LANDSCAPES ON THE EDGE ARE DIFFERENT

INTRODUCTION TO LANDSCAPES ON THE EDGE

Landscaping on the Edge Needs to be Different

there are 4 major factors which make living & landscaping on the edge different

1. Influences of shoreline & riparian processes, geology, soils, hydrology & erosion.
2. Results & impacts of past property development, current management & landscaping practices.
3. Conditions within the watershed.
4. Regulatory & permit considerations.

Greenbank, Whidbey Island
where land & water meet – the land changes

EROSION & LANDSLIDES ARE A FACT OF LIFE throughout the Puget Sound region

shorelines are temporary places

before European settlement --- Puget Sound looked something like this
many layers created a redundant "FAIL-SAFE" system which reduced the creation of stormwater

Forest floor duff

forest soils & fungi

broad-leaved trees

conifers

lichen

snags

understory plants

shrubs & groundcovers

mosses

nurse logs

TONGASS NATIONAL FOREST

FUNDAMENTALLY, FORESTS PROTECT LAND FROM EROSION & LANDSLIDES IN TWO BASIC WAYS

DISCOVERY BAY, JEFFERSON CO

SKAGIT COUNTY
tree roots holding a large soil particle

GLACIAL ERRATIC, SKAGIT COUNTY LOWLAND FOREST

VEGETATION ON SHORELINES IS IMPORTANT

soil & vegetation filter pollutants & protect marine waters

JOHNSTONE STRAIT, BC

Greenbank, Whidbey Island

vegetation reduces erosion

JOHNSTONE STRAIT, BC

VEGETATION ON SHORELINES IS IMPORTANT

vegetation reduces erosion

JOHNSON STRAIT, BC

Greenbank, Whidbey Island

CONVENTIONAL SITE DEVELOPMENT IMPAIRS THE "FAIL‐SAFE" SYSTEM

forest vegetation & organic soils are cleared & graded

forest canopy interception is lost

evapotranspiration & hydraulic redistribution is reduced

lisp soils are removed

structural reinforcement from roots is lost

sub‐soils are compacted

COUPEVILLE, WHIDBEY ISLAND
GOOD SOIL IS LIKE A SPONGE

- Impairs drainage & infiltration
- Reduces plant vigor & increases stress
- Impedes root penetration

Landscapers often inherit sites with poor soil conditions.

Lawns are installed over graded & compacted soils.

LAWNS OVER COMPACTED SOILS

- Less rainfall interception & evapo-transpiration by plants
- More water + less water storage = increased stormwater
- Less infiltration capability & water-holding capacity of soil

Possession Point Estates, Clinton, Whidbey Island
creation of stormwater results in large volumes of surface water runoff

which causes or contributes to surface erosion

soil saturation
landslides

and property loss

and can leave landscapers with some challenging situations
Urban Creeks & Ravines

STEVE RINGMAN, SEATTLE TIMES
LONGFELLOW CREEK, WEST SEATTLE

SIMPLIFIED STREAM-FLOW GRAPH

TIME AFTER RAINSTORM

DISCHARGE VOLUME

higher peak flow after development
results in increased stormwater before development

upland stormwater runoff

results in increased flooding of urban ravines & creeks
CONFUSES SPAWNING SALMON

Harley Soltes/Seattle Times

CHUM SALMON, SKOKOMISH RIVER, MASON CO

contributes to ravine erosion & property damage

URBAN RAVINE, NW SEATTLE Photo: USGS LANDSLIDE HAZARDS PROGRAM

and discharge of polluted runoff into Puget Sound
clearing the uplands & slopes for the perfect home site, lawn & view.....

may not be the best plan

HODD CANAL, JEFFERSON COUNTY HUGH SHIPMAN PHOTO

The less we alter watershed hydrology during development

Forest & = less than 1% surface water runoff is generated 1%

Cleared - 20-30% runoff

The less we need to spend for stormwater & erosion control, mitigation & slope stabilization

20-30% = 20-30 TIMES MORE RUNOFF

20-30 times more runoff from rainfall can have significant cumulative effects

saturated soils, bluff seepage & surface run-off increase landslides & slope failures

