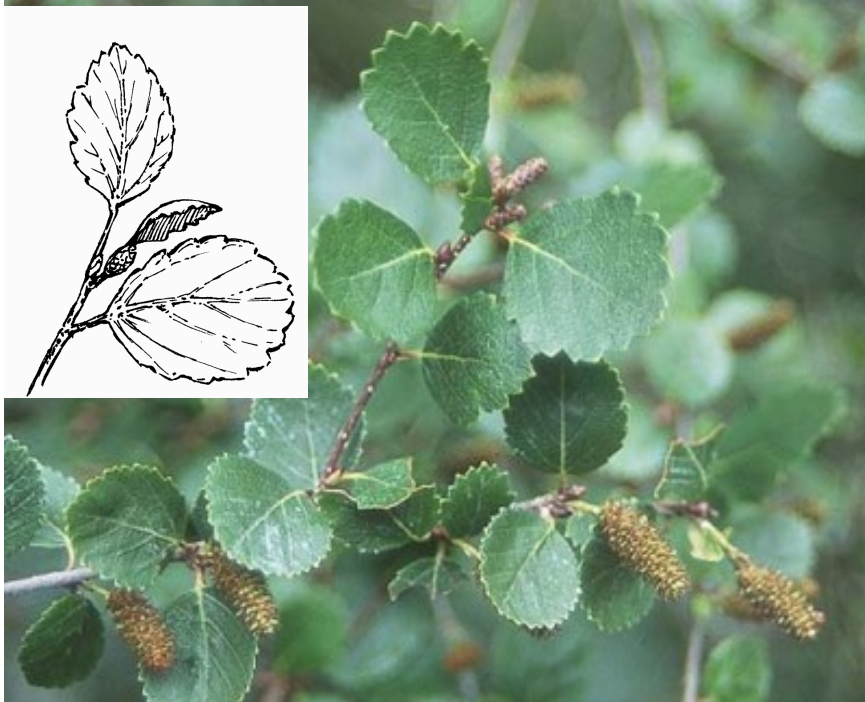


http://forestis.rsvs.ulaval.ca/BOIS_HTML_2001_X/%20Labo%20Magnoliophytes%20HTML%20X/Betula%20glandulosa%20HTML%20X/Betula%20glandulosa.html



Graham Stark

Betula glandulosa vs. *B. nana*



B. glandulosa © Pat Breen, Oregon State University, <http://www.fs.fed.us>

- *B. glandulosa* often has a cuneate (wedge-shaped) leaf base.
- *Betula nana* has generally much smaller leaves than *B. glandulosa*, that are broader than long, and with a truncated (flat) base.

