



2009 State of the Sound

*A report on Puget Sound ecosystem status
and a performance management system to
track Action Agenda implementation*

PugetSoundPartnership
our sound, our community, our chance

Note:

Some pages in this document have been purposefully skipped or blank pages inserted so that this document will copy correctly when duplexed.

2009 State of the Sound Report

Puget Sound Partnership

January 2010

Puget Sound Partnership
P.O. Box 40900 Olympia, WA 98504-0900
Toll-free: 800.54.SOUND | Phone: 360.725.5444 | E-mail: info@psp.wa.gov
www.psp.wa.gov/pm

This project has been funded, in part, by the U.S. Environmental Protection Agency (EPA) under assistance agreement CE-00J00101 to the Puget Sound Partnership. The contents of this document do not necessarily reflect the views and policies of EPA, nor does mention of trade names or commercial products constitute endorsement or recommendation for use.

If you would like copies of this document in an alternative format, please call 800.54.SOUND or for TDD, call 800.833.6388.
Publication No. PSP09-08 January 2010

Table of Contents

Section I – Introduction.....	1
The 2009 State of the Sound Report.....	1
Next Steps.....	2
2009 State of the Sound Executive Summary.....	2
Section II – Ecosystem Status.....	7
Human Health.....	8
Safety of Water.....	14
Human Well-Being.....	14
Species and Food Webs.....	20
Flagship Species.....	24
Habitat.....	31
Water Quality.....	40
Water Quantity.....	50
Section III – The Action Agenda Performance Management System.....	55
Introduction.....	55
Overview of the Performance Management System.....	55
The Action Agenda Performance Management Cycle.....	57
Next Steps for Completing and Implementing the Performance Management System.....	65
Section IV – Action Agenda Funding Accomplishments and Performance.....	67
Action Agenda Funding Analysis Summary.....	67
Highlights of Expected Results from 2009-11 Funding.....	78
Consistency with the Action Agenda.....	82
Recommendations for How Future Expenditures Could Better Align with Action Agenda Priorities.....	83
Highlights of State Recovery Accomplishments from 2007-09.....	83

Appendices

- A Science Panel Comments on Progress Implementing the 2008 Action Agenda
- B Final Results from the 2007-2009 Puget Sound Conservation and Recovery Plan, July 1, 2007 – June 30, 2009 (see www.psp.wa.gov/pm)
- C Ecosystem Status & Trends: A 2009 Supplement to State of the Sound Reporting (see www.psp.wa.gov/pm)
- D Funded Near-Term Actions by State Agency

Tables

Table 1-1	Summary of recent trends	3
Table 2-1	Partnership goals and the categories included in this report	7
Table 2-2	Summary of recent trends	9
Table 3-1	Ecological components related to the 2020 statutory goals	63
Table 3-2	Alphabetical list of ecosystem threat categories for Puget Sound	64
Table 4-1	Action Agenda funding estimates from state budgets	70
Table 4-2	Threats, actions, and funding	71
Table 4-3	Near-term actions by state agency	73
Table 4-4	Estimate of state agency funding for Action Agenda Implementation.....	75
Table 4-5	Estimate of funds from federal agencies	76
Table 4-6	Funding for the Partnership during the 2009-11 biennium	76
Table 4-7	Partnership activities and funding sources	77
Table 4-8	Federal funding for Action Agenda implementation	78
Table 4-9	American Recovery Act stimulus funding to implement the Action Agenda (shown in \$ million)	81

Figures

Figure 2-1	Fecal coliform monitoring of commercial shellfish growing areas.....	13
Figure 2-2	Meal limit recommendations for rockfish and flatfish from Puget Sound	15
Figure 2-3	Percent of time core beaches did not meet fecal bacteria water quality standards during swim season from 2004 - 2009	16
Figure 2-4	Annual harvest in Puget Sound in non-tribal commercial fisheries (wild)	19
Figure 2-5	Annual harvest in Puget Sound in tribal commercial fisheries (wild)	19
Figure 2-6	Annual harvest in shellfish aquaculture industry	20
Figure 2-7	State and private forest land use change in Puget Sound Action Area counties	21
Figure 2-8	Imperiled native species and species groups in the Puget Sound ecosystem.....	23
Figure 2-9	Southern Resident Orca abundance, 1976-2009	26
Figure 2-10	Puget Sound herring spawning biomass estimates by selected stocks and regions, 1973-2008 (historical mean assumed if stock not sampled)	27
Figure 2-11	Annual average Puget Sound Chinook wild adult abundance (as reported in <i>2008 State of Salmon in Watersheds</i>)	29
Figure 2-12	Annual average Hood Canal summer chum adult abundance (as reported in <i>2008 State of Salmon in Watersheds</i>)	30

Table of Contents

Figure 2-13	Impervious areas in the Puget Sound Basin, 2001-2006 comparison	34
Figure 2-14	Status – Extent of land cover type in 2006, summarized by action areas.....	35
Figure 2-15	Status – Extent of land cover type in 2006, summarized by forest zones.....	36
Figure 2-16	Forest zones within the Puget Sound basin	37
Figure 2-17	Shoreform change, 1850s – 2006	38
Figure 2-18	Eelgrass area in five regions of greater Puget Sound, and the proportion of eelgrass in broad flats and narrow fringe habitat types.....	40
Figure 2-19	Sources and distribution of chemical contaminants in the marine environments of Puget Sound	43
Figure 2-20	Liver disease and PAH exposure in English sole from Elliott Bay, Seattle	45
Figure 2-21	Change in high molecular weight PAH concentrations in Elliott Bay, Seattle from 1998 to 2007	46
Figure 2-22	PBDEs in harbor seals and Pacific herring in Puget Sound.....	47
Figure 2-23	Surface map of Puget Sound illustrating the spatial patterns of chronic low oxygen concentration (hypoxia) below thresholds of 5 mg (yellow), 3 mg (orange) and 2 mg (red) oxygen per liter from 2003-2008.....	49
Figure 2-24	2008 water quality index ratings for freshwater stations in the Puget Sound basin	50
Figure 2-25	Average freshwater Water Quality Index scores at Puget Sound region long-term monitoring stations.....	51
Figure 2-26	Seasonal pattern of runoff from Puget Sound's major rivers has shifted from conditions observed in the mid-20th century	53
Figure 2-27	The combined summer flows of Puget Sound's major, unregulated rivers	54
Figure 3-1	The Action Agenda Performance Management Cycle.....	58
Figure 3-2	Performance management timeline	59
Figure 3-3	Example measurement strategy for implementing low-impact development guidance	61
Figure 4-1	Funding methods for Puget Sound.....	69
Figure 4-2	Status of 2007-09 actions as of June 30, 2009.....	84

Section I – Introduction

When the Partnership was created in 2007, the governor and the legislature charged us with three tasks: 1) create an Action Agenda to guide regional efforts to restore Puget Sound's health by 2020, 2) hold the system accountable for achieving a healthy Puget Sound by 2020 and implementing the Action Agenda, and 3) build public awareness and engage the citizens of Puget Sound in long-term recovery. The first of these tasks, creation of the 2020 Action Agenda, was completed in December 2008. The Partnership is required to produce a State of the Sound report every 2 years. The statutory reporting requirements are to document the current status of the ecosystem, as well as status of implementation and funding. This information can be used to inform decisions about changes to funding, programs, or policies that might accelerate the regional progress towards ecosystem recovery, including more efficient use of resources. Ecosystem performance evaluation and reporting is complex. This daunting task of linking actions to improving overall ecosystem conditions has eluded many of the other large ecosystem restoration efforts in places like the Chesapeake Bay and the Everglades. We believe we are on a path to make this work in Puget Sound but it will take a committed effort by the Partnership agency and its partners to be successful. The Partnership's performance management system will link actions and investments to reducing threats and achieving ecosystem goals. This system will help document our collective thinking, structure constructive dialogue around complex, contentious issues, improve the relationship between science and policy, focus spending on priority actions, focus the region on achieving results, and help us learn. We are following guidance from the Government Accountability Office and are designing the system to help meet the reporting requirements of the state legislature and Joint Legislative Audit and Review Committee, and the U.S. Environmental Protection Agency.

The 2009 State of the Sound Report

In this 2009 State of the Sound report, the Partnership 1) documents the current status of the ecosystem, 2) explains the performance management system we are putting in place to manage recovery efforts in a systematic way and our progress to date in developing the system, and 3) presents an overview of funding and anticipated results for the 2009-11 biennium, as well as accomplishments in 2007-09 biennium. Implementation of the Action Agenda is just getting underway as state budget allocations became effective in July 2009. Therefore, it is premature to report on implementation progress as described in the Partnership's enabling statute. Once the overall performance management system is in place, progress can be assessed against agreed-upon measures.

Next Steps

The Partnership's near-term work is to align the state's 2011-2013 biennium budget with the Action Agenda. To meet this critical objective, the Partnership has an aggressive work plan to accomplish the following performance management tasks in 2010:

- Finalize the ecosystem status indicators that will be used to inform progress toward the 2020 goals
- Prioritize threats to the ecosystem
- Set quantitative targets and benchmarks for the reduction of priority threats
- Establish outcome measures with implementing agencies for actions implemented in the Action Agenda
- Identify potential revisions to the 2008 Action Agenda in the context of the quantitative targets and benchmarks
- Establish criteria to determine consistency of action with the Action Agenda.

More detail on the tasks associated with developing status indicators and performance measures for the performance management system are addressed in the two Partnership technical memos; *Using Results Chains to Develop Objectives and Performance Measures for the 2008 Action Agenda* and *Identification, Definition, and Rating of Threats to the Recovery of Puget Sound* available at www.psp.wa.gov/pm.

2009 State of the Sound Executive Summary

Ecosystem Status and Trends

For the 2009 report, members of the Partnership's Science Panel evaluated ecosystem status indicators that represent each of the six goals in the Partnership's authorizing statute: human health, human well-being, species and food webs, habitats, water quantity, and water quality. Compared to historical conditions, the Puget Sound ecosystem shows signs of stress and degradation from human activity. For example, pollution and restricted marine harvests have reduced ecosystem support for human health and well-being. In addition, concerns about species viability and ongoing habitat alteration point to vulnerable biological systems in the region. Altered stream flows and water quality are some of the underlying problems in the Puget Sound ecosystem. There are also examples where the ecosystem has positively responded to management activities. For example, the quality of sediments in Elliott Bay is much improved over the late 1990s and the improvement happened at the same time as a decrease in tumors in fish. Table 1-1 summarizes these challenges and improvements.

Table 1-1 Summary of recent trends

Indicator		Basis for Evaluation of Recent Trend	Possible Cause of Recent Trend
Indicators that Show Worsening Trends			
Human well-being	Non-tribal & tribal marine harvest other than shellfish aquaculture	Decreases in harvested amount for most types of finfish & shellfish from 1980s to 2000s ^a	Declines in stocks possible due to harvest & habitat impacts, have limited allowable catch
Human well-being	Forestland conversion	7 to 32% of forestland in PS counties converted from 1988 to 2004 ^b	Expanding footprint of developed lands
Species & food webs	Orcas	20% decline numbers in southern resident population in 1990s; numbers in 2000s below mid-1990s peak ^c	Reduced prey abundance, disturbance, and contaminants
Species & food webs	Herring spawning biomass	~40% decline from spawning biomass observed from 1970s to 2007 driven by decline at Cherry Point ^d	Overfishing, predation by other fish and animals, and other environmental factors such as contaminants, degradation of nearshore habitat ^e and endemic disease and parasites
Habitat	Agricultural lands converted to development	From 2001-06, 4,300 acres converted to developed (17,000 acres converted 1991-2006) ^f	Pressure from development; possibly in combination with changes in the economics of farming
Habitat	Eelgrass area	Sites with year-to-year declines outnumber sites with increases in 7 of last 8 years ^g	Natural variation, water quality, and/or physical habitat alteration associated with shoreline development
Water quantity	Stream flow in major rivers	Earlier, higher winter flows and lower, earlier ending summer flows 1984-2008 compared to earlier period; declining portion of annual flow occurring in summer over 70-year record ^h	Climate change
Water quality	Flame retardant chemicals (PBDEs) in harbor seals & herring	Increase in PBDEs in harbor seals through 2003 ⁱ	Increase in the use of PBDEs in global economy and loading into Puget Sound
Indicators that Show Improving Trends			
Human health	Shellfish growing area pollution	From 1994 to 2008, DOH upgraded about twice as much area as downgraded ^j	Shellfish protection & pollution identification and control efforts
Human well-being	Shellfish aquaculture harvest	From mid-1980s to mid-2000s, substantial increase in harvest ^k	Growth of industry to include new products
Species & food webs	Chinook	Run size after listing (since 1998) greater than before listing (prior to 1998), ^l however spawning biomass remains far below recovery targets	Ocean conditions and possibly harvest
Species & food webs	Hood Canal summer chum	Run size after listing (since 1998) greater than before listing (prior to 1998) ^m	Ocean conditions and possibly hatchery management and reduced harvest

