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Gardening in a Maritime Climate Stewarding plant collections at the Jensen-Olson Arboretum as the climate changes

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We've all been through some challenging natural disasters in the past few weeks, months, and recent years. Though these wide reaching events connect us in many ways, some of us who retreat to our landscapes to relax have been stressed about the erratic weather effects on our gardens. Some of you may be new to gardening, some have been digging in the dirt for years.

For the next few minutes, I'd like you to imagine, imagine you spent decades nurturing a special garden, filling it with robust species that thrive on long hours of summer sun.

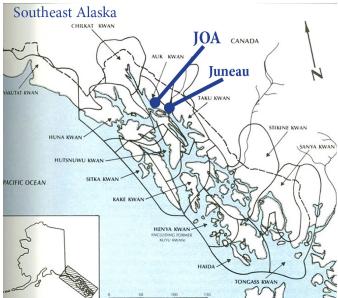


Caroline Jensen archives.



Heirloom Delphinium.

Tlingit Ancestral Lands



Map by Andrew Hope III



Delphinium, Primula, bulbs, fruiting trees and shrubs, and other colorful plants that brought you joy.

Then one summer you find you have to water, not much, but just enough to notice. Despite the fact that your garden lives in the Pacific Temperate Rainforest.

This is the situation facing the Jensen-Olson Arboretum in Juneau, Alaska.

It is the land of the Aak'w kwáan Tlingit who prospered and lived with the environment for thousands of years. Navigators call this the world-famous Inside Passage.

The arboretum is just a few (hundred) miles north of Seattle, but within the same temperate rainforest. JOA is directly on a coast, quite rare for a public garden.

The land was taken advantage of by a German family in the late 1880s who arrived with the flush of gold miners in Southeast Alaska. They raised children there, along with horses, and grew their own food crops to sustain themselves through decades of hard-rock mining. One daughter, Irma, branched out to raising mink, chickens, and even a few cows beloved by one or two neighbor boys.

Irma's nephew Carl inherited the property and relocated here with his bride Caroline. By the 1950s, they didn't have to haul ore or tend cows in a rainforest. Carl was a ships millwright, Caroline worked in offices and assisted Carl with his business. They savored their location in the protected cove harvesting fish, building a new home, and seeding colorful gardens.

Caroline was active with the Juneau Garden Club and contributed a wealth of information to their book *Gardening in Southeast Alaska*. She had a fondness for primroses so joined the American Primrose Society early on. Caroline wished her gardens to be enjoyed by everyone. She worked

with the Southeast Alaska Land Trust to create the first conservation easement in the region. The 14 acres Caroline tended was donated to the City and Borough of Juneau.

Caroline's vision was to use the property to educate the public on horticulture, landscape, natural sciences, and to preserve the aesthetics and culture of the place.







Though she asked that the preserve be called an arboretum, it took five years for the first horticulturist and manager to plant enough trees to attain official Level I Arboretum accreditation from ArbNet.

Seeing that the gardens were strewn with a wide variety of Primula species, the same first manager worked tirelessly to build a quality collection. JOA received certification in 2012 for holding the Nationally Accredited Plant CollectionTM for the genus Primula. At the time of recognition, there were approximately 200 species and cultivars on site. Each spring the primroses provide a calliope of candy colors blanketing garden beds. [*Primula denticulata*, *P. veris*, *P.* 'City of Bellingham', *P.* 'City of Juneau', *P.* 'Lady Greer', and Juliaes]. As the varieties rotate through bloom cycles, taller species appear mid- to late summer, [*P. japonica*, *P. chungensis*, *P. secundiflora*, *P. alpicola*, *P. capitata*] and some bloom until near to frost [*P. florindae*]

Naturally, a few species decided it wasn't warm enough on the Alaskan coast, or snow lingered too long-to be expected when gardeners test new plants.

But most were all well and good, until the jet stream zigs, and the ocean warms, and it doesn't rain, and some Primula don't like drying out, *P. alpicola*, and other Himalayan varieties.

So now the arboretum must water even more, a challenge with one well on-site. A shallow well since the grounds are along the Pacific coast.



Top left: the four cultivated acres of the arboretum. Top: *Spiraea douglasii*. Above: *Primula* 'Lady Greer'.

Some years it is not enough to water during the working hours, in 2019, the horticulturist had to water twenty-four hours a day. The result was naming of the tractor sprinkler "Employee of the Year". It did what it could until salt water infiltrated. Certainly some Primula perished, and some woody plants suffered. A lack of water never would have crossed the minds of gardeners along the Inside Passage in years past.

And the next year, the weather patter zags, and it rains, and rains, and rains, until the puddle becomes a

pond, and eventually "Lake Caroline". Again, certainly some Primula perished, along with some varieties of sedum, and other plants that count on the location's rocky shore for drainage.

Predicting the precipitation has been perplexing. In the past four years ice has accumulated when there should be snow. And, rain when there should be snow. Increasingly the garden grounds are open and exposed in winter, leading them to be victims of sudden deep freezes.

Of course most of the primula species are not native to the area, or even the continent [*P. deflexa, P. bulleyana*]. But we hold these for their beauty, and one day, they could help repopulate their home regions.

So what do you do when your gardening climate is unpredictable? When you can't cover the whole garden in burlap bags, or spruce boughs, or one large glasshouse?!

