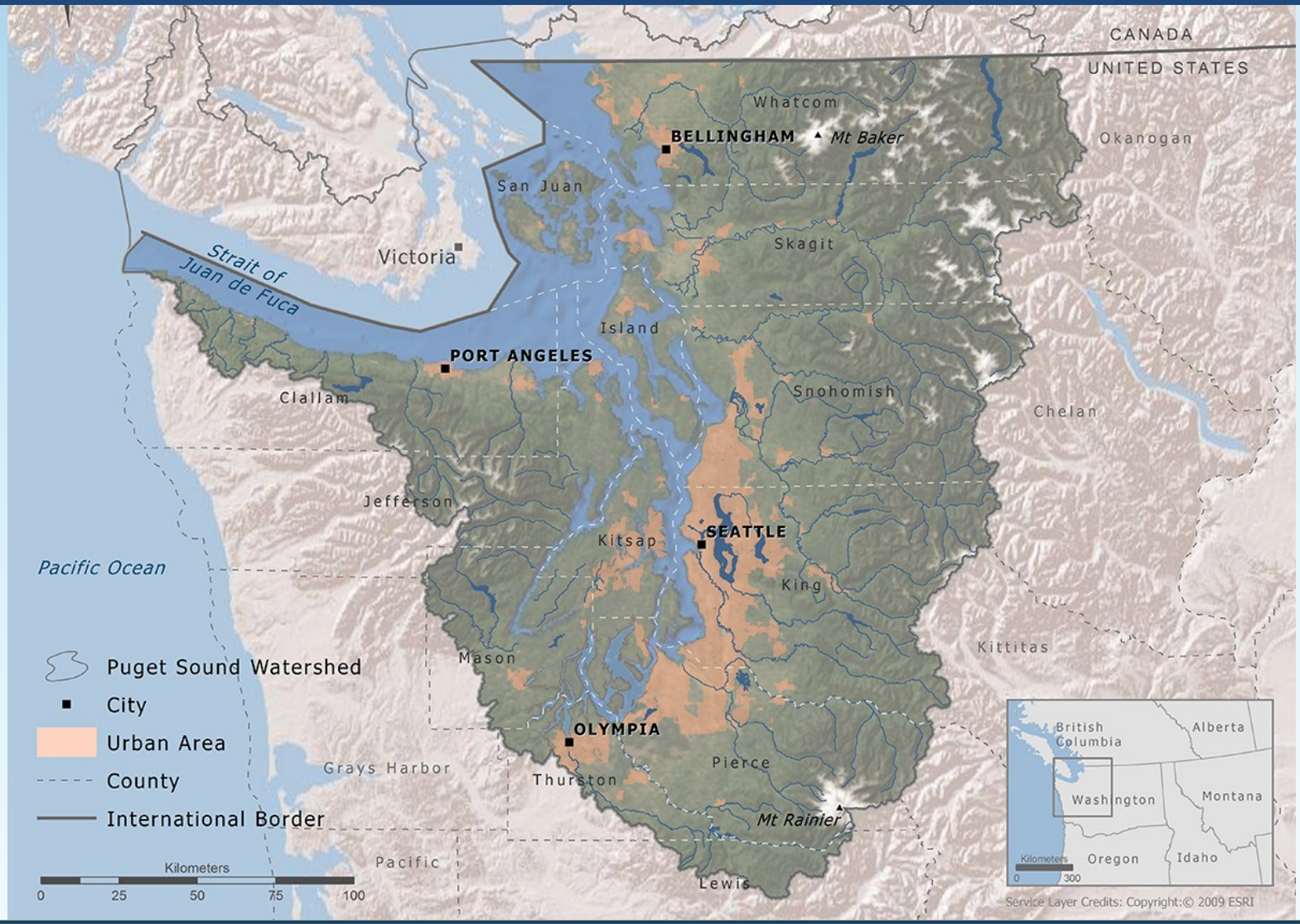
Puget Sound Ecosystem Monitoring Program

PugetSoundPartnership
LEADING PUGET SOUND RECOVERY

Presented to the Chesapeake Bay Program
December 6 2013

Puget Sound


CANADA
UNITED STATES
Whatcom
BELLINGHAM
Mt Baker
Okanogan
San Juan
Skagit
Victoria
Strait of Juan de Fuca
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Clallam
Snohomish
Chelan
Jefferson
Kitsap
SEATTLE
King
Pacific Ocean
Kittitas
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Kilometers
0 25 50 75 100
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Washington
Montana
Oregon
Idaho
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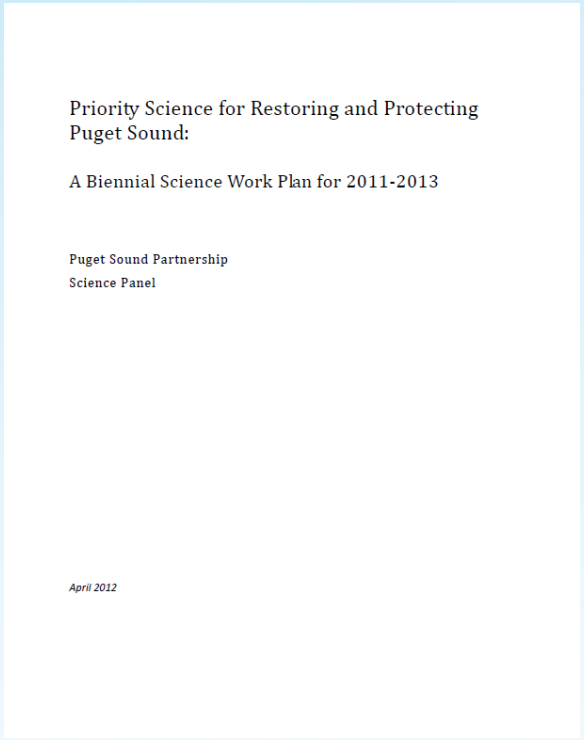
Salish Sea