COLUMBIA BEACH, CULTON, WA
NASA Landsat Imagery of Puget Sound

21 SEPARATE WATERSHED SUB-BASINS

(according to the Encyclopedia of Puget Sound)

we all live in a watershed

https://www.eopugetsound.org/

SUBURBAN DEVELOPMENT

30% cumulative impacts?

we can no longer afford traditional landscaping

COUGAR MOUNTAIN, EAST KING COUNTY
WE NEED TO DEVELOP A WATERSHED PERSPECTIVE
to reduce erosion & protect Puget Sound

Hydrologic Cycle

It is important to realize that what happens here

Development, management & landscape practices need to be viewed within a watershed context

can impact shoreline properties

there is more at stake when you live on the edge
.....or near it

Hood Canal, Kitsap County
National Marine Fisheries Service, Seattle
and a lot to lose if the health of Puget Sound declines

SO WHAT CAN WE DO NOW?

we can’t bring back the old-growth forests

but we CAN replace some lost functions through improved management practices
you can work with your clients to improve landscape practices

help them develop a more informed aesthetic

GIG HARBOR, KITSAP COUNTY

evaluate the property

know your site

NORMANDY PARK, KING COUNTY

Source: WA. STATE DOE COASTAL ATLAS

Map The Property & Landscape Characteristics

Existing woods

RESIDENCE

Flat Open Area

Entry

STORAGE
IDENTIFY, ASSES & MITIGATE PROBLEMS

Upland - Slope - Shore
Poor Stormwater System
Uncontrolled Stormwater Run-off

suit landscape design & plantings to fit existing conditions

don’t fight the site!

TO PROTECT SHORELINES FROM SURFACE WATER RUNOFF, EROSION & LANDSLIDES - LANDSCAPING SHOULD PROVIDE

Hydrologic Benefits
REDUCING STORMWATER RUN-OFF, SURFACE EROSION, SILTATION, SEDIMENTATION & SOIL SATURATION.

Mechanical Soil Reinforcement
SHRUB & TREE ROOTS HOLD SOIL, RESIST SOIL EROSION & MINIMIZE SHALLOW LANDSLIDES
The cumulative benefits will help protect THE PROPERTY & PUGET SOUND.

CONTROL INVASIVE PLANTS

Scot's Broom
Himalayan Blackberry
Thistle
Butterfly Bush
English Ivy

PLANT FOR MULTIPLE LAYERS

GOOD FOR SLOPE STABILITY (and your clients)

GOOD FOR WILDLIFE

GOOD FOR WATER QUALITY

SHRINK THE LAWN
reduce areas of bare soil
control invasive plants

REPLACE THE FUNCTIONS & VALUES OF NATIVE FORESTS LOST DURING DEVELOPMENT

PLANT BUFFERS
RESTORE SLOPE VEGETATION & IMPROVE VIEW MANAGEMENT

The cumulative benefits will help protect THE PROPERTY & PUGET SOUND.
REDUCE USE OF HERBICIDES & FERTILIZERS

a lot of it ends up in Puget Sound

encourage your clients to choose a distinctly regional landscape style

featuring native Puget Lowland species & plant communities

several hundred species of ornamental native groundcovers & shrubs in the Puget Lowlands

Pacific Ninehark
Wax Myrtle
Nootka Rose
Mock Orange
Pacific Rhododendron
Huckleberry
THERE ARE MANY RESOURCES AVAILABLE

EDUCATION, GUIDANCE & INCENTIVES PROGRAMS

things are changing on the shoreline
VISIT THE ELISABETH C. MILLER LIBRARY

They have set up a fine display

BALDHIP ROSE & SNOWBERRY, SHORELINE GARDEN

TIME FOR A BREAK

* Elliott Menashe, Greenbelt Consulting
Ellsworth Creek Preserve, Ilwaco, WA: photo: NATURE CONSERVANCY

Forested watershed sub-basin

There is often a time delay between cause & effect

This delay often prevents us from knowing how the results of our actions will affect us later.

From the forests to the Sound it was all connected.....

.....but not as well

Deep Forest, Mural, 2009, Juneau Campus, U of Ak, by Ray Troll