The background image shows a lush garden with various green plants and white flowers. On the left, a large, weathered stone marker is visible, engraved with text. The text on the stone includes 'Seattle University', 'taq^wšəblu Vi Hilbert', 'Ethnobotanical Garden', and some lines of text in a Native American language: 'ix^w dx^w 'ug^w usa f' and 'swatix^w tod'. Below this, it says 'The earth'. The top half of the image is overlaid with a semi-transparent grey box containing the title and university name.

taq^wšəblu Vi Hilbert Ethnobotanical Garden Plant Guide

Seattle University

Hanna-Marie Lucero



Pueblo of Isleta Mountains, Hanna-Marie Lucero

Introduction

Hello, my name is Hanna-Marie Lucero and I'm from the Pueblo of Isleta in New Mexico. I'm a 4th year student at SU and a 2020 Edible Campus Intern.

For my project I am focusing on the taq^wšəblu Vi Hilbert Ethnobotanical Garden. I'm creating a plant guide on the Native plants within the garden with information that would seem fun and useful to know! After the plant guide, I provide useful propagation tips and recipes for some of the plants along with an outline of my own experiment with propagating at the end.

Some of the plants within the garden can be found on other parts of campus, so I encourage you to use the guide to see where else you can identify the plants!

One goal of my project is to provide a way for people to connect with these plants which hopefully sparks peoples interest to do further individual research into what plants around them can be useful in their every day lives while acknowledging the Peoples and land that they exist on.

The picture above is one of the mountain/hill ranges on my reservation back home. While being in Washington I was able to experience the beautiful nature out here, so I want to share some of my home with you all! I hope you enjoy the guide.

Thank you!!!

Thank you to everybody who helped me in creating this! I especially want to thank Shannon Britton, Jeanne, Mel, Sophie, Randy Lewis, Dean Dan, Ben, Jerry, and everybody else that I may have chatted with or come across your content along the way!

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General Disclaimer

The information is from outside sources and we ask that you seek advice from a professional before using any of the plants for medicinal purposes. We also want to let you know that everyone has different reactions to plants and their uses.

Allergies to fruits are common so to take precautionary measures:

- Be completely sure that you have identified the plant correctly (some have lookalikes that are not for edible or medicinal use)
- If wanting to add something to your diet do so in a small quantity the first time allowing enough time to pass to see if there are any side effects before increasing the amount you intake
- When trying new products such as soap, or applicants that go on the skin do so in a small patch at first allowing enough time to pass to see if there are any reactions before using the product on larger areas of the body. If there are uncomfortable reactions stop using immediately

Members of the page cannot be held responsible for incidents that occur from the information in this guide.

I hope you're able to use this guide as you walk through the Vi Hilbert Garden to identify the surrounding plants, please stay safe!

Vine maple, Oregon vine maple

Acer circinatum

Family Aceraceae

Group Dicot

Duration Perennial

Form Tree

✓ Edible Uses

- Sap is used as a drink
- When the sap is concentrated through boiling, it can be used as a syrup which is used as a sweetener

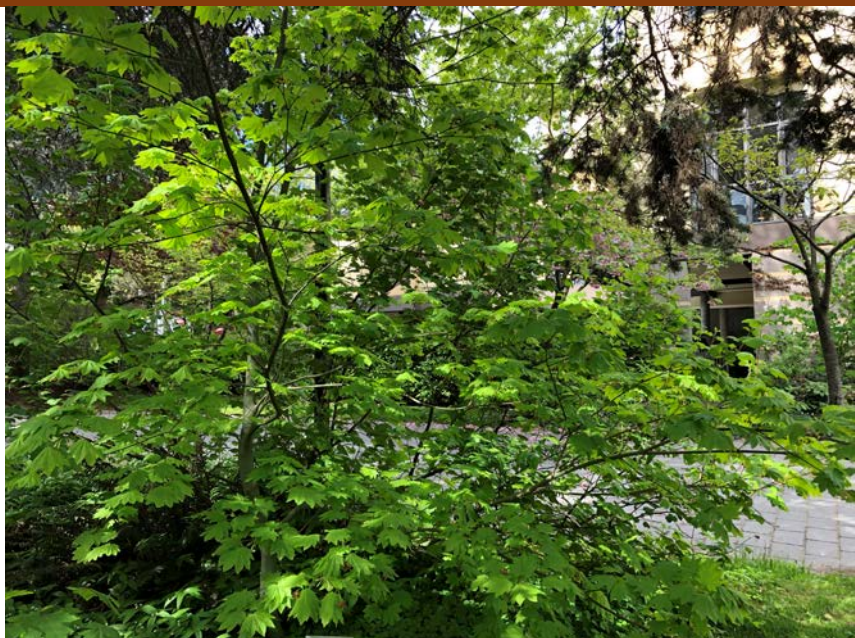
✓ Other Uses

- Leaves are packed around root crops, apples, and other fruit to aid in preservation
- Shoots are used in basket making
- Charcoal from the wood, when mixed with oil, is used as black paint
- Wood is used to build small appliances, tools, boxes, etc.
- When wood is green it can be a cauldron hook
- Feeds songbirds, gamebirds, and attracts butterflies

Seed Dispersal

- Wind

Leaves are palmate and arranged oppositely on the stem. The inflorescence is a panicle. The fruits are winged drupes that have single seeds; they are reddish-brown. The flower themselves have 6-10 stamens, 4-5 petals, 4-5 sepals, and 2-3 carpels. The ovary is superior.



Yarrow

Achillea millefolium

Family Asteraceae

Group Dicot

Duration Perennial

Form Subshrub

*Warning: extended use of plant when eaten or taken medicinally can lead to allergic reactions and photosensitivity in some people

✓ Edible Uses

- Aromatic tea made from flowers and leaves

✓ Medicinal Uses

- Essential oil can be created from leaves for medicinal uses
- Stalk used for pain relief

✓ Other Uses

- Repels beetles, ants, and flies
- When burnt it repels mosquitos
- Flowers create yellow and green dyes
- Used in landscaping
- Used in bouquets

Pollinators

- Insects



Leaves are simple and lay alternately on the stem. The inflorescence is an umbel and the flower has 4-5 petals and 5 stamens. The ovary is inferior.



