



Washington State Department of Natural
Resources

Aquatic Resources Program Habitat Conservation Plan

Winter Shoreline Planners
Coordination Meeting

January 22, 2009

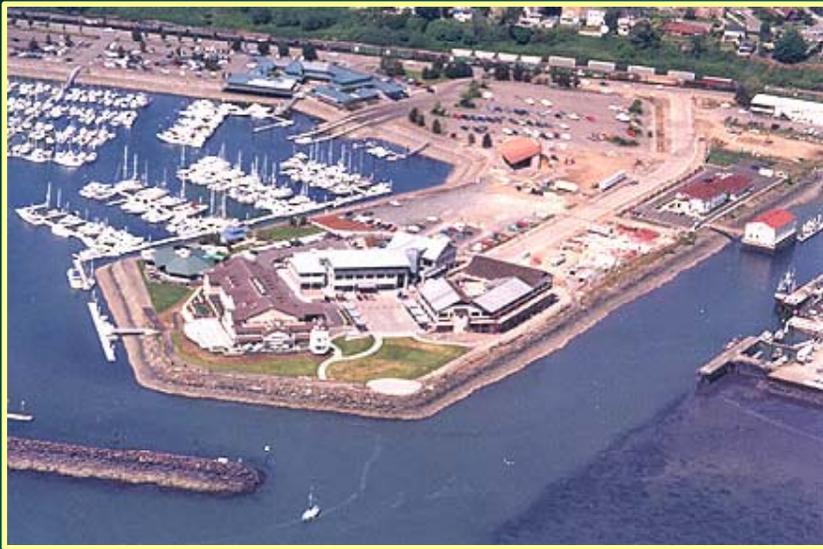
Topics

- Overview of DNR's Aquatic Lands HCP
 - Conservation measures
 - Aquatic vegetation buffers
 - Landscape prioritization
 - Overwater structures data

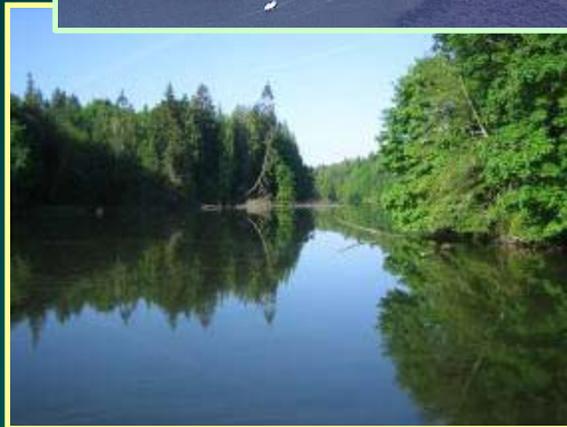


Why Are We Doing the Aquatic Lands HCP?

Develop a workable balance between species conservation and land use on Washington's aquatic lands



DNR's Habitat Conservation Plan



- ✓ Long term conservation of species
- ✓ Assurances
- ✓ Ecosystem management



Nexus with SMPs

- Protect the natural environment
- Gives preference to water-dependant uses
- Management emphasizes the interests of all people in the State



Habitat Conservation Plans

- ✓ Basis for an Incidental Take Permit
- ✓ Negotiated plan between NOAA Fisheries, US Fish and Wildlife and DNR



Habitat Conservation Plans

- ✓ Basis for an Incidental Take Permit
- ✓ Negotiated plan between NOAA Fisheries, US Fish and Wildlife and DNR
- ✓ Undertaken after DNR determined that our activities may cause incidental take of listed and sensitive species
- ✓ Describes how DNR will avoid, minimize and compensate for impacts to species and their habitats



HCP Planning Area

≈ 2.6 Million Acres

66% Puget Sound, Hood Canal & Straits



56

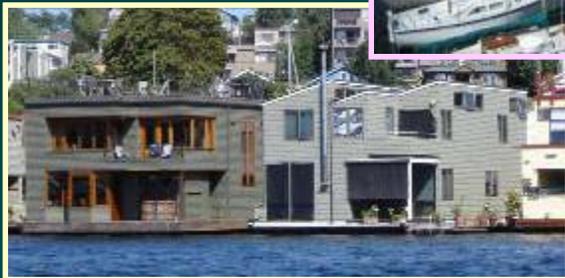
73% Puget Sound Action Area



Covered Activities

3 Groups, 11 Activities

- Shellfish aquaculture



Covered Activities

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- Shellfish aquaculture
- Log booming and storage



