
PUGET SOUND
NEARSHORE
ECOSYSTEM RESTORATION PROJECT



Strategic
Protection and
Restoration of
Puget Sound
Nearshore
Ecosystems

Shoreline Planners
Briefing
January 27, 2011

Major Themes

- PSNERP is a restoration planning partnership
- PSNERP delivers a science-based approach for nearshore restoration and protection
- Change Analysis geo-data and Strategies analyses advance nearshore ecosystem planning



Puget Sound Nearshore Ecosystem Restoration Project

A State-Federal Planning Partnership

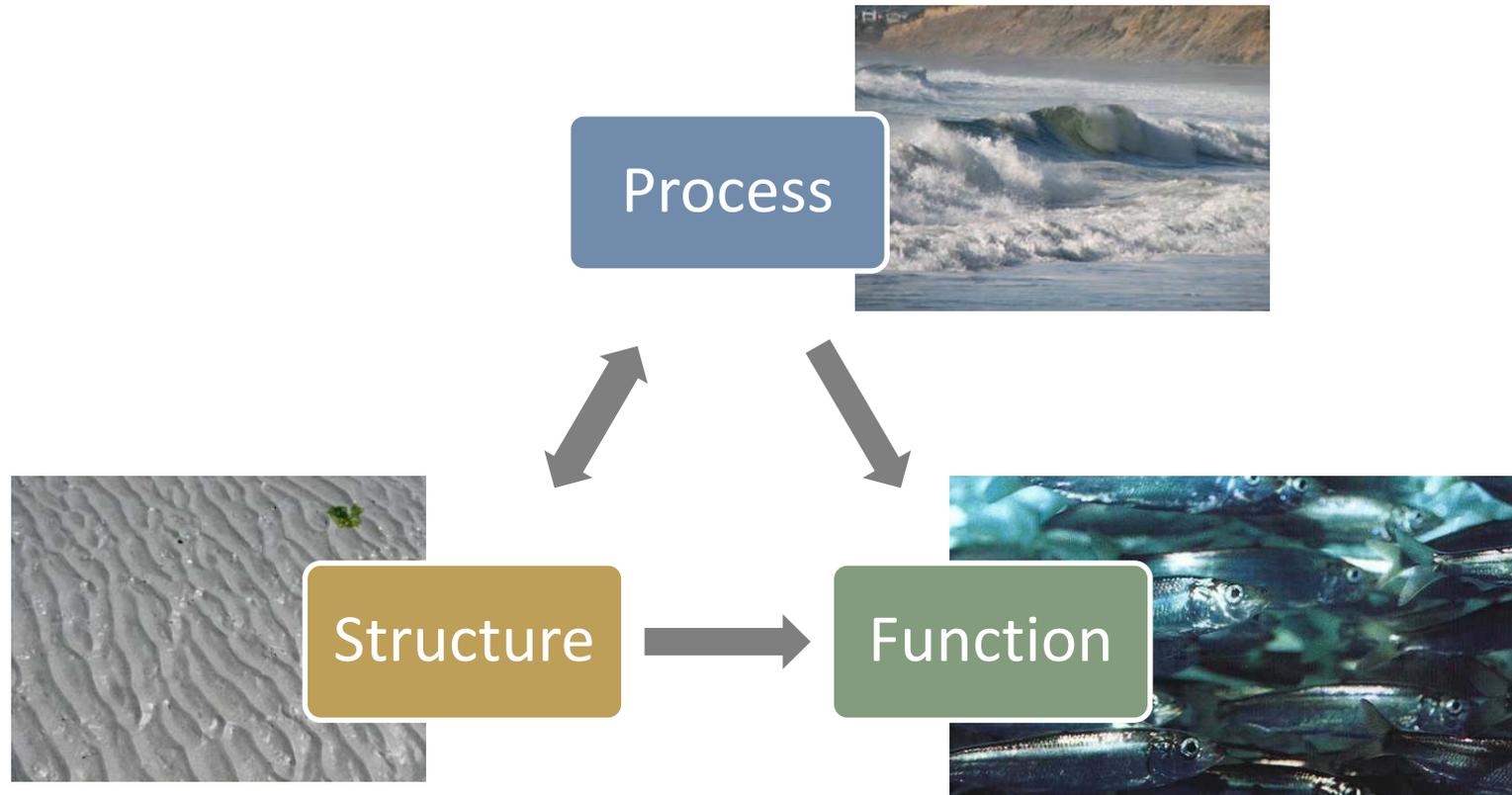
- General Investigation study, jointly sponsored by Corps and DFW
- Sound-wide initiative to protect and restore processes and functions in the nearshore
- Nearshore component of Action Agenda

