Designing
Distinctively Regional and Ecologically Sound Shorelines

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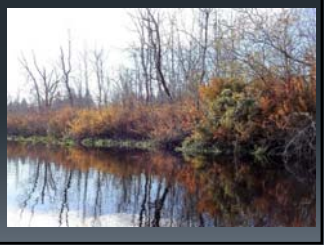
MASON CONSERVATION DISTRICT

My perspective:
Landscape & Restoration Design | Conservation District Framework

- Conservation Districts – What are they? Why should you care?
- Shore Friendly Mason (EPA/WDFW grant-funds)



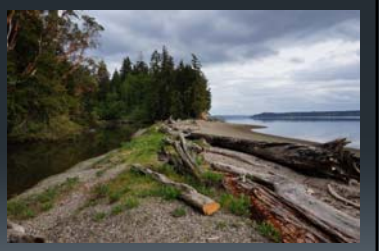
The Clients: WATERFRONT PROPERTY OWNERS

- ✓ Growing interest in stewardship projects
- ✓ Growing demand for assistance:
- ✓ . . . contractors, designers, landscapers, arborists, drainage specialists – professionals with the knowledge and skill to implement projects "the right way" in complex marine shoreline/ streamside / steep slope environments.

. . . Your participation today addresses this growing need

The Other Clients: OUR PUGET SOUND ECOSYSTEM

- ✓ Wildlife - aquatic + terrestrial – and their habitats
- ✓ Native plants of our region – and their habitats
- ✓ Puget sound processes –
  - ✓ natural bluff erosion
  - ✓ sediment movement along shorelines
  - ✓ natural hydrologic processes



Marine Shorelines

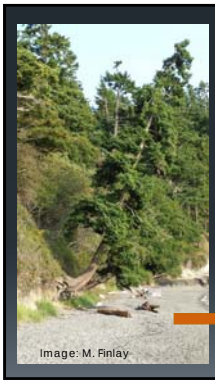
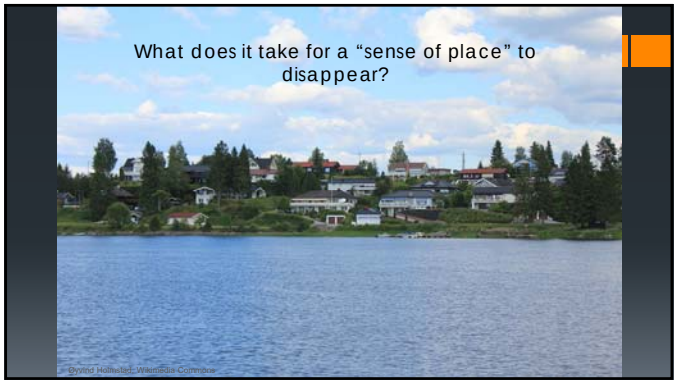


Image: M. Finlay


Image: H. Shipman


Freshwater Shorelines


"Distinctively Regional" Design?


What does it take for a "sense of place" to disappear?

Our challenge:

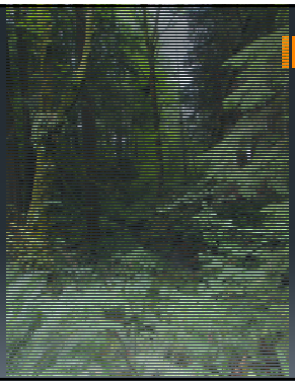
Finding "the right way" to design:

Ecologically Functional Landscapes

Regionally Distinctive Landscapes

And doing so - in complex, vulnerable environments

- Marine Bluffs
- Steep Slopes
- Freshwater Shorelines
- Drainage Ravines



DESIGN FRAMEWORK

1. Understand that landscape is infrastructure, 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* watershed health

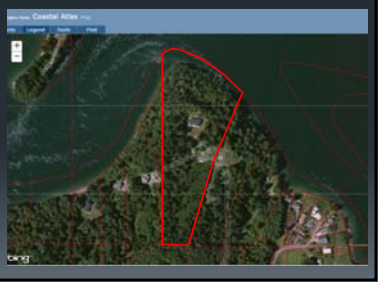
Site Assessment reveals how landscape is critical infrastructure.