Covered Activities

3 Groups, 11 Activities



- Shellfish aquaculture
- Log booming and storage
- Overwater structures (docks & wharves, boat ramps/launches, floats & rafts, mooring buoys, nearshore buildings, floating homes, marinas, shipyards & terminals)



Covered Species

4 Associations, 23 Species



Herptofauna - Columbia spotted frog, Northern leopard frog, Western toad, Western pond turtle, Oregon spotted frog



Birds - Bald eagle, Black tern, California brown pelican, Common loon, Harlequin duck, Marbled murrelet, Western snowy plover



Covered Species

4 Associations, 23 Species



Fish - Bull trout/Dolly Varden, Chinook, Chum, Coastal cutthroat trout, Coho, Pink, Sockeye/Kokanee, Steelhead, Green & White sturgeon



Marine mammal - Southern resident killer whale



Operating Conservation Program



- Standards for all uses
- Programmatic strategies
- Avoidance and minimization measures



Conservation Measures



- All uses of state-owned aquatic lands, covered and non-covered activities (16)

- Overwater structures (20)
- Log booming and storage (12)
- Aquaculture (16)



Best Management Practices



- Shellfish aquaculture
- Creosote removal
- Marinas
- Shipyards and terminals



All Activities Treated Wood



All Activities Treated Wood



Terminal 91: 25,000 creosote to 5,000 concrete

Overwater Structures

Light Transmission



All Activities

Forage Fish Habitat



All Activities

Forage Fish Habitat



Log Booming and Storage Nearshore Impacts



Log Booming and Storage

Nearshore Impacts



12/17/2007

Log Booming and Storage Nearshore Impacts



Shellfish Aquaculture

Substrate Alteration and Turbidity



Shellfish Aquaculture

Longline Shading



Shellfish Aquaculture

Longline Shading



Aquatic Vegetation



Image by V. Shoemaker



Image by R. Old



Image by R. Jouan



Aquatic Vegetation

Protected Groups of Vegetation

- Freshwater plants
- Freshwater algae (stoneworts/brittleworts)
- Marine plants
- Marine algae (canopy-forming kelps)

Conservation Measures

- Decrease shading
- Decrease physical impacts
- Decrease toxins



Aquatic Vegetation Buffers – All Activities

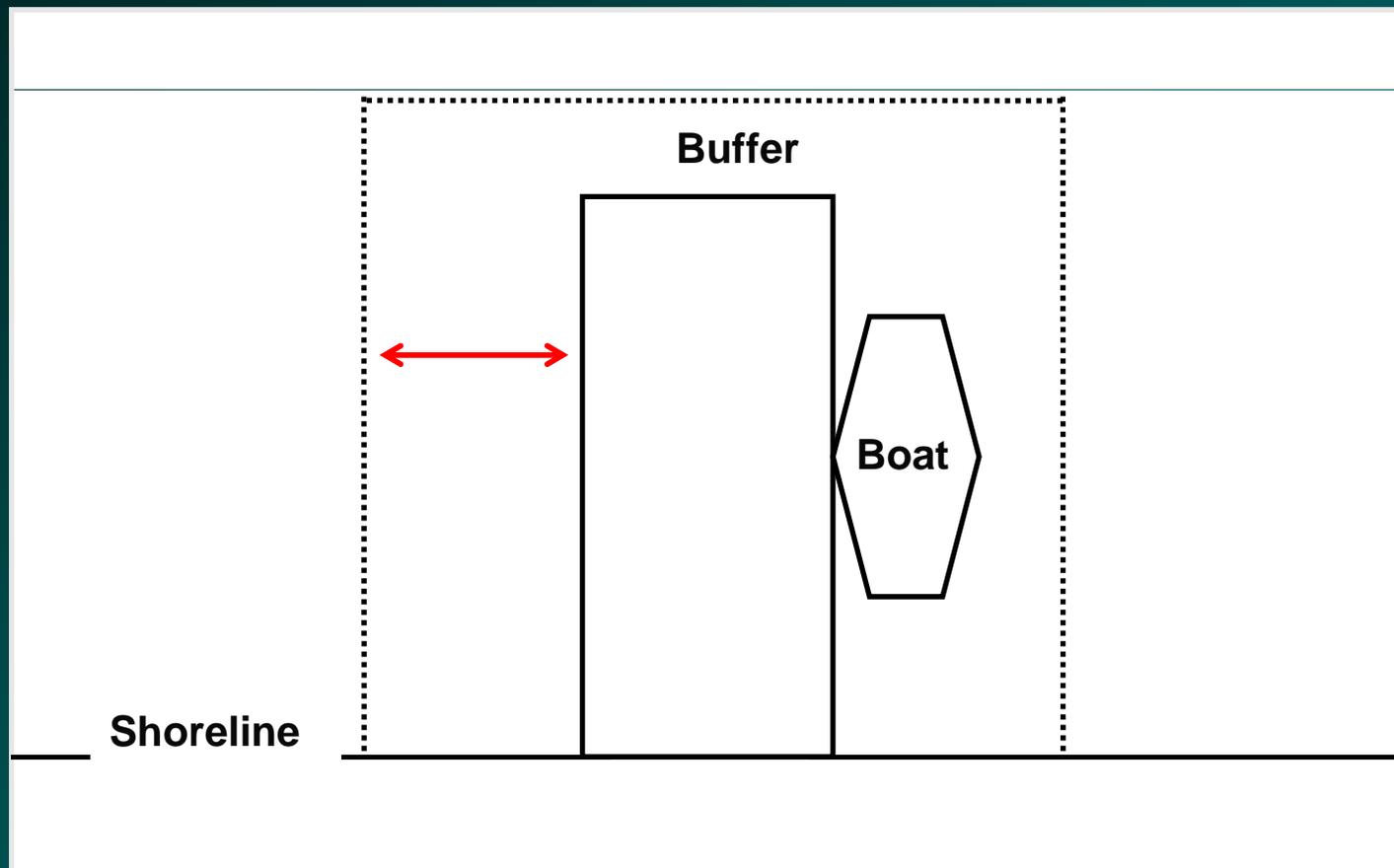
- Shellfish aquaculture = 3 meters
- Finfish aquaculture = 150 meters
- Log booming and storage = 200 meters
- Outfalls = 5 meters