Vanilla leaf, sweet after death, deer-foot

Achlys triphylla

Family Berberidaceae

Group Dicot

Duration Perennial

Form Subshrub/Groundcover

✓ **Medicinal Uses**

- Leaves are used to treat tuberculosis, and as an emetic

✓ **Other Uses**

- Dried leaves repel flies and mosquitoes
- Plant decoction used as floor wash to get rid of pests
- Infusion of leaves is used to wash hair

Pollination

- Wind



Leaves are palmately compound with a fan-shape, laying alternately on the stem. The ovary is superior. Fruit is circular and is red-purple. The inflorescence is a spike and each flower has 6 sepals, 6-9 petals, 8-13 stamen, and 1 carpel.



Maidenhair fern
Adiantum pedatum

Family Pteridaceae

Group Fern

Duration Perennial

Form Subshrub

✓ **Medicinal Uses**

- Diuretic and astringent tea made from leaves

✓ **Other Uses**

- Plant is used as a hair conditioner
- Stems used as hair wash to help create shine
- Plant used a lot in landscaping

Spore Dispersal

- Wind



Blades are pinnate and fan shaped. Spores are on the edge of the underside of the leaves.



**Serviceberry, Saskatoon serviceberry,
Juneberry, Shadbush**
Amelanchier alnifolia

Family Rosaceae

Group Dicot

Duration Perennial

Form Shrub

✓ **Edible Uses**

- Fruit can be eaten raw or cooked
- Used to make wine
- Leaves can be used to make tea

✓ **Medicinal Uses**

- Fruit decoction is mildly laxative and can also be used as ear drops
- Root decoction can help with treating colds

✓ **Other Uses**

- Useful in erosion control
- Branches used to make rope
- Wood can be used to build products
- Stems are used in basket making
- Used for ornamental purposes and landscaping purposes such as to create hedges
- Used commercially as a fruit crop

Pollinators

- Bees



Saskatoon Serviceberry, Morton Arboretum accession 802-65-5
photos © Bruce Marlin

Leaves lay alternately on the stem and are simply shaped. The inflorescence is a raceme and the flowers have 20 stamens, 4-5 styles, and 5 petals. The fruit is purple black in color, circular, and can have a waxy looking surface.



Glacial Ridge Growers. *Amelanchier alnifolia* - Saskatoon Serviceberry [Digital image]. Retrieved from https://www.glacialridgegrowers.com/Amelanchier-alnifolia-Saskatoon-Serviceberry_p_6531.html

Canoe birch, white birch, paperbark birch, Kenai birch, paper birch

Betula papyrifera

Family Betulaceae

Group Dicot

Duration Perennial

Form Tree

✓ **Edible Uses**

- Tapped to gather sap to make syrup, wine, etc.
- Leaves used to make tea

✓ **Other Uses**

- Shampoo and soap can be made from the leaves
- Wood used for its thinness commercially (as pulpwood, veneer, etc.)
- Used to create paper
- Used for fuel
- Inner bark creates dye that ranges from brown to red

Pollinators

- Wind



Leaves are simple and alternate. The flowers have two stamen and no petals. The fruit is woody looking and brown in color.



Arbor Day Foundation. Paper Birch Tree *Betula papyrifera* [Digital image]. Retrieved from <https://www.arborday.org/trees/treeguide/treedetail.cfm?itemID=791>

Camas, blue camas, camas lily, common camas, western camas, small camas

Camassia quamash

Family Asparagaceae (Formerly in Liliaceae)

Group Monocot

Duration Perennial

Form subshrub

✓ **Edible Uses**

- Bulbs can be cooked or eaten raw
- If the bulb is dried and turned into a powder it can be used as a thickener in cooking
- Boiled bulbs used to make molasses

✓ **Medicinal Uses**

- Used to create a cough medicine

✓ **Other Uses**

- Grown for ornamental uses

Pollinators

- Insects (including honeybees, bumblebees, beetles, etc.)



The flower has 6 petals, 6 stamen, and 3 sepals. The ovary is superior. Leaves form a basal rosette. The inflorescence is a spike and the fruit is shaped like a 3-sided barrel that splits open to reveal the seeds.



Red-osier Dogwood, Red Twig Dogwood, Western Dogwood

Cornus sericea (formerly *Cornus stolonifera*)

Family Cornaceae

Group Dicot

Duration Perennial

Form Tree

✓ Edible Uses

- Oil can be created from the seeds

✓ Medicinal Uses

- Bark is astringent and used as a tonic
- Decoction used for headaches, cold, fevers, diarrhea, and coughs
- Bark shavings used to dress wounds and to stop bleeding
- Soaked inner bark and ash poultice used to relieve pain

✓ Other Uses

- Various landscaping uses
- Attracts birds and butterflies
- Bark fiber used to make cords and ropes when twisted
- Powdered bark is used as toothpowder
- Red dye is created from a bark and cedar ash mix



Flowers have 4 stamens, 4 sepals, and 4-5 petals. The leaves lay opposite on stems and are simple. The inflorescence is a cyme and the fruit ranges from white to pale blue in color. The fruit is circular in shape.

Pollinators

- Insects (including bumblebees, butterflies, and flies)



**Western flowering dogwood, Pacific dogwood,
mountain dogwood**

Cornus nuttallii

Family Cornaceae

Group Dicot

Duration Perennial

Form Tree

✓ **Uses**

- Boiling bark creates brown dye
- Bark is used as preservative because of the amount of tannin it has
- Slender branches used to make baskets
- Wood used to create different objects
- In landscape the tree is used to create borders
- Provides food and habitat for wildlife; woodpeckers, grosbeaks, and other birds eat the fruit along with small mammals.

Pollinators

- Insects



Leaves are simple and lay oppositely on the stem. The inflorescent is a raceme and the flower itself has 4 sepals, 4 petals, and 4 stamens. The ovary is inferior. Fruit is a red drupe.



Salal, Shallal

Gaultheria shallon

Family Ericaceae

Group Dicot

Duration Perennial

Form Shrub

✓ Edible Uses

- Fruit is sweet and can be eaten raw, cooked, or dried
- The fruit can be included in drinks, pies, and preserves
- Tea can be made from the leaves

✓ Medicinal Uses

- Toasted leaves can be made into a poultice for cuts
- Chewed leaves poultice is applied to burns and sores
- Leaf tea is used as a stomach tonic and for treating diarrhea and coughs

✓ Other Uses

- Attracts hummingbirds, pest-eating insects, birds, and mammals
- Fruit is used to create a purple dye
- Infused leaves is used to create green-yellow dye
- Used in landscaping for erosion control, creating hedges, and for ground cover.