Examples of pressures

PugetSoundPartnership

LEADING PUGET SOUND RECOVERY

- Mandate: recover Puget Sound, coordinate efforts
- Leads science and recovery plans and priorities
- Does accountability, reporting

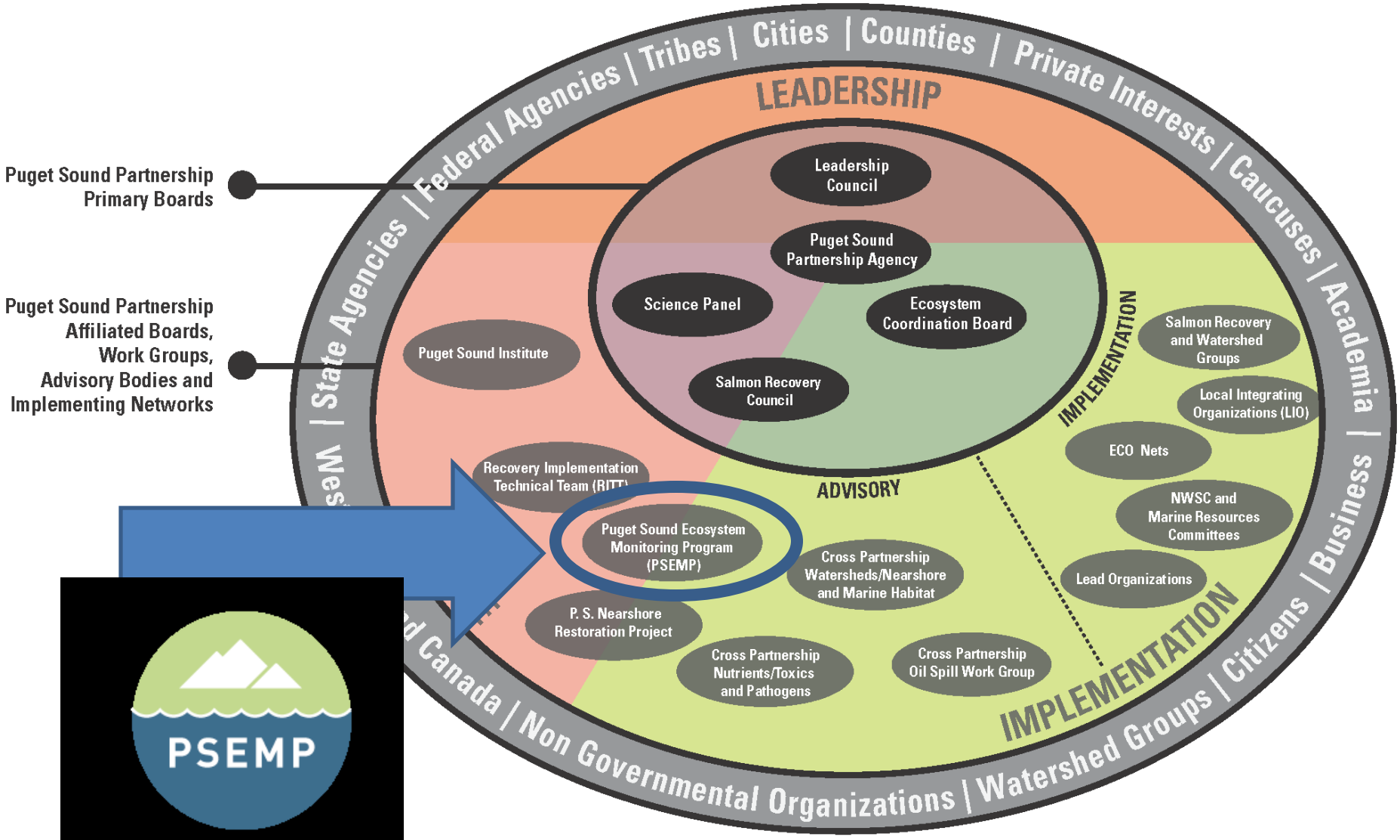


Puget Sound Vital Signs

PugetSoundPartnership
our sound, our community, our chance

Puget Sound Partnership Management Conference

Conceptual diagram of organization and partner structure



Objectives of network

Puget Sound Ecosystem Monitoring Program