Aquatic Vegetation

Buffers - Docks, Marinas, Shipyards

Area of Impact – 4 to 10 times the surface area of the dock



Aquatic Vegetation

Example – Dock on Lake Whatcom



Image Courtesy of Washington Coastal Atlas

Aquatic Vegetation

Example – Dock on Lake Whatcom

Dock

Length = 60 feet; Width = 7 feet



Aquatic Vegetation

Example – Dock on Lake Whatcom

Dock

Length = 60 feet; Width = 7 feet

Width dock + boat = 17 feet



Aquatic Vegetation

Example – Dock on Lake Whatcom

Dock

Length = 60 feet; Width = 7 feet

Width dock + boat = 17 feet

Surface area = 1,020 feet²



Aquatic Vegetation

Example – Dock on Lake Whatcom

Dock

Length = 60 feet; Width = 7 feet

Width dock + boat = 17 feet

Surface area = 1,020 feet²

Orientation = north/south



Aquatic Vegetation

Example – Dock on Lake Whatcom

Dock

Length = 60 feet; Width = 7 feet

Width dock + boat = 17 feet

Surface area = 1,020 feet²

Orientation = north/south

Buffer

Width = 22 feet

Area = 4,080 feet²



Aquatic Vegetation

Example – Elliott Bay Marina



Buffer distance for
north/south pier:
16 feet

Buffer distance for
east/west finger docks:
12 to 13 feet



Landscape Prioritization

Defined Land Base



Avoiding effects - Withdrawal;
Reserves; Prohibitions

Compensate for effects that
can't be minimized - Habitat
creation, restoration; purchase &
protection of similar habitat

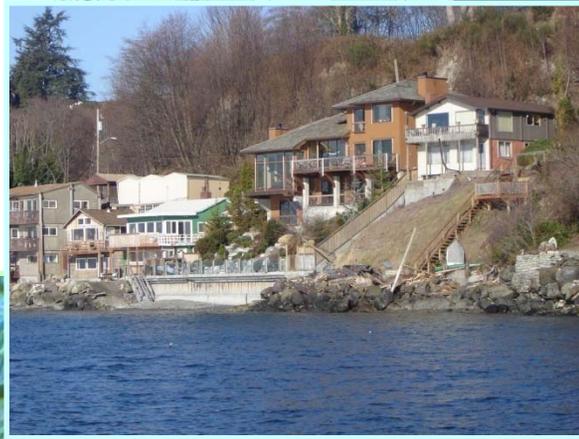


Commencement Bay, Yowkwala site

Landscape Prioritization Process



1st - Identified areas of state-owned lands important to covered species and species associations