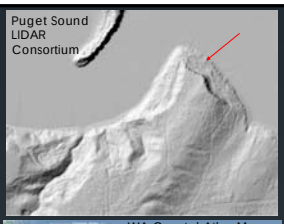
Land Form
- Topography, exposure, geology

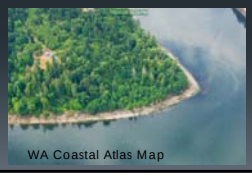
Processes
- Water movement?
- Erosion? (water – geology – land use)

Relationships
- built – natural
- topography – vegetation - stability

Function
- Sediment supply
- Plant / animal / human habitat







Establish an understanding of landscape: form, processes, and function – before design begins

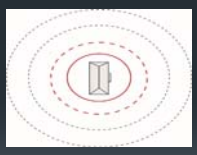
- Elements are interconnected and interdependent

  [Vegetation impacts drainage which impacts slope stability]

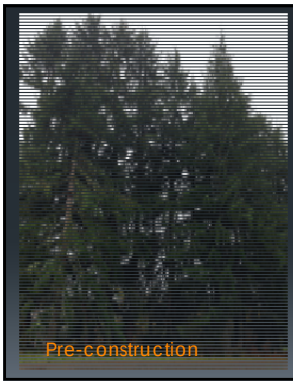
- Bottom line for all sites – but ESPECIALLY the sites we are looking at in this workshop: When you impact one element through poor design, you impact the function of the site as a whole.

HOW DOES THIS ALL PLAY OUT ON THE GROUND?

1. In highly complex and vulnerable sites, design to limit your impact



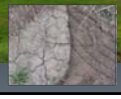
Scale of disturbance?



Pre-construction

Construction

The extent of site disturbance is proportional to future dysfunction



Post-construction

Landscaping?

2. Reconsider lawn.

How much does your client love to mow? [scale]

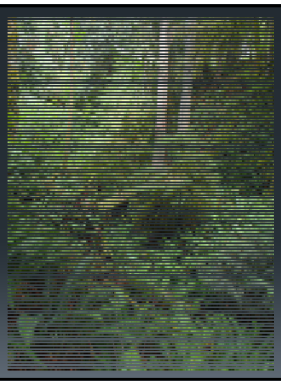
How will they regain the stormwater management, site stability, and habitat services that were lost?

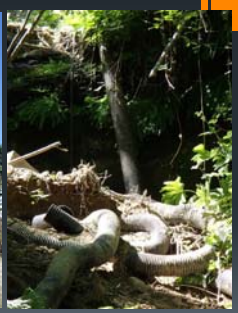
3. Preserve (or add) as much native vegetation as possible

Roots are infrastructure; they contribute to stability
Trees/shrubs are infrastructure: they uptake, intercept, evapo-transpire water

Priority vegetation retention areas:
All shorelines, ravines, above bluffs, on slopes

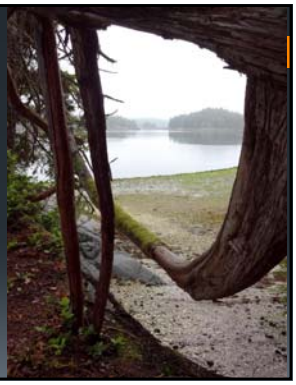
Your clients may not care about the regulations. They will care about the cost of addressing serious erosion, slope failure, + drainage problems.





4. Trees and views are compatible.

- Work with skilled climbing arborists
- Remind clients that the cost of maintenance pruning = infrastructure maintenance



"Frame" key views with strategic pruning and planting. Design views from the inside out.