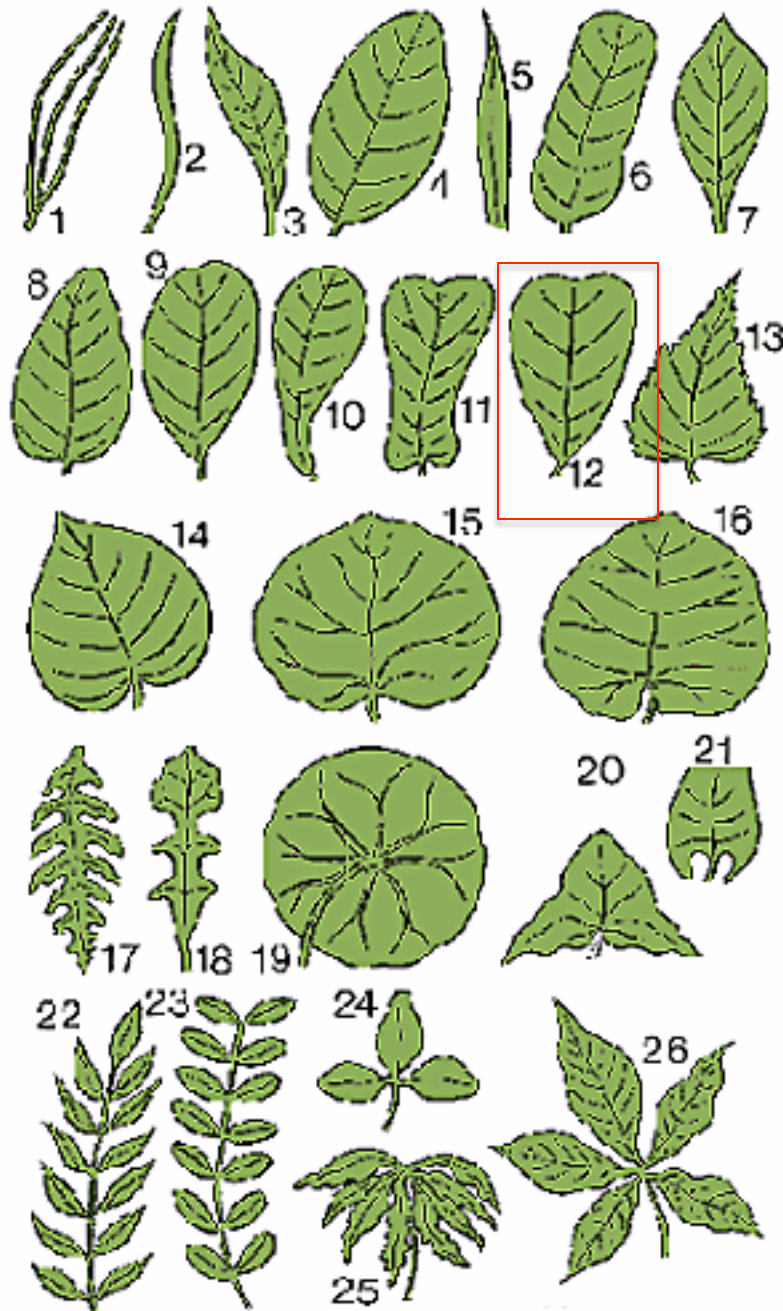


B. nana © Pat Breen, Oregon State University, <http://www.fs.fed.us>



Foto: Arne Anderberg

Leaf shapes



1a(1): 1 needle-shaped, 2 linear, 3 lanceolate, 4 elliptical, 5 ensiform, 6 oblong, 7 oblanceolate with acuminate tip, 8 ovate with acute tip, 9 obovate, 10 spatulate, 11 fiddle-shaped, 12 cuneate, 13 deltoid, 14 cordate, 15 reniform, 16 orbiculate, 17 runcinate, 18 lyrate, 19 peltate, 20 hastate, 21 sagittate, 22 odd-pinnate, 23 abruptly pinnate, 24 trifoliolate, 25, 26 palmate

Family: Salicaceae
Common name:
Richardson willow

Salix lanata

(slide 1/2)



Lynn Gillespie ©

- Leaves are often lanate (covered in wooly hairs), that give the plant a grayish appearance, with persistent, prominent, slender stipules, that give stems rough appearance.
- Flowers early before leaves form, (precocious).
- Young branchlets villous, or pilose (densely hairy).
- Calcareous substrates,
- Pedicels, ovaries and seed capsules not hairy. (*in S. glauca* they are hairy.)



Salix lanata (slide 2/2)



Foto: Arne Anderberg
Female catkin and leaves.



Victoria Island, Dwarf *Salix lanata*. The plant can be a tall shrub >2 m tall in southern subzones.

Aiken, S.G., Dallwitz, M.J., Consaul, L.L., McJannet, C.L., Boles, R.L., Argus, G.W., Gillett, J.M., Scott, P.J., Elven, R., LeBlanc, M.C., Gillespie, L.J., Brysting, A.K., Solstad, H., and Harris, J.G. 2007. Flora of the Canadian Arctic Archipelago: Descriptions, Illustrations, Identification, and Information Retrieval. NRC Research Press, National Research Council of Canada, Ottawa. <http://nature.ca/aafloora/data>, accessed on Jan 19, 2013.

Family: Salicaceae

Common name: Diamondleaf
Willow

Salix pulchra



[http://www.mun.ca/biology/delta/arcticf/sal/
www/wlsapu.htm](http://www.mun.ca/biology/delta/arcticf/sal/www/wlsapu.htm)

- Branches brown, or red, glabrous (without hairs), shiny,
- Leaves, diamond-shaped, longer than wide, shiny green. Dead leaves persist for 2 or more years and apparent in winter plants. Leaf bases cuneate.

Family: Salicaceae

Common name: Glaucous
(or Gray-Leaf) Willow

Salix glauca (slide 1/2)



<http://www.finn-j.dk/flora-groenlandica/dicotyledones/salix/glauca-3.html>

- Leaves similar to *S. lanata*, with grayish lanate hair. Stipules are not persistent.
- Branches do not have persistent stipules, so appear smoother than *S. lanata*.
- Seed capsule hairy, persisting into late summer.