→ ***Corps Construction Authority and Funding through Water Resource Development Act***



Puget Sound Nearshore Ecosystem Restoration Project

PSNERP's process-based approach to restoration:
Natural **processes** create the **structure** of habitats, which support ecological **functions** for species and people.

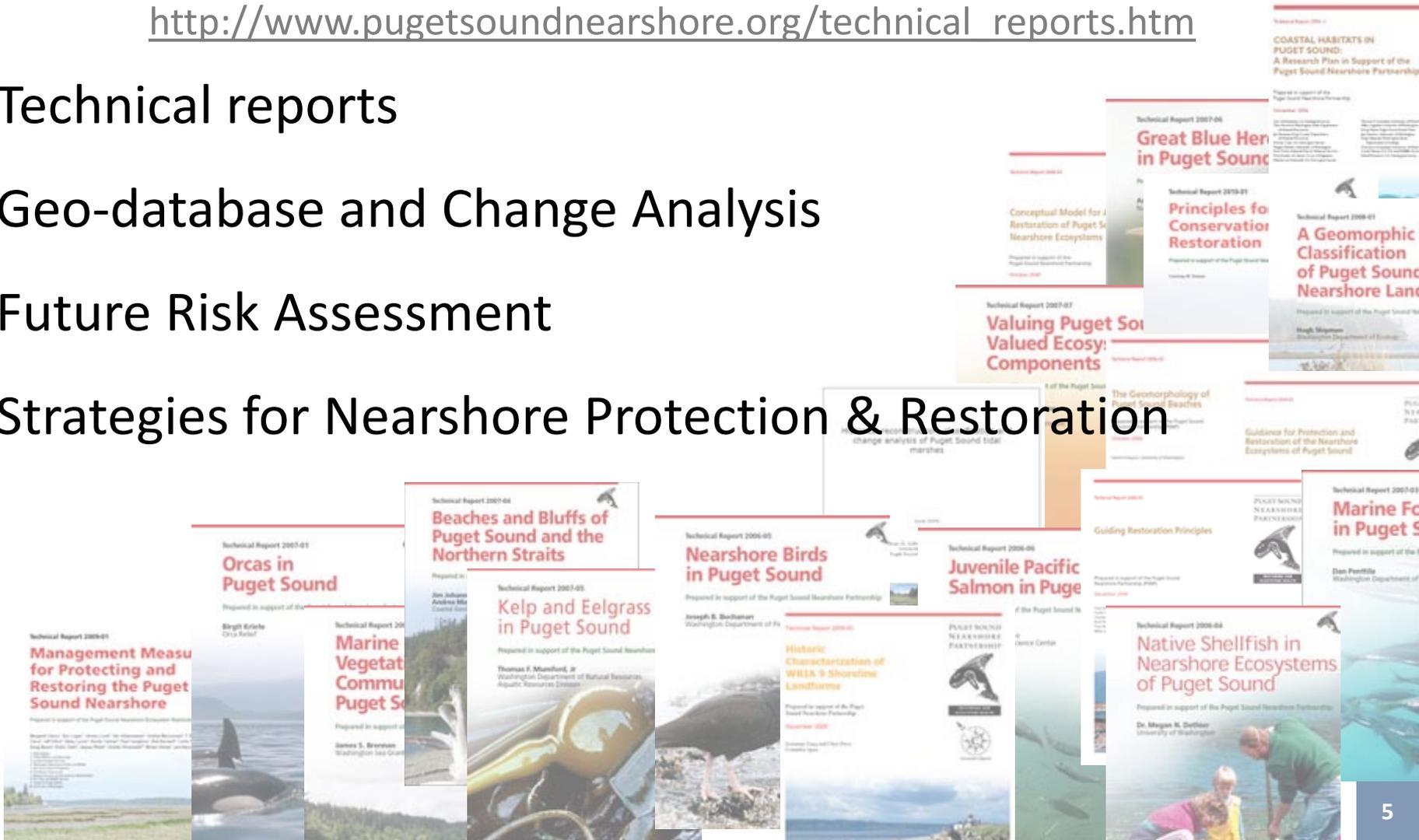


Puget Sound Nearshore Ecosystem Restoration Project

This process-based approach to restoration is based on data and peer reviewed analyses.

http://www.pugetsoundnearshore.org/technical_reports.htm

- Technical reports
- Geo-database and Change Analysis
- Future Risk Assessment
- Strategies for Nearshore Protection & Restoration



Change Analysis of nearshore conditions

- Detect and describe changes from past to present
 - In Puget Sound's deltas, embayments, and beaches
 - In human-built stressors in the nearshore
 - In adjacent upland and watershed conditions
- Informs an assessment of nearshore restoration needs in Puget Sound
- Sound-wide nearshore geo-database with summary pdf data sheets