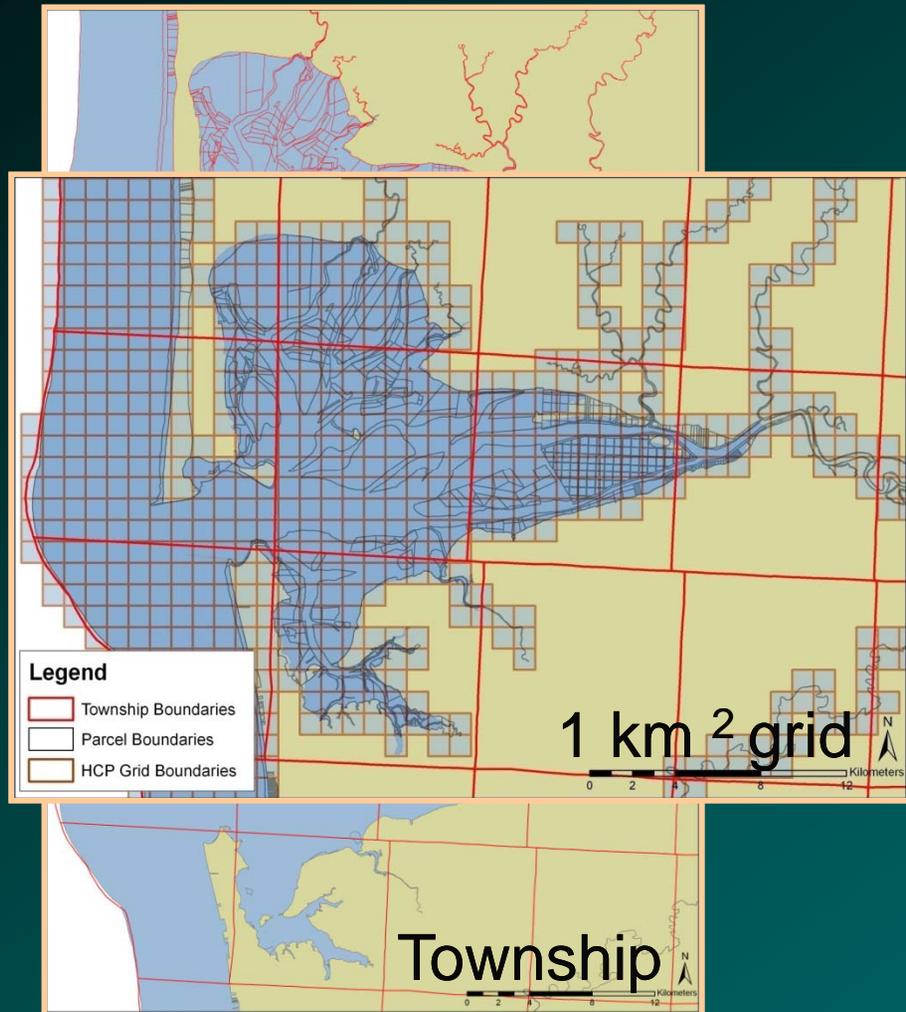


2nd – Prioritized using adjacent land use, cover, submerged aquatic vegetation



Spatial Design

Analytical Scale



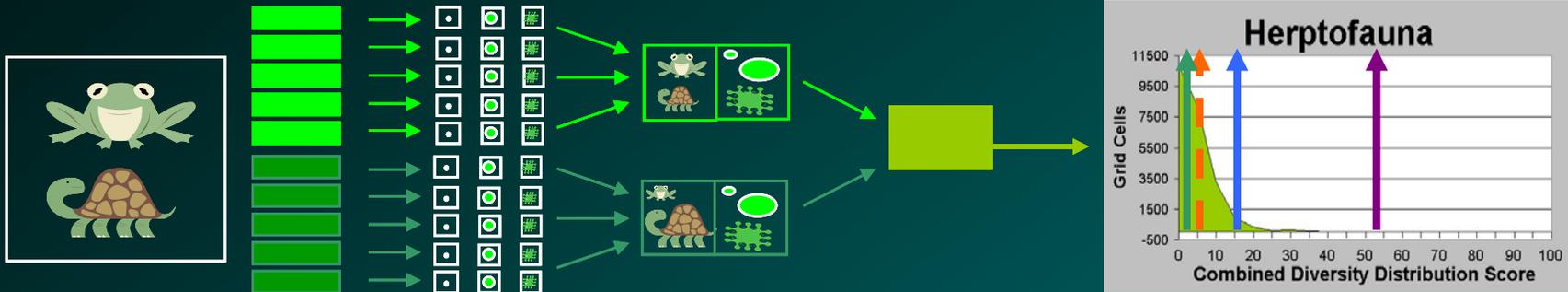
- Standardizes cell size and shape
- Independent of political, social, ecological boundaries