Pollinators

- Insects in general, primarily bumblebees and flies.



The leaves are simple with very small serrates on their edges; They also lay alternately on the branch. The fruit color varies from dark purple to blue-black and is circular.



The inflorescence type is a spike. The flower has 4-5 petals that are fused together creating a cup shape with a single sepal that turns into a circular dark-purple fruit. There are 10 stamens, 4-5 carpel, and the ovary lays superior.

Tall Oregon Grape, Oregon-Grape, Hollyleaved Barberry

Mahonia aquifolium; *Berberis aquifolium*

Family Berberidaceae

Group Dicot

Duration Perennial

Form Shrub

✓ Uses

- Used for ornamental floral arrangements
- The inside of the stem and roots is created to make dye varying from yellow to green
- Fruit is used to create dark-green to dark purple-blue dyes
- Used in landscaping to create hedges and because it is pest tolerant; aids in erosion control
- Specific butterfly and moth species use the shrub to host their larvae
- Provides food for songbirds

Pollinators

- Insects (includes bees, moths, and butterflies)
- Hummingbirds



The leaves are pinnately compound and lay alternately on the stem.

The inflorescence is a raceme. The flower has 6 stamens, 6 petals, and 6 sepals. Fruit is circular and rages in color from green, to blue-black with a dusty look.



**Low Mahonia, Cascade Oregon Grape,
Cascade Barberry**
Mahonia nervosa

Family Berberidaceae

Group Dicot

Duration Perennial

Form Shrub/ subshrub

✓ **Edible Uses**

- The fruit can be added raw to food
- The fruit can be used in pies, jams, and jellies

✓ **Medicinal Uses**

- The root can be used as a tonic to help digestion and absorption
- When the essence of the rootbark is extracted it is used used as an eyewash for itchy eyes and as a wash for arthritis
- Fruit can be eaten as a gentle laxative

✓ **Other Uses**

- Inner bark of the roots and stem is used to create a yellow dye
- Provides nectar for butterflies or moths

Pollinators

- Bees & other insects



Purple fruits, tart when eaten, are formed from clustered yellow flowers. The flower consists of 6 sepals, 6 petals, 6 stamens, and 1 carpellate with a superior ovary. The inflorescence type is a raceme. When ripe the berry is dark blue and roundly shaped. Alternately laying compound and simple leaves create the foliage.



Indian Plum, Oregon plum, Osoberry, bird cherry
Nuttallia cerasiformis, *Oemleria cerasiformis*,
Osmaronia cerasiformis

Family Rosaceae

Group Dicot

Duration Perennial

Form Shrub

✓ **Medicinal Uses**

- Bark used to create laxative

✓ **Other Uses**

- Attracts and is a nectar source for hummingbirds, butterflies, moths, bees, and other species
- Highly sought after for restoration work
- Used in landscaping including for erosion control

Pollinators

- Insects



Leaves are alternate and simply shaped . The inflorescence is a raceme and the flower has 15 stamens with 5 petals. The fruit is a drupe and shaped as an oval with a blue-black color.



Sword Fern, Western Sword Fern

Polystichum munitum

Family Dryopteridaceae

Group Fern

Duration Perennial

Form Subshrub/groundcover

✓ Uses

- Leaves used to line baskets, boxes, and racks
- Leaves are used for floral displays including wreaths.
- The plant itself is used in landscaping and for erosion control.

Spore Dispersal

- Primarily wind
- Gravity
- Water
- Animals



The leaf blades are circinate and are segmented into pinnae without overlapping. Spores are a light yellow



Bitter Cherry

Prunus emarginata

Family Rosaceae

Group Dicot

Duration Perennial

Form Tree

✓ Uses

- Leaves create green dye
- Fruit creates dark grey dye
- Bark used to make baskets
- Tree is used to help control stream bank erosion, for increasing biodiversity, and protecting aquatic environments

Pollinators

- Insects

Seed Dispersal

- Birds
- Mammals



Leaves lay alternately on the stem and are oval. Inflorescence is a raceme. The fruit is a drupe and is circular with a bright red color when ripe. The flower has 5 petals and around 20 stamens. Ovary is superior.



Douglas Fir, coast Douglas-fir, Oregon

Douglas-fir

Pseudotsuga menziesii

Family Pinaceae

Group Gymnosperm

Duration Perennial

Form Tree

✓ **Edible Uses**

- Used as a coffee substitute

✓ **Other Uses**

- Wood has construction uses
- Bark creates brown dye
- Resin taken from trunk
- Used in landscape to create wind block
- Used as fuel wood because of the little smoke produced when burned
- Ornamental uses (includes being used as a Christmas tree)

Pollination

- Wind



Tree Seed Online LTD. *Douglas-fir (Pseudotsuga menziesii)*. photograph.

The needles are simple and lay alternately and in a spiral on the branch.

Cascara buckthorn, cascara

Frangula purshiana (Used to be *Rhamnus purshiana*)

Family Rhamnaceae

Group Dicot

Duration Perennial

Form Tree

✓ **Uses**

- Bark creates green dye
- Landscaping to create hedges
- To create small tools

Pollinators

- Insects (Including bees)
- Hummingbirds



Las Pilitas Nursery. *Rhamnus purshiana*, Cascara Sagrada [Digital image]. Retrieved from <https://www.laspilitas.com/nature-of-california/plants/869-rhamnus-purshiana>

The leaves are simple and alternate. The inflorescence is an umbel and the flowers have 5 sepals, 5 stamens, 5 petals, and 2-4 carpels. The fruit is circular and ranges from red to blue-black in color.



Paul Rothrock. *Rhamnus purshiana* DC [Digital image]. Retrieved from <http://swbiodiversity.org/seinet/taxa/index.php?taxon=57199>

Coastal Black Gooseberry, Straggly Gooseberry

Ribes divaricatum

Family Grossulariaceae

Group Dicot

Duration Perennial

Form Shrub

✓ Edible Uses

- Fruit can be eaten raw or cooked
- Unripe fruit and young leaves is made into a sauce

✓ Medicinal Uses

- Burnt stems used to rub neck sores
- Chewing inner bark used for colds and sore throats

✓ Other Uses

- Roots boiled with cedar and wild rose roots can be pounded and woven together to make rope
- Used to create hybrids for the horticultural trade

Pollinators

- Insects

Leaves lay alternately on the stem and are palmately shaped. The inflorescence is a raceme and the flower itself has 5 petals, 5 sepals and 5 stamens. The ovary is inferior. The fruit is circular and smooth with a purple-black color.



