

# SHORE STEWARDS NEWS

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Island County, Washington

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The information in this newsletter was excerpted from Guidelines 2 and 5 of the new 2015 edition of the Shore Stewards book, "Guide for Shoreline Living". To see the new book in its entirety, go to this link and click on the photo of the book: <http://shorestewards.cw.wsu.edu/guidelines/> This issue discusses what you should consider when planning development on your property, with an emphasis on retaining natural habitat and reducing erosion.

## Designing with Nature

Nature can work for you! By working with nature you can cool your home, save energy, provide privacy, reduce your water bill, save time, avoid introducing invasive species and increase bird and wildlife activity. You can also prevent erosion and water runoff. Many Shore Stewards find that with careful site planning, nature can provide all of these things, inexpensively and attractively. By observing and understanding your property you can begin to design with nature, taking full advantage of the benefits it provides.

For example, if you keep trees like big leaf maple, vine maple and bitter cherry on the south side of your house, your home will be shady and cool in the summer. Dense existing vegetation can maintain your privacy and provide a screen from future development on neighboring properties. Dead trees or snags can be attractive and will provide homes for many birds such as woodpeckers, flickers, osprey, and bald eagles. Keep them if they are not a hazard. Carefully planning pathways to the beach can prevent erosion. Maintaining your views can be accomplished by carefully pruning limbs, instead of cutting down or topping a tree.



You might start by drawing a simple map of your property. (See example on preceding page.) Note where your home is and any paved surfaces, driveways and paths. Show the slopes, where water is and how it moves through your property, the soil conditions (clay, sand), and existing trees and shrubs and special views. Once you have your map you will start to see ways to work with nature. Observe your property over a few months to see the conditions in your yard. This will help you decide which plants would thrive on your property. Some plants do best in full sunshine, others prefer shade, and some work well anywhere. One plant might prefer dry locations, and another likes areas that remain moist. If you haven't built your home yet and your land is not cleared, you have even more opportunities to work with nature.

One of the best ways to get nature working for you is to simply keep existing soils and native plants, shrubs, and trees. If you retain what you have, you'll save money, because buying replacement plants and trees can be expensive. You can reduce your water use, because established native plants are adapted to our dry summers. When you clear vegetation you open that area up to erosion and invasive weeds. For more on native plants, see Guideline 3 in the new *Guide for Shoreline Living* book.

If you hire a contractor to do work on your land, make sure they understand your wishes regarding clearing. Mark the areas you want to protect. Walk the land with your contractor to agree on which trees should be protected. Heavy equipment damages tree roots and compacts soils. Compacted soils inhibit plant growth and leads to ponding of water because the pores in the soil are gone. Most trees will likely survive if at least 60% of the root system is unharmed. Keep ground disturbance at least as far out as the drip-line (outermost circumference of the tree canopy). Ask your contractor how the trees will be cleared. The quickest way is to scrape them away with a bulldozer, but using a chainsaw will protect the surrounding trees better.



Photo: Erica Guttman

Clearing on a bluff or slope has special considerations due to the hazards of landslides. If your property is located on a bluff, you may want shoreline access, whether by trail or stairwell. Sometimes it is easier and cheaper to share shoreline access with a neighbor, or use a community access nearby. If not, look for a natural trail to the shoreline along durable surfaces, or if you have room, design a trail that meanders, rather than going straight down to the beach.

### Keeping a Buffer along the Water's Edge

One of the ways you can put nature to work is to maintain a buffer of native vegetation along your bluff or shoreline. Buffers provide a transition between aquatic and upland areas and provide a number of important benefits to you and our waterways. Vegetation helps stabilize slopes and bluffs, and can calm heavy wave action, reducing the need for expensive bulkheads. Along streams, the vegetation in the buffer can help prevent erosion and slow damaging floodwaters. Healthy buffers can protect water quality by filtering out sediment and pollutants such as nitrogen, phosphorus, heavy metals, pesticides, harmful bacteria, and other pathogens common in runoff from streets, homes and agricultural areas. Buffers also provide shade, food sources, and habitat for birds, fish, wildlife and essential insects such as pollinators. Buffers require little in the way of irrigation or maintenance once the plants are established.