Salix glauca (slide 2/2)



<http://www.krovoll.net/Fjellplanter/slides/Solvvier.html>

Male catkin



<http://ww1.clunet.edu/cr/foot/family/fhl-297.htm>

Female catkin:

Caprifoliaceae A. L. de Jussieu
(Honeysuckle Family)

Herbs, shrubs, small trees, or lianas; often with phenolic glycosides, iridoids, and scattered secretory cells. Hairs various. *Leaves opposite, simple*, sometimes pinnately divided or compound, entire to serrate, with pinnate venation; stipules lacking. Inflorescences various. Flowers bisexual and bilateral. Sepals usually 5, connate. *Petals usually 5, connate, often with 2 upper lobes and 3 lower lobes, or a single upper lobe and 4 lower ones*, the lobes imbricate or valvate. *Stamens (1-)4 or 5*; filaments adnate to corolla; pollen large, spiny, usually tricolporate or triporate. *Carpels usually 2-5, connate*; ovary inferior, often elongate, with axile placentation, sometimes only 1 locule fertile; style elongate; stigma capitate. Ovules 1 to numerous in each locule, with 1 integument and a thin-walled megasporangium. Nectar produced by closely packed glandular hairs on lower part of corolla tube. Fruit a capsule, berry, drupe, or achene; endosperm present or lacking (Figure 8.125).

- Leaves, opposite, simple.
- Petals, 5, connate (joined in tube), 2 or 1 upper lobes, and 3 or 4 lower lobes.
- Carpels 2-5, connate.
- Fruit, capsule, berry, drupe, or or achene.

Floral formula: $X, \textcircled{2}, \textcircled{2}, \overline{4-5}, \overline{2-5}$; drupe,
berry, capsule, achene

Distribution: Widely distributed, especially in northern temperate regions.

Genera/species: 36/810. Major genera: *Valeriana* (200), *Lonicera* (150), *Scabiosa* (80), and *Valerianella* (50). Noteworthy genera of the continental United States and/or Canada include *Lonicera*, *Valeriana*, *Valerianella*, *Dipsacus*, *Linnaea*, *Symphoricarpos*, and *Diervilla*.

Economic plants and products: *Lonicera* (honeysuckle), *Abelia*, *Symphoricarpos* (snowberry), *Weigelia*, and *Kolkwitzia* are used as ornamentals. *Dipsacus* (teasel) is a widespread weed.



Figure 8.125 Caprifoliaceae. (A-H) *Lonicera sempervirens*: (A) fruiting branch (x 0.75); (B) flower (x 3); (C) corolla opened lengthwise to show attachment of stamens and distribution of hairs and nectar glands (x 2.3); (D) portion of inflorescence, corollas removed (x 12); (E) ovary in cross-section (x 15); (F) seed (x 9); (G) seed in cross-section, seed coat hatched, endosperm stippled, and embryo unshaded (x 9); (H) embryo (x 18). (I-J) *L. japonica*: (I) flowering branch (x 0.75); (J) flower (x 3). (From Ferguson 1966, *J. Arnold Arb.* 47: p. 55.)

Former Caprifoliaceae (honeysuckle) family characteristics and recent division into several families

Family has recently been subdivided into several distinct families:

Adoxaceae: *Viburnum* (High-bush Cranberry) and *Sambucus* (Elderberry).

Caprifoliaceae: *Lonicera* (Honeysuckle) and *Symphoricarpos* (Snowberry).

Linnaeaceae: *Linnaea* (Twinflower).

Valerianaceae: *Valeriana* (Valerian).

Dipsicaceae: *Dipsicus* (Teasel).

Family: Adoxaceae
Common name:
Highbush Cranberry

Viburnum edule



ELAEAGNACEAE (Oleaster Family)
Order Proteales

Shrubs and trees having N-fixing bacteria in their root nodules. Often colonizing recently disturbed sites. Most common in subtropics and temperate regions. The two species in Alaska are common to gravel bars and open dry woodlands.

Plants often covered with scurfy or scaly pubescence. Leaves simple, firm; opposite or alternate along twigs. Small flowers are uni- or bisexual, actinomorphic, and arranged in small axillary racemes or umbels. Petals absent; sepals 2 or 4, fused to form a disc-shaped or tubular calyx. Single carpel is superior, but may appear to be inferior if within the fused calyx. Fruit is an achene, but surrounded by swollen calyx tissue and appearing to be a berry.

