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Briefing note

How “native” should restoration plantings be?

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It is necessary to begin by defining several terms in widespread use, the meanings of which vary with context. The term “native” is especially subject to misunderstanding.

“Native” can only be understood in relation to a particular geographic area. This is especially relevant to the botany of the San Juan Islands. The relative isolation of the islands by water means that many plant and animal species found elsewhere in Western Washington (or elsewhere within the larger Salish Sea region), are absent in the San Juan Islands. Likewise, some species found in the islands are absent from the mainland areas of the Salish Sea (Puget Sound and the Gulf of Georgia). The best source of information on the species historically native *to the islands* is Atkinson & Sharpe’s *Wild Plants of the San Juan Islands*, which was based on historical collections and field surveys.

Even if a species is identified by Atkinson & Sharpe as occurring naturally in San Juan County, it is prudent to make field surveys to see whether it occurs anywhere in the vicinity of the restoration site—within a square mile or less, in similar conditions to what exists or will be constructed at the restoration site. Simply the fact that a species can find a home *somewhere* in this multitude of islands, does not mean that it is likely to thrive at a particular spot where we have no record or observation of its presence. Moving plants a mile or less is a better guarantee of compatibility and sustainability, than choosing them out of a reference book—even one as thorough and accurate as Atkinson & Sharpe. For example, south Lopez enjoys barely half the annual precipitation of north Orcas, and the heights of Mount Constitution are twice as wet as the nearby town of Eastsound. Such a range of climate variations is associated with significant differences in vegetation: cactus on south Lopez, for example, and Pacific ninebark on Mount Constitution.

The term “native” is also commonly used in ways that obscure the importance of genetic diversity within species. Pacific salmon are “native” to western Washington, but a Stillaguamish Chinook and a Skagit Chinook are not interchangeable, despite being the same native species. Each represents a genetically and behaviorally distinct reproductive population, historically separated from others and adapted to a somewhat different habitat mosaic. Geographically isolated populations of a species can look alike but exchange no genes for generations at a time; they are potential new species. This is especially true of the plants in San Juan County. The nearest conspecifics to the *Oxytropis monticola* patch on south Lopez is in Okanogan County, so gene flow is almost assuredly zero at this time, and the Lopez population will eventually become a new species should it survive, if it is not one already. The Rosy pussytoes on Mount Constitution have relatives on Mount Baker and the Cascade Ridge, but not closer. There are many, many more examples.

Like “native,” the term “rare” must always be used with reference to a particular geographic area. There are species that are very rare in the San Juan Islands (such as our Long-Toed Salamanders) that are widespread and common in other western Washington counties. Locally rare species are important constituents of our county’s biodiversity, in imminent danger of disappearing from the islands (and becoming locally “extirpated”). Many of them have probably been isolated here in the islands for a very long time, and as such represent very small genetically isolated populations, or sub-species, like the Island Marble butterfly, which is a small isolated population of eastern Washington’s abundant Large Marble butterfly. Hence while a particular plant or animal may not be ESA-listed as endangered nationally, or listed by Washington State as a species of statewide concern or “sensitivity”, it may still be losing ground locally and merit local protection. We have observed, for example, that nearly all of the grasslands on public lands in the islands are composed entirely of Eurasian species. Very few patches of our *regionally* native grasses such as Roemer’s fescue and *Danthonia* can still be found. While they are not *regionally* rare, they are growing very rare *locally*.

The loss of native plants threatens the survival of native animals that depend on those plants for food or shelter. While Washington State as a whole would scarcely miss San Juan County’s Garry oaks, their loss would doom the Propertius Duskywing butterfly and could adversely affect on Stellar’s Jays and Northern Flying Squirrels, which feast on acorns and also help disperse them.

“Invasive” is another highly contextual term. At the outset it must be carefully distinguished from “non-native”. Many non-native (=recently introduced) species grow happily in farms and gardens of San Juan County, but do not extend their range beyond areas of human disturbance and/or management. They are exotic, but not invasive. Most garden fruits and vegetables fit this description; but most Eurasian pasture grasses, and the European field mustard once planted to enrich many of our pastures (*Brassica rapa campestris*), are indeed highly “invasive” and will thrive and spread aggressively unless aggressively controlled. On the other hand, many native species can be invasive under certain circumstances: Nootka Rose and Snowberry are native, but in the wake of the abandonment of pastures and hayfields, they can overwhelm Eurasian grass species and produce extensive oligarchic stands that are difficult to restrict or reverse. Douglas fir, an iconic native island species, can also be highly invasive, in the wake of clear-cutting or pasture abandonment. The term “invasive” should therefore not be used as a synonym for “non-native” but rather as a description of the functional behavior of particular species in particular contexts. If the area of a riparian re-vegetation project is bordered by reed canary grass (non-native) or Nootka rose (native), it matters very little whether the grass or the rose overwhelms the freshly disturbed ground!

Indeed, many regionally non-native species, such as the apple and pear trees to be seen thriving and very slowly recruiting around old homesteads, pose little threat to the remaining native plants in their neighborhood; while native species that State and Federal agencies place on “native plantings” lists (such as roses) are highly invasive if planted in disturbed riparian zones of San Juan County.

The fundamental principles we recommend for consideration in reviewing habitat restoration projects are: (1) protect the genetic integrity of existing populations of *locally-native* plants; and (2) protect local plant diversity from invasive plant species, whether or not they are native to the San Juan Islands or Washington.

In applying these broad principles to specific projects, we recommend that project sponsors:

- Use *locally appropriate* species, that is, ones that still grow on the same island near the project site under similar habitat conditions.
- Use *locally collected* stocks, that is, seeds or cuttings from the same island if it is possible, otherwise from a nearby island.
- Include some species that were more widespread historically in the islands, as long as they can be propagated from locally collected stocks.
- Use seeds or cuttings from nearby parts of the Washington mainland or British Columbia to re-establish species that were historically native to the San Juans Islands but can no longer be found here. Do not import seeds or cuttings from outside the Puget Lowlands and Georgia Depression.
- *Non-invasive* non-native species, including fruit trees and ornamentals, can be useful components of restoration projects, and actually have less of an adverse impact on locally native plant populations than introducing non-local stocks of locally native species! Many farm and garden favorites do not spread and will not hybridize with local wild species.
- Avoid introducing any *invasive* non-native *or* native species. Invasive natives can be just as troublesome to manage or eradicate as the worst non-native.
- Any soil disturbance is an invitation to invasive species that are already in the area. Identify any invasive native and non-native species within 1,000 feet of the project area and adopt specific measures to prevent them from colonizing disturbed ground. Among other measures, ensure that tools and clothing have been cleaned of seeds and other plant material before use at the project site.