https://sites.google.com/a/psemp.org/psemp/







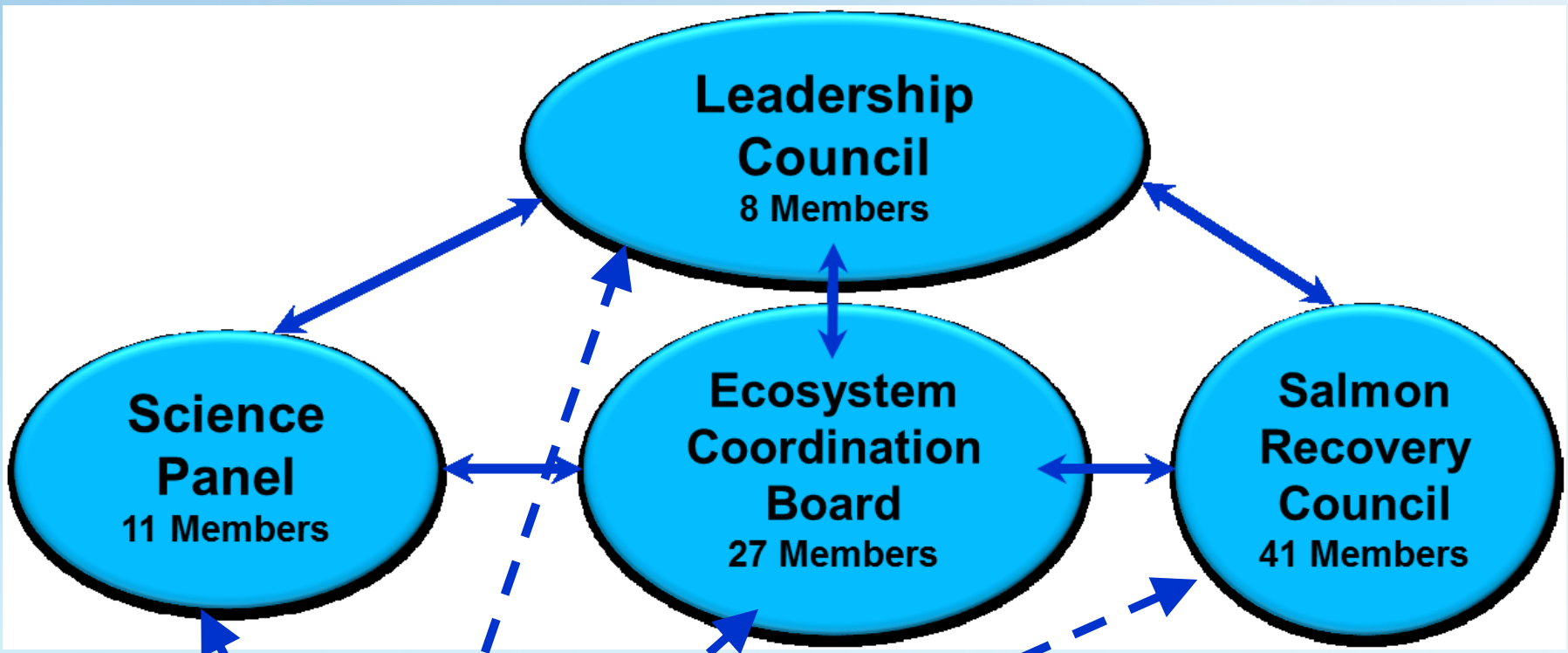
Objectives of network

- Coordinate monitoring and build partnerships
- Provide a monitoring framework that supports the Action Agenda and recovery goals
- Evaluate progress recovery of Puget Sound

Governance

Work Groups

- Stormwater
- Marine Waters
- Salmon
- Toxics
- Freshwater
- Birds
- Modeling
- Terrestrial
- Forage Fish and Food Web
- Nearshore
- Mammals
- Rock Fish
- Other…
- Other…
- Other…



