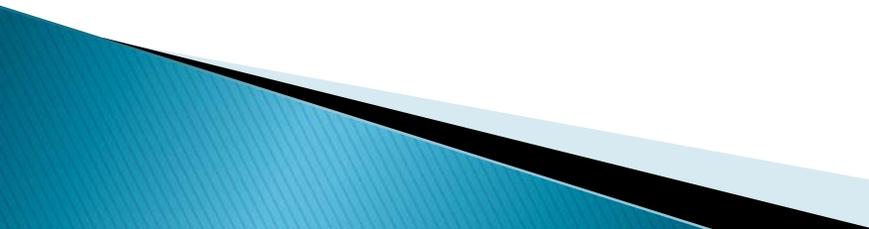


# **Puget Sound Dashboard of Ecosystem Indicators Overview**

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Water Quality Partnership Meeting  
LOTT Alliance Regional Service Center  
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# Outline

- ▶ Background
  - ▶ Framework
  - ▶ Dashboard
  - ▶ Next Steps
  - ▶ Resources
- 

# Background

- ▶ Puget Sound Partnership (Partnership) mandated to establish ecosystem indicators by 2008
  - Phase 1 process completed in December 2008
    - Over 100 indicators identified as “good” or “potential”
    - Various recommendations to move forward
- ▶ Puget Sound Science Update – “Phase 2”
  - Considered Phase 1 recommendations and other sources
  - Provides framework for ecosystem indicators selection
  - Posted October 2010
- ▶ Partnership forms team in March 2010 to select high-level ecosystem indicators (Dashboard)
- ▶ Leadership Council approves Dashboard in July 2010