Table 1-1 (continued) Summary of recent trends

Indicator		Basis for Evaluation of Recent Trend	Possible Cause of Recent Trend
Indicators that Show Improving Trends (continued)			
Habitat	Development and impervious surface	Developed land increase 3% from 2001-06 but this is rate is slower than prior 5-year periods. ⁿ	Focus of development in already developed areas
Water quality	Elliott Bay PAHs	Decline in English sole liver lesions & PAH exposures in Elliott Bay in early 2000s along with decline in PAH sediment concentrations from 1998 to 2007 ^o	Sediment clean up and/or decreased loadings of PAHs to Elliott Bay
Water quality	Freshwater quality	From 1990s through 2000s, increase in annual average Water Quality Index score from long term stations ^p	Possibly due to water quality improvement projects in watershed
Indicators with No Clear Trend			
Human health	Fish consumption advice re: chemicals	Current assessment provides no information on trends	
Human health	Marine swimming beaches	Current assessment provides no information on trends	
Species & food webs	Species of conservation concern	Current assessment provides no information on trends	
Habitat	Shoreforms	Current assessment provides no information on trends	
Water quality	Hypoxia	Current assessment provides no information on trends	

^a PacFIN data as reported in companion *Ecosystem Status and Trends* report

^b University of Washington Western Washington Land Use Change Dataset as reported in *Ecosystem Status and Trends* report

^c Center for Whale Research data as reported in *Ecosystem Status and Trends* report

^d WDFW herring spawning data as reported in *Ecosystem Status and Trends* report

^e To be included in the next version of this report

^f Coastal Change Analysis Program 2006 as reported in *Ecosystem Status and Trends* report

^g WDNR eelgrass monitoring program results as reported in *Ecosystem Status and Trends* report

^h PSP staff analysis of stream flows of major, unregulated rivers in Puget Sound region; as reported in *Ecosystem Status and Trends* report

ⁱ Department of Fisheries and Oceans Canada analysis presented in 2007 Puget Sound Update and in *Ecosystem Status and Trends* Tech Memo

^j DOH Shellfish Programs monitoring and analysis as reported in *Ecosystem Status and Trends* Tech Memo

^k PacFIN data as reported in *Ecosystem Status and Trends* Tech Memo

^l WDFW data as reported in 2008 State of Salmon in Watersheds and in *Ecosystem Status and Trends* Tech Memo

^m WDFW data as reported in 2008 State of Salmon in Watersheds and in *Ecosystem Status and Trends* Tech Memo

ⁿ Coastal Change Analysis Program 2006 as reported in *Ecosystem Status and Trends* Tech Memo

^o WDFW and Ecology analyses reported in *Ecosystem Status and Trends* Tech Memo

^p Ecology analysis reported in State of Salmon in Watersheds and in *Ecosystem Status and Trends* Tech Memo

Eight of the 20 indicators presented provide evidence of continuing decline in the Puget Sound ecosystem, while seven indicators show evidence of improving conditions. The remaining five indicators describe other ecosystem aspects, but for which no clear trend is apparent in the existing information.

Action Agenda Performance Management System

The Partnership is developing a performance management system that will systematically link budgeting, planning, research, and actions to help us set priorities and effectively allocate resources. Implementation and evaluation of the Action Agenda will be iterative: implementation, assessment of results, decisions to sustain or improve effectiveness, and then implementation again.

The Partnership is using the Open Standards for Conservation to logically align strategies and actions to reducing threats and achieving ecosystem goals, and to help develop clear, specific measurable outcomes. The Open Standards for Conservation is recognized by practitioners around the world as an effective way to systematically organize and adapt conservation work and there is a high degree of confidence in this approach. Our current work includes a) refining the statutory goals so that they become specific, timebound, and measurable as ultimate outcomes for the Action Agenda, b) defining and initially rating 27 direct threats to the ecosystem, and c) developing examples of threat reduction objectives for growth, stormwater loading and runoff, marine invasive species, restoration of rivers, floodplains and marine shorelines, water use, and water pollution from treatment plants and septic systems. This work will be further refined over the coming year so that threat reduction objectives can be set, biennial benchmarks can be determined for current near-term actions, and refined budget guidance can be provided to implementers by March 2010.

Action Agenda Funding, Accomplishments, and Performance

Preparing a detailed analysis of funding spent on Action Agenda implementation is complex and has not been done before in Puget Sound. To address statutory reporting requirements and the need to pilot this type of funding analysis, for this 2009 report, we first focused on the state agency budgets. This is the best estimate of state funding tied to implementation of a Puget Sound recovery plan. Future reports will be more comprehensive in terms of analyzing the total funding, including money spent by federal agencies, tribes, and local governments.

For the 2009-11 biennium, approximately \$400 million has been allocated through the state budget to actions identified in the Action Agenda. An additional \$132 million in contributions by federal agencies and local governments has been identified, primarily through federal stimulus funding. In comparing estimated state spending to the original Action Agenda cost estimate of

\$602 million for the biennium, the gap has increased only slightly from \$199 million to \$202 million. To achieve recovery by the 2020 deadline, additional resources will be needed.

Almost 64 percent of the state Agenda funding is in the capital budget (\$260 million), 29 percent (\$116 million) in the operating budget, and 6 percent (\$23.7 million) in the transportation budget. The greatest amount of funding in the capital budget is directed at addressing the impacts of wastewater treatment plant discharges (\$97 million), followed by residential and commercial development (\$83 million), and dams, levees, and tidegates (\$51 million). Spending on these threats alone accounts for 58 percent of funding allocated to Action Agenda implementation. There are still significant gaps in funding to address the impacts of development and stormwater runoff in the built environment. Although significant investments are being made to address these threats, there is still a gap of \$51 million each for threats from wastewater and stormwater. Slightly smaller gaps are identified in addressing point source pollution (\$37 million), water withdrawals (\$35 million) and onsite sewage systems (\$31 million). On the other hand, some threats received amounts larger than identified in the Action Agenda these include Wastewater Treatment (\$66 million) and dams, levees and tidegates (\$34 million). Much of this additional funding is coming through one-time federal stimulus dollars. Overall, \$150 million in federal stimulus funds has been provided for Action Agenda implementation.

Overall, the Department of Ecology leads all state agencies in terms of spending on the Action Agenda with \$203 million or 50 percent of all funding, followed by the Recreation and Conservation Office at \$76 million and the Department of Natural Resources at \$39 million. An incomplete survey has found that non state partners are providing an additional \$132 million for Action Agenda implementation.

Anticipated results from current funding include, but are not limited to: maps for each watershed that identify target areas for protection and restoration as well as for new growth; technical and financial assistance to complete Shoreline Master Program updates on schedule; a more effective stormwater monitoring program for the region; large scale restoration at mouths of the Nisqually, Skagit and Snohomish Rivers; construction of the Belfair Sewage Treatment Plant; removal of 90 percent of the derelict fishing gear in Puget Sound, and acceleration of projects needed to complete the removal of the Elwha Dam. In addition, a permanent mechanism to maintain the emergency rescue tug at Neah Bay was created.

Highlighted accomplishments from the 2007-09 biennium include: development of the watershed mapping tool to determine where growth, protection, and restoration should occur; completion of the Phase I and II toxic loading studies that will help prioritize source control efforts; a reopening of 1,309 acres of shellfish beds for commercial and recreational harvest; restoration of 3,800 acres of habitat; a 12 percent reduction in diesel emissions; and a 22 percent reduction in mercury in waste streams.

Section II – Ecosystem Status

This chapter provides a summary and interpretation of the status and trends of the Puget Sound ecosystem, developed by members of the Partnership’s Science Panel based on its evaluation of a limited set of ecosystem status indicators. This summary draws from a more comprehensive and detailed report prepared by partnership staff, data providers, and regional experts with guidance from science panel members.

This status and trends information is organized into six sections to represent each of the six goals in the Partnership’s authorizing statute. Each of the six goals has been further divided into two or three broad categories. Table 2-1 shows the six broad goals and their respective categories. Specific indicators have been selected as a means of evaluating the goals and categories.

The *Ecosystem Status and Trends* report is available at www.psp.wa.gov/sos09.php. It provides more details about the Partnership’s 2009 ecosystem indicators and the findings presented in this chapter. The report also presents citations and references that provide further background information.

Table 2-1 Partnership goals and the categories included in this report

Partnership Goal	Categories Included in this Report
Human health	<ul style="list-style-type: none"> • Safe seafood • Safe swimming
Human well-being	<ul style="list-style-type: none"> • Working resource lands & industries • <i>Nature-based recreation</i>
Species and food web	<ul style="list-style-type: none"> • Species of greatest conservation concern • Flagship species • <i>Food webs</i>
Habitat	<ul style="list-style-type: none"> • Extent of ecological systems • <i>Condition of ecological systems</i>
Water quantity	<ul style="list-style-type: none"> • Major rivers stream flow • <i>Hydrologic alteration</i>
Water quality	<ul style="list-style-type: none"> • Chemical contamination in marine environments • Water quality in fresh and marine waters

The categories that are italicized are not discussed in this report because the data to support them are not yet prepared or available.

This chapter is organized into six sections to represent the six goals. Each section begins with summary information that answers key questions about the overall status of the goal, what affects our ability to attain the goal, and how this goal affects other aspects of the ecosystem. We then include some description of each of the indicators to evaluate how well we are attaining the goal.

Because the Puget Sound ecosystem is complex, it is not surprising that some parts of it may improve while others decline. Therefore, it is very difficult to create a single, scientifically defensible score of ecosystem status. Instead, examining appropriate indicators and using a weight-of-evidence approach can give an overall sense of how Puget Sound is functioning and changing. As more data and assessment tools become available, this information will be updated.

Compared to historical conditions, the Puget Sound ecosystem shows signs of stress and degradation. The indicators presented here describe an ecosystem heavily altered by human activity. For example, pollution and restricted marine harvests have reduced ecosystem support for human health and well-being. In addition, concerns about species viability and ongoing habitat alteration point to vulnerable biological systems in the region. Altered stream flows and water quality tell us about some of the underlying problems in the Puget Sound ecosystem. There are also examples where the ecosystem has positively responded to management activities. For example, the quality of sediments in Elliott Bay is much improved over the late 1990s and the improvement happened at the same time as a decrease in tumors in fish. Table 2-2 summarizes these challenges and improvements.

Eight of the 20 indicators presented in this section provide evidence of continuing decline in the Puget Sound ecosystem, while seven indicators show evidence of improving conditions. The remaining five indicators describe other dimensions of concern, but do not provide information about recent changes.

Human Health

People are an integral part of the Puget Sound ecosystem; therefore, supporting human health through a viable Puget Sound ecosystem is key to ecosystem recovery. This is expressed in the Partnership's authorizing statute as:

A healthy human population supported by a healthy Puget Sound that is not threatened by changes in the ecosystem.

In this report, status and trends for human health are addressed by two categories of indicators: seafood safety and water safety.

Section II – Ecosystem Status

Table 2-2 Summary of recent trends

Indicator		Basis for Evaluation of Recent Trend	Possible Cause of Recent Trend
Indicators that Show Worsening Trends			
Human well-being	Non-tribal & tribal marine harvest other than shellfish aquaculture	Decreases in harvested amount for most types of finfish & shellfish from 1980s to 2000s ^a	Declines in stocks possible due to harvest & habitat impacts, have limited allowable catch
Human well-being	Forestland conversion	7 to 32% of forestland in PS counties converted from 1988 to 2004 ^b	Expanding footprint of developed lands
Species & food webs	Orcas	20% decline numbers in southern resident population in 1990s; numbers in 2000s below mid-1990s peak ^c	Reduced prey abundance, disturbance, and contaminants
Species & food webs	Herring spawning biomass	~40% decline from spawning biomass observed from 1970s to 2007 driven by decline at Cherry Point ^d	Overfishing, predation by other fish and animals, and other environmental factors such as contaminants, degradation of nearshore habitat ^e and endemic disease and parasites
Habitat	Agricultural lands converted to development	From 2001-06, 4,300 acres converted to developed (17,000 acres converted 1991-2006) ^f	Pressure from development; possibly in combination with changes in the economics of farming
Habitat	Eelgrass area	Sites with year-to-year declines outnumber sites with increases in 7 of last 8 years ^g	Natural variation, water quality, and/or physical habitat alteration associated with shoreline development
Water quantity	Stream flow in major rivers	Earlier, higher winter flows and lower, earlier ending summer flows 1984-2008 compared to earlier period; declining portion of annual flow occurring in summer over 70-year record ^h	Climate change
Water quality	Flame retardant chemicals (PBDEs) in harbor seals & herring	Increase in PBDEs in harbor seals through 2003 ⁱ	Increase in the use of PBDEs in global economy and loading into Puget Sound
Indicators that Show Improving Trends			
Human health	Shellfish growing area pollution	From 1994 to 2008 DOH upgraded about twice as much area as downgraded ^j	Shellfish protection & pollution identification and control efforts
Human well-being	Shellfish aquaculture harvest	From mid-1980s to mid-2000s, substantial increase in harvest ^k	Growth of industry to include new products
Species & food webs	Chinook	Run size after listing (since 1998) greater than before listing (prior to 1998), ^l however spawning biomass remains far below recovery targets	Ocean conditions and possibly harvest