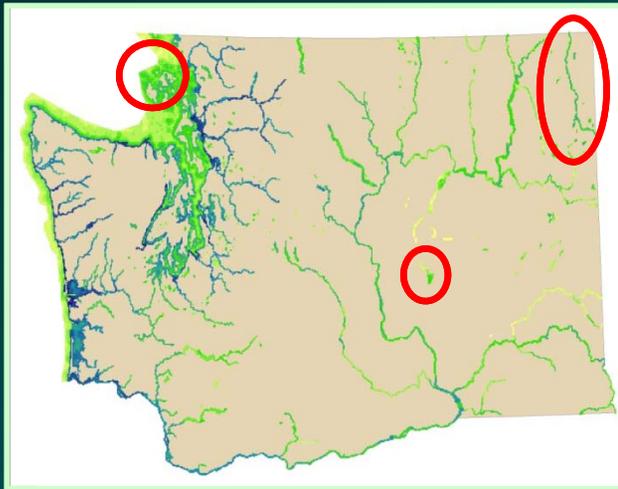
Analysis - Phase 1

Calculated Diversity / Distribution

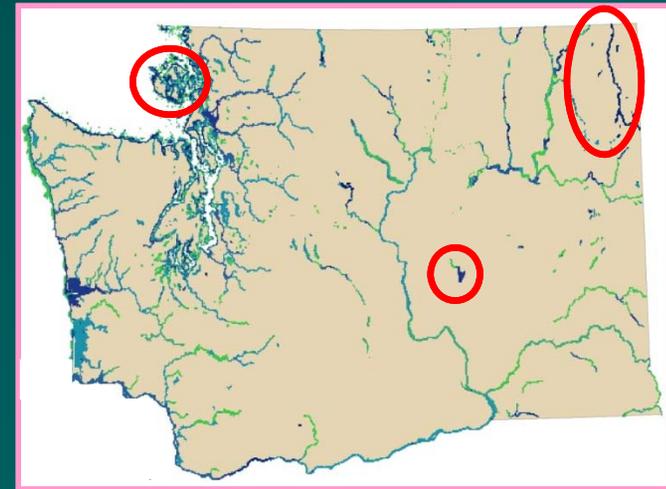
Standardized Scores



Mapped Areas of Importance



All Species



Amphibians and Reptile

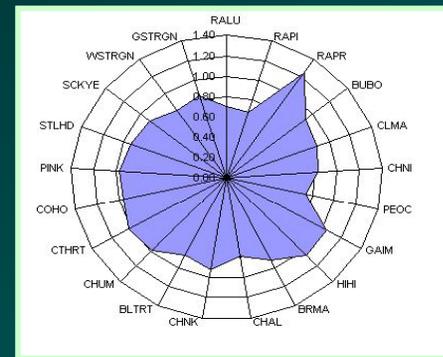
Analysis - Phase 2

Unique Species Habitat

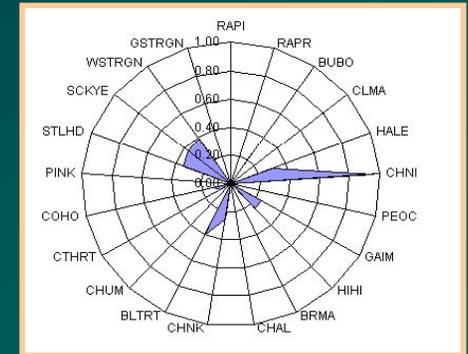
Species Present	Species Present		
	A	B	C
A		Yes	Yes
B	Yes		No
C	No	Yes	

