

The old oak prairie

When Smithsonian naturalist C.B.R. Kennerly visited San Juan Island in 1860, his hosts at Camp Pickett insisted that he visit the “Oak Prairie”, five bone-rattling horseback miles into the interior through swampy wetlands and meadows overgrown with ferns. At the headwaters of False Bay, Kennerly found several square miles of scattered oaks. But he was more interested in the valley’s agricultural potential, and it was January. He took few notes. And while Kennerly crisscrossed the islands for months describing landscapes and collecting specimens, he made no other mention of oaks.

Where and what exactly was the Oak Prairie? Was it the principal, or perhaps the only oak-dominated landscape in San Juan County 150 years ago?

Near the intersections of Old Schoolhouse Road and Valley Farms Road with San Juan Valley Road, you can see scores of large Garry oaks scattered around farm pastures, mainly on the thin, well-drained soils of small rounded knobs or ridges. Their location is consistent with Kennerly’s notes. Early farmers cleared many oaks to plant pastures with European forage grasses, now the dominant plant species. Acorns are good forage for livestock, however, so oaks may have been given preference over other woody species. Thus grass and oaks were both promoted.

The archipelago’s only other large historically documented Garry oak woodland was at Victoria, but modest oak patches are found today on Cady Mountain and Young Hill, south Turtleback, Disney, and elsewhere in the San Juan and Gulf Islands including many tiny islets. Few seedlings surround the trees, and recent studies have observed that the Gulf Island oaks are mainly about 125 years old. One popular explanation is shading-out by fast growing Douglas firs, in the absence of logging and fires.

Studies of pollen in lower Vancouver Island sediments indicate that oaks declined sharply when the Northwest cooled more than 4,000 years ago, creating a climate more agreeable to conifers that were already widespread in the islands. Fire scars in tree rings show that Coast Salish people probably fire-cleared the underbrush about every 10 years on Disney and south Lopez, probably to maintain accessible deer parks for hunting since there is no archaeological evidence of acorn use in San Juan Islands. But oaks may have colonized clearings. Logging of firs in the late 19th century would have created a window

of opportunity for widespread oak regeneration, and created most of the oak patches that today are slowly disappearing back under fir canopies.

Our laboratory is exploring alternative explanations. Garry oaks are mast trees: they produce a huge crop of viable acorns every 3-10 years, instead of producing a crop every year. This strategy fools acorn predators such as the filbert weevil, whose numbers in the islands grow in mast years, and crash in post-mast years. But this can be a delicate balance, possibly tipped against oaks by climate change or the introduction of additional acorn parasites by orchards and gardeners.

We have also observed that most seedlings are very close to established trees: do island oaks have enough animals to disperse their acorns? The best acorn dispersers are animals that cache or bury acorns rather than eating them immediately, such as Stellar's jays, once abundant in the islands but now largely restricted to west Orcas; and Northern flying squirrels, thus far seen only at higher elevations of San Juan Island and Blakeley.

Understanding and conserving our native oaks is important for wildlife that relies on acorns for fall sustenance, such as Band-tailed pigeons. But that's not all. One small milk chocolate colored butterfly, the Propertius duskywing, lays its eggs on oak leaves, and the emerging caterpillars feed solely on oak until they are ready to pupate. By fall they roll themselves in oak leaves, and after the leaves drop, the pupae spend the winter in the leaf litter where they are often destroyed by trampling, raking, and burning leaves. Duskywings are easily recognized fluttering around oak groves in the summer—the only animal that will certainly completely disappear if we lose our native oaks!

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