Table 2-2 (continued) Summary of recent trends

Indicator	Basis for Evaluation of Recent Trend	Possible Cause of Recent Trend	
Indicators that Show Improving Trends (continued)			
Species & food webs	Hood Canal summer chum	Run size after listing (since 1998) greater than before listing (prior to 1998) ^m	Ocean conditions and possibly hatchery management and reduced harvest
Habitat	Development and impervious surface	Developed land increase 3% from 2001-06 but this is rate is slower than prior 5-year periods. ⁿ	Focus of development in already developed areas
Water quality	Elliott Bay PAHs	Decline in English sole liver lesions & PAH exposures in Elliott Bay in early 2000s along with decline in PAH sediment concentrations from 1998 to 2007 ^o	Sediment clean up and/or decreased loadings of PAHs to Elliott Bay
Water quality	Freshwater quality	From 1990s through 2000s, increase in annual average Water Quality Index score from long term stations ^p	Possibly due to water quality improvement projects in watershed
Indicators with No Clear Trend			
Human health	Fish consumption advice re: chemicals	Current assessment provides no information on trends	
Human health	Marine swimming beaches	Current assessment provides no information on trends	
Species & food webs	Species of conservation concern	Current assessment provides no information on trends	
Habitat	Shoreforms	Current assessment provides no information on trends	
Water quality	Hypoxia	Current assessment provides no information on trends	

^a PacFIN data as reported in companion *Ecosystem Status and Trends* report

^b University of Washington Western Washington Land Use Change Dataset as reported in *Ecosystem Status and Trends* report

^c Center for Whale Research data as reported in *Ecosystem Status and Trends* report

^d WDFW herring spawning data as reported in *Ecosystem Status and Trends* report

^e To be included in the next version of this report

^f Coastal Change Analysis Program 2006 as reported in *Ecosystem Status and Trends* report

^g WDNR eelgrass monitoring program results as reported in *Ecosystem Status and Trends* report

^h PSP staff analysis of stream flows of major, unregulated rivers in Puget Sound region; as reported in *Ecosystem Status and Trends* report

ⁱ Department of Fisheries and Oceans Canada analysis presented in 2007 Puget Sound Update and in *Ecosystem Status and Trends* Tech Memo

^j DOH Shellfish Programs monitoring and analysis as reported in *Ecosystem Status and Trends* Tech Memo

^k PacFIN data as reported in *Ecosystem Status and Trends* Tech Memo

^l WDFW data as reported in 2008 State of Salmon in Watersheds and in *Ecosystem Status and Trends* Tech Memo

^m WDFW data as reported in 2008 State of Salmon in Watersheds and in *Ecosystem Status and Trends* Tech Memo

ⁿ Coastal Change Analysis Program 2006 as reported in *Ecosystem Status and Trends* Tech Memo

^o WDFW and Ecology analyses reported in *Ecosystem Status and Trends* Tech Memo

^p Ecology analysis reported in State of Salmon in Watersheds and in *Ecosystem Status and Trends* Tech Memo

This section does not address a number of environmental conditions related to human health, including abundant foods, clean drinking water, and clean air. Ecosystem conditions reported elsewhere in this document relate to ecosystem support for human health. Some aspects of food production from fishing and agriculture are addressed in the human well-being, species and food webs, and habitat sections of this chapter. Evaluation of water quantity and water quality provides information about the ability of the ecosystem to provide abundant, clean water for human residents.

Furthermore, the Partnership's evaluation does not address aspects of human health that are not directly related to the Partnership's concerns for Puget Sound ecosystem recovery (e.g., quality of health care, human behaviors that increase the risks of disease and injury, and human genetic variability). While these may be key determinants of the health of Puget Sound's human population, they are not directly linked to the health of the Puget Sound ecosystem.

Safety of Seafood

The Puget Sound ecosystem has provided shellfish, finfish, and other foods for people for millennia. However, in recent years, pollution from human and animal waste and from stormwater runoff and industrial discharges from developed lands have threatened the healthfulness of Puget Sound seafoods. Two indicators have been selected to evaluate seafood safety: pathogen-related commercial shellfish bed closures and fish consumption advisories. Biotxin-related shellfish closures are described in the full *Ecosystem Status and Trends* report.

What is the status of human health in relation to Puget Sound? Seafood and water quality in some parts of Puget Sound indicates that pollution is affecting the ecosystem's ability to support human health. Risks to human health are avoided by restricting shellfish harvest and advising limited seafood consumption in polluted areas. For example, the entire shoreline from Everett to Tacoma is closed to commercial shellfish harvest due to known pollution sources.

What affects ecosystem support for human health? Human health depends on the quality of goods and services provided by a healthy ecosystem, including a clean and abundant supply of food, clean water for drinking, irrigation and recreation, and clean air to breathe. Stormwater inputs and other pollution from a growing population and continuing land development are expected to threaten human health support by the Puget Sound ecosystem. The relative effect of legacy contaminants as well as new sources of contamination (chemical and biological) are not well understood.

How does human health affect other aspects of the ecosystem? The following aspects of the ecosystem are affected by human health: Harvesting seafood from Puget Sound requires water quality conditions that do not threaten human health. Closure of shellfish growing areas directly affects economic benefits derived from harvesting shellfish and reduces opportunities for recreational shellfish harvest. Pathogens, biotoxins, and contaminants that threaten human health might also threaten the health of Puget Sound's marine mammals and other animal species.

Indicator: Pathogen-Related Commercial Shellfish Growing Area Closures

Shellfish (such as clams and oysters) filter large quantities of water and therefore can accumulate bacteria, viruses or other harmful pathogens from the water. If contaminated shellfish are eaten, they can cause severe illness in humans. Shellfish growing areas require constant monitoring to ensure the waters are clean so these areas can remain open for harvesting.

Figure 2-1 shows results from recent fecal coliform monitoring of commercial shellfish growing areas by the Washington State Department of Health (DOH). Nearly a third of all commercial beds exhibited some fecal bacteria contamination. However, results

indicate fecal pollution impact has been generally low overall, and has remained relatively stable during the past decade. DOH uses fecal coliform monitoring results and other information about sanitary conditions to approve, regulate, or prohibit harvest from commercial shellfish growing areas. Since 1994, DOH has upgraded harvest classifications over twice as much growing area than they have downgraded as a result of improvements or declines in the sanitary conditions of shellfish growing areas.

Indicator: Fish Consumption Advisories

Based on tissue concentrations, frequency of detection, and toxicity of polychlorinated biphenyls (PCBs) and mercury, DOH advises limited consumption of fish from Puget Sound.

Salmon: Current consumption advisories based on these contaminants recommend limiting Puget Sound Chinook salmon to one meal per week and resident Chinook (blackmouth) to two meals per month. DOH has not advised restrictions on consumption of other species of Puget Sound salmon.

What is the current status of commercial shellfish bed closures? Nearly a third of all commercial beds had some fecal bacteria contamination. Recent monitoring results indicate fecal contamination has been generally low. Since 1994, DOH has upgraded twice the number of growing areas that they have downgraded.

What affects commercial shellfish bed closures? Since the early 1980s, nonpoint fecal pollution has become the key factor in closure of shellfish beds. Intensive development of rural watersheds and the marine shoreline of Puget Sound have increased the threat of nonpoint pollution. Even though fecal contamination has been low, and remained relatively stable over the last 10 years, increases in human population and altered land use (especially unregulated land use) could affect this trend.

What is the current status of fish consumption advice? Based on contaminant levels in marine fish, eating seafood from urban areas poses a greater risk for humans than for seafood caught from non-urban areas in Puget Sound. Puget Sound rockfish, especially older fish, from urban areas exhibit higher PCB and mercury levels than fish from non-urban areas. Advisories prohibit consumption of rockfish from the Duwamish Waterway and Sinclair Inlet and are very restrictive for fish from other urbanized sites (e.g., Commencement Bay, Everett) throughout Puget Sound.

What affects fish consumption advisories? Chemical contaminants that affect water quality and accumulate in the marine food web drive the need to provide advice about consumption of Puget Sound finfish. Puget Sound fish consumption advisories are based on levels of PCBs and mercury.

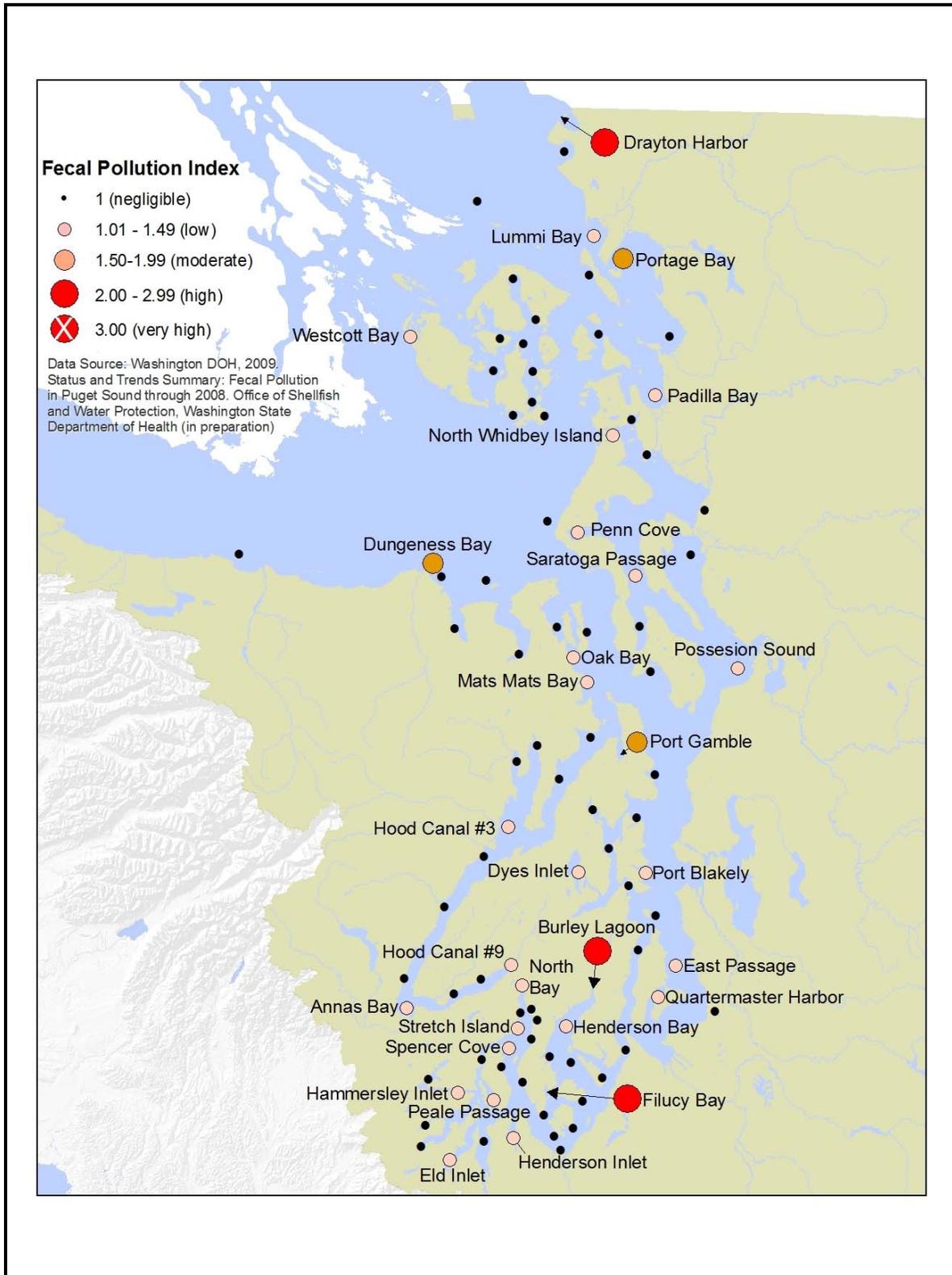


Figure 2-1 Fecal coliform monitoring of commercial shellfish growing areas

Marine fish: Rockfish and English sole from urban areas of Puget Sound have demonstrated higher levels of mercury and PCBs than those from non-urban Puget Sound areas. And, mercury contamination for both fish species was higher in older fish. DOH's meal limit recommendation for rockfish for most of Puget Sound is one meal per week (Figure 2-2). There is no general meal limit for English sole for most of Puget Sound. The meal limits for both are more restrictive in some urban embayments. The general meal limit recommendation for rockfish throughout Puget Sound is one meal per week. No meal limits are recommended for flatfish beyond Puget Sound urban bays.

Freshwater fish: PCBs, mercury, and chlorinated pesticides are responsible for fish advisories in lakes and rivers in the Puget Sound region.

Safety of Water

Human health depends on clean water for drinking, irrigation, and for recreation. One indicator is currently selected to address safety of water: pathogens at marine swimming beaches. Biotoxins in freshwater (e.g., toxic algae blooms) and the quality of source water for drinking water systems may be included as indicators in future reports.

Indicator: Pathogens at Marine Swimming Beaches

Since 2003, DOH has monitored swimming beaches in Puget Sound for *Enterococcus* bacteria, an indicator of fecal contamination. Seven of 50 routinely monitored beaches had bacteria levels that did not meet water quality standards more than 8 percent of the time. Twelve of these beaches had bacteria levels that did not meet standards between 4 and 8 percent of the time. Figure 2-3 shows how often EPA water quality standards are exceeded at 50 Puget Sound beaches.

What is current status of marine swimming beaches? Swimming in marine waters is relatively safe in most areas and during the majority of times of the year but 7 out of 50 beaches had fecal bacteria levels that did not meet EPA water quality standards more than 8 percent of the time.