Maintaining a buffer is not only important in protecting your property, but is also required by current regulations. See Guideline 10 in the new *Shore Stewards Guide for Shoreline Living* book for details on permitting and the Shoreline Management Act, which covers Washington's marine shoreline and rivers and lakes. Streamside buffer requirements are discussed in Guideline 6.



*Photo: Matt Brincka*

## Understanding the Causes of Erosion

Erosion is the process in which soil and rock from one location are transported to another location where they are deposited. The main producers of erosion are water, wind, and human activities. Puget Sound itself was developed by the erosion caused by water and ice movement from retreating glaciers nearly 15,000 years ago. Even today, erosion is a continual natural process along the shoreline through water runoff, wind, and waves.

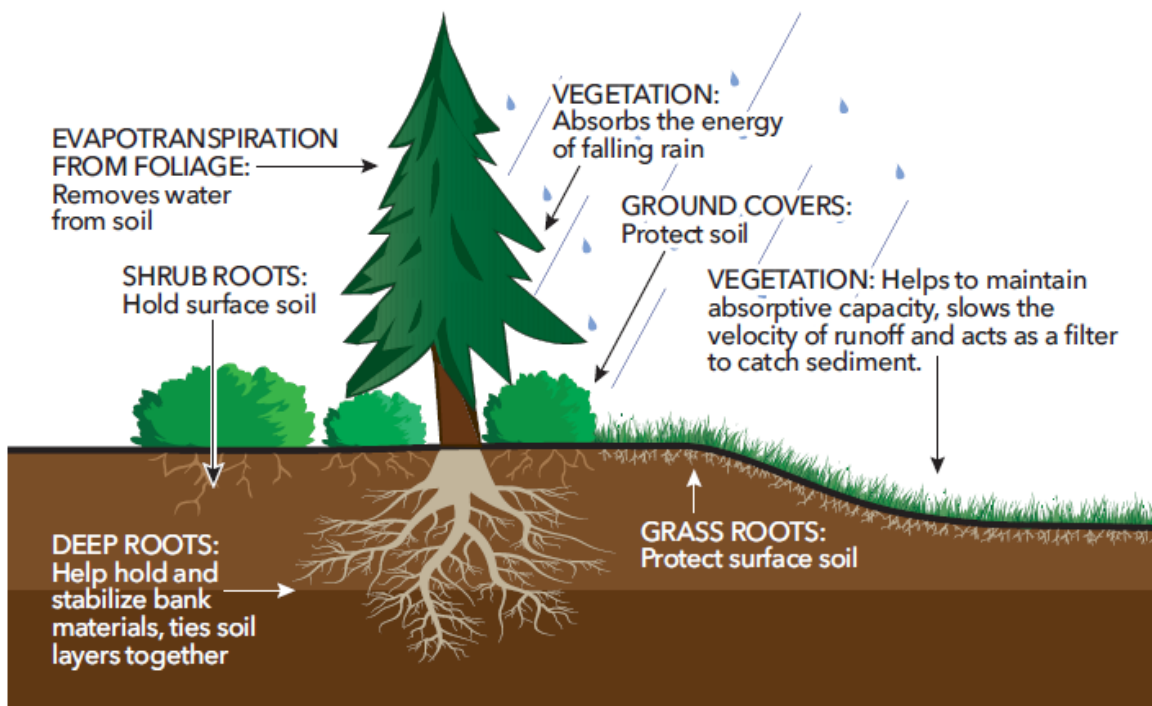
## Limiting the Risk of Erosion

### To minimize the risks from erosion to your property:

- **Establish or maintain a buffer zone between your yard and the water.** Buffer zones are areas of densely planted or naturally occurring vegetation composed of trees, shrubs and plants along bluffs and streams. They hold soils in place. This helps to prevent erosion, as well as prevents sediment from washing into the water. When developing your site, do so with minimal disturbance, leaving as much native vegetation as possible, including an undisturbed vegetation buffer along the top of the bluff. If you choose to plant trees on a slope or along streams, use bare rootstock and plant directly into the native soils of your site. Mulching heavily around the planting helps retain moisture and prevents erosion.
- **Plant bare areas.** Bare soils will erode or invite weeds. When planting, use hardy, deep-rooted native species appropriate to the site, except when it's over your drainfield. Choose trees and shrubs to stabilize the soil and provide erosion control (See table). These species have large, complex root systems that help hold soils.
- **Consider building location.** Locate your home, outbuilding or patio deck, sufficiently far from the water or bluff so it is not susceptible to erosion or landslides. Resist the urge to trade off safety for the sake of a slightly improved view.
- **Divert runoff away from the bluff face.** Excessive groundwater and surface water runoff are leading causes of landslides and bluff erosion. Coordinate with neighbors to avoid concentrating runoff, if possible.
- **Plan your beach access for minimal erosion.** Paths can cause erosion that goes straight to the beach and into the water. When possible, consider sharing access with neighbors to minimize disturbance and cost. Consider building a "hybrid" system (a combination of trail, ladder, winding paths and stairs) to limit disturbance on the bluff.
- **Consider natural erosion protection methods.** Try using beach logs or downed trees to protect your shoreline. Engineered bulkheads only encourage erosion, often on your neighbor's property.
