Common Plants of the San Juan Islands

Compiled by Susan Kagel

I. Introduction

Plants in the San Juan Islands are influenced by a variety of factors. Mild winters coupled with the rainshadow effect of the Olympic Mountain Range and Vancouver Island create harsh conditions for many common moisture-loving plants found throughout western Washington. The scouring and deposition of gravelly soils left by the Vashon Glacier further limits prime habitat. However, these unique conditions allow for some species of plants usually found east of the Cascade Mountains to grow on the San Juan Islands.

Despite these conditions, plants have adapted to every habitat found on the San Juans. Beginning below the sea, a few species of plants are able to flourish in the salt water alongside the algae that make up the seaweeds. Along the shore, some plants are able to eke out a living in the harsh substrata of rock and sand. Moving inland from the shoreline, plants become more numerous as sand and rock give way to more forgiving soils. On south-facing slopes, remnants of prairies can be found. On moister north-facing hillsides, forests have been able to take hold. Ponds, lakes, and wetlands throughout the islands provide habitat for a variety of plant species. The San Juans do not have many perennial streams which is partly due to the dry summers and unfavorable soil conditions. Therefore certain riparian (streamside) species commonly found on the mainland are missing.

The following sections describe various habitats found throughout the San Juan Islands. The plants listed represent a variety of species either commonly found in these areas or of special interest. Many plants found in one habitat may also be found in others. For a more complete listing of plants in each habitat, refer to *Wild Plants of the San Juan Islands*, by Atkinson and Sharpe. No habitat is static and some species may be found in great numbers in certain areas while seemingly missing from others.

II. Habitats of the San Juan Islands

Shoreline Habitat - Salt Marshes, Backshores of Beaches and Rocky Shoreline

Plants living in shoreline environments must contend with tidal influences, wave action, salt spray, wind, and harsh soils conditions. Seemingly impenetrable rocky shoreline dominates many areas of the islands yet this habitat is home to a few plant species. Sandy and rocky beaches are also found throughout the islands. Soils along the shoreline are predominately sandy in composition and are unable to retain moisture. This may result

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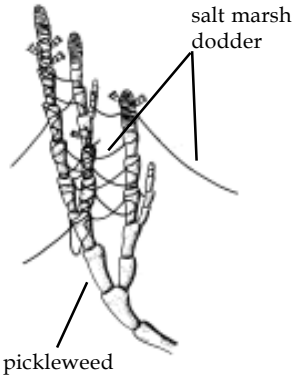
in dehydration. Due to the shifting nature of these soils, plants must also develop adaptations that allow them to take root.

Salt Marshes - Salt marshes can be found in various places in the islands including Mud Bay and Hunter Bay on Lopez Island and Westcott Bay on San Juan Island. Salt marshes are created when sediment and organic materials from both sea water and freshwater runoff combine in a bay or inlet. As more material is deposited, the area becomes elevated which stops it from being completely inundated by tides on a regular basis. Because of this, and the continuous flow of freshwater, salinity in a salt marsh is usually lower than pure saltwater. The combination of these factors allow for the colonization of specialized plants which continue to add decaying material to the soil.

Backshores of Sandy Beaches - The backshores of sandy beaches, such as the area behind South Beach on San Juan Island, must contend with wind, shifting sands, harsh exposure to sunlight, and poor water retention. To battle these conditions many plants are succulents or grow in creeping mats.

Rocky Shorelines - Where soil is able to accumulate in the rocky shoreline, plants have taken hold.



Pickleweed *Salicornia virginica*
Description:
Pickleweed is also known as American Glasswort and is one of the most common plants found in salt marshes on the islands. Pickleweed is a fleshy plant with jointed stems and almost imperceptible leaves. It usually forms dense mats. Salt accumulates in the tips of the stems which turn a brownish-purple in the fall and fall off. This allows the plant to discard some of the salt in its tissues.

Salt Marsh Dodder *Cuscuta salina*
Description:
Salt marsh dodder is a parasitic plant whose threadlike orange stems attach with suckers to other plants, especially *Salicornia*, growing in the salt marsh. It has small white to cream colored, bell shaped flowers. Because dodder gets its nutrients from other plants, it does not need chlorophyll to photosynthesize, hence the orange color. It is strictly a summertime plant.


Puget Sound gumweed

Puget Sound Gumweed *Grindelia integrifolia* var. *macrophylla*
Description:
Puget Sound gumweed is a wildflower found in a variety of habitats throughout the islands, but is mostly a shoreline resident. Most of its leaves

are basal, but it also has leaves growing up the somewhat hairy stem. The buds of the bright yellow flowers are covered by a sticky white resin.