What affects the status of marine swimming beaches? Runoff and discharge of human and animals wastes deliver loads of bacteria and viruses that affect the safety of swimming beaches.

Human Well-Being

Human well-being in the Puget Sound region depends upon the Puget Sound ecosystem for provision of food, water, and fiber, and support for cultural, spiritual, recreation, and aesthetic values. The significance of this is expressed in the Partnership's authorizing statute as:

A quality of human life that is sustained by a functioning Puget Sound ecosystem.

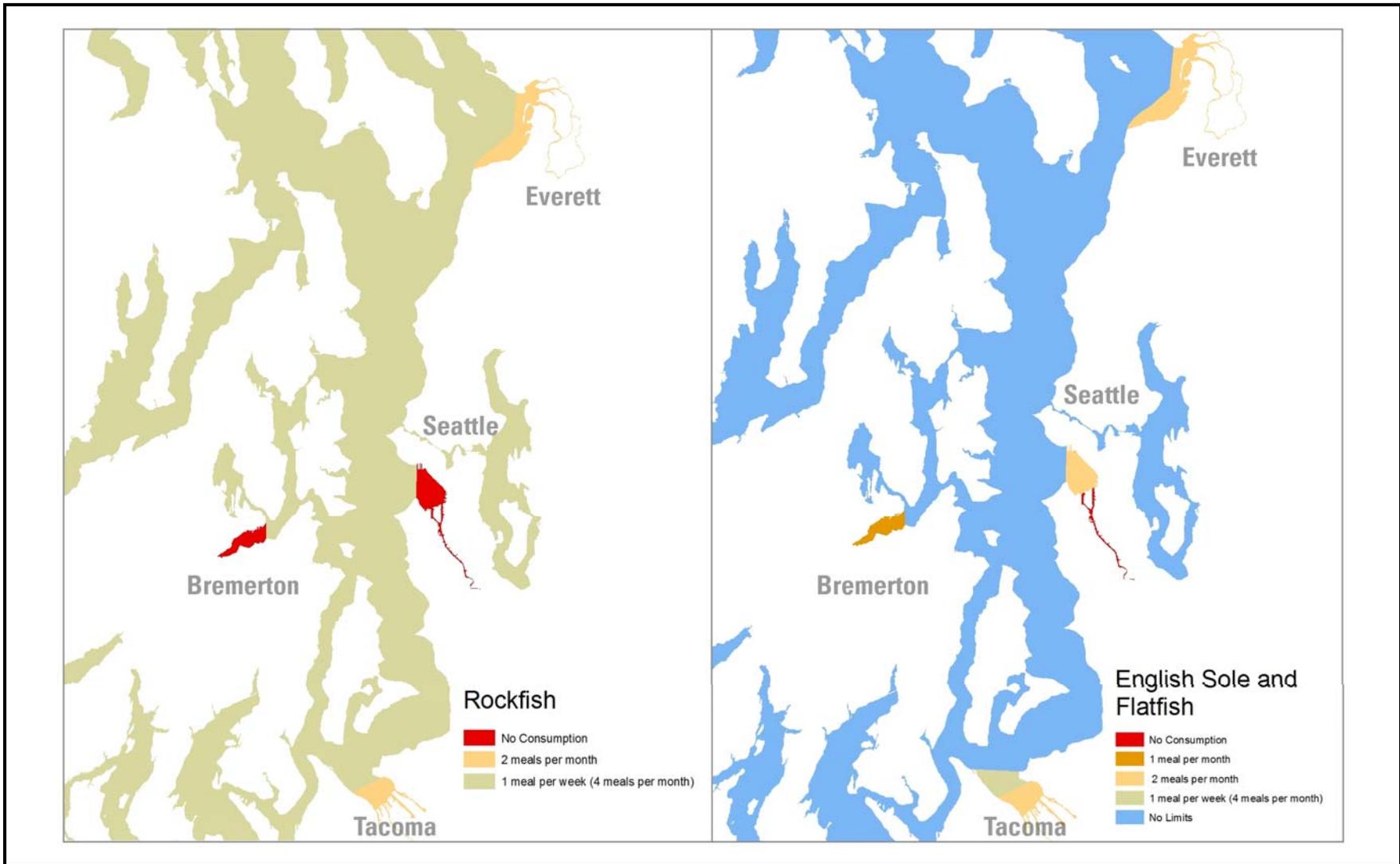


Figure 2-2 Meal limit recommendations for rockfish and flatfish from Puget Sound

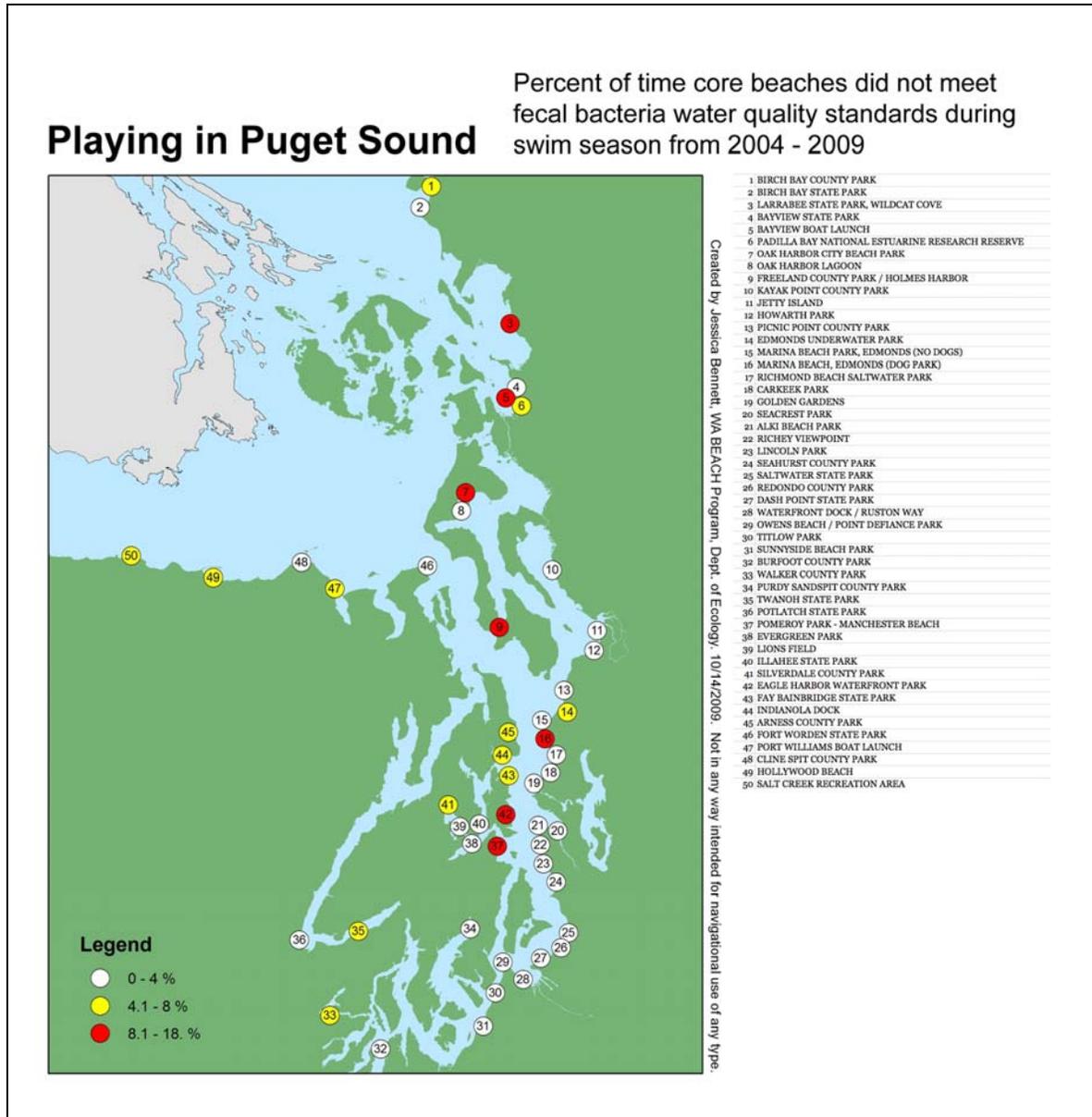


Figure 2-3 Percent of time core beaches did not meet fecal bacteria water quality standards during swim season from 2004 - 2009

People and their behavior are typically viewed as a stressor on the Puget Sound ecosystem. A broader understanding of the relationship between people and the Puget Sound ecosystem needs to be recognized as a key aspect of ecosystem management. Human well-being is typically associated with factors such as the employment rate (a relative strength for the region) and traffic and road congestion (a detriment to well-being), and less about the benefits that people derive from the natural assets of the Puget Sound ecosystem and unintended consequences of behaviors that negatively impact the environment. Until we better understand how people value and relate to the natural ecosystem, the effectiveness of actions to enhance the Puget Sound may be limited. Nature-based recreation is an important aspect of human well-being. Outdoor, nature-based activities (boating, fishing, swimming, wildlife viewing, picnicing, hiking, and scenic viewing) are of significant value to Puget Sound residents. However, with a few exceptions, data to support indicators for these activities have not yet been developed. Therefore, for this report the only category of indicators identified to assess status and trends related to human well-being is: working resource lands and industries.

What is the current status of human well-being in relation to Puget Sound? The Puget Sound ecosystem provides services that contribute to human well-being. Natural resources and related industries continue to support local economies in the region, though not at levels seen historically.

What affects the ecosystem's support for human well-being? The well-being of people in the Puget Sound region depends on services provided by the ecosystem: availability of food, water, and fiber; support for cultural, spiritual, recreation, and aesthetic values. Ecosystem services, in turn, depend on the health of the ecosystem's species and food webs and processes that create and maintain diverse and high-quality habitats. Therefore, stressors that affect other Partnership goals for the ecosystem such as human health, species and food webs, and water quantity, also affect human well-being.

How does human well-being affect other aspects of the ecosystem? Harvest of marine species and timber and agricultural production can affect the health of species, food webs, and habitats. Marine harvest supports human health by providing a healthful food resource. Working lands can provide habitat characteristics that are more beneficial than developed landscapes; development of homes, businesses and transportation systems can reduce the working land base and contribute to water quantity and quality problems. Recreational activities can negatively affect wildlife habitats and stress species' populations.

While many aspects of human well-being are not covered by the indicators below, we believe those chosen reflect important priorities established by the Partnership. The one exception is the goal of meeting tribal treaty rights and other tribal needs and interests. While the indicators include a measure of tribal commercial marine harvests, they do not include other elements of tribal interests and needs such as sustaining their cultural, spiritual, subsistence, ceremonial, and medicinal needs, or the economic endeavors of the tribal communities of Puget Sound.

Working Resource Lands and Industries

Monitoring the state of working resource lands and industries will allow the Partnership to understand if efforts to manage for ecosystem recovery are sustaining a thriving and prosperous economy in the region. Two indicators have been selected to represent this category of human well-being: Puget Sound commercial finfish and shellfish harvest and forestland acreage. Agricultural acreage may be added as an indicator in future reports.

Indicator: Puget Sound Commercial Finfish and Shellfish Harvest

Fish and shellfish harvest indicate one aspect of a thriving marine based commercial industry, one that provides jobs, revenue, income, a tourist draw and local protein source. In addition, fish and shellfish harvest are a significant part of the culture and heritage of the Puget Sound region. Finally, fish and shellfish harvest provide both a commercial industry and well as cultural, traditional and spiritual values to local tribal nations.

What is current status of commercial finfish and shellfish harvest? Significantly lower levels in recent years for all harvests except shellfish aquaculture.

What affects marine harvest? Marine harvest depends on markets for seafood products, the quality of waters and the resulting products, and the underlying stocks of the harvested resources (which depend on productive habitats, ocean conditions, international harvest, and other factors).

Figures 2-4, 2-5, and 2-6 illustrate the historical trends in commercial (tribal and non tribal) fish and shellfish production in Puget Sound. For non-tribal fisheries (Figure 2-4), not including aquaculture, total harvest declined from 1981 through the mid-1990s. The trend has improved slightly and leveled off since then. While groundfish accounted for a significant percentage of the total harvest for these fisheries in the 1980s, it has declined to less than 10 percent for the past decade. For tribal fisheries, harvest declined until the 1990s, after which total harvest has leveled off. Salmon accounted for the vast majority of the harvest in the 1980s and early 1990s, but over the past decade the share of crab and other shellfish have increased significantly (Figure 2-5).

Shellfish aquaculture (Figure 2-6) has shown significant growth in terms of harvest since 1985. This growth may be explained by increased acreage under production and introduction of new cultured species including geoduck.

Indicator: Forestland Acreage

Puget Sound forestlands provide significant services to its residents. Commercial forestry is a significant component of the Puget Sound region's heritage, providing the beginnings of a vibrant and stable economy.

What is the current status of working forest lands in Puget Sound? Twenty-five percent loss of forest lands in about a 15-year period.

What affects working forest lands? Working forest lands are affected by markets for wood products, competing land uses, and the health of the timber stock.