Thimbleberry

Rubus parviflorus

Family Rosaceae

Group Dicot

Duration Perennial

Form Shrub

✓ Edible Uses

- Fruit can be eaten raw or cooked or dried as fruit leather
- Fruit can be used in cooking (pies, preserves, etc.)
- Peeled young shoots can be eaten raw or cooked

✓ Medicinal Uses

- Leaves are astringent and antiemetic
- Dried powdered leaf poultice used for wounds and burns
- Roots are astringent
- Decoction of roots is used to treat pimples and blackheads

✓ Other Uses

- Soap can be created by boiling the bark
- Fruit can be used to make a purple-blue dye
- Berries support wildlife (birds, bears, and small mammals)
- Leaves and twigs also support wildlife (deer and elk)

Pollinators

- Insects (includes bees, and butterflies)
- Hummingbirds



Leaves are simple and lay alternately on the branches. The inflorescence is a panicle and the flower itself has 5 petals, 5-10 sepals, 100-200 stamens, and 150-450 carpels generally. The ovary is superior. The fruit resembles a raspberry in shape and is red.



Salmonberry
Rubus spectabilis

Family Rosaceae

Group Dicot

Duration Perennial

Form Shrub

✓ **Edible Uses**

- The berries can be eaten fresh or used in dishes

✓ **Medicinal Uses**

- Leaves can be brewed in a tea that treats diarrhea & dysentery.
- If made into a poultice, the leaves and bark can be used to dress burns and open sores.

Pollinators

- Hummingbirds
- Bumblebees & other insects



Leaves are alternate and pinnately compound. The inflorescence type is panicle. Flowers have 5 petals and range from pink to orange red in color. They have 20–100 stamens, 5 sepals, and numerous carpels. The ovary is positioned superiorly.



Trailing Blackberry, California Blackberry, Pacific Blackberry

Rubus ursinus

Family Rosaceae

Group Dicot

Duration Perennial

Form Subshrub

✓ **Edible Uses**

- Fruit can be eaten raw, cooked, or dried
- Used in cooking to create pies, preserves, and other sweets
- Young shoots can be eaten raw or cooked
- Tea can be made from leaves

✓ **Medicinal Uses**

- Dried root bark is astringent
- Dried root bark is used to treat diarrhea
- Roots used as disinfectant wash on infected sores

✓ **Other Uses**

- Dye ranging from purple to blue in color is created from the fruit

Pollinators

- Insects



The leaves lay alternately on the stem and can be simple/ compound and lobed. The inflorescence is a cyme and the flowers have 5 petals, 5 sepals and 75-100 stamens. The fruit has cone-like shape that is a shiny black when ripe and red when immature.



Scouler's willow, mountain willow

Salix scouleriana

Family Salicaceae

Group Dicot

Duration Perennial

Form Tree

✓ Medicinal Uses

- Poultice used to treat cuts
- Root decoction used to treat dysentery

✓ Other Uses

- Stems used in basket making
- Barks used to create cord

Pollinators

- Insects (Bees especially)

Seed dispersal

- wind
- Water



Slichter, P. 2011. Scouler's Willow [Digital image] Retrieved from <http://science.halleyhosting.com/nature/plants/shrubs/deciduous/willow/salix/scouleriana.html>

The leaves are simple and lay alternately on the stems. The inflorescence is a catkin. The flowers lack sepals and petals.



Slichter, P. 2005. Scouler's Willow [Digital image] Retrieved from <http://science.halleyhosting.com/nature/plants/shrubs/deciduous/willow/salix/scouleriana.html>



McDougall, S., hosted by the USDA-NRCS PLANTS Database. *Salix scouleriana* Barratt ex Hook. – Scouler's willow SASC [Digital image] Retrieved from https://plants.usda.gov/java/largeImage?imageID=sasc_005_ahp.jpg

Garry Oak, Oregon White Oak, Oregon Oak

Quercus garryana

Family Fagaceae

Group Dicot

Duration Perennial

Form Tree

✓ Edible Uses

- Ground seed is used as thickener in cooking and for making bread
- Roasted seed can be a coffee substitute
- Acorns can be eaten

✓ Medicinal Uses

- Pounded bark has been used in aiding the mother before her first delivery

✓ Other Uses

- Wood used in construction
- Used in landscaping

Pollination

- Wind

Leaves lay alternately on the stem and are pinnately lobed. The ovary is inferior, and the tree has male and female flowers. The male flowers are green-yellow catkins and the female flowers are red and small. The fruit is a nut that is bowl shaped with a bumpy top.



Western Red Cedar, Pacific Red Cedar

Thuja plicata

Family Cupressaceae

Group Gymnosperm

Duration Perennial

Form Tree

✓ Edible Uses

- Dried, ground bark powder can be used to thicken liquid in cooking such as soups

✓ Medicinal Uses

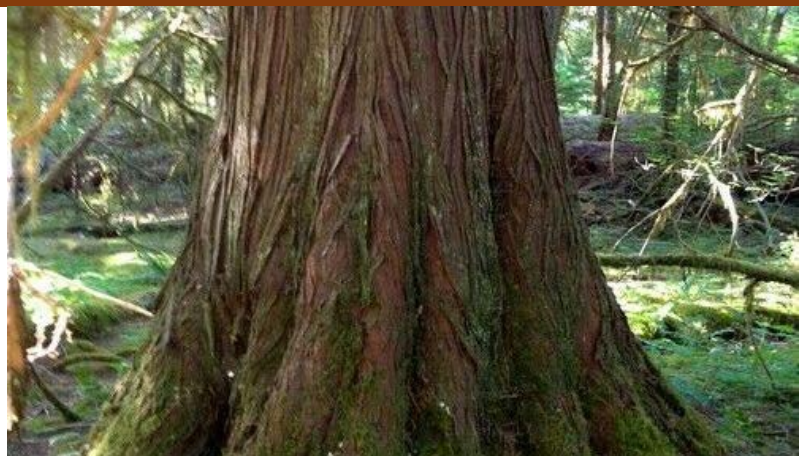
- Infusion of leaves can be used to treat stomach pain and diarrhea
- Leaf buds can be chewed for toothaches
- Bough decoction used for antidandruff shampoo