PSEMP

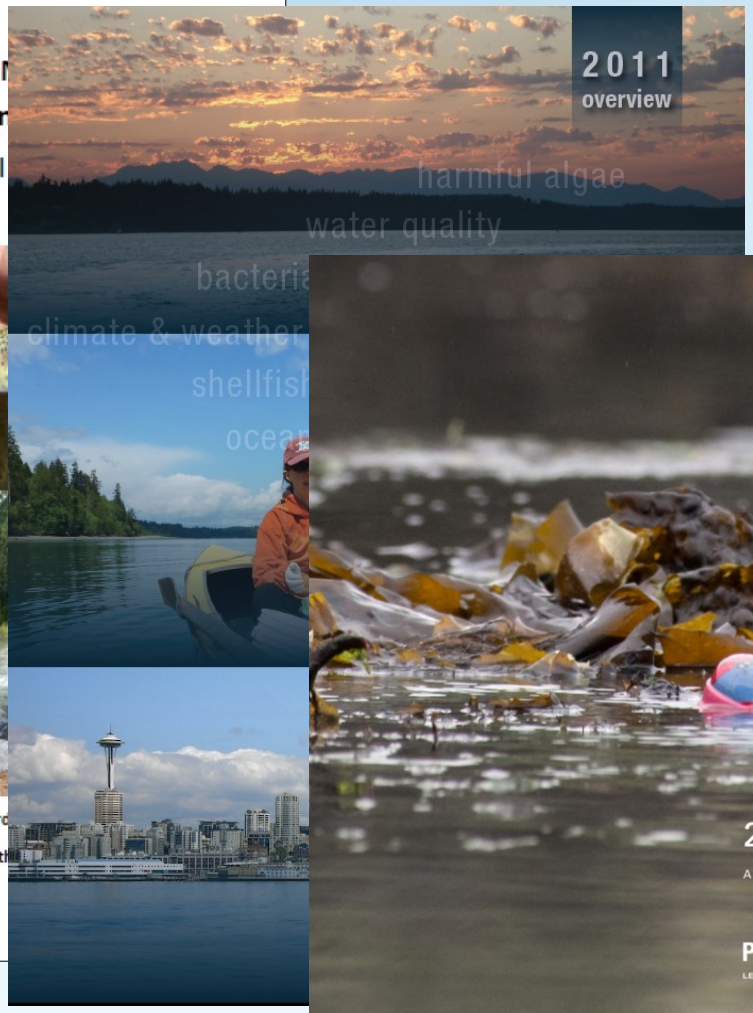
PSP statute RCW 90-71-060 requires a

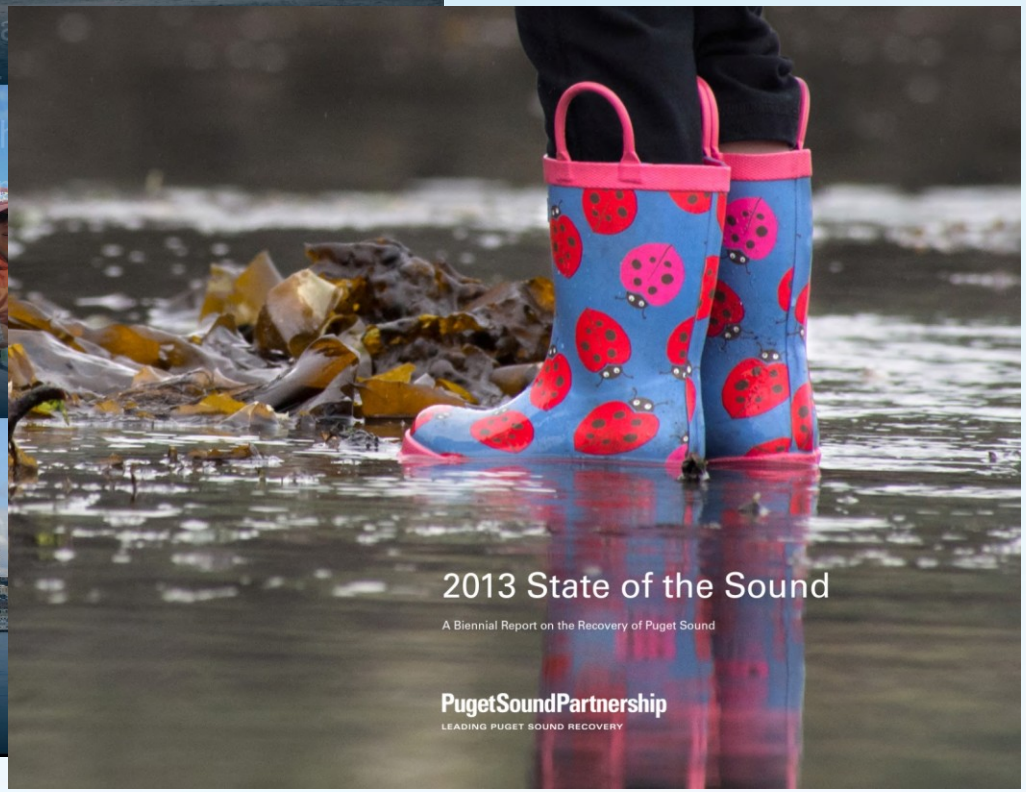
"Puget Sound Assessment and Monitoring Program"

Ongoing work

- *Created monitoring inventory and gap analysis*
- Prioritize monitoring needs
- Track and report on indicators and targets
- Continue data collection, analysis, reporting
- Develop effectiveness monitoring framework
- Craft funding strategy

Examples of products





Operations model

- Individual programs do data collection







Puget Sound Partnership tracks progress of recovery efforts

Puget Sound Action Agenda Report Card

Summary Report Card — Print

Action Filters

Owner
None selected.

Vital Sign
None selected.

Funding Status
None selected.

Performance Status
None selected.

Corrective Action
None selected.

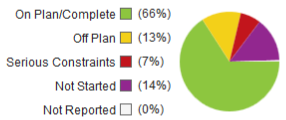
Recovery Strategy
None selected.

Strategy
None selected.

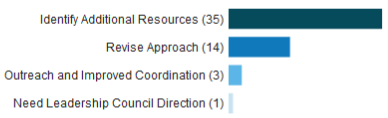
Sub-Strategy
None selected.

Action Search
None selected.