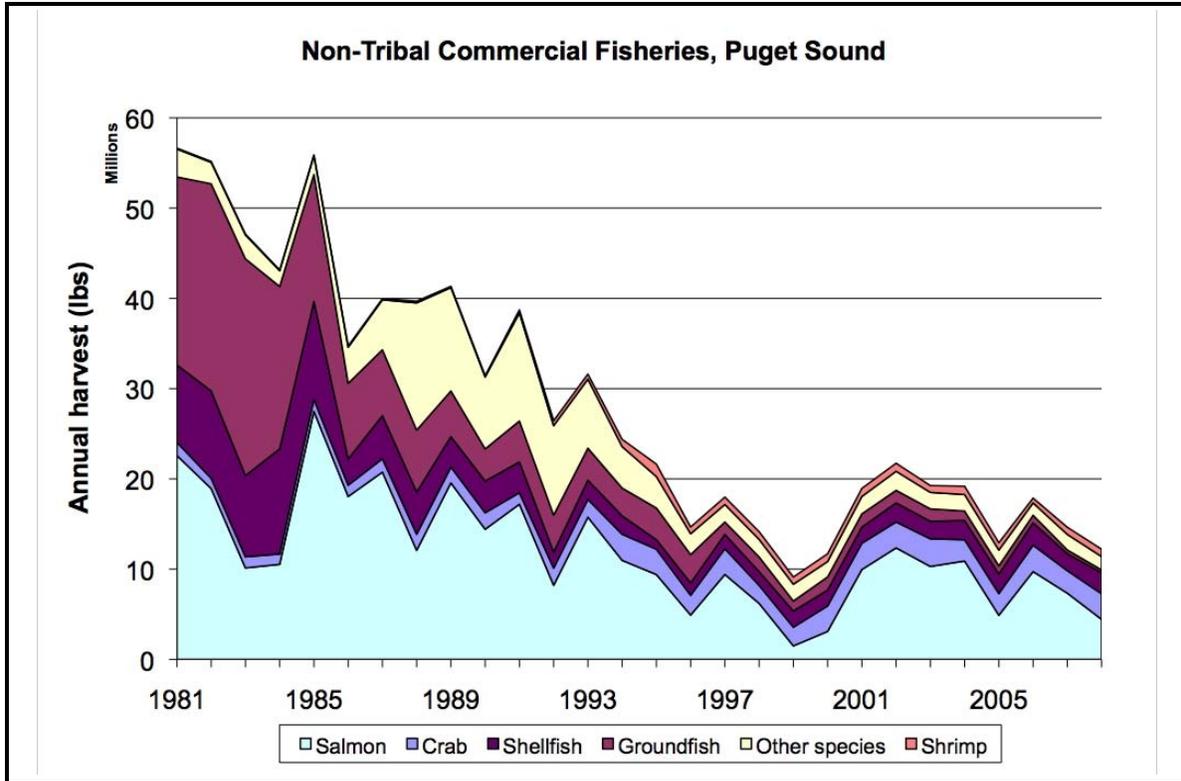


Figure 2-4 Annual harvest in Puget Sound in non-tribal commercial fisheries (wild)

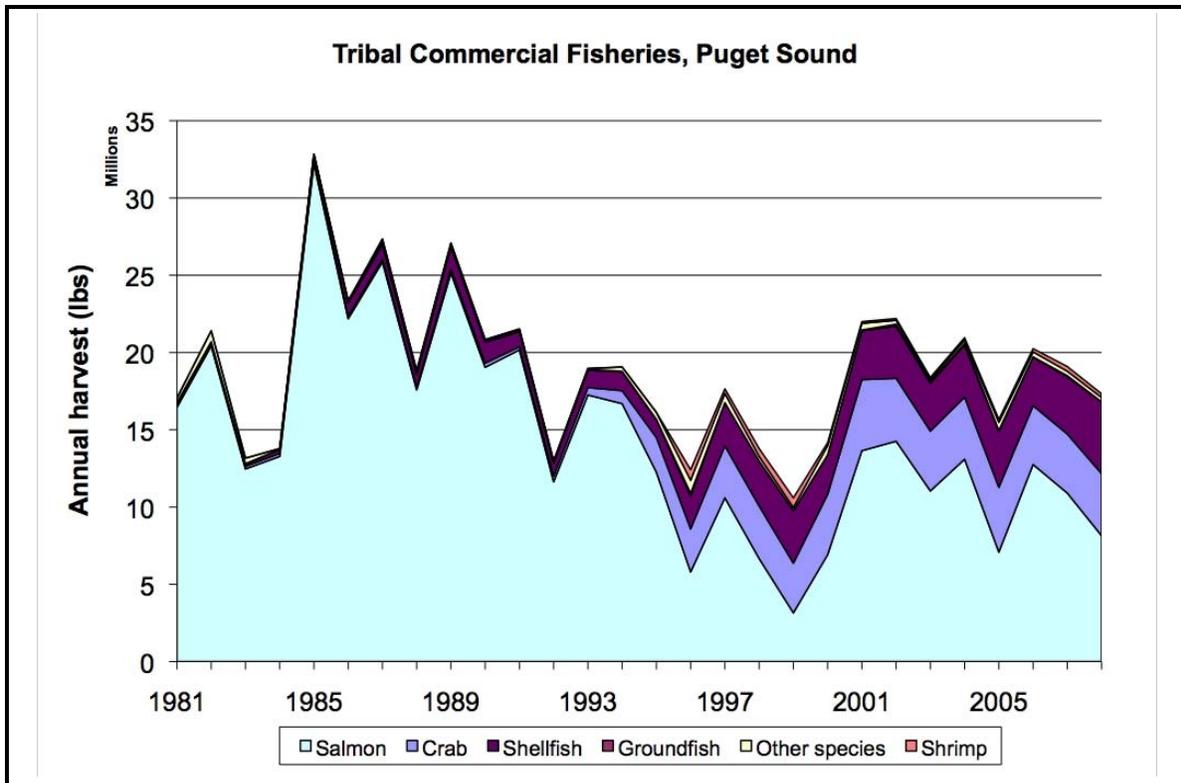


Figure 2-5 Annual harvest in Puget Sound in tribal commercial fisheries (wild)

It provides jobs, tax revenue, income, and fiber for both local and international use. The forest lands are also often managed to provide public access for recreational activities such as hiking, hunting, and wildlife viewing.

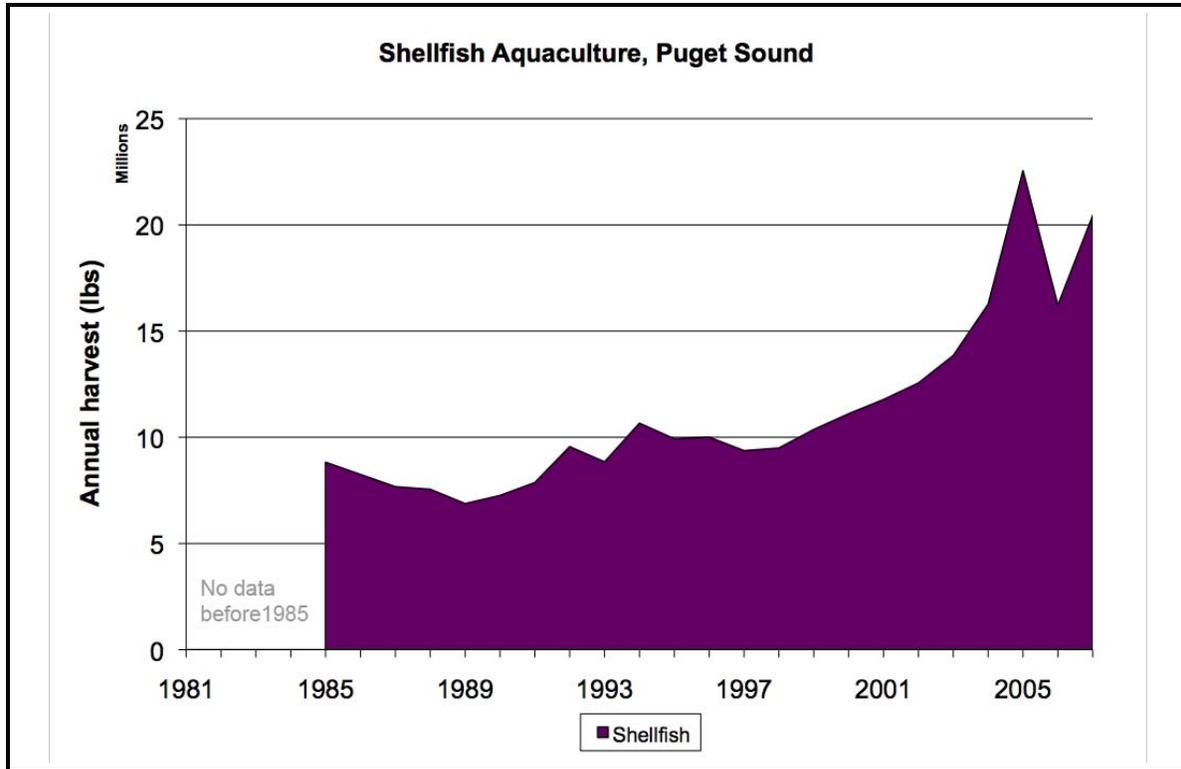


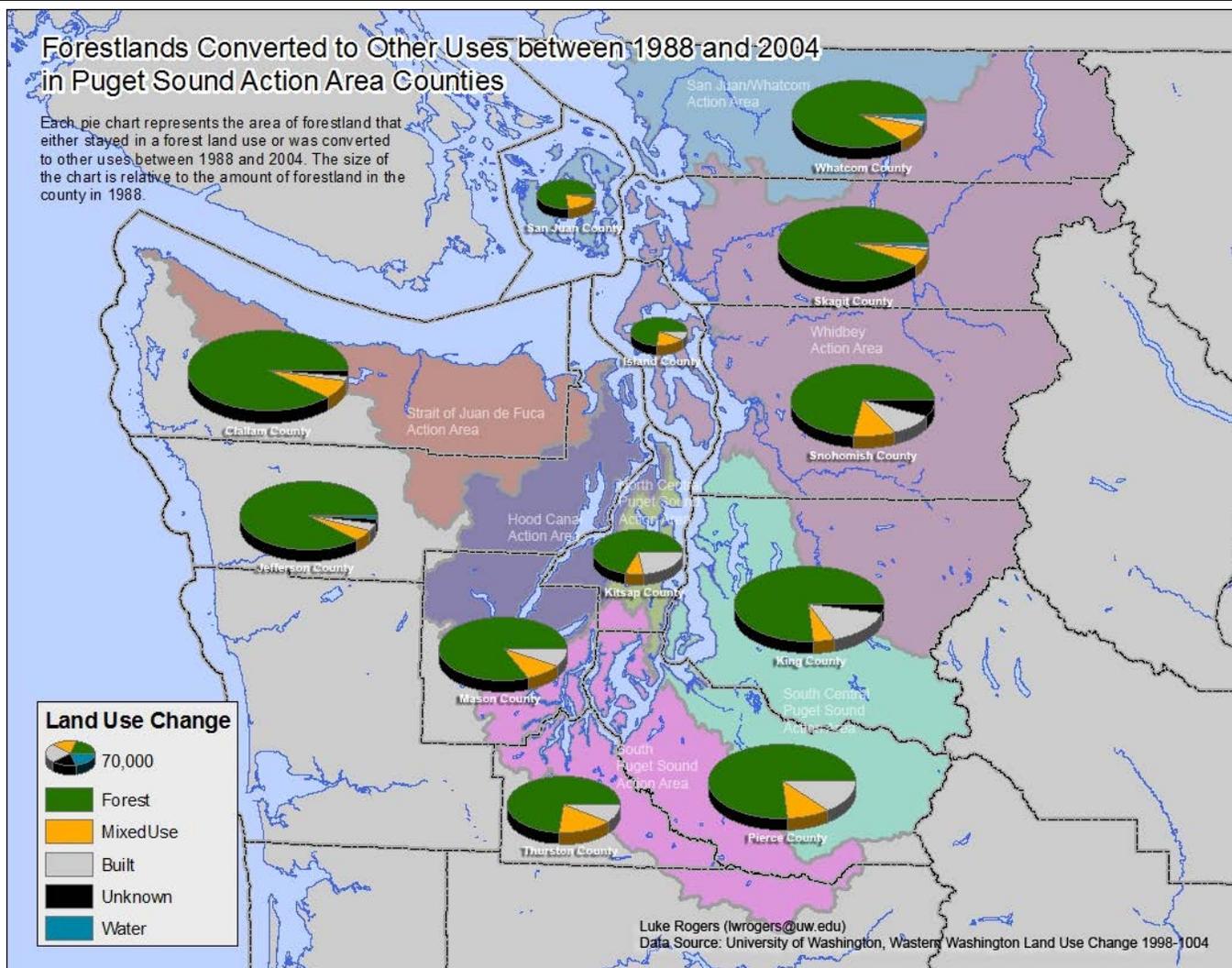
Figure 2-6 Annual harvest in shellfish aquaculture industry

As indicated by Figure 2-7, 936,000 acres of state and private forestland in western Washington were converted to non-forest uses between 1988 and 2004. This represents a 25 percent loss in forest lands over about 15 years. Recent research indicates that nearly 1 million more acres of private forestland are threatened with conversion in the Puget Sound region.

