Part II

Planting your shoreline



Source: MCD Karin Strelioff

Planting Projects: 4 Phases

- I. Planning & Choosing Plants
- II. Site Preparation
- III. Planting
- IV. Adaptive Management



DESIGN FRAMEWORK

 Understand that landscape is <u>infrastructure</u>, and design with - not against it. site first |design second

2. When planting, use native species as the foundation; integrate non-native ornamentals as highlights

3. Keep the "big picture" in mind: design for human use *and* habitat *and* Puget Sound health

I. Start with a simple plan





Scale?

Goals?

Sketch & Inventory

- Buildings
- Paths
- Activities
- Soils
- Light
- Drainage
- Existing plants



Base Map and Existing Conditions

(http://wdfw.wa.gov/wlm/backyard/landscape-design_landscape.htm)

Consider Site Exposure

Southern & Western (hot, dry?) Eastern and Northern (cooler, shady)? Existing tree cover?



Work with Your Site

Site Soils:

- Clay? Loam? Gravelly/sand?
- Glacial till? Bedrock?
- Topography?





Influences plant selection & soil amendment

Prioritize Native Plants. Use multiple species.

Design for vertical + horizontal diversity





Dramstad et al., Landscape Ecology Principles in Landscape Architecture and Land Use Planning

Consider Diversity

- Plant species
- Plant Heights
- Evergreen vs. deciduous broadleaf trees

Little variety. . . means fewer benefits



(http://wdfw.wa.gov/wlm/backyard/landscape-design_landscape.htm)



High diversity means better stormwater management and soil stabilization services . . and benefits wildlife.



(http://wdfw.wa.gov/wlm/backyard/landscape-design_landscape.htm)

Designing to support habitat

- Avoid fragmentation or isolation of habitat areas
- Preserve or create large PATCHES that provide interior and edge habitat
- Create CORRIDORS and STEPPING STONES



Dramstad et al., Landscape Ecology Principles in Landscape Architecture and Land Use Planning

Habitat value increases



Design Views from the Inside Out



"Frame" key views with strategic pruning and planting.

Finish your plan – select the "Right Plant for the Right Place"



Choosing Native Shoreline Plants





Shore Pine (Pinus contorta var. contorta)





Pacific Madrone (Arbutus menziesii)





PACIFIC MADRONE Arbutus menziesii

(to ~100+ feet)





Oregon White Oak (Quercus garryana)





Sitka Spruce (Picea sitchensis)





SITKA SPRUCE Picea sitchensis (to ~230 feet)



Douglas Fir (Psuedotsuga menziesii)





Western Red Cedar (Thuja plicata)



Scoulers + Hookers Willow



(Salix hookeriana / scouleriana)



S. lucida - to 60+ ft. tall; Salix hookeriana, S. schouleriana, S. sitchensis, (typ. under ~35 ft)



Snowberry (Symphoricarpos albus)

SNOWBERRY

Symphoricarpos albus (to ~5+ feet)











Nootka & Baldhip Roses

(Rosa nutkana) (Rosa gymnocarpa)







Images at right: B. Legler, Bottom left : B. Erhardt, Latah SWCD





Pacific Wax Myrtle (Morella (Myrica) californica)



Oceanspray (Holodiscus discolor)





OCEANSPRAY Holodiscus discolor

(to ~15 feet)



Vine Maple (Acer circinatum)



Red-Flowering Currant (Ribes sanguineum)

RED-FLOWERING CURRANT

Ribes sanguineum (to ~10 feet) (Critical for migrating hummingbirds)













Earth Sanctuary - Whidbey Island Nature Reserve (photographer unknown)

Evergreen Huckleberry (Vaccinium ovatum)


Tall Oregon Grape (Mahonia aquifolium)



TALL OREGON GRAPE Mahonia (Berberis) aquifolium (to ~10 feet)



www.masoncd.org

Low Oregon Grape (Mahonia nervosa)



DULL (LOW) OREGON GRAPE







Hairy Manzanita (Arctostaphylos columbiana)





HAIRY MANZANITA Arctostaphylos columbiana

(to ~10 feet / sunny, dry sites)



Sandy Beaches, Spits, Backshore



Pickleweed (Salicornia virginica)



IMAGE: K. STRELIOF



PICKLEWEED | AMERICAN GLASSWORT Salicornia virginica (S. pacifica) (coastal salt marshes, tideflats, beaches)



AAGE:

K. STREUOFF

Dune Grass (Leymus (Elymus) mollis)





DUNEGRASS (DUNE WILDRYE) Leymus mollis (Elymus mollis)



Seaside saltgrass (Distichlis spicata)





SEASIDE SALTGRASS Distichlis spicata





Lyngby's Sedge

(Carex lyngbyei)