Performance Status (Q4 2013)



Corrective Action



Summary of Cost Estimate: $678,897,546

Summary of Budgeted Amount: $292,127,015

Performance Status 2012 3 4 / 2013 1 2 3 4 / 2014 1 2	Corrective Action	Action ID	Action Title	Owner
		A1.1.1	Apply Watershed Characterization Results	Department of Ecology
		A1.1.2	Web-Based Data Tool to Support Land Use Decisions	The Puget Sound Institute
		A1.1.WS1	West Sound Inventory of Transportation Infrastructure Projects	West Sound Watersheds Council
		A1.2.1	Land Use Planning Barriers, BMPs and Example Policies (SIHB)	Department of Ecology
		A1.2.2	Financial Support for GMA updates	Department of Commerce
		A1.3.1	Address Regulatory Exemptions (SIHB)	Puget Sound Partnership
		A1.4.HC2	HCCC In Lieu Fee Mitigation	Hood Canal Coordinating Council
		A2.1.1	Community Forestry Conservation Act	Department of Natural Resources
		A2.1.2	Updated Avoidance and Minimization Guidance	Department of Ecology
		A2.1.3	Port Gamble Land Conservation	Forterra

Puget Sound Vital Signs


Puget Sound
Vital Signs
Indicators of Puget Sound's Health and Vitality
WATER QUALITY
Toxics in Fish
Marine Sediment Quality
Freshwater Quality
Marine Water Quality
HEALTHY HUMAN POPULATION
On-site Sewage
Swimming Beaches
Shellfish Beds
HUMAN QUALITY OF LIFE
Quality of Life
Sound Behavior
Recreational Fishing
Commercial Fisheries Harvest
SPECIES AND FOOD WEB
Chinook Salmon
Orcas
Pacific Herring
Birds
PROTECT AND RESTORE HABITAT
Shoreline Armoring
Eelgrass
Land Development and Cover
Floodplains
Estuaries
WATER QUANTITY
Summer Stream Flows
OWNERS MUST CLEAN UP AFTER THEIR DOGS

Data sources

- Over 30 scientists and their teams
- Dozen organizations

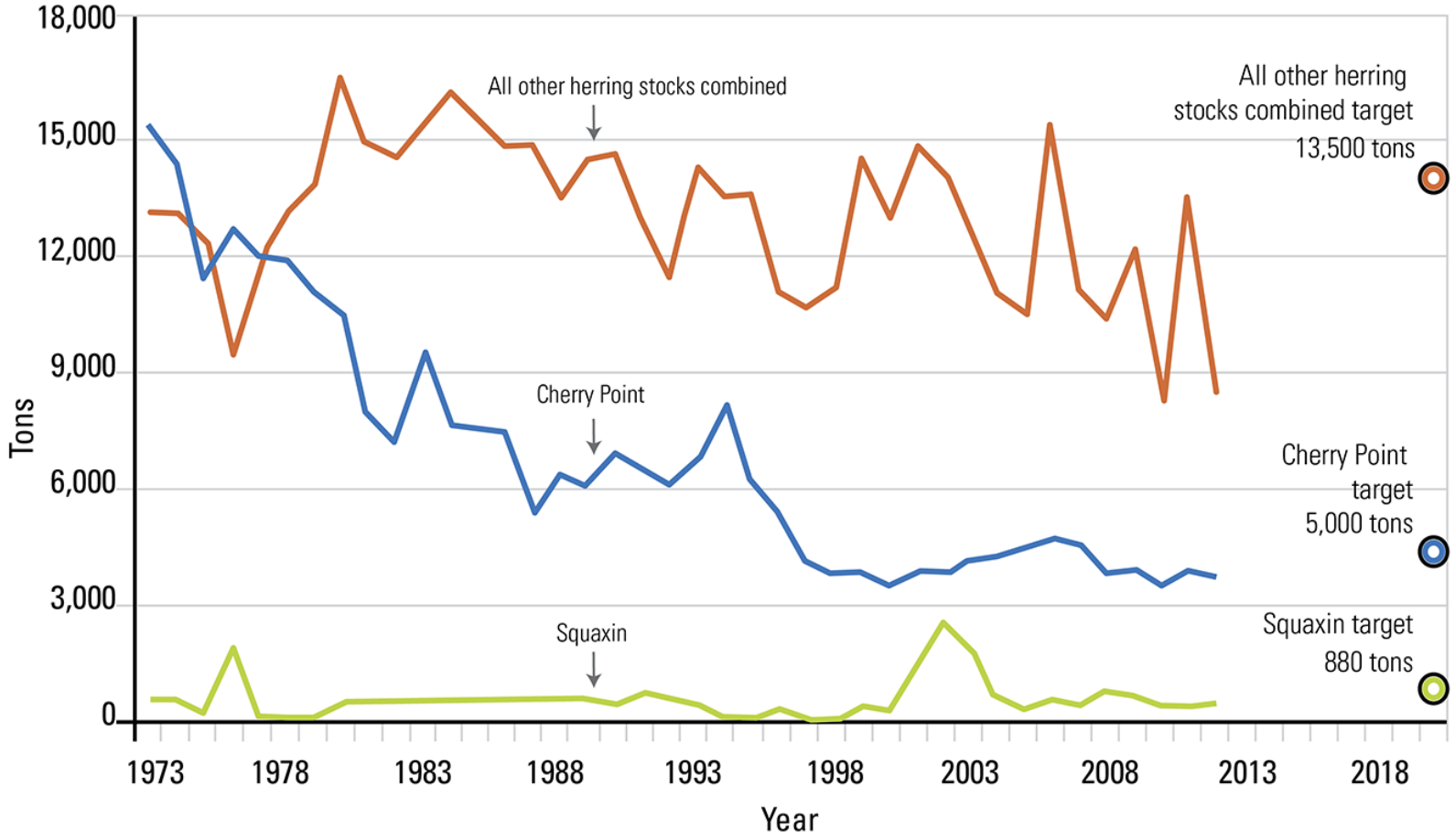
1. Ken Balcomb, Center for Whale Research
2. Scott Berbells, Washington Department of Health
3. Bob Carey, The Nature Conservancy
4. Randy Carman, Washington Department of Fish and Wildlife
5. Paul Cereghino, National Oceanic and Atmospheric Administration
6. Christopher Clinton, Washington Department of Ecology
7. Pete Dowty, Washington Department of Natural Resources
8. Maggie Dutch, Washington Department of Ecology
9. Fred Felleman, NW consultant, Friends of the Earth
10. Leska Fore, Puget Sound Partnership
11. Stuart Glasoe, Washington Department of Health
12. Alana Knaster, Puget Sound Partnership
13. Ken Koch, Washington Department of Ecology
14. Christopher Konrad, U.S. Geological Survey
15. Christopher Krembs, Washington Department of Ecology
16. Adam Lindquist, Washington Department of Fish and Wildlife
17. Julie Lowe, Washington Department of Ecology
18. Dayv Lowry, Washington Department of Fish and Wildlife
19. Alex Mitchell, Puget Sound Partnership
20. Scott Pearson, Washington Department of Fish and Wildlife
21. Paul Pickett, Washington Department of Ecology
22. Kenneth B. Pierce Jr., Washington Department of Fish and Wildlife
23. Puget Sound Recovery Implementation Technical Team (RITT)
24. Mindy Roberts, Washington Department of Ecology
25. Mindy Rowse, National Oceanic and Atmospheric Administration
26. David St. John, Puget Sound Partnership
27. Hugh Shipman, Washington Department of Ecology
28. Fred Short, Washington Department of Natural Resources
29. Kurt Stick, Washington Department of Fish and Wildlife
30. Kari Stiles, Puget Sound Partnership
31. Markus Van Prause, Washington Department of Ecology
32. Dave Ward, Puget Sound Partnership
33. Jim West, Washington Department of Fish and Wildlife
34. Jo Wilhelm, King County

