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Blackberries in the Salish Sea: Fruitful Delight or Ecological Nightmare?

In the Salish Sea, there are native blackberry species and then there are the invasive blackberry giants that tower over everything in their path. The primary native berry species' are *Rubus ursinus*, aka the Pacific or Trailing Blackberry, and *Rubus spectabilis*, aka Salmonberry. Pacific blackberries grow low to the ground in trailing mounds or creep up surfaces like trees and buildings with vines up to 20' long (Tirmenstein, 4). They have lobed leaves with semi-serrated edges, narrow petals that give them a "spread out" appearance, abundant needle-like barbs along the stem and under the leaves, and oblong berries with small drupelets. The primary invasive species' are *Rubus armeniacus* or *R. bifrons*, the Himalayan blackberry, and *Rubus laciniatus*, the Evergreen blackberry. Himalayan blackberries grow up and out in dense, climbing thickets with vines up to 23' long (Fryer, 2). Their leaves are rounded and uniformly serrated along the edges, broad petals, hooked barbs, and rounder berries with larger drupelets. Both types of blackberries are able to thrive in a variety of soils but prefer damp, well-drained environments with deep soil for their extensive root systems.

The man who introduced this domineering fruit to Salish ecology was a eugenicist named Luther Burbank. His goal was to make better produce more accessible to middle-income families in the late eighteenth-century. Despite having no formal botanical training, his experimental focus was creating plant hybrids with better flavor and agricultural yield. He is credited with creating the Burbank potato, which mutated into the Russet Burbank, "the most widely grown potato in America today." (Dornfeld, 1) He traded seeds with people around the

world and received some for berries that were plump, juicy, and could grow easily in the right setting. He named these berries the Himalayan Giant and sent them to people in temperate climates. This is how the prolific, barbed thickets we're all familiar with got their start in the Salish region.

Native berry species have been a seasonal staple for Indigenous communities for generations. They have a broad variety of uses as a food, medicine, and tea. According to Kirsten Johnson of the NW Oregon Wetland Plants Project, "The vines of trailing blackberry were used by the Saanish Indians of Vancouver Island to place over and under food in steam cooking pits, and also for ritual scrubbing. They and other Coast Salish groups sometimes used the fruits as a purple stain. The berries were eaten fresh, or mashed and dried in cakes, by the Straits Salish, Halkomelen, Squamish, Sechelt, Comex, Nootka, and South Kwakiutt. Other Indian uses include: using the leaves and roots to treat diarrhea, dysentery, cholera, excessive menstruation, fever, and sores in the mouth. The leaves of this species also were used as a substitution for tea during the Colonial Tea Boycott. Currently, teas made from this species are recommended by herbalists as a diuretic and mild astringent. In addition, the seeds of drupes all contain Cyanogenic Glycosides. The leaves of Cyanogenic plants were boiled and used as a bitter tonic and astringent, and presently is an ingredient in an assortment of Patent medicines." (Johnson & Maser, 3)

For our project, our original quest was to investigate the impact of invasive blackberries on local ecology and compare them with native blackberries. We had to shift slightly and compared the plant biodiversity in areas with invasive berries versus without because we couldn't actually find any native species. We observed how aggressively invasive berries grow

in our localities within the Salish Sea and identified other plant species that grew in each site, including one where no invasive berries were found. Each site researched has unique, but similar, ecology. Our goal was to try showing the impact invasive species, especially Himalayan blackberries, have had on their surroundings.

Our revised research question was "How does plant biodiversity change around invasive blackberry thickets versus an area with a similar setting and no blackberries?" To answer this, we surveyed different locations in Lynden and Bellingham with unique ecological settings to create a broader picture of how invasive species impact lightly landscaped areas with human interference including a park, creek, roadside, and trailhead. We compared the abundance and types of other plant species around areas with invasive blackberries and an area without berries present. This included a visual survey in person and later, using photos from each site to identify plant species for direct comparison. This way, we got an idea of what species' can be found around invasive berries and what species' has a harder time coexisting.

Throughout the different sites, we were able to see the interaction between invasive berries and other plant species. Our physical observations were that invasive berry thickets grew tall, broad, dense, and prolific throughout our localities of Lynden and Bellingham. They tend to creep and surround other plants like maple trees and undergrowth bushes, and block light from reaching the ground directly underneath them, limiting the species that can thrive in close-proximity. There were some species that were found in most or all of the sites: buttercups, nettle, chicory, bluegrasses, alder and maple trees, ferns, wildflowers, and horsetail. The plant that had the most scarcity is the one we started the project looking for: the indigenous blackberry species *Rubus ursinus*, known as the Pacific or Trailing blackberry,

naturally found along the western North American coast in moderate climates. Some species of invasive berry were present in and dominated all but the intentionally scarce site at Berthusen Park. Admittedly, human interference may have played a part in the lack of blackberries since it was a public park. Regardless, we were pleased that there was plant biodiversity in our sites, but are ending this project frustrated with the domineering nature of invasive berry species.

Further research on this subject could include a broader site survey of the Salish region, quadrant-based quantification of thicket biodiversity, contrasting the ecology around native and invasive berries by finding somewhere with native berries, and comparing the impact of human interference with blackberries on ecological restoration.

Works Cited

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