Japanese Beach Pea *Lathyrus japonicus*
Description:

Japanese beach pea resembles the garden pea plant in having compound leaves and pea pods. It flowers, also pea-like, are reddish-purple to blue in color. It can be found in large mats creeping across the sand. Despite its species name, it is a native of the Pacific coast.

Japanese beach pea

Other plant species that may be found in shoreline habitat include:
Salt marsh
Seaside arrow-grass *Triglochin maritimum*
Common orache *Atriplex patula*
Seashore salt grass *Distichlis spicata* var. *spicata*
Backshore beaches
Yellow sand-verbena *Abronia latifolia*
Seashore lupine *Lupinus littoralis*
Beach rye-grass *Leymus mollis*
Rocky shoreline
Lance-leaved stonecrop *Sedum lanceolatum*
Seaside plantain *Plantago maritims*

Prairies

Prairie habitat is characterized by gravelly, well-drained soils which were deposited as the Vashon Glacier receded. As these nutrient poor soils accumulated on southern facing and rocky slopes where solar radiation is most intense, prairie species were able to out-compete other tree and plant species which require rich, moist soil conditions. There is evidence that the Straits Salish peoples on southern Vancouver Island used fire to maintain the prairies. Low intensity fires were set to suppress the encroachment of Douglas-fir and maintain an open area for important food plants. It is possible that fire was used on the San Juan Islands as well.

great camas

Common Camas *Camassia quamash*
Great Camas *Camassia leichtlinii*
Description:
Camas is a wildflower with light to dark purple, open star-shaped flowers and basal grass-like leaves growing from an underground bulb.

death camas

Death Camas *Zygadenus venenosus*
Description:
Death camas is a wildflower with a cluster of creamy white, bell-shaped, foul-smelling flowers and basal grass-like leaves. It grows from an under-


chocolate lily

ground bulb. Death camas bulbs are extremely poisonous, causing vomiting, difficulty in breathing, and coma when eaten.

Chocolate Lily *Fritillaria lanceolata*
Description:
Chocolate lily is a wildflower with three to five lance-shaped leaves in one or two whorls around the stem. The bell-shaped nodding flowers are brownish-purple and speckled with yellow and green. The flowers grow both singly and in clusters of two to five flowers. At Iceberg Point on Lopez Island, Yellow Island, and many other places, this lily often has yellowish flowers.

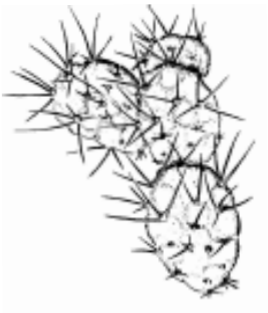

few-flowered shooting star

Henderson's Shooting Star *Dodecatheon hendersonii*
Few-Flowered Shooting Star *Dodecatheon pulchellum*
Description:
Henderson's shooting star is a wildflower with oval basal leaves; the few-flowered shooting star has oblong leaves. Both have hot pink to magenta flowers that look like they have been swept backwards. The base of the flower is ringed in yellow; the stamens and styles are joined together to create a point. The flowers are clustered on top of a stem.

Other plant species that may be found in prairie habitat include:
Sheep sorrel *Rumex acetosella*
Idaho fescue (grass) *Festuca idahoensis*
Western long-spurred violet *Viola adunca*
Hooker's onion *Allium acuminatum*
Brodiaeas *Brodiaea* spp.

Rocky Areas

As the Vashon Glacier receded over 10,000 years ago, it scoured many areas of the islands down to the rock layer. Today many of these areas continue to be mostly devoid of soil. Rock is slowly broken down through time from a variety of factors including rain, wind, and, on the shoreline, waves. Soil collected in cracks and crevices allow plants that favor drier climates to flourish. Plants more often associated with the east side of the Cascades can be found here.


brittle prickly pear catus

Brittle Prickly Pear Cactus *Opuntia fragilis*
Description:
The prickly pear cactus found in the San Juans is very small compared to species of the same genus found in the southwestern deserts. It has very succulent, fleshy pads covered in spines. Large yellow flowers with papery petals in the spring are followed by small pear-shaped fruits. It is found on rocky outcrops and prairie habitat. The spines of the cactus are actually modified leaves developed to protect the succulent pads (modified stems) from predation. The spines also reduce evapotranspiration because their small surface area allow the cactus to retain moisture.