Shepherdia (soap berry) with opposite leaves and uni-sexual flowers
Elaeagnus (silver berry) with alternate leaves and perfect flowers



Eleagnaceae (Oleaster) family characteristics

- Plants covered with scurfy or scaly pubescence.
- Leaves simple, firm, alternate or opposite.
- Flowers, small, in axillary racemes or umbels. No petals. Sepals fused to form disc-shaped or tubular calyx. N-fixing bacteria in root nodules.
- Colonize disturbed sites.
- Mostly tropical and temperate species.

Family: Elaeagnaceae
Common name:
Soapberry, Buffaloberry

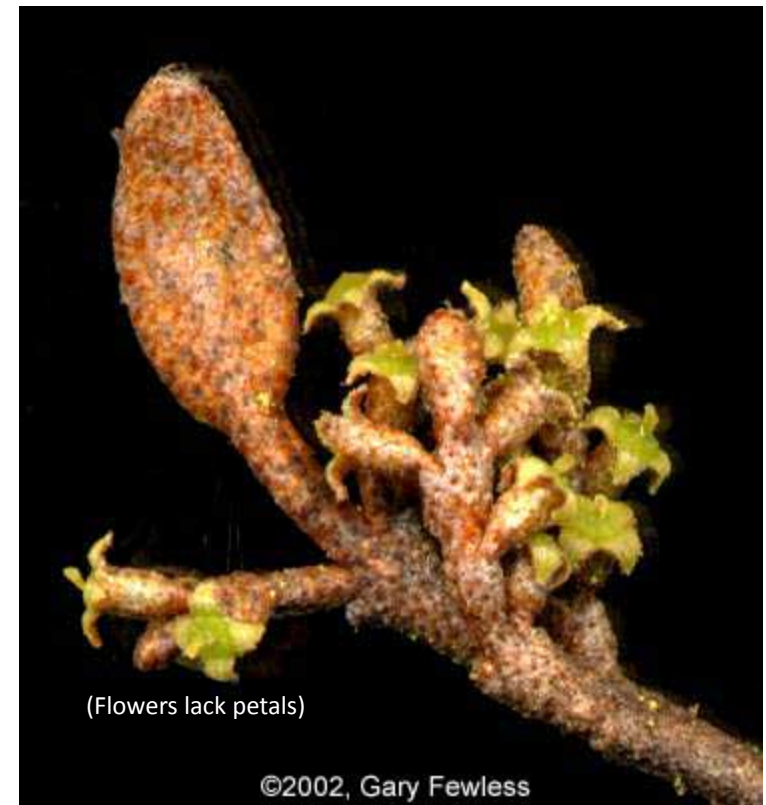
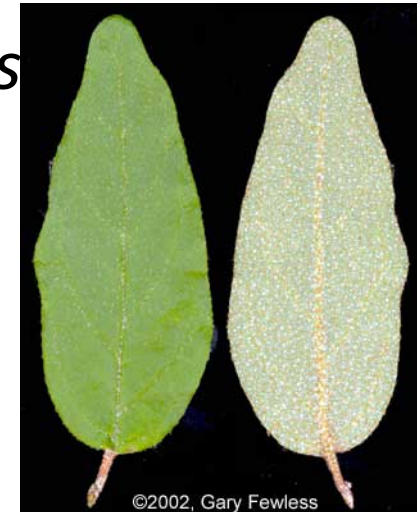
Shepherdia canadensis



Leaves: opposite, rounded at both ends. Underside of leaves and twigs densely covered with reddish-brown scales and silvery star-shaped hairs.

Flowers: Small, yellow, Dioecious. One of earliest flowering plants in the interior.

Fruits: Elliptic, red or yellow.



GROSSULARIACEAE (Currant, Gooseberry Family)
Order Rosales

Trees and shrubs with a cosmopolitan distribution, but most common in the northern hemisphere. *Ribes* is the only genus in Alaska and is described here.

Small shrubs with alternate, simple leaves which are often palmately veined and/or lobed. Prickles found on some species. Small actinomorphic 5-merous flowers arranged in axillary racemes. Perianth is usually small and bract-like. Hypanthium is well developed early in flowering stage, the ovary is inferior and develops into a berry. Hypanthium and fruit sometimes covered with resin dots, stalked glands, or hairs.