Vital Sign types

- Bio-physical (16)
- Human wellbeing (3)
- Pressure (3)
- Management response (9)
- Societal Response (1)

Spawning Biomass of Pacific Herring Stocks in Puget Sound

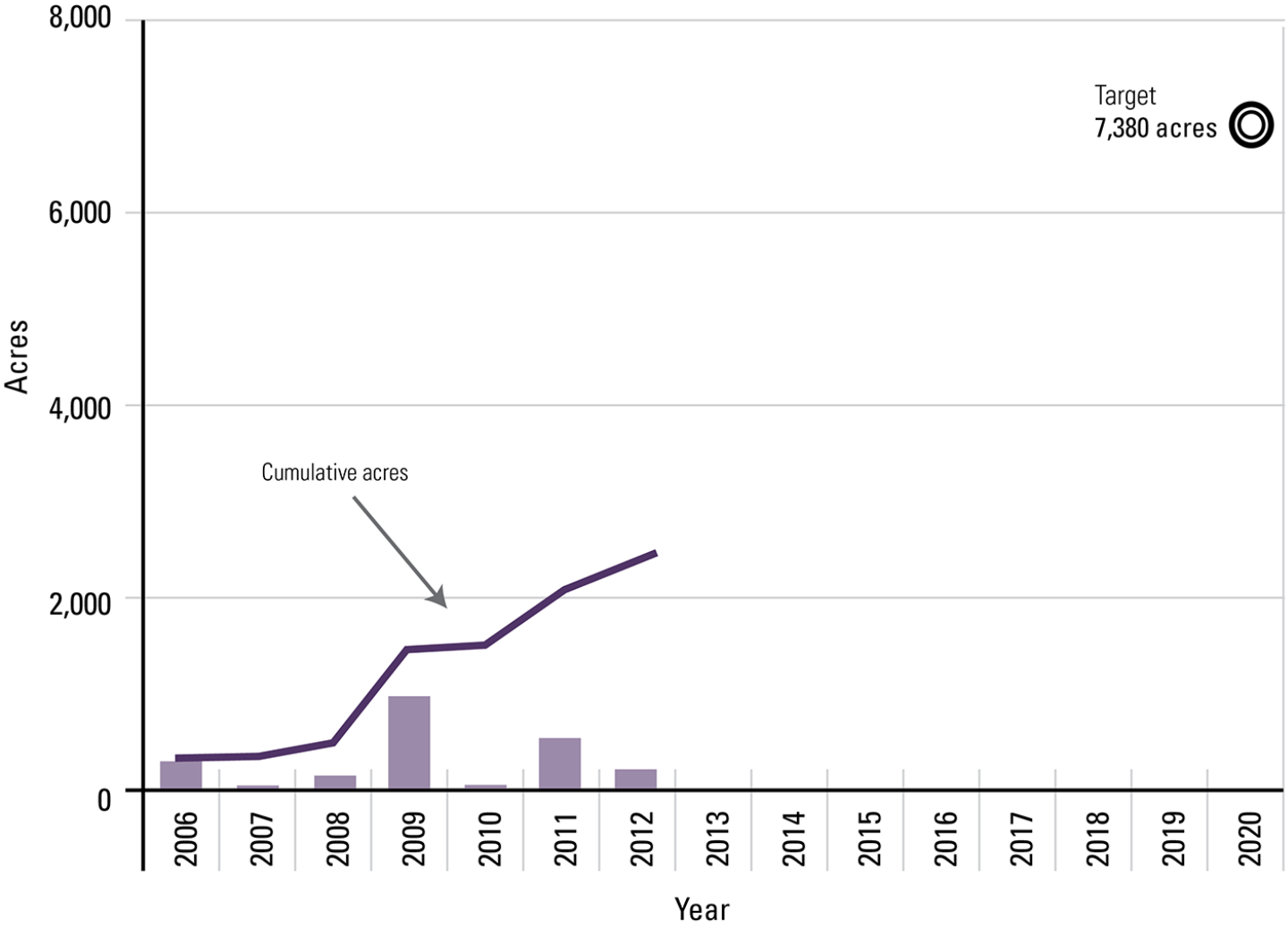
1973-2012



Source: Washington Department of Fish and Wildlife, Fish Program

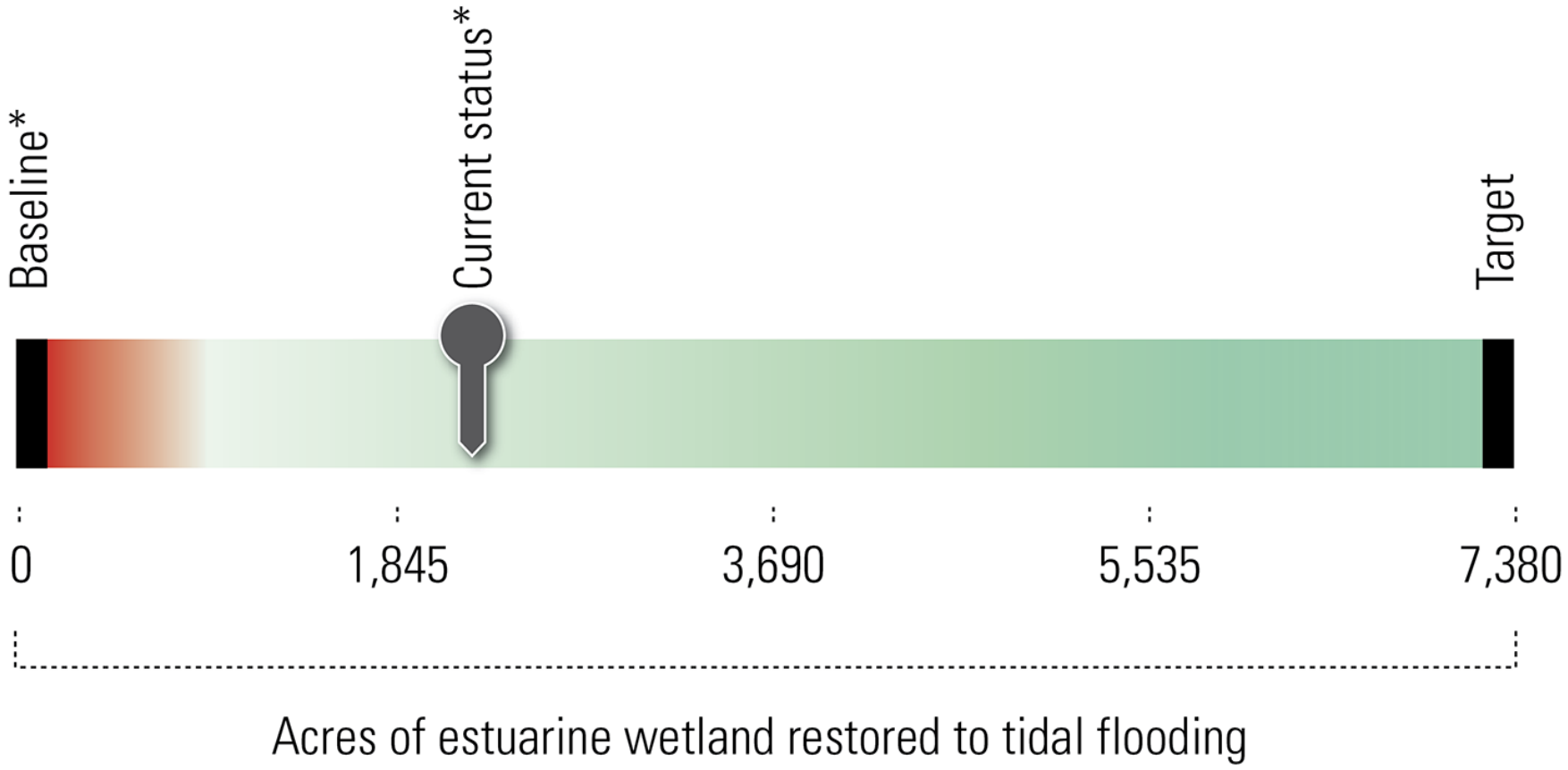
Estimated Area of Estuarine Wetland Restored to Tidal Flooding

2006-2012



Source: Project Information System (PRISM), Washington State Recreation and Conservation Office

Measuring progress toward 2020 target



*Status is the total area of estuarine wetlands restored to tidal flooding since 2006 in the large river deltas of Puget Sound. We set the baseline to zero, as the starting point in 2006 for totaling acres restored.

Is there progress?