Patterns in data define problems across Puget Sound



- Barriers in large river deltas restrict the movement of fresh water and tides.
- Small coastal inlets have been blocked off and filled in.
- Armoring along beaches and bluffs prevents sand and gravel from replenishing beaches and intertidal areas.
- Nearshore wetlands have been eliminated.
- The shoreline has become shorter, simpler, and more artificial.
- Many places are affected by multiple types of changes.

Problems are Re-framed as Objectives

- Restore
 - Large river deltas
 - Sediment processes
 - Shorelines
- Protect relatively undegraded
 - Large river deltas
 - Sources of sediment
 - Embayments
- Enhance diversity and connectivity of nearshore features
- Learn from actions to improve restoration outcomes



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Landform-Based Strategies

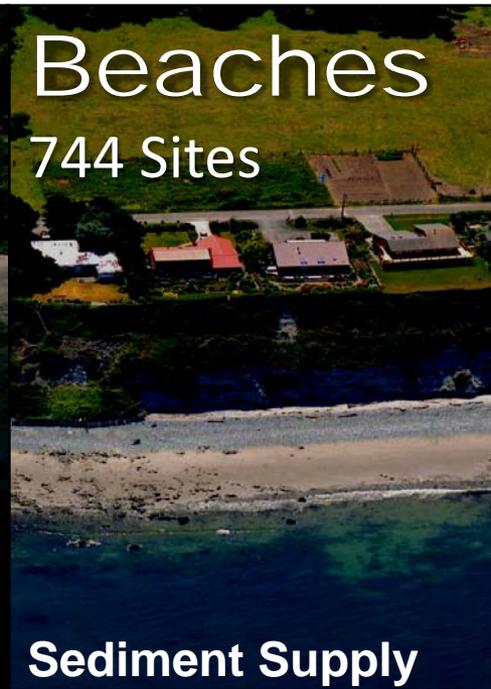
Target processes and approach specific to system

Drift cell or embayment scale (1-5km of shoreline)

Scale appropriate for “process management policy”