LYNGBY'S SEDGE Carex lyngbyei sandy/gravelly beaches,salt marshes



Silver Burweed

(Ambrosia chamissonis)

5



(coastal dunes, sandy/gravelly beaches)

Coastal Gumweed

(Grindelia integrifolia)



COASTAL (ENTIRE-LEAVED) GUMWEED Grindelia integrifolia (saltwater shorelines, marshes, sun)





AASON CONSERVATION DISTRICT

Douglas Aster

(Aster suspicatus (douglasii)



Yarrow (Achillea millefolium)



Coastal Strawberry

(Fragaria chiloensis)



II. Site Preparation



Timing = typically summer or late fall

Tasks:

- Choose an achievable project size to start
- Remove invasive weeds or lawn
- Purchase and place compost or soil if appropriate
- Install erosion control fabric or mulch to protect bare/disturbed ground if needed
- Locate and order plants for fall/winter delivery and planting

Invasive plants to avoid (& remove)

Readily available and easy to establish, these plants are monsters

- Take over your landscape
- Hide problems with slope stability or erosion
- Destroy native habitat, creating a "diversity desert".
- Many have berries that are easily distributed by wildlife.
- Cost a lot to remove if it's possible



Invasive Plants Found in the Puget Sound Region

Seattle Urban Nature (SUN) is a non-profit organization dedicated to creating tools to empower stewards for healthy urban ecosystems. SUN assists community groups, government, non-profit organizations, and private citizens in their efforts to survey, map estore, and maintain urban forests in the Puget Sound region To support SUN or for more information, please visit www.seattleurbannature.org

English ivv (Hedera helix) is one of the most well-known invasive plants in our urban forests. This vine can suffocate trees by climbing into the canopy. It also forms a dense ground cover which impedes all other plants from growing creating an "ivy desert." English ivy is the second most invasive plant affecting attle's public land



Wild clematis (Clematis vitalba) is a

climbing vine which can grow into the canopy of trees forming a dense mat. Its

it can root from stem nodes to produce

new plants. It is among the top five most

eds are spread by wind and water, and

aroundcover which arows in low-light conditions in our urban forests A relatively new threat, this plant can form extensive colonies which exclude al other plants



Hedge false bindweed

Knotweed (Polygonum spp.) Several species of knotweeds (Japanese Bohemian, Himalayan) are posing a serious threat to wetland and riparia areas in King County This escaped ornamental plant spreads by rhizomes and seeds. Knotweed forms thickets along stream banks that clog waterways and displace native plants. It is one of the top ten invasive plants affecting Seattle's narks and open snaces





Guidance: Invasive Plants

Seattle Urban Nature / King County DNR / WA Invasive Species Council

Yellow archangel (Lamium Hedge false bindweed (Calvstegi sepiumi and Shortstalk false bindwe galeobdolon) is a popular horticultura (C. silvatica) are climbing vines which form a thick ground cover and climb into the canopy of woody plants. These plants spread by rhizomes and car sprout from fragments left in the soil



Bittersweet nightshade (Solanum dulcamara) is a poisonous vine which grows in wet areas in our urban forests It is commonly grown as an ornamental plant in gardens. Much like English ivy, this vine can form dense mats on the ground, excluding other native plants and reducing the quality of wildlife habitat for native animals and birds





*This fact sheet was made possible with contributions from people like you!

Provided by Elliott Menashe, Greenbelt Consulting (www.greenbeltconsulting.com) for the Coastal Training Program Class "Shoreline Management and Stabilization Using Vegetation", 2004







English Ivy (Hedera helix)





warrenphotographic.

St. John's Wort

(Hypericum sp.)



English Holly

(Ilex aquifolium)



Japanese Knotweed (Fallopia japonica)





Bay/English Laurel

(Prunus laurocerasus)



Bamboo sp.

Heavenly Bamboo (Nandina domestica)

(Phyllostachys sp.)





Left -Right: Guzhengman, Source: Flikr



III. Planting

Tasks:

- Purchase plants
- Stage plants where you want them (potted plants only)
- Plant using appropriate
 strategy for the plant



Buying Plants

1. Plant name Common / Scientific (Genus species)

2. Quantity / spacing Trees 8-20' "on center" Shrubs 2 - 4' OC Groundcovers 1-2' Live Stakes 1-3' OC

3. Size (container or material type)Sound Native Plants plant quantity "calculator"



Types of native plant stock

CONTAINER STOCK (POTTED PLANTS)

- Easy to transplant (but heavy)
- Can leave in the pot (needs watering)
- Available all year
- Best time to plant: Fall
- Higher cost per plant
- Lower mortality
- Most species available
- Medium mortality
- Medium aftercare
- Larger root systems
 - = big holes