Species and Food Webs

Stable, resilient food webs and the persistence of native species over time are key components of a healthy Puget Sound ecosystem. The health of species and food webs is related to most of the other goals and indicators described in this chapter including, habitat conditions, water quantity and quality, appropriate management (including harvest), and prevention and control of disease and harmful exotic species. The Partnership's authorizing statute expresses a goal for ecosystem recovery that includes:

Healthy and sustaining populations of native species in Puget Sound, including a robust food web.



From the 2006 Western Washington Land Use Change Dataset. ©2009 University of Washington.

Figure 2-7 State and private forest land use change in Puget Sound Action Area counties

What is the current status of Species and Food Webs in Puget Sound? On a scale of several centuries, species composition of Puget Sound biological communities, population sizes of individual species, and physical habitats that support species have been through dramatic changes. Some species formerly present are now absent from the region, and some formerly common native species have become rare. The current status of species and food webs in Puget Sound lead to three major conclusions: 1) a relatively large proportion (or number) of species in the Puget Sound ecosystem are imperiled, due in large part to human activities over the last 150 years, 2) changes in species abundance can affect food webs, perhaps in dramatic and permanent ways, and 3) our limited knowledge of species and food web response to current threats limits our ability to predict ecosystem outcomes with great certainty.

What affects species and food webs in the Puget Sound ecosystem? Climate change and other human influences (e.g., habitat loss associated with land use changes, pollution, over harvest, non-native species introductions) contribute to rapid ecological change.

How does the status of species and food webs affect other aspects of the Puget Sound ecosystem? All species in the ecosystem are connected via a food web. Changes in the composition of species or in the abundance of a single species have the ability to change the structure of the food web. While it is easy to understand how a decline in a prey could result in decline in predators that consume that prey, less obvious changes can also occur that result in unexpected and sometimes dramatic shifts in the system. Thus, declines in single species obviously warrant concern for that species, but these declines may also lead to unexpected and undesirable changes in the food web of which that species is part.

Declines in species can also affect other elements of ecosystems structure, function and process. For example, salmon transport marine-derived nutrients in the form of carcasses and eggs into nutrient-limited river systems. If salmon numbers decline, rivers do not receive adequate levels of nutrients from salmon, which would then affect other species and aspects of the food web. Eel grass provides food for a wide variety of herbivores, serves as habitat for a variety fish and shellfish, and may help stabilize intertidal and subtidal sediments. Similarly, shellfish can affect the condition of bottom sediments, water clarity, and nutrient cycling.

Two categories of indicators were identified to assess status and trends of Puget Sound’s species and food webs: species and communities of greatest conservation concern, and flagship species. A third category, food web health, was also identified. The Partnership’s evaluation of food web health will require development of a framework for reporting. Attributes of marine, freshwater, and possibly terrestrial systems may be used to characterize food web health in these systems in future reports.

Indicator: Species and Communities of Greatest Conservation Concern

Figure 2-8 shows the number of imperiled native species and species groups by level of risk in the Puget Sound ecosystem. By accounting for different types of species and higher order groupings this indicator captures the effects of a variety of stressors in the environment and provides an overall view of how we are meeting the Partnership goal of maintaining species. As shown, a large

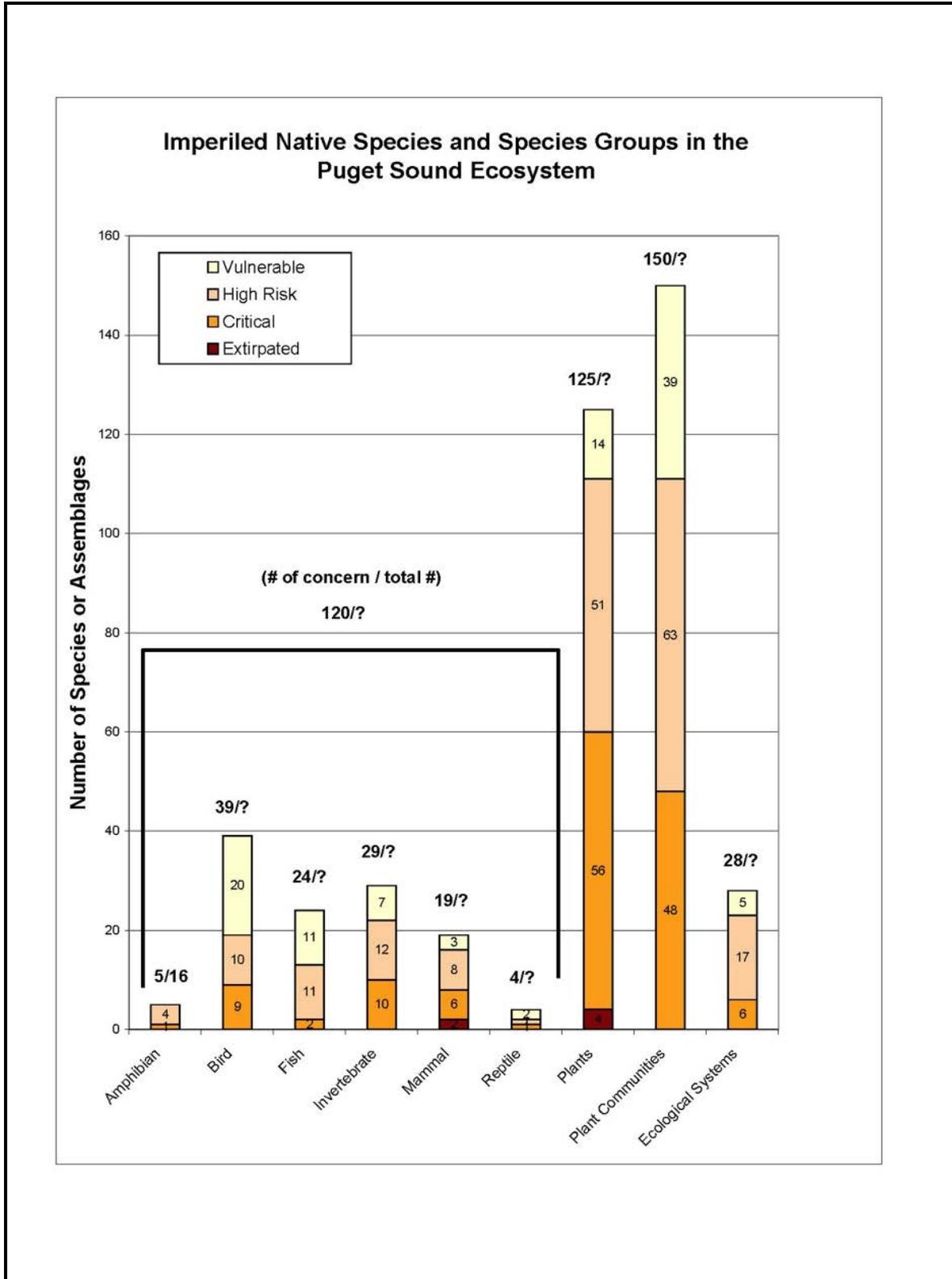


Figure 2-8 Imperiled native species and species groups in the Puget Sound ecosystem

percentage of the species or groups identified as imperiled are ranked as ‘critical’, the last stage before extirpation. Environmental stress has not been equally applied across all species or ecosystems types. Some of our most productive and ecologically diverse ecosystems such as estuarine wetlands, riparian habitat, and old-growth forest, are also some of the most imperiled.

During our lifetimes, Puget Sound is in danger of losing many of its plant and animal species, and the unique ecological functions they serve. Major causes include habitat loss, fragmentation, degradation, overharvest, and the introductions of exotic plant and animal species. Climate change, increasing biological invasions, and rapid growth of the human population pose further risks to biodiversity.

What is the current status of species of greatest conservation concern? Species with a significant portion of their range in the Puget Sound ecosystem that have been identified as global, federal, and state imperiled have typically experienced dramatic changes in population numbers. Even as efforts to conserve these species are under way, the list of imperiled species continues to grow. Some species, because they have minor commercial or cultural significance—or because they are obscure—are declining but have not received similar legal protection (for example under the Endangered Species Act) simply because insufficient scientific and regulatory resources prevent their formal consideration.

What affects the species of greatest conservation concern in the Puget Sound ecosystem? Threats to species of concern include habitat loss and degradation, direct mortality (e.g., due to human harvest), environmental contaminants, disturbance, and invasive species.

Flagship Species

Flagship species include iconic animals that provide a focus for raising awareness and stimulating action for broader conservation efforts and which may play a role in the context of human systems (i.e., social, economic, spiritual, etc.). Flagship species can also play a pivotal role in the food web, or can be indicative of other members of the community. As such, they can show us unique aspects of the ecosystem not readily measured by other means.

Some flagship species may have a minor ecological role (for example, within the food web) but be critically important as an indicator of a certain community type. Some species may have a controlling role on populations of other species, but there may be insufficient scientific understanding to shape effective restoration actions. Examples of the importance of flagship species to the food web include:

- Pacific herring: These are considered to be the most important component of pelagic prey fish in the Puget Sound food web. It is an important prey species for many fish-eating predators and many marine birds. Many of the species that eat herring are themselves listed.

- Pacific Salmon: This fish is an important food source for a wide variety of predators as juveniles, and for marine mammals including orca and humans, as adults. Salmon play a unique role in Puget Sound as one of the few species that return marine-derived nutrients to river systems in the form of eggs and carcasses. This marine terrestrial food web link helps support a large number of fresh water and terrestrial species. Salmon continue to play a pivotal role in the social, cultural, spiritual, and economic fabric of the Pacific Northwest.
- Apex predators: These species, like the orca, can exert strong control on the food web, and the loss of the orca could directly affect other species and indirectly affect them through their relationships in the food web. Loss of the southern resident populations would result in the loss of an iconic Pacific Northwest species and a multimillion dollar whale watching tourist industry in both British Columbia and Washington State.

In this report, the status and trends of flagship species are addressed through evaluation of indicators for orca whales, Pacific herring, and salmon listed under the ESA. Pileated woodpecker, red-legged frog, Pacific madrone, and giant chain-fern have been identified for evaluation as flagship species. Indicators for these species are introduced but not fully developed for 2009 reporting in the *Ecosystem Status and Trends* report.

Indicator: Orca Whales

The Southern Resident Orca Whales are actually a large extended family, or clan, composed of three pods. These three main orca populations visit the waters of Puget Sound regularly but only one - Southern Resident Whales - returns each summer to Puget Sound and the waters around the San Juan Islands. In 2005, Southern Resident Orcas were added to the federal endangered species list after scientists determined they are a genetically distinct population that do not breed with other orca populations.

What is the current status of Southern Resident Orcas? What affects orcas? While the number of Southern Resident Orcas appears stable in the most recent years, orca numbers belie the risks for the species. The orca was recently listed as threatened under the Endangered Species Act. This listing was based on a 20 percent decline in the population during the 1990s, in addition to ongoing threats from boat traffic, toxic chemical contamination, and declines in salmon, an important source of food for the species.

Figure 2-9 shows the fluctuation in this orca population over the past few decades. As of April 2009, the population of Puget Sound orcas totaled 85 individuals. This compares favorably to a low measured in the mid-1970s of 71, but unfavorably to the historic (pre-European settlement) population estimated at 150 to 250 whales. These animals continue to face threats to their health from a number of stresses including PBTs and other contaminants and declines in prey. The

whales are also at risk from major oil spills and from increased noise from whale-watching boats and other vessels.

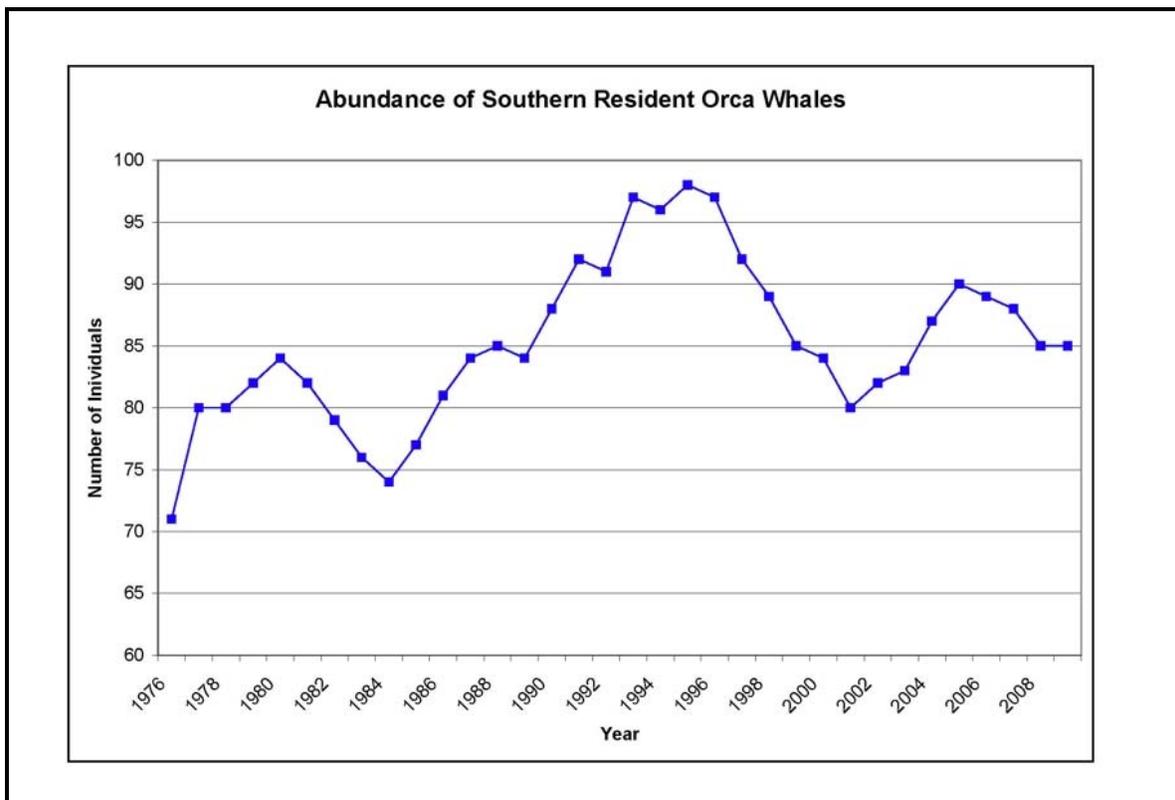


Figure 2-9 Southern Resident Orca abundance, 1976-2009

To better protect this population, we need to know the total nutritional requirement for a "recovered and sustainable" population, and provide for that requirement in our fisheries management programs and environmental planning. For example, in the 1970s and early 1980s, when Chinook salmon were still relatively abundant seasonally in Puget Sound, we documented orca presence during all months of the year.