← Watershed Influence

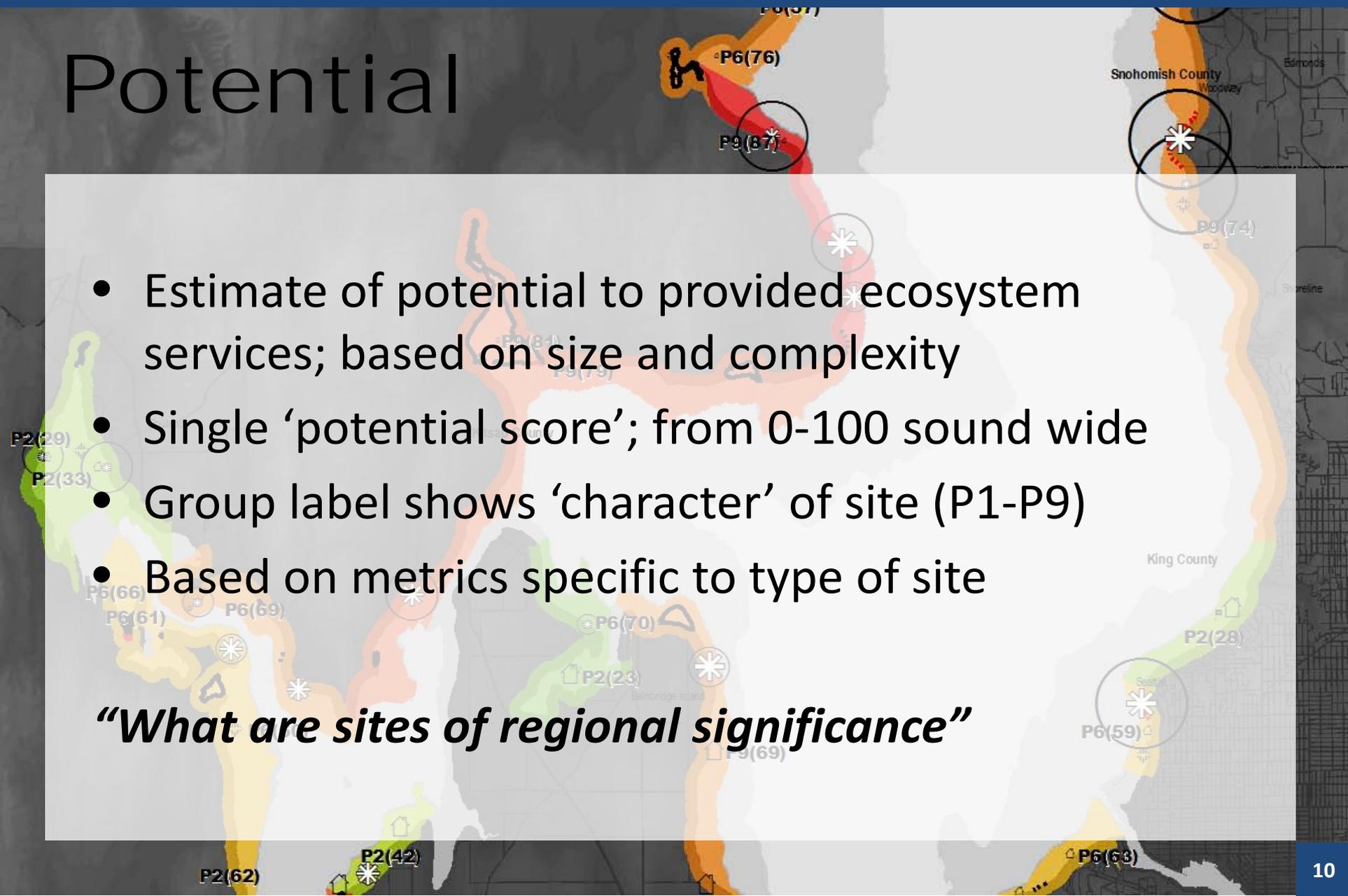
→ Drift Cell Influence



Potential

- Estimate of potential to provided ecosystem services; based on size and complexity
- Single 'potential score'; from 0-100 sound wide
- Group label shows 'character' of site (P1-P9)
- Based on metrics specific to type of site