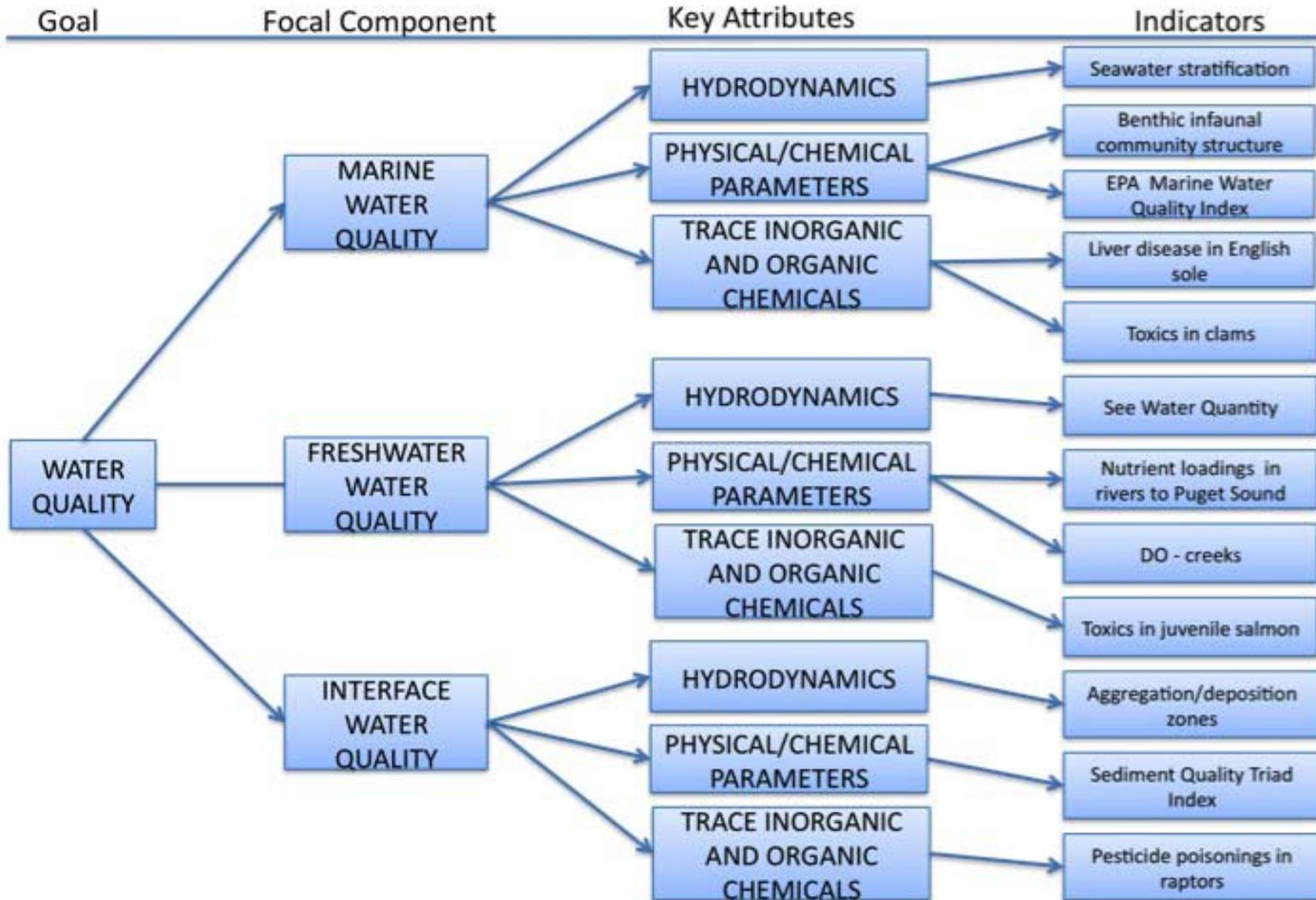
# Dashboard Selection

- ▶ Dashboard are high-level status and trends indicators
  - **NOT** the only indicators needed
  - ecologically important & socially resonant
- ▶ Integrated with Performance Measurement System
  - *Open Standards for the Practice of Conservation*
  - Results chains (a.k.a logic models)
- ▶ Used framework outlined in the Puget Sound Science Update

# Framework

- ▶ Begin with the six goals of the Partnership
  - Human health, human well-being, species and food webs, water quality, water quantity, habitat
- ▶ Decompose goals into unique ecological *Focal Components*
  - Specific habitat domains.....marine, freshwater, terrestrial, and interface
- ▶ Each focal component is then characterized by *Key Attributes*
  - Describe fundamental aspects of each focal component.
- ▶ *Indicators* are assigned to each ecosystem key attribute.

# Framework



# Puget Sound Dashboard of Ecosystem Indicators

Natural Dimension	Human Dimension	Program Dimension
Marine Water Quality Index - <b>ECY</b>	Sound Behavior Index (under constr.) - <b>PSP</b>	Funding for Action Agenda - <b>PSP</b>
Freshwater Quality Index - <b>ECY</b>	Puget Sound Quality of Life Index (under constr.) - <b>PSP</b>	Percent of Action Agenda Items Addressed - <b>PSP</b>
Stream Flows Below Critical Levels - <b>ECY</b>	Tribal/Non-Tribal Commercial Harvest - <b>NWIF</b>	
Wild Chinook Salmon - <b>RITT</b>	Swimming Beaches - <b>ECY</b>	
Orcas/ South Resident Killer Whales – <b>Center for Whale Research</b>	Recreational Fishing Permit Sales - <b>DFW</b>	
Pacific Herring - <b>DFW</b>	Shellfish Beds Restored – <b>EPA &amp; DOH</b>	
Birds - <b>DFW</b>		
Shoreline Armoring - <b>DNR</b>		
Eelgrass - <b>DNR</b>		
Toxics in Fish - <b>DFW</b>		
Toxics in Sediments - <b>ECY</b>		
Land Use/Land Cover - <b>DFW</b>		

# Results Chain (a.k.a. logic model)

## Outputs

**Implement a Strategy/Activity**  
*Action Agenda:*  
*Implement Shellfish Protection District plans*

## Immediate Outcomes

**Intermediate Result**  
*Performance Measures:*  
*Onsite septic discharges & Wastewater treatment plant discharges*

## Intermediate Outcomes

**Threat Reduction Result**  
*Performance Measures:*  
*Acres of shellfish beds re-opened*

## Ultimate Outcomes

**Improves Outcomes**  
*Dashboard/ Ecosystem Indicators:*  
*Recreational fishing permit sales*

...so that...

...so that...