Some workers consider the genus *Ribes* to be in Saxifragaceae (see Hulten and Welsh), others split Grossulariaceae into several families on a world wide basis. Differs from Saxifragaceae described here in its woody habit, having a well-developed hypanthium, an inferior ovary, and the fruit being a berry.

Ribes (currants)



Grossulariaceae (Gooseberry and Current) family characteristics

Small shrubs and trees.

Leaves, palmately veined and/or lobed.

Flowers: 5-merous, in axillary racemes.

Perianth usually small, with well-developed hypanthium, with inferior ovary that develops into a berry. Hypanthium and fruit sometimes covered with resin dots, stalked glands, or hairs.

Family: Grossulariaceae (Saxifragaceae)

Common name: Northern Red Current



Ribes triste (slide 1/2)



- **Leaves:** Simple, 3-5 lobed, lobes broadly triangular, and coarsely toothed.
- **Twigs:** Smooth when young but becoming shredded and reddish brown (characteristic feature in winter).
- **Fruits:** Bright red berries.
- Common in white spruce and paper birch forests on well drained soils.
- This and several other species of *Ribes* are common in Alaska. *R. triste* has the widest distribution and is main current in the interior and north to warm areas of the North Slope. Other common species near Fairbanks include. *R. glandulosum*, *R. bracteosum*, *R. lacustre*. Hulten and Welsh placed *Ribes* in Saxifragaceae.

Ribes triste (slide 2/2)



Myricaceae Blume
(Bayberry Family)

Aromatic trees or shrubs; triterpenes and sesquiterpenes present; tannins present; roots usually with nodules that contain nitrogen-fixing bacteria. *Peltate scales with a glandular, usually golden-yellow, swollen head, containing various aromatic oils and/or resins. Leaves alternate, simple (deeply lobed in *Comptonia*), entire to serrate, with pinnate venation; stipules absent, or present (*Comptonia*). Inflorescences indeterminate, often spikelike or catkinlike, erect to ± pendulous, axillary, staminate and carpellate flowers usually in separate inflorescences. flowers unisexual (plants monoecious or dioecious), radial, inconspicuous, 1 in the axil of each inflorescence bract. Perianth lacking, except in *Canacomyrica* where represented by 6 minute tepals at ovary apex, but flowers usually associated with bracts and bracteoles. Stamens 2-9, but appearing more numerous due to clustering of several flowers; pollen grains usually triporoporate. Carpels 2, connate; ovary apparently superior (due to loss of perianth: *Comptonia*), becoming inferior due to intercalary meristematic activity around and/or beneath the gynoeceum, forming a cuplike structure, which raises the bracteoles up as part of the fruit wall (*Gale*), or inferior even at the time of pollination, due to early intercalary activity that forms a thick structure with (*Myrica*) or without (*Canacomyrica*) papillae, with basal placentation; stigmas 2, elongated. Ovule 1 per gynoeceum, orthotropous, with 1 integument. Nectaries lacking. Fruit a drupe, covered either with waxy or fleshy papillae, or an achene, not associated with conspicuous bracteoles (*Myrica*, *Canacomyrica*), with 2 bracteoles fused to achene (*Gale*), or simply surrounding fruit (*Comptonia*); endosperm lacking, or nearly so (Figure 8.86).*

Floral formula: Staminate: $\ast, -0-, 1-9, 0$

Carpellate: $\ast, -0-, 0, \underline{\underline{\ast}}$; drupe, achene

Distribution and ecology: Widespread in temperate to tropical regions; often early successional or in wetlands; plants associated with nitrogen-fixing, filamentous bacteria in root nodules.

Genera/species: 4/40. Major genus: *Myrica* (35 spp.).

Economic plants and products: Aromatic wax is extracted from the fruits of several species of *Myrica* (bayberry, wax myrtle, candleberry); a few species have edible fruits. Several species of *Myrica* are used as ornamental shrubs.



Figure 8.86 Myricaceae. (A-F) *Myrica pensylvanica*: (A) branch with staminate catkins (x 1.5); (B) staminate flower (x 14.5); (C) staminate flower, lateral view (x 14.5); (D) carpellate catkin (x 9); (E) carpellate flower with bracts (x 22); (F) carpellate flower in longitudinal section, showing basal ovule (x 30). (G-I) *M. cerifera*: (G) branch with fruits (x 0.75); (H) drupe (x 12); (I) fruit in longitudinal section, note waxy papillae, endocarp (indicated with numerous radiating lines), and embryo (x 12). (From Elias 1971, *J. Arnold Arbor.* 52:p.310.)