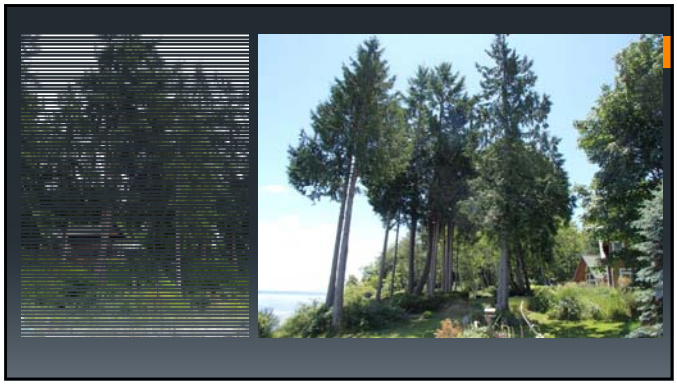



Image: Washington State Coastal Atlas Map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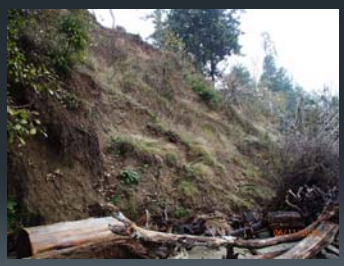
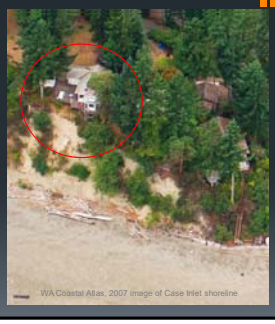
5. Setbacks. ALWAYS exceed required setbacks.



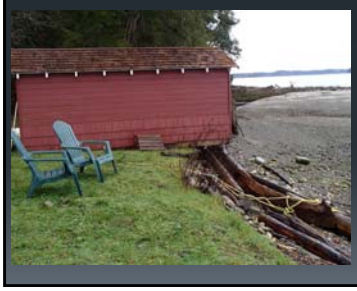
Things change.

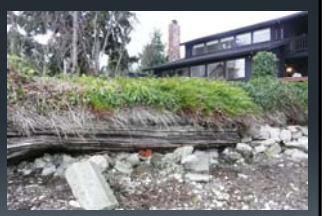


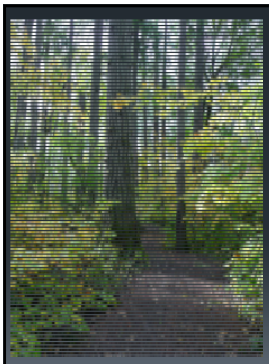
WA Coastal Atlas. 2007 image of Case Inlet shoreline

Slopes, bluffs, + shorelines are transitional sites. Set built elements back far enough to tolerate change.

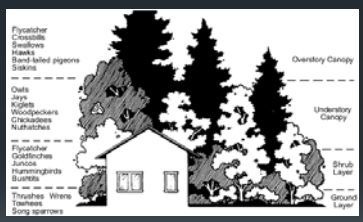
Recognize these edges as the dynamic settings they are. Don't create an opportunity for shoreline modification







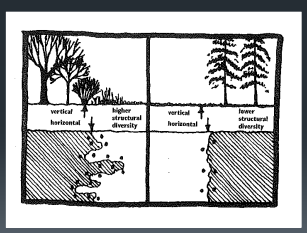
6. Design for functional habitat: preserve | enhance



Emphasize Layered Vegetation.

(http://wdfw.wa.gov/wlm/backyard/landscape-design_landscape.htm)
Landscaping for Wildlife by Russel Link

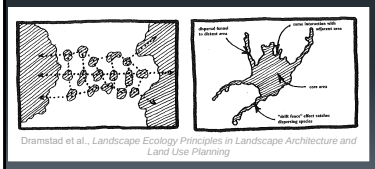
Prioritize Native Plants.
Use multiple species.
Design for vertical + horizontal diversity



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

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

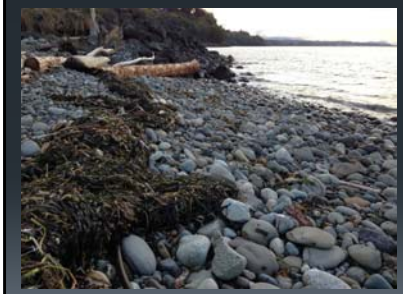


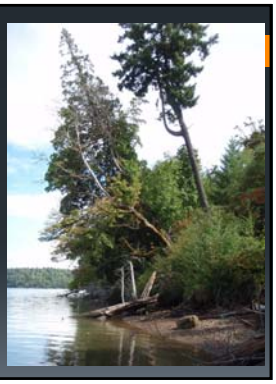
Dramstad et al., *Landscape Ecology Principles in Landscape Architecture and Land Use Planning*

