

# SHORE STEWARDS NEWS

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## Salt Spray and Your Landscaping

None of us would take a rainbow trout from a Cascade Mountain lake and drop it into Puget Sound, expecting it to live. Or try to transplant manila clams to a Lake Washington beach. We all know that certain species are adapted to fresh water and others to seawater. Yet people continually landscape their beach or bluff properties with the same plants, groundcover and trees that thrived in more residential yards, and wonder why they seem to be dying despite their best efforts to help them thrive. This article seeks to explain why certain plants die near the shoreline, and what you can do to ensure a beautiful landscape for your beach or bluff property!

Whenever the winds cause waves and whitecaps, a certain amount of salt spray is inevitable. Certain sheltered areas are less susceptible than others but, waterfront property anywhere gets a fair amount of salt spray. When the droplets of spray that land on the leaves of trees and shrubs evaporate, sodium and chloride from the salt can penetrate the buds, leaves and stems, the damage of which can be seen when the leaves begin to wilt or turn brown. You probably wouldn't think about misting your indoor plants with seawater, but nature does it to your shoreline vegetation on a regular basis. Some signs of salt spray damage include browning of needles and leaf burn, particularly on the side that faces the water. In more serious cases, you can actually see the white salt residue left on the plants after the spray has evaporated.

The spray that lands on the ground travels downward through your soil with the rain, causing saline soil. If your yard or garden is particularly close to the beach, separated only by a small shoreline barrier, the seawater during high tides can often reach the roots of your trees and shrubs that are planted close to the barrier. If the salt in the soil is in lower concentrations, the membrane in the plant root cells prevents the salt from entering, allowing only the water into the roots. In higher concentrations, the salt can actually dehydrate the roots by drawing the water out of the cells. High levels of salts can cause compacted soils, particularly when they bind with soil clays. This happens more often in clay soils than sandy soils. Water and oxygen have a harder time penetrating the soil, and water has a more difficult time draining from this compacted soil. This affects not only plant growth but also pest resistance.

Most of our landscape plants are sensitive to salinity in the soil, especially young transplants and seedlings. Heavy winter rains can help remove this salt from the soil, thus reducing the damage from continued exposure, whereas periods of drought and hot weather increase the damage from exposure to the salty soil. There are other species that have adapted to salt spray and salty soil conditions over thousands of years. These we call "halophytic", or salt-loving plants.

## Some Thoughts on Changing Your Landscaping

If you think that you might have a problem with saline soil, one way to find out is to take a sample of your soil to a soil test laboratory (find a list of these at your WSU Extension office), which measures the amount of salt in your soil in ppm, or “parts per million”. Generally, a ppm of under 1000 is considered low, and 1000–2000 ppm is considered medium. Most of your landscape plants can tolerate salt concentrations in the low to medium range, with the exception of very sensitive plants. If that is the case, you might consider planting more salt-tolerant plants, including native species that are adapted to living along the shoreline.

Before you consider planting any new trees, shrubs or plants, think about their potential for impact on your septic system drainfield. You really should only have grasses or shallow-rooted native plants over your drainfield, avoiding any trees, shrubs, or plants with deep roots- as they can work their way into the system and create big problems. Anything planted over your drainfield that requires watering will impact the ability of your drainfield to do its job. Even a vegetable garden over the drainfield is not a good idea.

Take a look up and down your beach, and see how your neighbors yards are doing. You will see some plants, trees and foliage that are thriving, and others that just seem to be getting by, or worse yet, dying. Check the native plant nurseries, and ask them which plants are salt tolerant and grow well along the shoreline. Take some time and explore our islands, and forget about the city and suburban landscaping you have become accustomed to in the past. You are living in a special place now, and you need special plants to create a healthy coastal garden. See also this list of Salt-tolerant plants: <http://www.nativeplantsalvage.org/ShorelineRevegetationSuperstars.pdf>

## Salt Tolerant Trees and Shrubs

One of the most important things to consider when choosing a salt-tolerant tree is how large it will get. If you are planting a Douglas Fir (*Pseudotsuga menziesii*), for example, which has good slope erosion control, realize that it can reach up to 200 feet high. Maybe not in your lifetime, but it could still grow tall enough to block the view of the neighbors behind you. Other great native trees that are adapted to a shoreline location include the Pacific madrone (*Arbutus menziesii*), Sitka spruce (*Picea sitchensis*), Red alder (*Alnus rubra*), Western red cedar (*Thuja plicata*), Big-leaf maple (*Acer macrophyllum*), Grand fir (*Abies grandis*), Western hemlock (*Tsuga heterophylla*), Pacific yew (*Taxus brevifolia*), Shore pine (*Pinus contorta*), and the Western white pine (*Pinus monticola*).

Some of the better salt-tolerant shrubs and small trees to consider include Salal (*Gautheria shallon*), Ocean Spray (*Holodiscus discolor*), Snowberry (*Symphoricarpos albus*), Elderberry (*Sambucus species*), Tall Oregon grape (*Mahonia aquifolium*), Serviceberry (*Amelanchier alnifolia*), Nootka Rose (*Rosa nutkana*), and the Wax Myrtle (*Myrica californica*). This is by no means a complete list of all the trees and shrubs that do well along the shoreline. A short bibliography is given on page three.

## Native Herbaceous Plants for Shoreland Sites

There are a variety of native plants that are commonly found near the shoreline, and which typically do well in the Puget Sound area. These include the sword fern (*Polystichum munitum*), Bracken fern (*Pteridium aquilinum*), Fireweed (*Epilobium angustifolium*), Coastal lupine (*Lupinus littoralis*), Honeysuckle (*Lonicera species*), and Coastal strawberry (*Fragaria chiloensis*). There are also many ornamental grasses that do well along the shoreline and that are very attractive. You might check one of the nurseries in the area that specialize in ornamental grasses. Try to find ones that are native and that do not spread at an excessive rate, and that are non-invasive. Andean pampas grass, which can commonly be seen in gardens around Island County, are considered to be a very invasive species in California, and viewed by State authorities in a similar fashion as we do with our own Scotch broom or spartina!

## Bibliography / Publications for Further Reading

**Plants of the Pacific Northwest Coast.** Jim Pojar and Andy MacKinnon, Lone Pine Publishing, Vancouver, BC, 1994.

**Native Plants in the Coastal Garden, 2<sup>nd</sup> Ed.** April Pettinger, Whitecap Books, Vancouver, BC, 2002.

**Gardening with Native Plants of the Pacific Northwest.** Arthur Kruckeberg, University of Washington Press, Seattle, WA, 2003.

**Flora of the Pacific Northwest: An Illustrated Manual.** C. Leo Hitchcock & Arthur Cronquist., University of Washington Press, Seattle, WA, 1973.

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The following publications were printed by the Washington Department of Ecology and are available for free to Shore Stewards. See bottom of last page for contact information.

**Slope Stabilization & Erosion Control Using Vegetation: A Manual for Coastal Property Owners.** 1993, Publication #93-30.

**Vegetation Management: A Guide for Puget Sound Bluff Property Owners.** 1993, Publication #93-31.

**Surface Water & Groundwater on Coastal Bluffs: A Guide for Puget Sound Property Owners.** 1995, Publication #95-107.

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