Licorice Fern *Polypodium glycyrrhiza*
Description:
Licorice fern grows on moss covered rocks in the San Juans. It is a small evergreen fern with leaflets that have pointed tips and finely toothed margins. The rhizomes of licorice fern tastes like licorice.


licorice fern

Other plant species that may be found in rocky areas include:
Stonecrop species *Sedum* spp.
Small flowered alumroot *Heuchera micrantha*
Tall Oregon grape *Berberis aquifolium*

Damp Places, Wetlands, Ponds, and Lakes

Damp Places - There is a variety of damp places on the San Juan Islands ranging from roadside ditches to pastures. These areas are present where seepage occurs and after rainstorms, but extensive standing water does not remain during drier periods.

Wetlands - For a wetland to develop, three factors are required: the presence of water for a lengthy time of the year, hydric soils, and plants tolerant to water (hydrophytic). The overwhelming presence of water creates saturated soil conditions. Usually the water level is a little below, a little above or right at the surface of the soil layer. There may also be times during the year where water is not present. Hydric soils are characterized by a low oxygen content throughout all layers of the soil. These soils can be organic (full of rotting plant material) or mineral in nature. Hydrophytic plants growing in these soils must develop ways to trap what little oxygen is available. A few examples of this adaptation include developing shallow roots or root systems that hang in the water. There are several different types of wetlands in the San Juan Islands ranging from peat bogs on Mt. Constitution on Orcas Island, to marshes and the edges of lakes and ponds.

Ponds and Lakes and Streams - Ponds and lakes are numerous on the islands and range in size from Cascade and Mountain Lakes on Orcas Island to small stock and backyard ponds. As mentioned before, besides a few exceptions, streams generally dry out during the summer, and as a result, do not provide the best habitat for many riparian species.


Pacific willow

Pacific Willow *Salix lasiandra*
Description:
Pacific willow is different from other willows on the islands by it long lance-shaped leaves that end in a point. It can grow to over 40 feet tall. Mature trees have yellow-brown colored bark. Its flowers are pale yellow bracts, which after flowering, become filled with wooly seeds.

red elderberry

Red Elderberry *Sambucus racemosa*
Description:
Red elderberry is a large shrub with dark, red-brown bark, large leaves divided into five to seven leaflets, clusters of creamy white, smelly flowers, and bright red berries.

salmonberry

Salmonberry *Rubus spectabilis*
Description:
Salmonberry is an erect shrub with golden to brown-colored bark, leaves consisting of three sharply toothed leaflets, bright magenta colored flowers, and large yellow-red raspberries.

Hardhack *Spiraea douglasii*
Description:
Hardhack is a very dense shrub that can make impenetrable thickets. It has medium sized deciduous leaves which are dark green above and lightly hairy beneath. Tiny, bright pink to magenta flowers grow in clusters at the tips of branches.

hardhack

Stinging Nettle *Urtica dioica*
Description:
The stems of stinging nettle are covered in fine stinging hairs. The stinging hairs are hollow and contain formic acid. When the plant is touched, the hairs break, releasing the acid, which irritates the skin. Stinging nettle leaves are lance to heart-shaped and coarsely toothed. The green flowers form drooping clusters.

stinging nettle

Skunk Cabbage *Lysichiton americanum*
Description:
Skunk cabbage is a prehistoric looking plant with very large leaves and small flowers growing on a spadix (spike) which is hooded by a yellow bract. If the leaves are crushed they give off a skunk-like odor. When the yellow bract emerges in the springtime, the plant is sometimes referred to as "swamp lantern."

Other species that may be found in damp areas and wetlands include:
Skita willow *Salix sitchensis*
Common monkey flower *Mimulus guttatus*
Buttercup species *Ranunculus* spp.
Cattail *Typha latifolia*
Cooley's hedge nettle *Stachys cooleyae*

Forests

Originally, forests dominated the landscape of the San Juan Islands. Today, much of the soil on the islands is suitable to support forest species but

many areas are cleared for pasture and development. Although there are many microclimates that can create a variety of forest types, there are two categories that can generally describe the forests on the islands: Open Woodlands and Conifer Forests.

Open woodlands often mark to transitional areas between prairies and forests. They are characterized by a combination of evergreen, coniferous, and deciduous trees. Many species found in the open woodlands can also be found around rocky outcrops and shoreline such as the west side of San Juan Island.