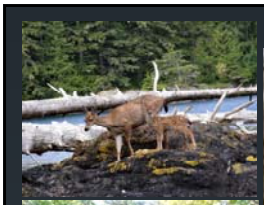
Habitat value increases

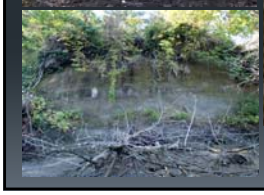
Unnecessary interruptions to natural processes and habitat can be removed – or avoided in the first place

MESSY = COMPLEXITY = LIFE










Earth Sanctuary - Whidbey Island Nature Reserve
(photographer unknown)

7. Design is a tool for education and advocacy.

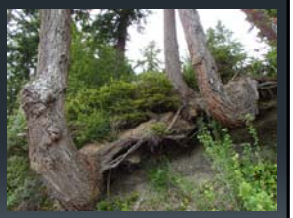
What would make homeowners more likely to prune or limb trees or shrubs near the shoreline - instead of removing them?

Top motivators:

- knowing plants improve slope stability
- "enjoying the natural look of it"
- (34%) said that providing healthy habitat for fish and wildlife is a motivating factor.
- getting a tax break for it (or financial incentive)
- Avoid expensive armor?

The top barrier was not knowing enough about it.

(A 2014 survey of 1,164 Puget Sound waterfront residents)



Shoreline Parcel Report available at:
http://wdfw.wa.gov/grants/ps_marine_nearshore/results_products.html

8. Recap: Landscape is an afterthought

When our fundamental concept is ignored, we see compromised processes/ degraded ecology

- Vegetative cover disappears
- Stormwater interception decreases
- Surface water runoff increases
- Soil compaction increases
- Invasive weeds thrive
- Biodiversity decreases
- Shoreline erosion accelerates
- Water quality? Shellfish production?

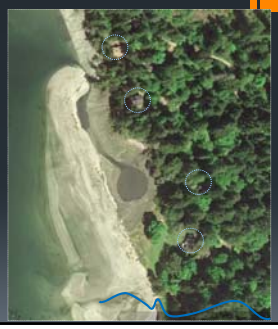
- Call for help – problems with erosion, stunted plants, stormwater

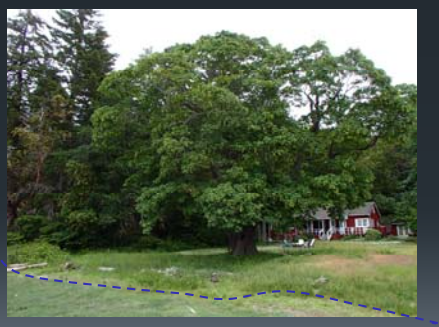
9. Landscape is infrastructure

Functional ecology / processes

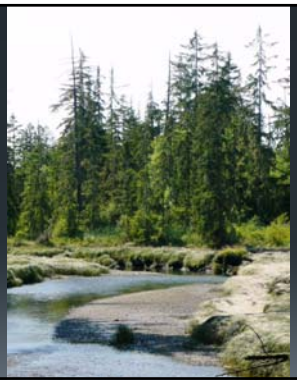
- Vegetative cover - rich, layered
- Stormwater intercepted
- Surface water runoff - minimal
- Biodiversity supported
- Shoreline - natural erosion rates,
- Sediment accretes and moves on
- Water quality protected

Call for help –
how can we enhance habitat?

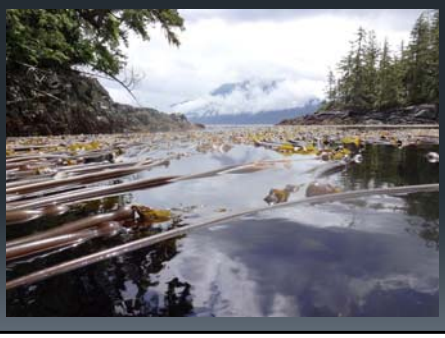




10. Celebrate, honor, and respect our region



Remarkable landscapes in an exceptional part of the world.



QUESTIONS?

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THANK YOU

Puget Sound Marine & Nearshore Grant Program

US EPA | WDFW