Myricaceae (Bayberry) family characteristics

Fragrant shrubs in Alaska.

Leaves: alternate, simple with entire or toothed margins, and small aromatic yellow resin dots on both surfaces.

Flowers: Small yellowish, without sepals or petals. Inflorescence often spikelike or catkinlike. Flowers unisexual, staminate and carpellate flowers usually in separate inflorescences (plants can be monoecious or dioecious).

Fruit: a small drupe or achene.

Family: Myricaceae

Common name: Sweet Gale



http://www.canadianbiodiversity.mcgill.ca/english/species/plants/plantpages/myr_gal.htm

- **Leaves:** Oblanceolate, cuneate, coarse teeth, thinly hairy on both surfaces, with waxy glands.
- **Flowers:** Dioecious, small, inconspicuous, yellowish in spikes. Flowers in early spring.
- **Fruits:** Green or yellow, two-winged nutlet, long, resinous, waxy.
- Common in wet areas in interior Alaska.

Myrica gale (slide 1/2)



© William S. Justice

Myrica gale (slide 2/2)



Myrica gale
Foto: Jan Wesenberg

Male flowers.



Photo copyright Henriette Kress
<http://www.henriettesherbal.com>

Branch in seed. <http://www.henriettesherbal.com/pictures/p09/pages/myrica-gale-4.htm>.

ROSACEAE (Rose Family)
Order Rosales

Large worldwide family, centered in northern hemisphere. Very diverse and well represented in Alaska. Includes plants of economic value (apples, almonds, etc.) and ornamentals (roses, burnet).

Trees, shrub, and herbs. Leaves are stipulate, alternate, and quite variable in shape and dissection. Flowers are perfect, actinomorphic, and variously arranged. Perianth usually 5-merous; 5 sepals are fused at their base and often subtended by an epicalyx, the 5 or more petals are distinct and may be clawed. Carpels 1 to many and either superior or inferior. Anthers 5 to numerous. All floral parts are attached to a hypanthium which ranges from a flat disk to an urn-shaped container, depending on species, and/or the stage of fruit development. Fruits are also variable, and include achenes, drupes, pomes, and aggregates. Most species are insect pollinated, having showy flowers with nectar and abundant pollen available. Some taxa are selfing, apomictic, or frequently hybridize...causing much taxonomic grief!

Rubus (cloud berry, salmon berry), *Potentilla* (cinquefoils, silver weeds), *Sibbaldia*, *Geum*, *Sanguisorba* (burnet), *Rosa* (wild rose), *Dryas* (mountain avens), *Spiraea*, *Amelanchier*, *Sorbus*, *Luetka*, *Chamaerhodos*, *Aruncus*, *Fragaria*, and a few more.

Terms: drupelet, achene, epicalyx, hypanthium/receptacle, hip.



Rosaceae Family Characteristics

- Very variable family!
- Growth forms: Highly variable, trees, shrubs, herbs.
- Leaves often serrate.
- Flowers: 5-merous, 5 sepals, many spirally arranged stamens.
- All flower parts fused at base into a hypanthium.
- Fruits: Highly variable (achenes, drupes (plums), hips (rose), pomes (apple), nuts (almonds), and aggregates (strawberry, raspberry).
- Many showy flowers and edible fruits.

Family: Rosaceae
Common name: Shrubby
Cinquefoil

Dasiphora fruticosa (*Potentilla fruticosa*, *Pentaphylloides floribunda*)



<http://www.swcoloradowildflowers.com/Yellow%20Enlarged%20Photo%20Pages/dasiphora%20floribunda.htm>



http://www.missouriplants.com/Yellowalt/Potentilla_fruticosa_page.html

<http://www.cnr.vt.edu/dendro/dendrology/carddetail.cfm?Genus=Dasiphora&Species=floribunda>

Much branched deciduous shrub.

Leaves: Alternate, pinnate, with pair of membraneous, presistent stipules.