Conifer forests are dominated by needle-leaved trees. This area is characterized by moister conditions and soil with a greater nutrient content. Douglas-fir is very common in drier areas while western red cedar and western hemlock are more common in wetter places. As with other habitats, species are not static and can be found in various locations.

Very few large old growth trees exist in the San Juans for a variety of reasons. Because of the rainshadow effect and the marginal soils left behind by glaciers, conditions disallow for huge trees to develop like they do on the Olympic Peninsula. Most of the large trees that did exist were harvested to fulfill the needs of building, fuel for lime kilns, and to power steamships. Some of the oldest trees remaining on the islands can be found in Moran State Park on Orcas Island.

<u>Open Woodlands</u>

Rocky Mountain Juniper *Juniperus scopulorum*
<u>Description:</u>
Rocky mountain juniper is a medium-sized tree growing to heights of 35 feet. The older bark has a weathered gray look that grows in strips around the trunk and branches. Seedlings have needlelike leaves, but older plants have scalelike leaves. Junipers develop purplish, berry-like cones covered with a white waxy coating.


rocky mountain juniper

Oregon White Oak (Garry Oak) *Quercus garryana*
<u>Description:</u>
The Oregon white oak can grow up to 80 feet tall, and usually has heavy limbs. The bark is light gray with grooves and ridges in older trees. The deciduous leaves are dark green and formed in a traditional "oak shape" with rounded lobes. Acorns are generally produced every other year and are an important food source for many animals. Oaks are found mainly on forest margins near prairie habitat and in cleared pastures where they make good shade trees. Oaks can be found throughout the islands but are most prevalent on San Juan and Orcas Islands. The Oregon white oak is the only species of oak native to western Washington and in the San Juans it is close to marks its northernmost limit.


Oregon white oak
(Garry oak)

Pacific madrone

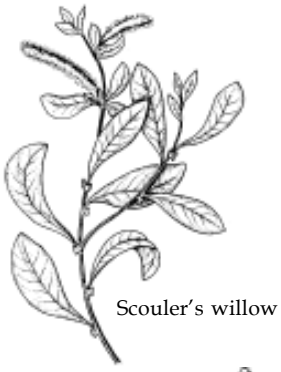
Pacific Madrone *Arbutus menziesii*
Description:
Madrone can grow up to 90 feet tall but most trees are much smaller trees. The madrone is probably best known for its greenish bark that turns reddish brown and peels as it grows older. It has evergreen leaves that are thick and shiny dark green in color. The madrone has white flowers which grow in clusters and droop off the end of branches. Reddish-orange berries later develop and often stay on trees into the winter.

big-leaf maple

Big-Leaf Maple *Acer macrophyllum*
Description:
Big leaf maple trees have very large, often multi-stemmed trunks. The bark is smooth and green in young trees becomes gray and grooved in older trees. The trucks and branches are often covered by mosses and lichens in older trees. The deciduous leaves are very large and maple-shaped, turning yellowish-brown in the fall. It has small yellowish-green flowers hanging in clusters and brown, winged seeds.

shore pine - lodgepole pine

Shore Pine - Lodgepole Pine - *Pinus contorta* var. *contorta* and var. *latifolia*
Description:
The San Juans host a somewhat unique eco-type of this pine. The usual form here tends to be rather tall and straight, like the lodgepole form that grows in pure stands in the Cascades. The bark of large trees, however, is usually about an inch thick, a characteristic of the shore pine variety found in wind-swept areas along the open coast. The needles of the pines grow in pairs. In the spring, pollen cones form clusters on the tips of branches. The small seed cones have stiff scales. This species is in a variety of places in the islands.



Scouler's willow

Scouler's Willow - *Salix scouleriana*
Description:
Scouler's willow is a large, multi-stemmed shrub or small tree. The young leaves feel very velvety while older leaves are usually dark green above and smooth or with a few reddish hairs underneath. The leaves have a rounded tip, and are widest above the middle. Catkins appear on the branches in the spring before the leaves develop.

ocean spray

Ocean Spray *Holidiscus discolor*
Description: Ocean spray is a multi-stemmed shrub with coarsely toothed, oval leaves and small, white to cream-colored flowers which grow in clusters at the end of branches. The flowers eventually turn brown and may stay on the shrub throughout the winter.