Currently, only chum salmon in autumn are in sufficient supply to entice the orcas into Puget Sound with any regularity.

Indicator: Pacific Herring

Pacific herring are a vital component of the marine ecosystem and are a valuable indicator of the overall health of the marine environment. Many species of seabirds, marine mammals, and finfish, including Chinook and coho salmon, depend on herring as an important

What is the current status of herring? What affects the status of herring? The species is divided into different stocks for assessment purposes. One stock (Cherry Point) has experienced relatively sizable declines in abundance, for mostly unknown reasons. Other stocks appear to be relatively stable in terms of overall abundance, although data from other scientists suggests that there have been large changes in herring age distributions (fewer older fish) that may indicate increasing mortality rates among older fish. Our lack of understanding of the causes for decline in the Cherry Point stock heightens the concern for this species.

prey item. Nearshore habitat is critical for this species, therefore the status of herring populations in Puget Sound can be a measurable indicator of the productivity and health of nearshore systems. Additionally, the commercial herring bait fishery operates in Puget Sound, providing product for recreational fisheries and herring is one of the few Puget Sound marine fish species for which abundance data are available.

For the 2007-08 period, less than half (47 percent) of Puget Sound herring stocks were classified by WDFW as healthy or moderately healthy. This is the lowest percentage of stocks meeting these criteria since development of the stock status summary in 1994; although similar to the status breakdown for the previous 2-year periods (2003-04 and 2005-06).

Figure 2-10 provides a summary of spawning biomass of different herring stocks or within different regions of Puget Sound. For 2007-08, the spawning biomass for all Puget Sound stocks combined, excluding both the Cherry Point and Squaxin Pass stocks, would be considered moderately healthy compared to the previous 25 years. In 2005-06, these stocks were classified as healthy.

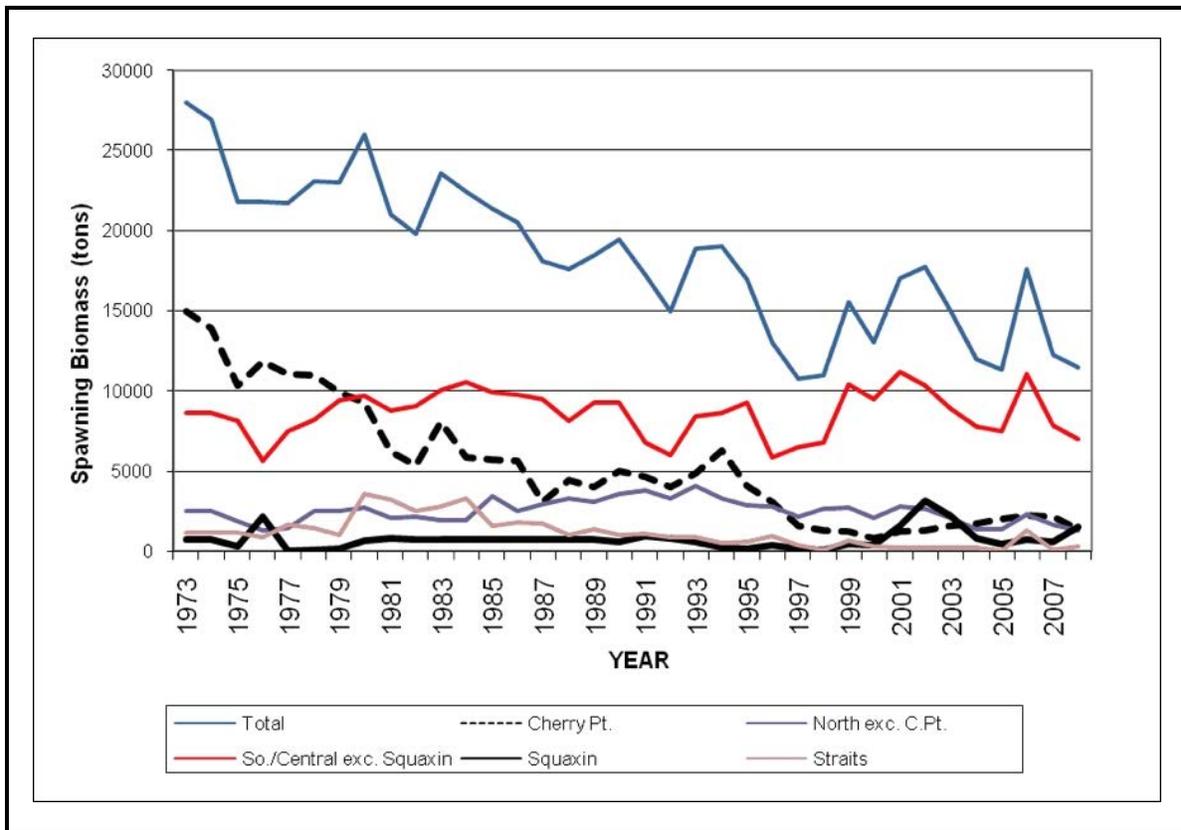


Figure 2-10 Puget Sound herring spawning biomass estimates by selected stocks and regions, 1973-2008 (historical mean assumed if stock not sampled)

In general, the abundance of south and central Puget Sound herring stocks in recent years is comparable to the 1970s and 1980s, while the Cherry Point stock, and cumulative north Puget Sound (excluding the Cherry Point stock) and Strait of Juan de Fuca regional spawning biomasses are at low levels of abundance (Figure 2-10).

Indicator: Listed Salmon

In Puget Sound, Chinook salmon, Hood Canal summer chum, and steelhead are all federally listed as threatened. Natural Chinook spawning abundance in Puget Sound is generally depressed, and at critically low levels for some specific populations. The data displayed in Figure 2-11 aggregate specific populations into broader geographical groupings called major population groups. These data show that the number of spawners and total abundance (spawners + harvest and mortality) has generally increased since listing in 1999. However, Puget Sound Chinook populations still remain well below the target spawning ranges needed for recovery as identified by the regional technical and scientific teams.

What is the current status of listed salmon? What affects the status of listed salmon? The Puget Sound supports three species of salmon that have been listed under the federal Endangered Species Act (ESA): Chinook, Hood Canal summer chum, and steelhead, with a fourth species, Coho, under consideration. Concerted efforts to recover the Chinook and summer chum are underway, and new plans for recovering steelhead are being considered. Chinook and summer chum abundance (run size) appear to be responding to favorable ocean conditions and may be affected by concerted recovery efforts to improve harvest and hatchery practices. Factors affecting the recovery of salmon include harvest, hatchery practices, and habitat, including the effects of hydropower on stream habitats.

Hood Canal summer chum were federally listed in 1999 but conservation measures actually began as early as 1992 in response to critically depressed populations. Due to both supplementation programs and reduced harvest, Hood Canal summer chum populations have rebounded in recent years (Figure 2-12). Until very recently they have remained well above the spawning goals. It will be important to monitor populations over the next few years to see if this increasing trend continues.

Steelhead were federally listed as threatened in 2007 because the populations were deemed critically depressed and in steep decline in recent years. The listing is so recent that there is no basis for comparison to pre-listing years. This information will be available for future reports.

Section II – Ecosystem Status

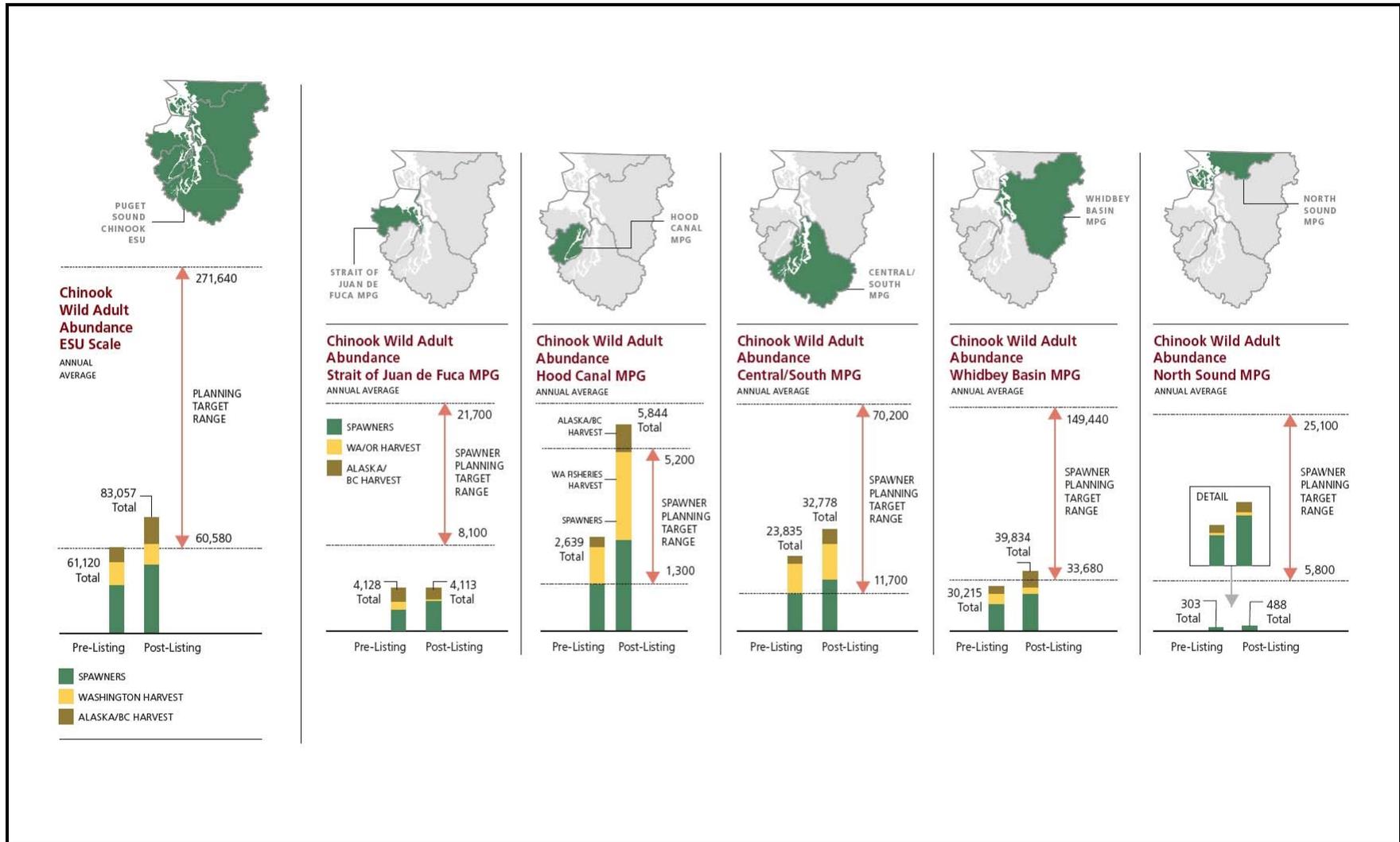


Figure 2-11 Annual average Puget Sound Chinook wild adult abundance (as reported in 2008 State of Salmon in Watersheds)