YES	Worsening	Not changing
Shellfish	Orcas	Chinook
Beaches	Herring	Eelgrass
Estuaries	Marine Water	Stream Flow

MIXED On-site Sewage, Shoreline Armoring, Land Dev & Cover, Freshwater, Marine Sediment, Toxics in Fish

N/A Quality of Life, Sound Behavior, Recreational and Commercial Fishing, Birds, Floodplains

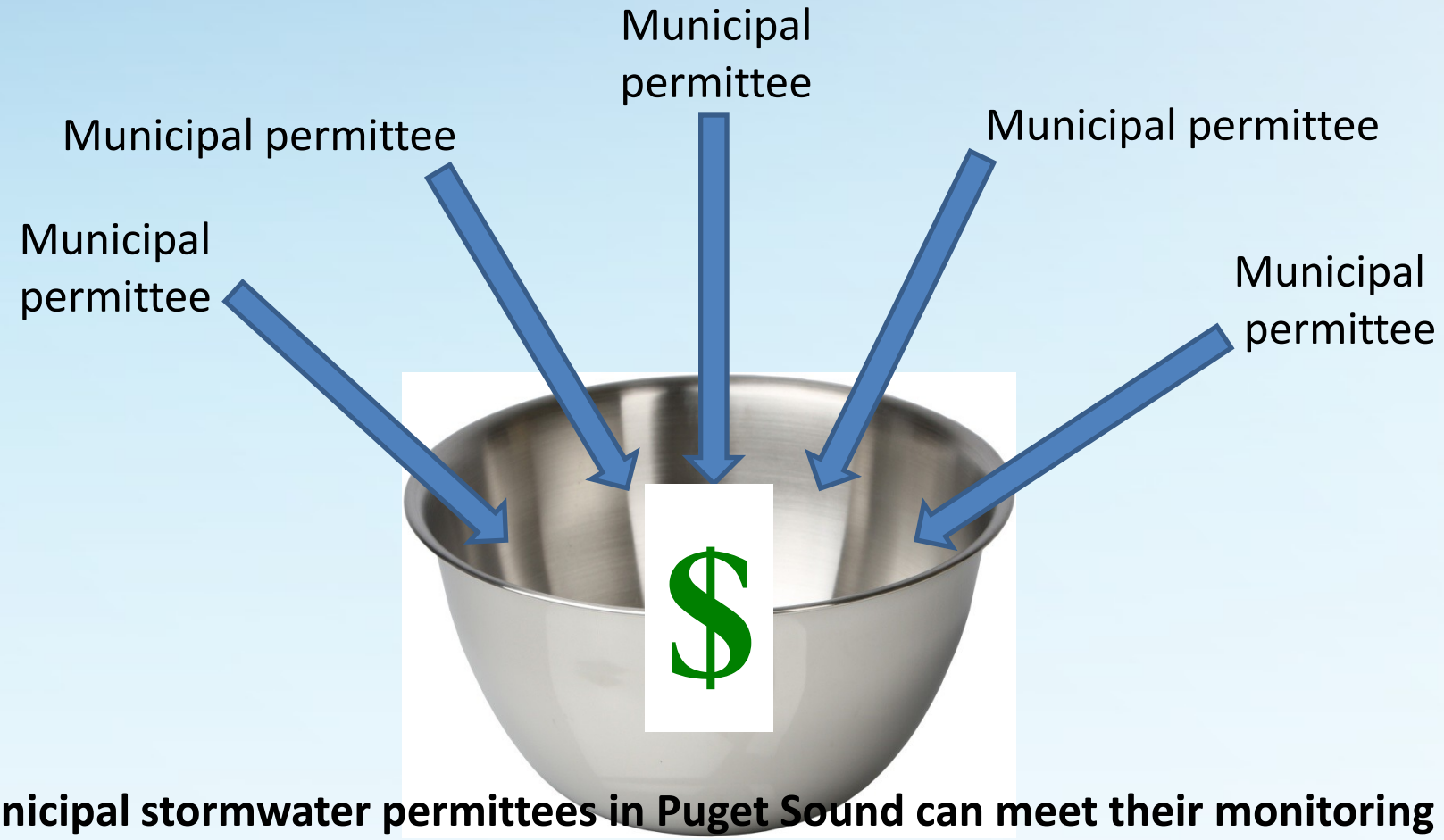
Business model

- Individual agencies manage monitoring funds, aligned with statutory mandates
- Partnership does not fund monitoring
- EPA funds Partnership staff for coordination
- No single source of dedicated funds
- PSEMP is developing funding strategy

Business model

Silos restrict integration; but do have other benefits

Regional Stormwater Monitoring Program



Municipal stormwater permittees in Puget Sound can meet their monitoring requirements by contributing to a funding pool that supports the program

Salmon Recovery Funding Board

- Under the terms of NOAA's annual Pacific Coast Salmon Recovery Fund Grant, 10% of all project funding must be spent for related monitoring.

- Funds are allocated by the Salmon Recovery Funding Board in open public meetings.

Challenges

- Coordination
- Prioritizaton
- Funding cuts to ongoing programs
- No sustainable, dedicated source of funding
- Effectiveness monitoring, bringing the data to bear, connecting it to decisions

Successes

- Regional Stormwater Monitoring Program
- Engagement of many partners and people
- Published and delivered products
- Recognition by our leadership that monitoring is important