✓ Other Uses

- Construction including creating shingles, canoes, houses, and greenhouses
- Landscaping to create hedges
- Inner bark when pounded until soft can be used for a variety of uses including as sponge to scrub dishes, to create ropes, padding, and other objects.
- Waterproof clothing can be made from inner bark
- Creating baskets

Seed Dispersal

- Wind



Tree Seed Online LTD. Western Red Cedar (*Thuja plicata*) [Digital image]. Retrieved from https://www.treeseedonline.com/store/p108/Western_Red_Cedar_%28thuja_plicata%29.html

Leaves are needle-like and flattened with a scale-like appearance; they are arranged opposite on the branches. There are no inflorescence. Male pollen producing cones are 2mm long and vary in color from yellow to red-brown. Female seed producing cones are 8-10mm long and are brown.



Tree Seed Online LTD. Western Red Cedar (*Thuja plicata*) [Digital image]. Retrieved from https://www.treeseedonline.com/store/p108/Western_Red_Cedar_%28thuja_plicata%29.html



Trillium

Trillium ovatum

Family Melanthiaceae

Group Monocot

Duration Perennial

Form Subshrub/ Groundcover

✓ Edible Uses

- Leaves can be cooked to eat (their life cycle is 7 years, so it is recommended to only harvest 1 leaf per plant)

✓ Medicinal Uses

- Essence extracting from the root – or dried powdered root – can be used to treat sore eyes
- Root poultice & root juice can be used to treat external boils

Pollinators

- Insects (Bumblebees, ants, beetles, moths)



No true stems or leaves are produced above ground; What we think is the stem is just an extension of the rhizome and the leaves are bracts, a modified leaf. The inflorescence is comprised of a singular flower. The flower has 3 petals, 3 sepals, 6 stamens,



**Evergreen Huckleberry, Florist's Huckleberry,
Shot Huckleberry, Californian Huckleberry**
Vaccinium ovatum

Family Ericaceae

Group

Duration Perennial

Form Shrub

✓ **Edible Uses**

- Fruit is eaten cooked, raw, or dried
- Fruit can be used in cooking to make pies, preserves, and jams
- Leaves and dried fruit are used to make tea
- Fruit can be dried, partly mashed, and shaped to create a cake form before being wrapped in leaves and bark

✓ **Medicinal Uses**

- Leaf decoction used to treat diabetes by helping stabilize blood sugar levels
- Consuming leaf extract decreases blood sugar levels
- Leaves have astringent and antiseptic qualities that help with urinary disorders

✓ **Other Uses**

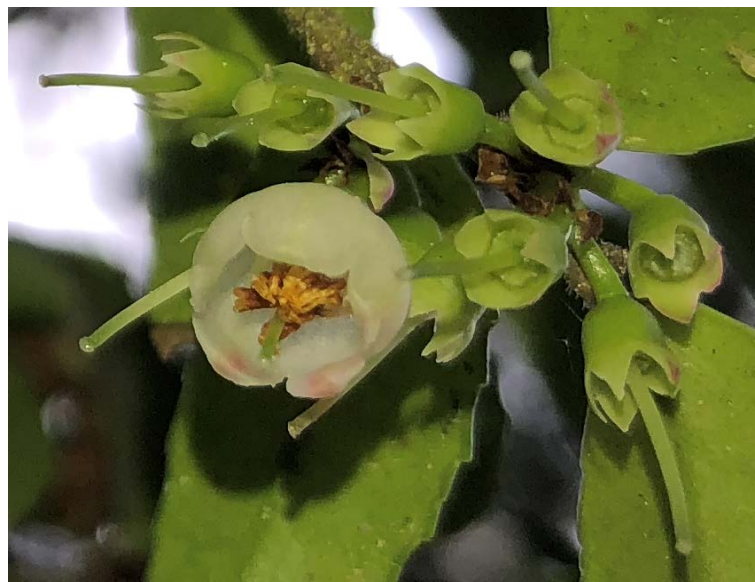
- Food for wildlife including elk, deer, birds, and small mammals such as rabbits.
- Used when creating hedgerows

Pollinators

- Insects (Mostly bees)
- Hummingbirds



The leaves are simple and lay alternately. The ovary is positioned inferiorly. The fruit is circular and dark purple to blue black in color. The inflorescence is a raceme and the flower has 5-6 petals, 5-8 sepals, 10-16 stamens, and 4-5 carpels.



Plant Propagation by softwood cuttings

Cutting taken from current season's new growth

Time Period

May - June

Tools/ Materials needed

- Healthy plant needs to be large enough that taking a cutting from it will not hurt it and no signs of disease should be present
- Blade/ scissors. needs to be sharp enough to provide a clean cut without damaging the stem
- Potting medium needs to be able to retain moisture and drain well
- Rooting hormone
- Pot With drainage holes
- Pen, pencil, etc. something to poke hole in the potting medium with

General steps

- Choose a healthy plant
- Pick a stem that looks green and is non-woody
- Cut the stem just below the node: this part forms roots more easily
 - Cut straight across
 - Cutting needs to be 4-6 inches long
 - Cutting needs 1-2 leaves and one node
 - Leaves closer to the cut need to be removed
 - Flowers need to be removed from cutting to help with supporting new root growth
 - Remove flowers
- Apply rooting hormone to cutting if you have one (follow instructions that come with the product)
- Make hole in potting medium before inserting cutting into the pot so the rooting hormone is not rubbed off
- Press down on the medium to make it compact
- Water right after cutting

General rules

- Do not let cuttings dry out
- Sterilize blade between each cut to prevent spread of pathogens, this helps minimize plant loss

Plant Propagation by hardwood cuttings

Cutting taken when plant is dormant from mature stems

Time Period

Mid-autumn – late winter: After leaves fall but before new growth

Tools/ Materials needed

- Healthy plant needs to be large enough that taking a cutting from it will not hurt it and no signs of disease should be present
- Blade/ scissors. needs to be sharp enough to provide a clean cut without damaging the stem
- Potting medium needs to be able to retain moisture and drain well
- Rooting hormone
- Pot With drainage holes
- Pen, pencil, etc. something to poke whole in the potting medium with