Probability of Overlap

Bald eagle

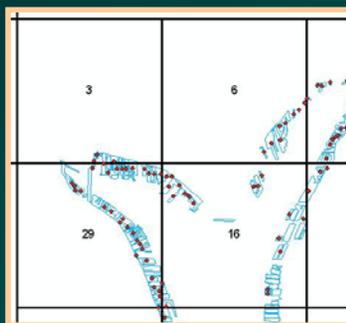


Columbia spotted frog

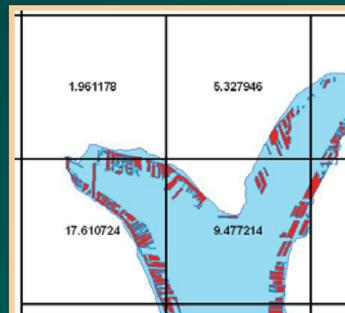


Overwater Structures

Number

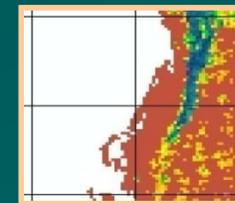


Area

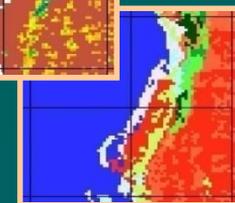


Terrestrial Development

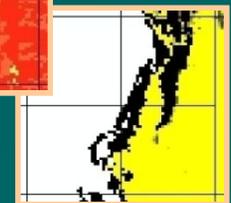
% Canopy



Land use

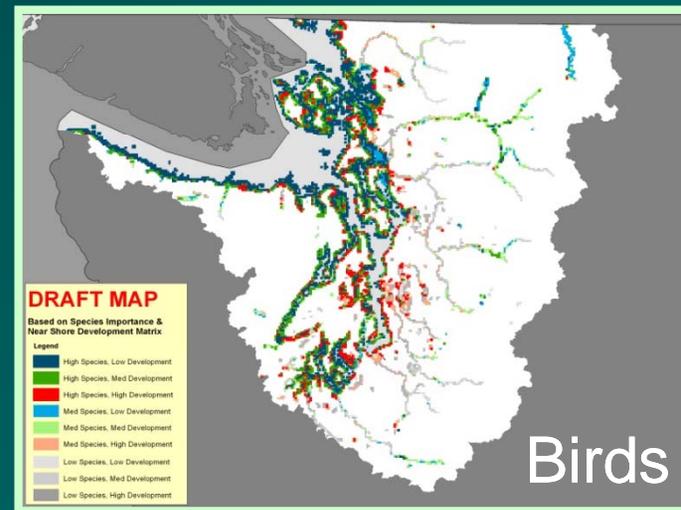
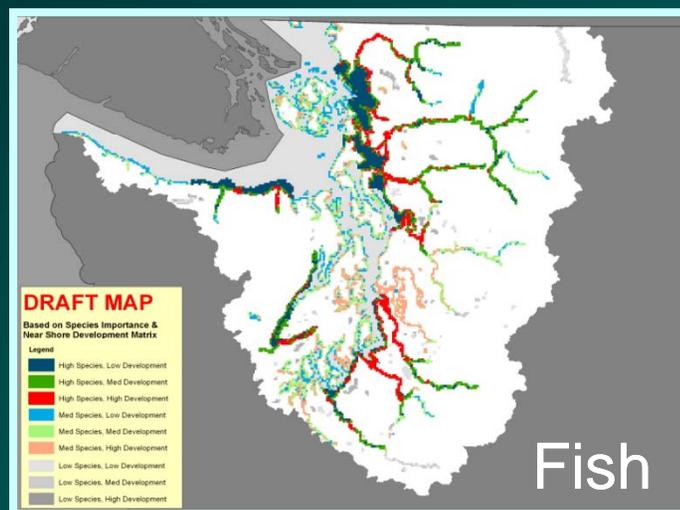
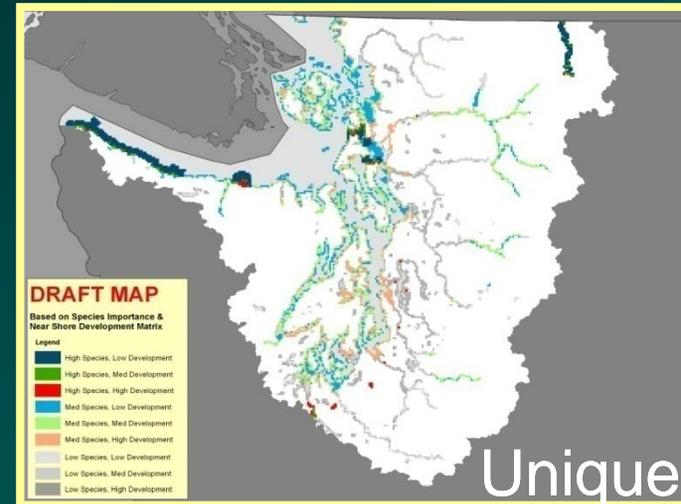
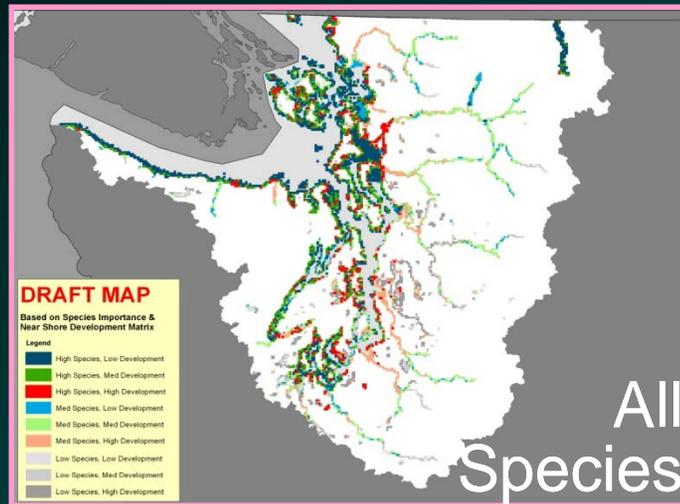