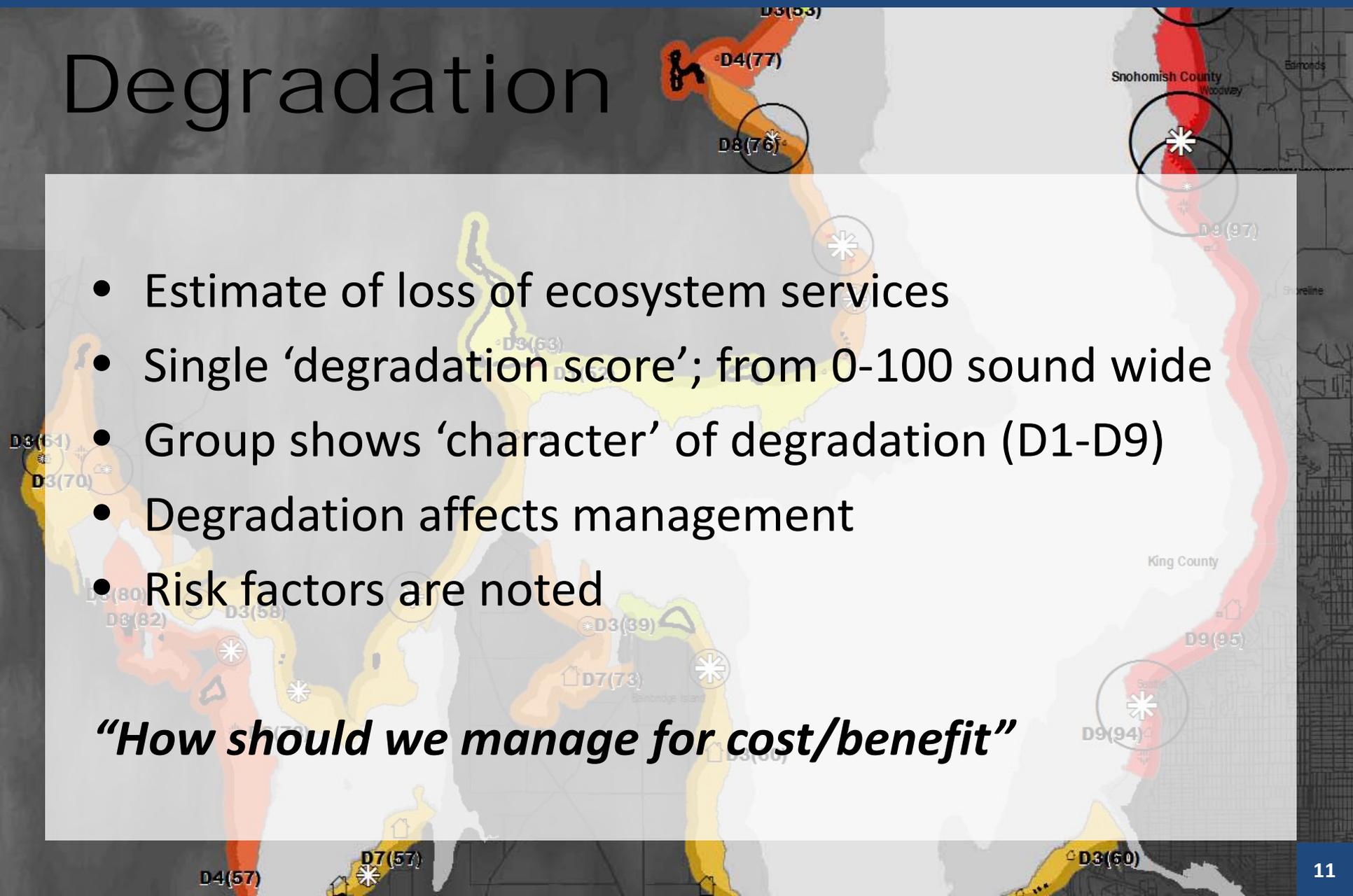
“What are sites of regional significance”



Degradation

- Estimate of loss of ecosystem services
- Single 'degradation score'; from 0-100 sound wide
- Group shows 'character' of degradation (D1-D9)
- Degradation affects management
- Risk factors are noted

“How should we manage for cost/benefit”



Recommendations

“How do we allocate effort across an ecosystem”

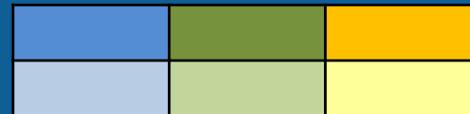
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|---------------------------|---------------------------|---------------------------|
| PROTECT HIGH POTENTIAL | RESTORE HIGH POTENTIAL | ENHANCE HIGH POTENTIAL |
| PROTECT | RESTORE | ENHANCE |

Recommendations

Multiple scales of analysis

Sub-basin Policy

Process Management Policy



**Habitat Functions
'Shorezone Scale'**

Site Prescription

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