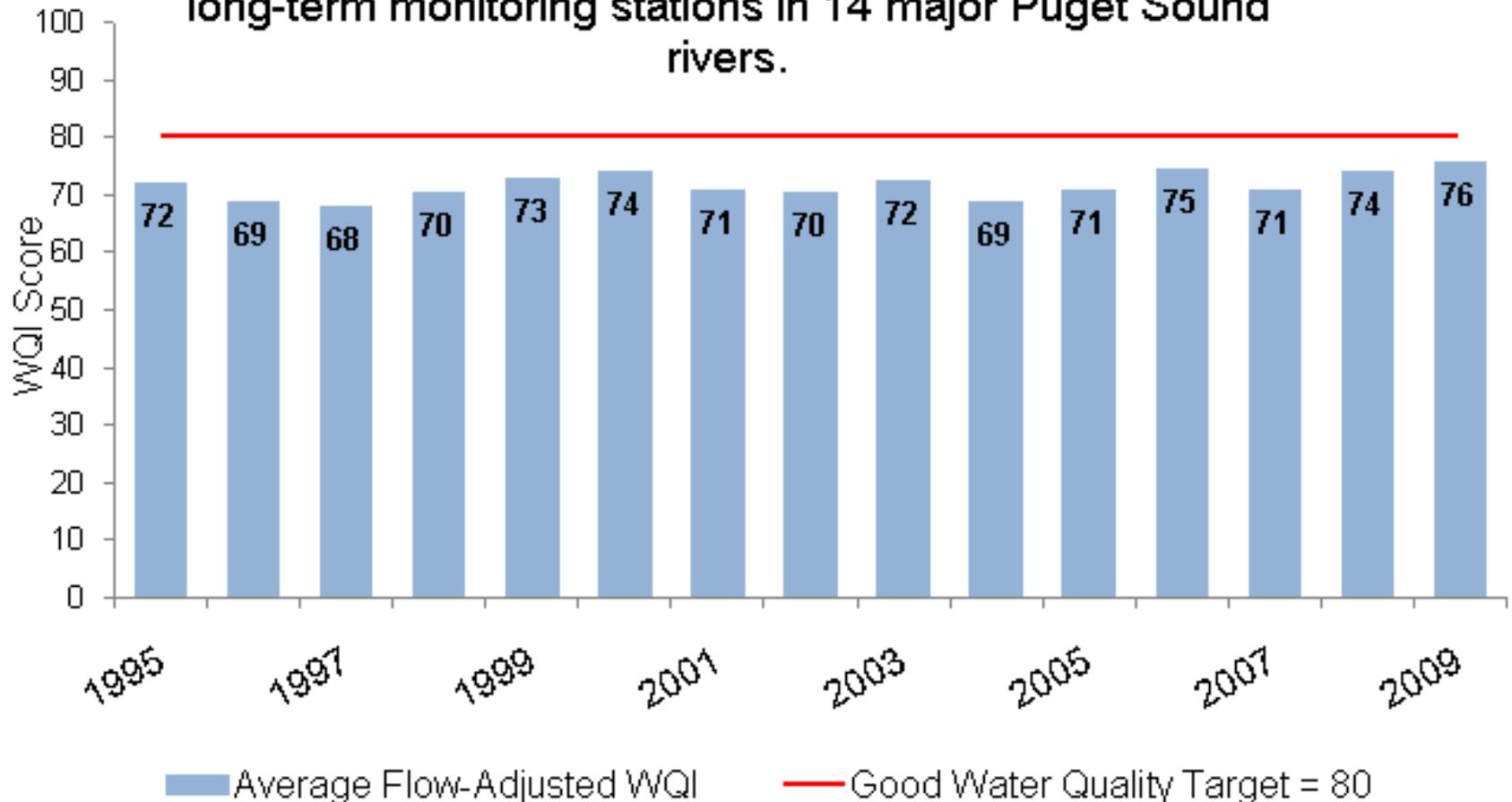
...so that...

*Ultimate Policy Intent*

*Degree of Influence/Control*

# Dashboard Example: Freshwater Quality Index

Annual average Water Quality Index (WQI) scores at long-term monitoring stations in 14 major Puget Sound rivers.