BARE ROOT PLANTS

- Inexpensive
- Easy to handle
- Light weight
- Smaller root systems
- Dormant(~February)
- Need to plant quickly
- Store in cool, moist site or heeled in
- Roots <u>must</u> stay moist







BARE ROOT PLANTING TIPS:

• Soak plants in water overnight



- Dig hole deeper than root length
- Mound soil in bottom of hole



- Spread roots over mound
- Backfill with original soil



- Water well
- Mulch with woodchips or bark

PLUGS

- Easy to handle
- Tiny!!!
- Low cost per plant
- Low handling cost
- Lower mortality
- Limited species
- Medium planting skill
- Low Medium mortality
- Less readily available





Image: BLM Idaho, Creative Commons liceense



Pinus contorta v. contorta (Shore Pine) plugs are offered in two sizes: plug-15 (left) and plug-6 (right)

PLUGS - Dune grass planting







CUTTINGS:

piece of stem, branch, or root, separated a host plant and used to create a new plant.

WILLOW STAKES RED OSIER DOGWOOD SNOWBERRY



LIVE STAKES

- Inexpensive
- Easy to handle
- Lightweight
- Easy to install
- Pointed end "in"
- Successful near seeps/moist slopes
- Low maintenance
- Limited availability ~Oct-Dec
- "clones" limited genetic diversity
- High mortality

SIZES

Live stakes: .5 - 1.5'' dia 2-4 ft long

Whips: soil bioengineering: fascines, brush mats, etc. .25-1.5" dia. 4- 6ft long

Poles: 1.5 – 3" dia 4 - 8ft long



Live Stakes and Fascines





III. Planting - Timing

(Oct - Dec) Late fall planting = potted plants, live stakes, plugs

> (Feb - March) Winter planting = bare root, potted

(Mar-April) Spring planting = potted, plugs

Expect to water

Plant Protectors / Deer Fence



Mulch (avoid slope edges/faces)




Water

- Watering will be critical for the first
 2-3 summers
- Spot water individual plants
- Permanent sprinklers and soaker hoses are not recommended on bluffs



Image Source: hawkmountain.org

Iv. Adaptive Management



Planting, 1st year The first year they SLEEP The second year they CREEP The third year they LEAP

Tasks:

- Weeding
- Watering
- Replacing plants as needed
- Adjusting as desired
- Working with an arborist



Planting at ~ 2 years





First Year – Dune grass

Second Year

FREE Online Guidance, Resources

Living on the waterfront offers many benefits - and some challenges as well.

The mambe showline is a naturally dynamic place where change is to be expected. Understanding typical coastal processes is an important part of being a waterfract property owner. Knowling what to aperty will help your to addres is uses that might metrifurther investigation or action. This guide offers an overview of shorteline processes and lays for regular monitoring that will help you to andres you to promately our property with conditione.

BECOME FAMILIAR WITH YOUR WATERFRONT AND NATURAL COASTAL PROCESSES

Taking time to make regular shoreline observations is the easiest way to become familiar with your stretch of the waterfront. This can be as simple as taking photos from the same spot throughout the year, and possibly over many years. It is a simple way to identify and track changes through time. Not only will this carly what to expect, but you may notice situations that influence changes in how you manage your waterfond.

For example, erosion is a common concern for many waterfront homeowners. Erosion is a typical shoreline process, both at the toe of the slope and higher on a bluff. Erosion may be caused by single or recurring storm events with large waves, or by smaller, more frequent agents of weathering like rainfall impacts and surface run-off. Walk your waterfront several times a year, in different seasons and weather conditions if possible, to observe the different processes and rates of change. You may observe seasonal vegetation or beach surface changes, and occasional landslides that deposit sediment, trees or other vegetation on the beach. These natural processes provide the material that builds and maintains beaches around Puget Sound. Unless a home is at risk or there is a sudden change to the shoreline with rapid, severe erosion or serious drainage problems, these gradual changes are typical and should not be cause for worry.

Give yourself the tools to best manage your marine waterfront property for the long term. The next pages include tips to guide you as you observe and manage your property to manage your shoreline through time.

ulkhead at the toe (bottom) of a bluff won't sto erosion caused by conditions above.

Trees provide many benefits to us, to our neighbors, and to our communities both human and otherwise. Learn how to care for trees and enhance your views. limiting the need and cost for tree removal.

HEALTHY, MATURE TREES PROVIDE MANY HIDDEN SERVICES FOR YOUR PROPERTY:

- · enhance the look of a landscape, adding to overall property value.
- · help to conserve energy, sequester carbon, and improve air quality.
- manage stormwater by intercepting rain and slowing it down, thus reducing soil erosion
- capture water on leaf surfaces, allowing water to evaporate or drip slowly to the ground.
 support conditions where water soaks slowly into the soil, recharging groundwater and our drinking water aquifers.