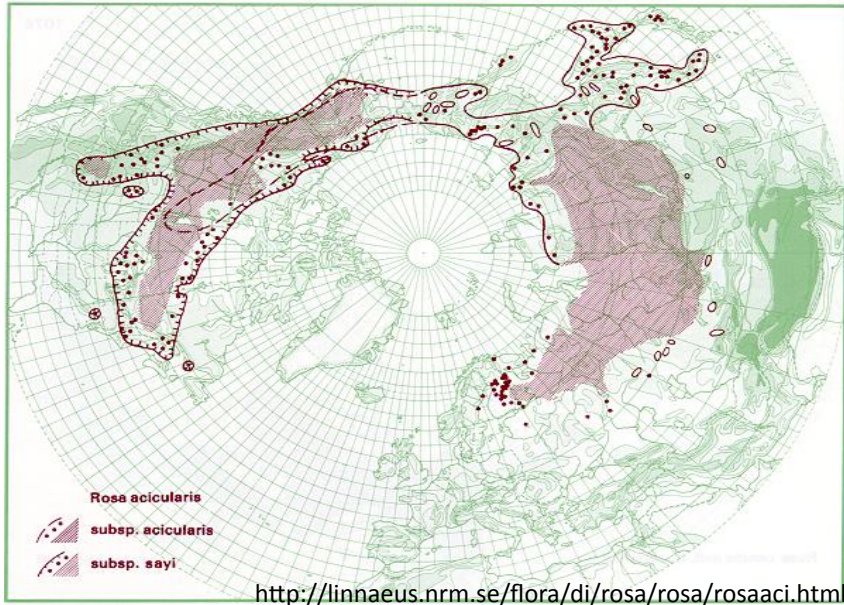
Flowers: Yellow, showy, 2-3 cm. diam., in terminal clusters.

Habitat: Common throughout most of Alaska, except West, and SE. Drier areas in the Arctic. Moist soils in the Interior, borders of streams and lakes, and dry rocky hillsides.

Family: Rosaceae

Common name: Prickly Rose

Rosa acicularis (slide 1/2)



Spiny much branched shrub (0.3-2.2m) high.

Leaves: Alternate, pinnate (5-9 cm long). Mostly 5 (3-9) leaflets, paired except at end, rounded at both ends, edges toothed.

Flowers: Large (4-6 cm diam.), Usually 1, sometimes 2-3 at end of twigs, pink to rose petals.

Fruit: Elliptic or rounded "hip", rich in Vitamin C. Food for grouse and other birds.

Habitat: Shaded undergrowth of deciduous and white spruce forest, with aspen on old burns. Common in interior and most of Alaska. Some warm areas of the Arctic, near Umiat and Sadlerochit Springs.

Rosa acicularis (slide 2/2)



<http://hortiplex.gardenweb.com/plants/p1/gw1034954.html>



http://www.colinherb.com/Rosaceae/Rosa/Acicularis/Rosa_acicularis.htm

Family: Rosaceae

Common name: American Red Raspberry

Rubus idaeus



http://www.atlas-roslin.pl/gatunki/Rubus_xpseudidaeus.htm

Deciduous thorny shrub, 0.6-1.2 m tall.

Common raspberry in the interior.

Leaves: pinnate, 6-18 cm long, with very narrow paired stipules, 3-5 leaflets, ovate, toothed margins, green mostly hairless above, gray-green and hairy beneath.

Flowers: 5 narrow hairy sepals, 5 white petals.

Fruit: aggregate, red raspberry with many hairy drupelets.

Habitat: Common in openings and borders of forests in much of Alaska, and roadside weed. Occurs in most of Alaska except tundra north of Brooks Range. Several other species of *Rubus* are common in southern and SE Alaska.



<http://www.phytochemicals.info/plants/raspberry.php>



<http://www.uni-graz.at/~oberma/baum-dias/rubus-idaeus.htm>



<http://www.uni-graz.at/~oberma/baum-dias/>

Family: Rosaceae

Common name: Beauverd Spirea

Spiraea beauverdiana



Small (30-60 cm) much-branched deciduous.

Leaves: Simple, with short petioles, blades elliptical to ovate 1.5-5 cm long, 1-3 cm wide, rounded at both ends with teeth most conspicuous near the leaf tip.

Twigs: Purplish brown, slender, hairy when young, afterwards shedding outer bark in long thin strips.

Flowers: In flattened clusters (corymbs) 2-4 cm across, Flowers small (about 6 mm) with 5 triangular sepals bent down, 5 white or rose-tinged petals.

Fruit: Usually 5 podlike follicles less than 3 mm long, shiny brown, hairy, with 2 to several seeds. Persistent in winter.

Habitat: Common tundra and black spruce from lowlands to alpine except in SE Alaska and north of Subzone E in the tundra.