% Impervious surface



Prioritization - Phase 2

Mapped Importance



Prioritization - Phase 2

Decision Matrix

Water Body	Overwater Structures		On-Shore Development	Diversity			Unique Species Distribution
	Area	Count		Herps	Bird	Fish	
Moclips River	Low	Low	Low	Low	High	High	High
Little Pend Oreille River	Low	Low	Low	High	Low	Low	High
Wenatchee Lake	Medium	Medium	Medium	High	Medium	Medium	High
Diamond Lake	Medium	Medium	Medium	High	Medium	Low	High
Squawk Slough	High	High	High	High	High	Medium	High
Skagit River	Medium	High	High	Low	Low	High	Low

Conservation

Restoration

Habitat Creation

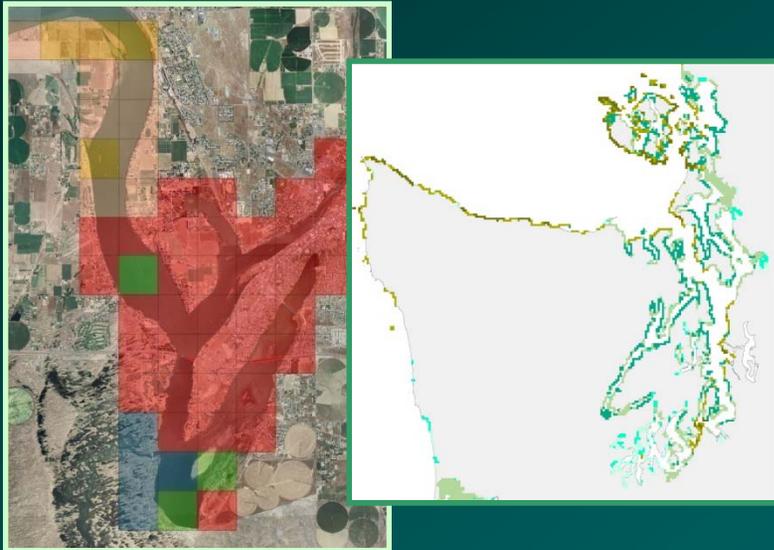


Next Steps

Prioritization and Refinement



- “Ground-truthing” – Feedback from local entities (Tribal, State, Local)
- Selection of Priority List
- Landscape planning (pre and post HCP)



Overwater Structures



Lake Chelan



Gig Harbor



Lake Washington



Overwater Structures

Map and Quantify

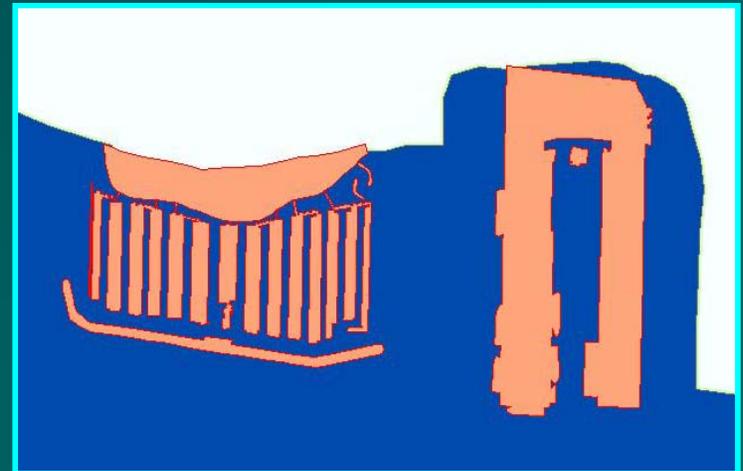


- Structures on or adjacent to state-owned aquatic lands (Docks, Bridges, Buoy/Float, Buildings, Fill)
- Amount of habitat affected by structures