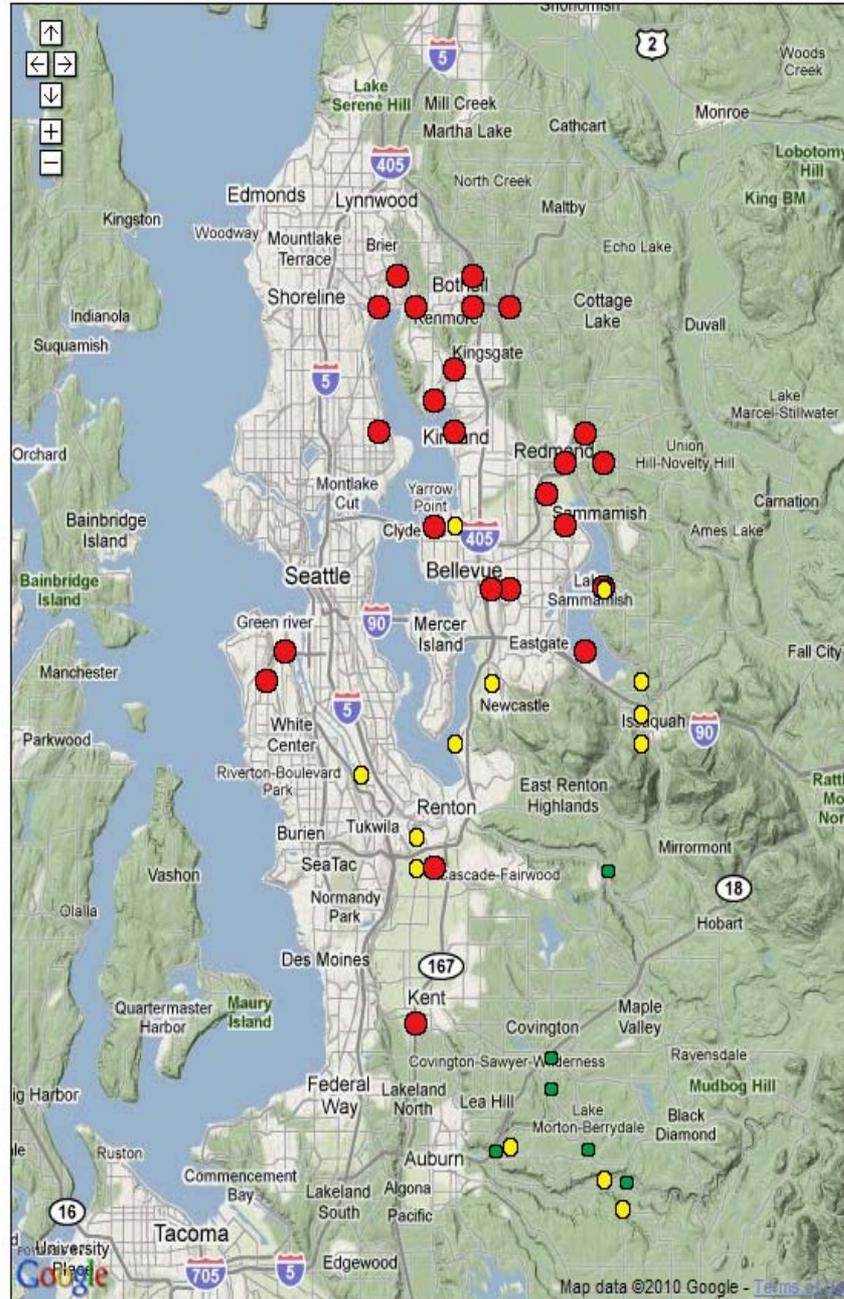
# Dashboard Example: Freshwater Quality Index

- ▶ Conventional pollutants for 14 major rivers in Puget Sound representing 70% of the drainage
  - temperature, pH, fecal coliform bacteria, dissolved oxygen, suspended sediment, turbidity, nitrogen, and phosphorus
- ▶ Toxic pollutants not included
  - More than 80% of the water bodies sampled for toxics in Puget Sound are impaired
- ▶ Urban streams subject to higher levels of pollution
  - King County found 24 of 43 sites had WQI scores below 40 (2007)
- ▶ The WQI shows that conventional water quality pollution in Puget Sound gets a “C.”

# Dashboard Example: Freshwater Quality Index

- ▶ Need to drill down
  - Spatially
    - Puget Sound is already a small grouping of 62 statewide sites
  - By parameter
  - Individual stations
- ▶ Spatial drill down – urban streams

- ▶ Freshwater Quality Index
  - King County Urban Streams



Map Legend	
<span style="color: green;">●</span>	Low concern
<span style="color: yellow;">●</span>	Moderate concern
<span style="color: red;">●</span>	High concern

# Next Steps

- ▶ Building the Dashboard
  - Identify single point of contact for each indicator (Champion)
  - Compile logistics for each indicator
    - Frequency of reporting, stability of funding, data format, data management, improvements, ect
  - Design and launch
- ▶ Target setting
  - Partnership will set 3-5 priority 2020 targets by February 2011
  - *Eelgrass, shellfish beds*, estuary restoration
- ▶ Puget Sound Coordinated Ecosystem Monitoring Program

# Resources

## Partnership Website

### ▶ Dashboard

- [http://www.psp.wa.gov/pm\\_dashboard.php](http://www.psp.wa.gov/pm_dashboard.php)

### ▶ Puget Sound Science Update

- <http://pugetsoundscienceupdate.com/pmwiki.php>

### ▶ Open Standards for the Practice of Conservation

- [www.conservationmeasures.org](http://www.conservationmeasures.org)