General steps

- Choose a healthy plant
- Pick a stem that looks green and is non-woody
- Unlike the softwood cutting method, for the hardwood method both sides of the stem being propagated are cut
 - The top needs to be cut at an angle right above a node
 - The bottom needs to be cut straight across at no angle right below a node
 - Cutting needs to be 6-8 inches long
 - Cutting needs 1-2 leaves and one node
- Hardwood cuttings can be put in pots or outdoor trenches
 - Pots: Used if only a few cuttings are being taken
 - Insert 2/3rd of the cutting into the soil, put a layer of sand at the base
 - Trenches: Used if a lot of cuttings are being taken
 - allow 1 1/2 feet between cuttings and trenches, insert 2/3rd of the cutting into the soil with a layer of sand at the base

General rules

- Sterilize blade between each cut to prevent spread of pathogens, this helps minimize plant loss

Recipes

*All the recipes are pulled from outside sources with their authors and locations listed below and within the citations

Oregon grape jelly

Amy Dearborn

Botanical Rambles: PNW Plants, Native Landscaping

&

Linda Ziedrich

A Gardener's Table

Ingredients

- 2 quarts Oregon grapes
- 3 cups of water
- 5 cups of sugar
- pectin package (should have ratio instructions)

Instructions

- Cover Oregon grapes in a pot with water and bring to a boil for 10 minutes
- Crush berries by hand with a tool or with a hand mixer
 - do not overly mix berries or they will become frothy
 - do not get rid of liquid
- Boil again for another 10 minutes
- Pass berries and liquid through strainer or cloth – this may take time
 - Around 4 cups of juice will be produced
- Bring the sugar and juice to a boil in the pot
- Add pectin
- Boil for another minute
- Put jam into mason jars and put the lid on
- To prevent mold growth place the mason jars in a pot of water and boil for 5-10 minutes
- Remove and let sit until cool

Recipes

*All the recipes are pulled from outside sources with their authors and locations listed below and within the citations

Slow cooked camas

Madrona Murphy
WSDA Specialty Crop Block Grant Project

Ingredients

- Camas bulbs
- Clean bulbs and cut out central stalk
- Put bulbs in a slow cooker and cover with water
- Set cooker on low and cook for 48 hours, checking every few hours to add water when needed to keep the bulbs covered

Salt and pepper to taste and eat as is, add to different recipes, or store in the fridge or freezer in the proper containers

Camas and Sweet Onion Salsa

Madrona Murphy
2016
WSDA Specialty Crop Block Grant Project

Ingredients:

- ½ cup of sweet onion
- ½ cup cooked camas
- 1 teaspoon vinegar (rice or cider)
- 1 teaspoon yellow mustard seeds
- ¼ - ½ teaspoon of salt
- Black pepper to taste

Mix ingredients in a bowl and serve cold

Citations

- Beidleman, L. H., & Kozloff, E. N. (n.d.). Plants of the San Francisco Bay Region. Retrieved from [https://books.google.com/books?id=1bMwDwAAQBAJ&pg=PA295&lpg=PA295&dq=Prunus emarginata ovary is superior&source=bl&ots=vdAwbyu_hg&sig=ACfU3U1L5b-7OQ6tq3x4MVM3bdFeZIK1tA&hl=en&sa=X&ved=2ahUKEwjTwoK_ztrpAhXSqZ4KHej2AwWQ6AEwAHoECAkQAQ#v=onepage&q=Prunus emarginata ovary is superior&f=false](https://books.google.com/books?id=1bMwDwAAQBAJ&pg=PA295&lpg=PA295&dq=Prunus+emarginata+ovary+is+superior&source=bl&ots=vdAwbyu_hg&sig=ACfU3U1L5b-7OQ6tq3x4MVM3bdFeZIK1tA&hl=en&sa=X&ved=2ahUKEwjTwoK_ztrpAhXSqZ4KHej2AwWQ6AEwAHoECAkQAQ#v=onepage&q=Prunus+emarginata+ovary+is+superior&f=false)
- Breen, P. Landscape Plants. Retrieved from <https://landscapeplants.oregonstate.edu/search-broadleaf>
- Bressette, D. K. (2019, May 20). Wildflower Seed List. Retrieved from <http://nativeplantspnw.com/wildflower-seed-list/>
- Carr, G. (Sapindaceae). Retrieved from http://www.botany.hawaii.edu/faculty/carr/phylo_sapind.htm
- City of Olympia. Trillium ovatum . Retrieved from <http://m.olympiawa.gov/city-services/parks/volunteering/trillium-ovatum.aspx>
- Coogler, G. Taking cuttings. Retrieved from http://www.cannagardening.com/taking_cuttings
- Cumo, C. M. Encyclopedia of Cultivated Plants: From Acacia to Zinnia [3 volumes]. Retrieved from [https://books.google.com/books?id=Ja7WAQAAQBAJ&pg=PA150&lpg=PA150&dq=how many carpels does Rubus spectabilis have&source=bl&ots=IZgOX65NV7&sig=ACfU3U2XSosjx88Q4x9C2oynxNZA0mRbIA&hl=en&sa=X&ved=2ahUKEwj_ur7Mq7DpAhUCHTQIHbS4BhAQ6AEwC3oECAcQAQ#v=onepage&q=how many carpels does Rubus spectabilis have&f=false](https://books.google.com/books?id=Ja7WAQAAQBAJ&pg=PA150&lpg=PA150&dq=how+many+carpels+does+Rubus+spectabilis+have&source=bl&ots=IZgOX65NV7&sig=ACfU3U2XSosjx88Q4x9C2oynxNZA0mRbIA&hl=en&sa=X&ved=2ahUKEwj_ur7Mq7DpAhUCHTQIHbS4BhAQ6AEwC3oECAcQAQ#v=onepage&q=how+many+carpels+does+Rubus+spectabilis+have&f=false)
- Dearborn, A. (2013, October 8). Eating Native: Recipes from the Field-Oregon Grape Jelly. Retrieved from <https://www.wnps.org/blog/eating-native-recipes-from-the-field-oregon-grape-jelly>
- East Multnomah Soil & Water Conservation District. (2013, November 5). Salal. Retrieved from <https://emswcd.org/salal/>
- eFloras. Flora of North America: Prunus emarginata (Douglas) Eaton, Man. Bot. ed. 7. 463. 1836. Retrieved from http://www.efloras.org/florataxon.aspx?flora_id=1&taxon_id=250100387
- Elliott, B. (2019, October 21). Cascara Sagrada (Rhamnus purshiana) Herbal Monograph. Retrieved from <https://www.brettelliott.com/cascara-sagrada-rhamnus-purshiana-herbal-monograph/>
- Flora of North America Association. Flora of North America . Retrieved from <http://beta.floranorthamerica.org>
- Fraser, L., Turkington, R., & Chanway, C. P. (1993). The Biology of Canadian Weeds. 102. Gaultheria Shallon Pursh. Canadian Journal of Plant Science, 1233–1247. Retrieved from <https://www.nrcresearchpress.com/doi/pdfplus/10.4141/cjps93-163>
- Friends of The Wild Flower Garden Home Page. Retrieved from <https://www.friendsofthewildflowergarden.org/>