After a couple of unbalanced years-in your mindit's spring again, and the sun is rising higher off the horizon each day, and the birds are migrating, and you can feel the swollen buds of trees just wanting to pop. Then NO- literally a day later a snow storm blows in, and more snow, and record snow, in March. And you have to get the snow blower back out, and shovels, and put up photos of what plants look like. . . leading visitors to empathize with your longings. . . Eventually spring returns, and you wonder, will this be the year of serenity?

No, not in 2022. Already in January there has been record rainfall. I've been at the arboretum thirteen months now, ten out of thirteen there have been weather records set: snow, heat, or rain!

No, we cannot know what to expect this summer. The numbers of record-setting weather events are increasing, much the same across the Pacific Northwest. These weather extremes create a slow cascade of issues for habitats and gardeners. In the past, a long, even, cold winter kept some insects at lower populations.

With longer summers, insects emerge sooner and may reproduce more often. Larger numbers of insects mean increased defoliation, further stressing plants already water challenged. But we can't spray anything because we live in Salmon Nation, so we pick, and call for birds, and wait. Because, remember, most caterpillars turn into prolific pollinators.

Extended freeze periods also once killed off decorative plants that were considered annuals, now they are weeds. And let's not even go to four-legged creatures-porcupine, deer- who can eat what we want, and others-bear, deer- that spread what we don't want.

Through the turmoil, a few Primula, and a few tree species decide this home does not suit their needs. And then one year, after a year or two of anguishing over whether or not this new home is worth it, a few



Varieties of early blooming Primula surround a *Ribes rubrum* 'Red Lake' currant. Red and black currants have shown to be durable and productive through the decades.



species reappear. Two species that did not emerge in 2020, *P. waltonii*, *P. capitata* delighted us in 2021, they were magnificent, and apparently nourishing, each feeding different species of hover flies.

But a marvelous example of stamina is a species that is suspected of being on the property for onehundred years. A diminutive buttery-yellow variety that may become 'Irma's Gold'. JOA's former manager is working with the American Primrose Society to confirm this as a new variety. Could plants like this hold endurance clues in their DNA?

We can look at plant losses a few ways. We can encourage the stalwarts who satisfy some need for beauty in place. They have grown to benefit the endemic wildlife, so we can use them to educate about pollination and other wildlife uses. This is a thrifty opportunity to divide and plant in other parts of the garden. At JOA that includes Astrantia, Astilbe, Hosta, Trollius, Doronicum to name a few. If native wildlife can take advantage of them, and the plant species doesn't run rampant, can our gardens benefit?

Especially if the flower is one of the first to bloom [*Petasites japonicus, Crocus sp.*]. In years without snow, there is a buffet for the native bumblebees that crawl out of burrows, ravenous. Here this bounty nourishes her for the task of preparing a brood home for her progeny.

A positive view of plant loss is, "it opens an opportunity to plant something new". Maybe that means giving homes to plants potentially losing ground to fire, floods, or development in their

Left: Spring blooming Crocus sp. Above: Petasistes japonica

home regions. We can be inquisitive and trial new horticultural specimens and share what we learn [*Taraxacum faeroense, Meconopsis sp., Lonicera caerulea*]. We can welcome plants from close gardening zones [*Betula papyrifera, Larix laricina*]. Even more resourceful, we can elevate our regional endemic plants [*Platanthera sp.*]

Some of those may be losing ground too, or need to change latitude, or searching for a comfy home [Kalmia microphylla, Ribes lacustre, Polypodium glycyrrhiza]. Some have proven durable in a curated environment [Spiraea douglasii, Viola glabella, Pyrola asarifolia], and some just welcome themselves to the party [Impatiens noli-tangere].

This year the Jensen-Olson Arboretum celebrates 15 years of being a free public garden managed by CBJ, with an on-site horticulturist and manager. This year, like every year, the arboretum will test new varieties of plants; we'll add to the primrose collection; we'll request specimens from gardens in similar climates; and we'll keep exploring our backyard looking to highlight regional plants.

Public gardens and home gardeners do not have to do the research on their own. We use resources that just about anyone can access: our local garden clubs, local master gardeners, the forest service, native plant societies, national organizations like the National Rock Garden Society and the American Primrose Society, and our neighbors. We'll talk to our friends in colder climates, and to those in areas used to more rain. Gardeners that live near public gardens can take advantage of their success by purchasing from botanical garden and arboreta plant sales. Utilize your local partners, other plant organizations, garden supporters. Great resources include the University of Washington Botanical Garden <u>https://botanicgardens.</u> <u>uw.edu</u>; Bellevue Botanical Garden <u>https://bellevuebotanical.org</u>; Washington state Cooperative extension, <u>https://extension.wsu.edu</u>; and The Washington Native Plant Society <u>https://www.wnps.org</u>. I hope you've enjoyed a look at the Jensen-Olson Arboretum, your commiserating northern neighbor. Know that we all have to look at our landscapes as benefiting from opportunities to "replace plants as needed".

After all, this region is not that old. Only 11,000 years ago did the Cordilleran Ice Sheet retreat. Well, most of it; and the botany is continually changing, though not as fast as it will in this period of climate change.

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Thank you to Janet Endsley and the organizers of the NWFGF for your perseverance. Thank you to all the medical workers, airlines, hotels, restaurants, and service folks involved. And, of course, to all of you lifelong students of gardening, thank you for your interest.

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