GOOD TREE MANAGEMENT INCLUDES:

Proper Pruning Techniques- This guide offers basic advise on tree care and on when and how to prune to best protect your existing trees. While some pruning is straight forward, hiring a certified arborist is a great way to get excellent tree care.

Mulching-Place wood chips, bark chips or tree lavase about a hindra deep vore the root zone to provide mulch for existing trees. Mulch educes evaporation from the soil surface, beling to maintain a soil moisture during the dry season. It limits soil compaction, protecting there roots and promoting growth and water infiltration. Mulch contributes nutrients to the soil as organic matter is broken down. Leave a few incluse directly around the tree trunk clear of mulch.

Root Zone Protection - Protecting the root zone of trees from compaction by cars and heavy equipment is important for long term tree health. Tree roots often extend beyond the tree canopy. Avoid driving and parking under

TREES AND SHRUBS PLAY AN IMPORTANT

ROLE IN STORMWATER MANAGEMENT

The Washington State Growth Management Act, Chapter 36 70,8 RCW, requires the protection of the 60lowing areas: wetlands, areas; with a critical recharging effect on aquillers for potable wates, aquatic and wildlife habitat concervation areas, frequently flooded areas; and geologically hazardowi areas. Vagetation removal on steep alopas is also prohibited. Consult the Mason County Resource Ordinance for county-specific guidance. Remember that here are penalles for formaring vegetation within critical areas. See www.counts.m.w.as

LOW-IMPACT LIVING ON COASTAL BLUFFS

Understanding how to steward your property on a marine bluff can make the difference between increasing bluff instability and maintaining a stable slope.

Marine bilitfs are dynamic landforms that are a critical part of the Puget Sound ecosystem. They may appear to be unchanging and stable, but in fact many bluffs naturally ende over time. Iosing sediment and vegetation while feeding the beaches and marine environment below. If you are a homeowner who lives near a manne bluff, it is critical to understand the processes at work and to become awell-informed teward of your land so you reduce the risk of causing landslides on your property.

Living on the waterfront involves amazing views and great responsibility. The following guidance offers a starting point for a better understanding of marine shoreline stewardship.

WHAT YOU NEED TO KNOW TO PROTECT YOUR SHORELINE PROPERTY

Most marine shorelines experience the ongoing natural process of cosion. A certain amount of coastal change over time should be anticipated and expected. You may observe seasonal beach unified or vegetation changes, and occasional landslides that deposit adment, trees or other plants downdope. There natural processes provide the sediment that builds our beautiful beaches along the Puget Sound.

Unless a home is at risk or a sudden change occurs involving rapid, severe erosion or new drainage problems, these gradual changes are typical and should not be cause for alarm. The best way to live with a dynamic shoreline is always to site all structures well away from the water's edge so there is room for change. Another important concept for shoreline living is to respect the relationship between water, vegetation, and geology. Costail landforms often include layers of different self-internation and gravel located above impermissible layers drains through the permeable layers until it his clay or an impervious hardpain layer and is forced to travel out towards the face of the bluff. This veskers the selfment above and can accelerate erosion or contribute to inadislices trees and shrubs pay a critical role by helping to intercept water and to stabilize slopes with their roots.

Waterfront property management activities related to water and vegetation are directly connected to slope stability. They should be a priority soy oud ont mistaken/y contribute to shoreline instability. Start by learning about the geology and history of your property. Has there been a history of sildes? This often indicates a higher risk of future sildes. The Washington State Department of Ecology has an excellent website about Puget Sound costal biolifs. With their website to learn more at hittp://www.ecy. wat.gov/econtemates/annlifeter-aboutAbout.

Shore Friendly Mason www.masoncd.org

SHORE FRIENDLY MASON: A PROGRAM FOR MARINE WATERFRONT HOMEOWNERS

CALENDAR

HOME

Our **Shore Friendly Mason Program** connects Mason County waterfront residents with the technical support and resources to make informed, cost-effective and environmentally-friendly decisions about shoreline management. We offer free, non-regulatory site visits and erosion assessments to help you identify problems or opportunities specific to your stretch of the shoreline. Our goal is to help you manage your land with confidence, so that the generations to come will enjoy it as much as you do.

SHORE FRIENDLY MASON

RESOURCES

<u>www.masoncd.org</u> Mason Conservation District

AS A WATERFRONT HOMEOWNER, YOU ARE DEEPLY CONNECTED TO THE PUGET SOUND . . .

QUESTIONS?

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THANK YOU!