Citations continued

- Gilman, E. F. *Pseudotsuga menziesii* Fact Sheet (1994, October). PDF.
- Harrison, J. A., & Andress, E. L. (n.d.). National Center For Home Food Preservation. Retrieved from https://nchfp.uga.edu/publications/uga/uga_jams_jellies.pdf
- Hoffmann, C. (n.d.). *Adiantum pedatum* (Maidenhair Fern). Retrieved from <https://www.minnesotawildflowers.info/fern/maidenhair-fern>
- Iannotti, M. (2020, April 3). How to Propagate Plants by Using Cuttings. Retrieved from <https://www.thespruce.com/make-more-plants-with-cuttings-1402474>
- Jauron, R. (2003, June 6). Propagation of Shrubs from Softwood Cuttings. Retrieved from <https://hortnews.extension.iastate.edu/2003/6-6-2003/softwood.html>
- Jepson Flora Project (eds.) 2020. Jepson eFlora, <https://ucjeps.berkeley.edu/eflora/>
- Johnson, K. (2000, August). Trailing blackberry; Dewberry; Pacific blackberry. Retrieved from <http://web.pdx.edu/~maserj/ESR410/rubisursinus.html>
- Kachel, S., & Herbert, J. *Ethnobotany and Native Plant Production*. PDF.
- Lillybridge, T. R., & Williams, C. K. *Common Plants of the Colville National Forest: June 2002 Draft*.
- Millbank, L. (2016, November 22). Red-osier Dogwood. Retrieved from <https://bentonswcd.org/red-osier-dogwood/>
- Missouri Botanical Garden. Propagating Plants by Cuttings. Retrieved from <https://www.missouribotanicalgarden.org/gardens-gardening/your-garden/help-for-the-home-gardener/advice-tips-resources/visual-guides/propagating-plants-by-cuttings.aspx>
- Murphy, M. (2016). *kwiaht*. Retrieved from <http://kwiaht.org/documents/Camascookbook.pdf>
- NC State Extension. Find a Plant: North Carolina Extension Gardener Plant Toolbox. Retrieved from https://plants.ces.ncsu.edu/find_a_plant/
- NRCS. USDA PLANTS: Wetland Indicator Status Search. Retrieved from <https://plants.usda.gov/core/wetlandSearch>
- Plants For A Future. Database Plant Search Page. Retrieved from <https://pfaf.org/user/Default.aspx>
- Royal Horticulture Society. (n.d.). Cuttings: hardwood. Retrieved from <https://www.rhs.org.uk/advice/profile?pid=387>
- Seven Oaks Native Nursery. (2015, April 17). Native Plants. Retrieved from <https://www.sevenoaksnativenursery.com/native-plants/>
- Sherry, D. (2014, April 25). 3 Easy Hardwood Cutting Methods. Retrieved from <https://www.finegardening.com/article/3-easy-hardwood-cutting-methods>
- Slichter, P. (2009, April 20). Salmonberry. Retrieved from <http://science.halleyhosting.com/nature/gorge/5petal/rose/rubus/sal.htm>
- Sultany, M. L., Kephart, S. R., & Eilers, H. P. (2007). Blue Flower of Tribal Legend: "Skye blue petals resemble lakes of fine clear water". *Kalmiopsis*, 14, 28–35. Retrieved from <https://www.npsoregon.org/kalmiopsis/kalmiopsis14/sultanykepharteilers.pdf>
- Turner, M. Browse Plants and Photos: Wildflowers of the Pacific Northwest. Retrieved from <https://www.pnwflowers.com/browse>
- USDA. Fire Effects Information System . Retrieved from <https://www.feis-crs.org/feis/>

Citations continued

U.S. Forest Service, & United States Department of Agriculture. (n.d.). Plant of the Week.

Retrieved from <https://www.fs.fed.us/wildflowers/plant-of-the-week/>

USDA NRCS National Plant Data Center. Plant Guide: Bitter Cherry. PDF.

Vance, N. C., Borsting, M. C., Pilz, D. C., & Freed, J. C. (2001). Special Forest Products: Species Information Guide for the Pacific Northwest(p. 169). Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station.

Virginia Tech Dept. of Forest Resources and Environmental Conservation, Seiler, J., Jensen, E., Niemiera, A., & Peterson, J. (2019). Virginia Tech Dendrology. Retrieved from <https://dendro.cnre.vt.edu/dendrology/syllabus/factsheet.cfm?ID=237>

Verlinde, S. *Rubus nutkanus* / *Rubus parviflorus* - Thimbleberry. Retrieved from <https://www.uwb.edu/wetlands/plants/rubus-nutkanus>

WTU Herbarium, Burke Museum, & University of Washington. (n.d.). Burke Herbarium Image Collection. Retrieved from <http://biology.burke.washington.edu/herbarium/imagecollection/>

Yashasvi, B. (2016, August 30). Rhamnaceae: Characters, Distribution and Types. Retrieved from <https://www.biologydiscussion.com/angiosperm/dicotyledons/rhamnaceae-characters-distribution-and-types/48028>