Other plant species that may be found in open woodlands include:
Pacific yew *Taxus brevifolia*
Nootka rose *Rosa nutkana*
Red flowering current *Ribes sanguineum*
Orange honeysuckle *Lonicera ciliosa*

Conifer Forests

Douglas-Fir *Pseudotsuga menziesii*
Description:
Douglas-fir can grow up to 250 feet tall, but is usually shorter on the islands. Young plants have smooth dark gray to brownish-colored bark, but this becomes reddish-brown and deeply grooved in older trees. The needles are arranged on a soft spiral around twigs. Young cones are green and turn brown with maturity. The cones are most distinctive by the three-forked bracts that alternate with the seed-producing cone. The bracts look a bit like the hind feet and tail of mice "hiding" in the cone. The common name "Douglas-fir" was given in honor of David Douglas, an eminent botanist and explorer of the Pacific Northwest during the 19th century. The species name "*menziesii*" is Latin for Archibald Menzies, the ship doctor and botanist during George Vancouver's surveying expeditions of the Pacific Northwest during the 18th century.


Douglas-fir

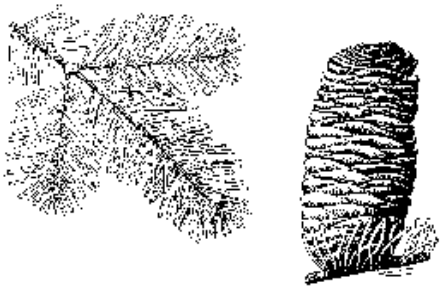
Western Hemlock *Tsuga heterophylla*
Description:
Western hemlock can grow to almost 200 feet tall. The growing tip droops even in old trees and the branches tend to hang down. Young bark is scaly, becoming grooved as the tree grows older. The flat, green needles are irregularly placed on branches and look feathery from afar. Western hemlock produces small seed cones which turn brown with maturity.


western hemlock

Western Red Cedar *Thuja plicata*
Description:
Western red cedar can grow up to 180 feet tall. It has reddish bark which grows in strips. Its leaves, instead of being needles, are yellowish-green scales. It has small, egg-shaped cones that turn upwards. The western red cedar is not a true cedar but rather a member of the cypress family.


western red cedar

Grand Fir - *Abies grandis*
Description:
Grand fir is a tall tree found in a variety of areas throughout the San Juans. Young trees have smooth bark often dotted with resin blisters while older trees have slightly ridged, grayish-brown bark with white blotches. The flat, notch-tipped needles grow in two horizontal rows. The cylindrical seed cones grow high up in the crown of the tree.


grand fir

Other plant species that may be found in conifer forests include:
Salal *Gaultheria shallon*
Snowberry *Symphoricarpos albus* var. *laevigatus*
Swordfern *Polystichum munitum*

Roadsides and Other Disturbed Land

Whether it is building sites, pastures, or remnants of past land use, many areas of the San Juans can be considered disturbed land. These areas have been altered to the degree that the landscape can only support weedy and invasive species. Over-grazed pastures are dominated by thistles, roadsides bloom with chicory, and old gravel pits are dotted with tansy ragwort. Blackberries take over vacant lots and Scotch broom invades prairies. Many of these species were introduced to the islands and most have become naturalized. Reclaiming the land for native species takes great perseverance and dedication.

Scotch broom

Scotch Broom *Cytisus scoparius*
Description:
Scotch broom is a rapidly spreading shrub with five-sided branches and small deciduous leathery leaves. It has bright yellow flowers from which seed pods develop. These pods turn black as they dry, burst open, and propel their seeds. Scotch broom will out-compete native plants and is very hard to eradicate.

Himalayan Blackberry *Rubus discolor*
Description:
Himalayan blackberry is a shrub that can grow in many fashions, varying from creeping along the ground to forming very dense thickets. Spine laden stems support mostly deciduous leaves and white flowers. The berries are big, black, and juicy, and a favorite among humans and animals.

Other plant species that may be found in disturbed habitat include:
Bull thistle *Cirsium vulgare*
Canada thistle *Cirsium arvense*
Queen Anne's lace *Daucus carota*
Fireweed *Epilobium angustifolium*
Stinging nettle *Urtica dioica*

III. Conclusion

Although plants are all around us, it can be very easy to take them for granted. The combination of geographic and meteorological factors that make the San Juans unique allow for a variety of plants to flourish and provide great opportunities for study. Taking the time to study local plants and habitats rewards the student with a better understanding of the world around us.

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The author would like to acknowledge Eugene Kozloff and Deanna Lickey for their review of this section. Special thanks to Dr. Kozloff who was so generous with his time and knowledge.