- **Do not dump yard waste over the edge of your bluff.** It sets the stage for future erosion because these piles of green waste smother native plants holding fragile slopes in place. Even small heaps of grass clippings can take years to break down. To learn more, please refer to Guideline 1.

## Using Plants & Trees for Stability

There are times when property owners feel that a tree or several trees should be removed. Unless the tree is a hazard to your life or property, or presents some other major problem, it should be retained whenever possible to keep the soil stabilized. Factors you should consider prior to removal include the stability of the slope, species, age, health, current health of the tree, position of the slope, surrounding vegetation and density of the stand, rooting habit, soil type, and the ability of the tree to sprout after it is cut.



### EFFECTS OF VEGETATION IN MINIMIZING EROSION

*Deeply rooted tree with shallow rooted shrubs and grasses*

#### EFFECTS OF VEGETATION IN MINIMIZING EROSION:

- Roots hold surface soil and stabilize bank materials
- Helps the ground to absorb water
- Slows the velocity of runoff and traps sediment
- Absorbs the energy of falling rain
- Removes water from soil and transpires it into the air

**For those who live along the water’s edge, trees provide multiple benefits by:**

- **Reducing stormwater runoff.** Trees reduce stormwater runoff by intercepting falling rain in their leafy canopies, slowing the force of rain that falls to the ground. The water is held in the bark and leaves, and absorbed through the roots.
- **Reducing risk of erosion.** Tree root systems help reduce erosion by holding soil in place. Even after being cut, the roots attached to the stump help stabilize soil for years.
- **Reducing risk of landslides.** The roots absorb the water in the soil and release it back into the atmosphere through a process called evapotranspiration, removing a significant amount of potentially landslide-causing water in the bluff’s soil.
- **Protecting embankments.** Fallen trees on the beach protect embankments from wave action. These fallen trees may also serve as “sediment traps”, helping build beaches or provide more buffer at the water’s edge. If branches on fallen trees are in your way, prune them instead of removing the trees.

**Trees & shrubs for shoreline & streamside erosion control**

Marine Shore Trees	Marine Shore Shrubs	Stream Trees
Douglas fir	Ocean spray	Douglas fir
Bigleaf maple	Salal	Bigleaf maple
Madrone	Snowberry	Western red cedar
Western red cedar	Vine maple	Black cottonwood
Willow	Serviceberry	Willow
Shore pine	Oregon grape	Paper birch
Vine maple	Evergreen huckleberry	Bitter cherry
Sitka spruce		Vine maple
Grand fir	<b>Stream Shrubs</b>	
Cascara	Ocean spray	
	Red-osier dogwood	
	Red elderberry	
	Sitka alder	

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