Overwater Structures

Methods



Overwater Structures

Data Qualifiers

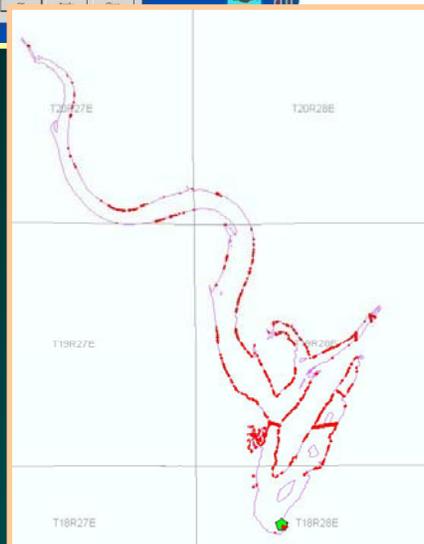
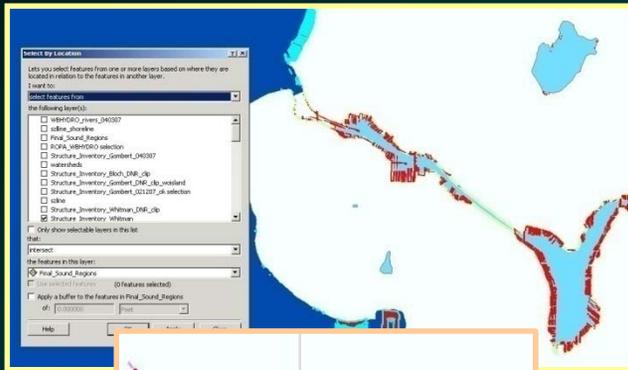


- Photo range 2001 to 2006
- Difficult to assess buoys, floats and fill
- Dock and bridge data most reliable



Overwater Structures

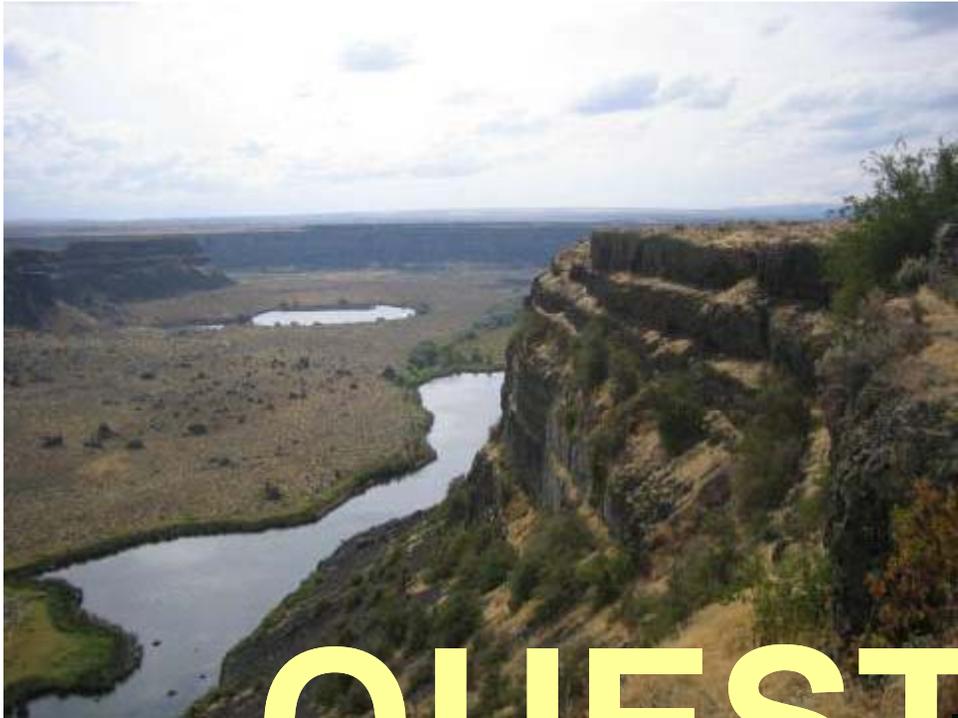
Data Queries



- Single criteria (Water body or County or Section)
- Multiple criteria (Waterbody and County and Section)
- Number and acreage

<http://fortress.wa.gov/dnr/app1/dataweb/dmmatrix.html>





QUESTIONS ?