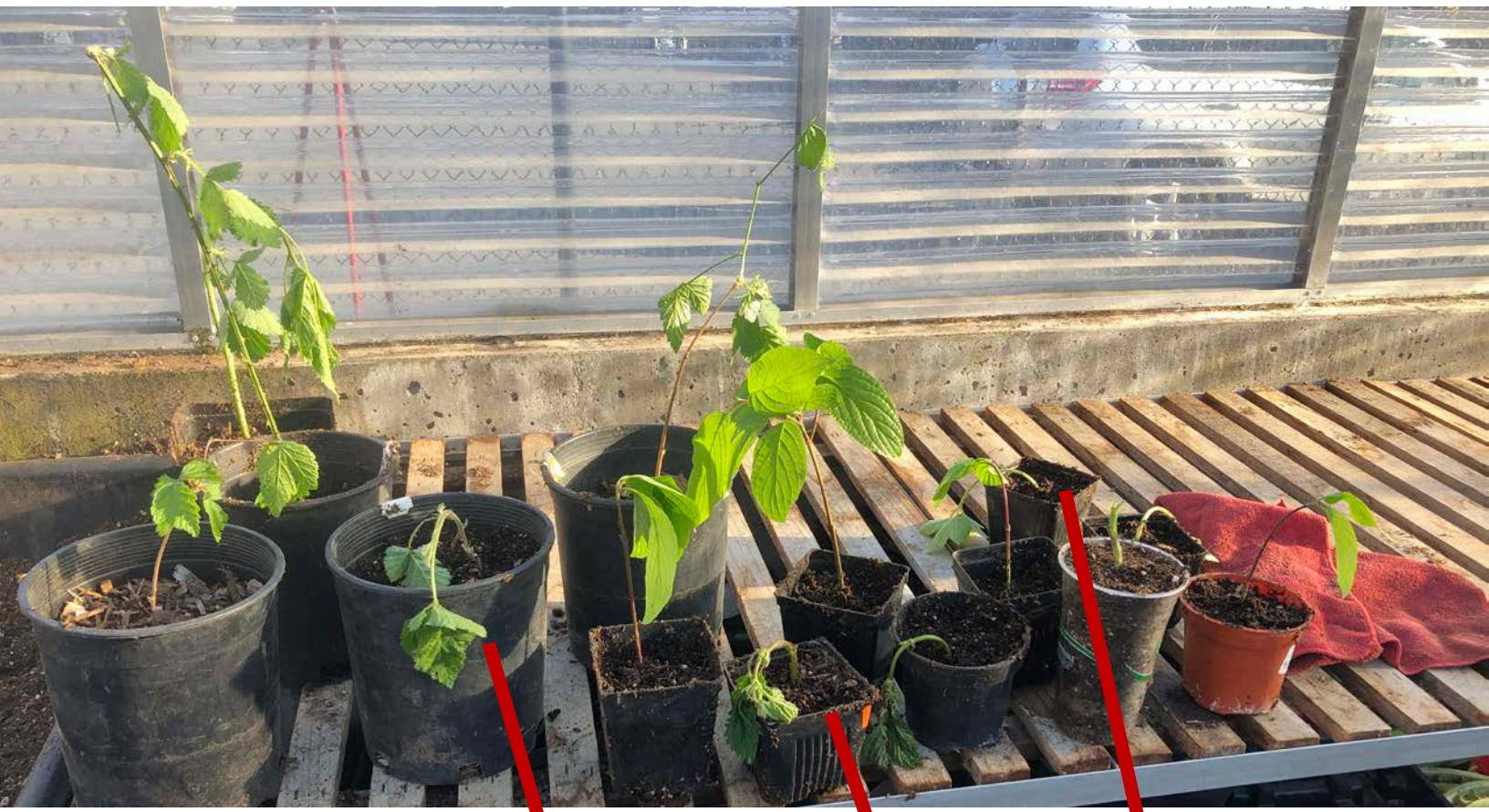
Ziedrich, L. (2013, December 29). Oregon Grape Jam. Retrieved from <https://agardenerstable.com/2013/07/21/oregon-grape-jam/>

*Picture citations can be found beneath the picture itself, if it has no citation the picture was taken by Hanna-Marie Lucero herself.

Appendix I: This is my try in propagating plants besides succulents

As part of my project I tried propagating some of the plants myself. I tried propagating *Cornus sericea*, *Urtica dioica*, *Rubus ursinus* in the cold frame and a green house initially. I put two of each in the greenhouse and the cold frame. After a few days the ones in the cold frame were completely dried out with the leaves a pale brown. The ones in the greenhouse (in the next picture) were starting to shrivel and dry up so in a final attempt I put them outside against the greenhouse's cement side. Here they were able to get cool shade and sun. Included are pictures of 4 of the plants, one a possibly mystery plant posing as a *Cornus sericea* ?

Side note: I initially thought my *Cornus sericea* cuttings were *Rhamnus purshiana* (cascara buckthorn) but once reviewing my work it turns out they weren't! It is safe to say this project tested my plant identifying skills.



May 5th 2020



May 21st 2020

Cornus sericea

Since the plants that I initially had in the greenhouse seemed to be doing okay outside, I took two more *Cornus sericea* cuttings and kept them outside the whole time. The leaves are starting to die off, but the bottom of the stem is looking slightly green again so I think there is hope!



May 26th 2020

May 26th 2020

May 21st 2020



June 5th 2020

June 1st 2020

... *Cornus sericea*?

A large portion of the plants in the green house this last quarter were tomato plants, so we think one made its way into the potting soil because here it is. I initially thought my Red-osier Dogwood was just a super fast grower, but Shannon & Mel helped in correctly identifying it(:



May 20th 2020

May 21st 2020

May 26th 2020

May 29th 2020

June 1st 2020



June 1st 2020

June 3rd 2020

June 11th 2020

July 7th 2020

Urtica dioica

My nettle actually did really well! It kept growing, but oddly enough it never rooted? There are no roots so I'm not sure what happened.... I think it might be because I cut the end at an angle instead of straight across? I'm going to try planting it in soil to see if that will help with rooting, but the other one I put in soil right away died so we'll see.



May 12th 2020



May 20th 2020



May 20th 2020



May 29th 2020



June 3rd 2020



June 11th 2020

Rubus ursinus

I honestly thought the trailing blackberry was a lost cause. I almost didn't continue watering it but I did so because it was right next to the cascara. It makes me wonder if the cold frame cuttings could have been revived if I had taken them out and put them next to these ones.



May 26thth 2020



June 1st 2020



June 1st 2020



June 3rd 2020



June 3rd 2020



June 5th 2020



June 11th 2020



June 11th 2020



June 11th 2020



July 7th 2020