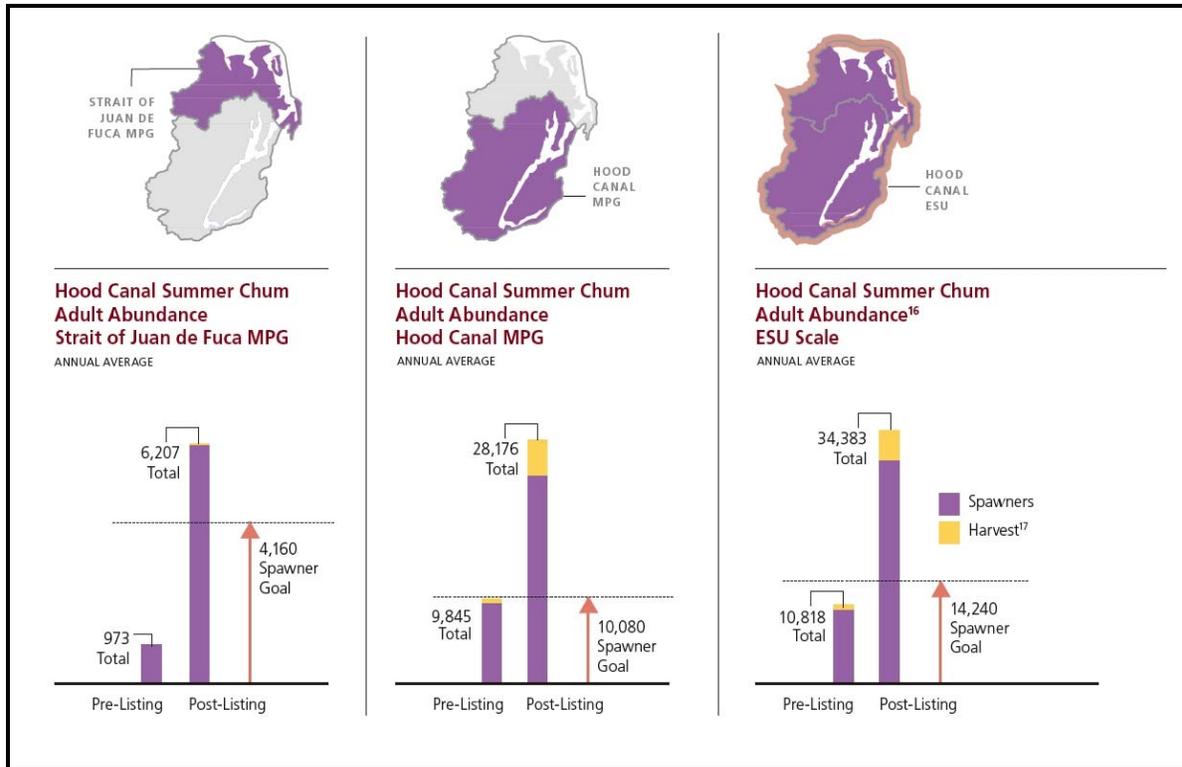


Figure 2-12 Annual average Hood Canal summer chum adult abundance (as reported in 2008 *State of Salmon in Watersheds*)

Habitat

What is the current status of habitat in the Puget Sound basin? The Puget Sound basin has experienced substantial degradation and loss of native habitats over the last 150 years. Most activity has occurred in the Puget lowlands (below 1,000 foot elevation) to provide living space (houses and associated infrastructure) for people. From 2001 to 2006, developed lands increased about 3 percent with nearly two-thirds of that increase representing impervious surface. This translates into a loss of about 10,700 acres of forest types and 4,300 acres of agricultural land over the 5-year period. As of 2006, approximately 25 percent of the Puget lowland was in urban use and agriculture. Some ecosystem types, particularly those in the lowlands and along riverine and marine shorelines, have experienced more change than others. Less obvious are changes in the conditions of habitat. Much of the old forest that dominated the region in the early 1900s has been converted to younger commercial forests.

What affects the condition of habitats in the Puget Sound ecosystem? Land development is a major determinant of the extent and condition of Puget Sound habitats. Most development continues to occur in the Puget Sound lowland but is not limited to relatively undisturbed lands. Agricultural lands also appear to be declining in support of more intensive land uses. In addition to development, climate change, pollution, and non-native species will also affect habitat quality and quantity in the region.

How does the status of habitats affect other aspects of the Puget Sound ecosystem? In addition to the direct effects on living space for imperiled fish and wildlife species and other valued elements of biodiversity, land conversion and use can have disruptive and degrading effects on ecosystem processes, many of which are important to maintaining a high quality of life for people. Some of these effects include an increase in flooding, reduced recharge of groundwater, increased transport of pollutants to streams and marine areas, increased concentrations of pathogens and bacteria, and more limited recreational opportunities. Loss of the working lands (agriculture and forests) may affect the quality, availability, and cost of food and wood fiber while decreasing the economic and cultural diversity of the region. Alteration of shoreform can alter important nearshore processes such as sediment delivery and routing as well as decrease food and habitat for the many nearshore dependent species.

The Puget Basin ecosystem encompasses a varied and dynamic mosaic of marine, nearshore, freshwater, and upland habitats that supports a wide variety species. From 1973 to 2000, the Puget lowlands experienced some of the highest rates of land use change in the country. The Partnership's interests in the region's habitats are expressed as one of six goals for ecosystem recovery:

A healthy Puget Sound where freshwater, estuary, nearshore, marine, and upland habitats are protected, restored, and sustained.

In reporting the status and trends of Puget Sound's habitats, one category is described in this report: the extent of ecological systems. A second category, the condition of ecological systems, was also identified. A number of indicators are being considered for evaluating the condition of ecological systems. These include an assessment of: fresh and marine riparian condition, marine benthic conditions, freshwater benthic conditions, breeding conditions for amphibians as estimated by egg masses, a freshwater habitat quality index, and habitat connectivity. These indicators are introduced in the *Ecosystem Status and Trends* report, but are not described any further in this chapter.

Extent of Ecological Systems

Indicators of the extent of ecological systems change include a coarse-scale indicator (conversion of upland habitats) and a number of finer-scale indicators of changes in specific habitat types, including *marine shoreform change, shoreline alterations and eelgrass area*. Indicators of focal upland habitats, intertidal wetlands, and freshwater wetlands are discussed in the *Ecosystem Status and Trends* report, but are not developed for this report.

Indicator: Conversion of Upland Habitats

The status and trends of upland habitat conversion was determined by investigating the development, impervious surface, and agricultural areas within the Puget Sound basin. Conversion of upland habitats is addressed by evaluating recent conditions and trends for the entire basin and for three scales or geographic divisions: 9 forest zones, 7 action areas, and 19 water resource inventory areas (WRIAs). Only a subset of the analysis is reported here. The *Ecosystem Status and Trends* report presents additional findings about different patterns of conversion in the different geographic divisions.

Nearly 10 percent of the Puget Sound basin is developed, with about a third of that being impervious surface. Agriculture accounts for around 4 percent of current land use; therefore, nearly 14 percent of the basin has been converted from natural ecological systems since pre-settlement. Between 2001 and 2006, developed land increased about 3 percent, with nearly two-thirds of that being impervious surface. The 2.8 percent increase of developed land from 2001 to 2006 is less than the pace of increases

What is the current status of upland habitat conversion? What affects upland habitat conversion? There has been substantial conversion and alteration of uplands over the last 50 years within the Puget Sound basin, although the rate of conversion from 2001 to 2006 appears to have slowed from earlier periods. Increased awareness of the impacts to the Puget Sound ecosystem, and economic conditions that reduce development rates may have contributed to lower rate of conversion. In addition, the emphasis to develop within urban growth areas may also be contributing to reducing the rate of urban sprawl. Although upland conversion rates slowed during the last 5 years, forecasts for human population growth in the Puget Basin raises concern for maintaining functioning upland ecosystem types, especially within the Puget lowlands.

observed from 1991 to 2001. The distribution of impervious surface in 2006 and the change since 2001 is depicted in Figure 2-13.

Agricultural land decreased by around 1 to 3 percent. There were nearly 4,300 acres of agricultural land converted to development, and nearly 17,000 acres were converted from 1991 to 2006. Similarly, about 10,700 acres of forest were converted to development, and about 57,000 acres have been converted from 1991 to 2006. With nearly 25 percent of the Puget lowland already in development and agriculture, sustained increases in development of even 3 percent every 5 years will put strains on important ecological systems and habitats.

The various geographic divisions of the Puget Sound basin have different levels of development and agricultural lands. Figure 2-14 depicts this variation across the Partnership's seven Action Areas.

The majority of the Puget Sound basin (61 percent) is classified as the Western Hemlock Forest Zone, which covers much of the Puget Lowland region below 1,000 feet in elevation. Nearly 25 percent of the Western Hemlock Forest Zone has been converted from natural ecological systems since pre-settlement; the majority as developed area (Figure 2-15). The other forest zones (see Figures 2-15 and 2-16), primarily occurring at elevations greater than 1,000 feet are considerably less developed, have impervious surface amounts below 1 percent, and have not been converted to agriculture in significant amounts.

Indicator: Marine Shoreform Change and Shoreline Alterations

The shoreline of Puget Sound is shorter now (2000-2006) than it was historically (1850s-1890s), reflecting a simplification of its complex geology. Total shoreline length of all natural shoreforms combined declined by about 15 percent Sound-wide (Figure 2-17).

Additionally, the composition of geomorphic shoretypes has changed with significant gains in artificial deposits (primarily nearshore fill) and significant losses in delta and embayment (barrier estuaries, barrier lagoons, closed lagoon marshes, and open coastal inlets) shoretypes.

What is the current status of shoreform and shoreline alteration? What alters shoreforms and shorelines? Habitat loss often refers to the process of conversion of habitat to other uses (e.g., forest to agriculture, or development) under the assumption that the feature is not lost altogether but rather modified to the point of relative dysfunction to previous occupants. Development along Puget Sound over the last 150 years resulted in the true loss of shoreline (by approximately 15 percent of its original length), and modification of much of the remaining shoreline and shoreform features. Most significant is the increase in artificial types (nearshore fill) at the expense of barrier estuaries, barrier lagoons, closed lagoon marshes, and open coastal inlets. Nearly 27 percent of the shoreline length has been armored and 7.9 percent of the area within 25 m of the shoreline consists of roads and tidal barriers. While most alterations to the nearshore are heavily regulated, new and replacement shoreline armoring is still relatively commonplace for single-family residences.

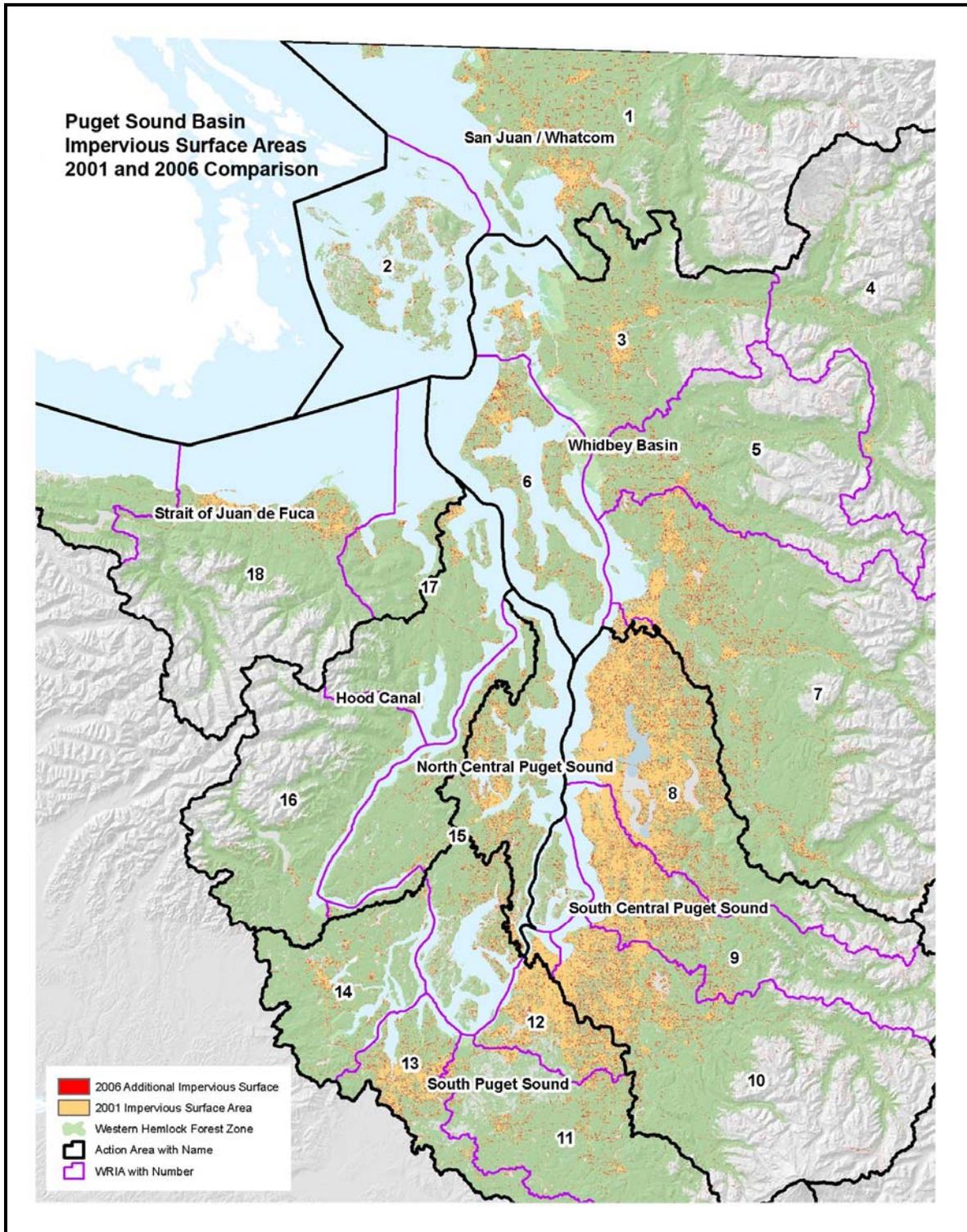


Figure 2-13 Impervious areas in the Puget Sound Basin, 2001-2006 comparison

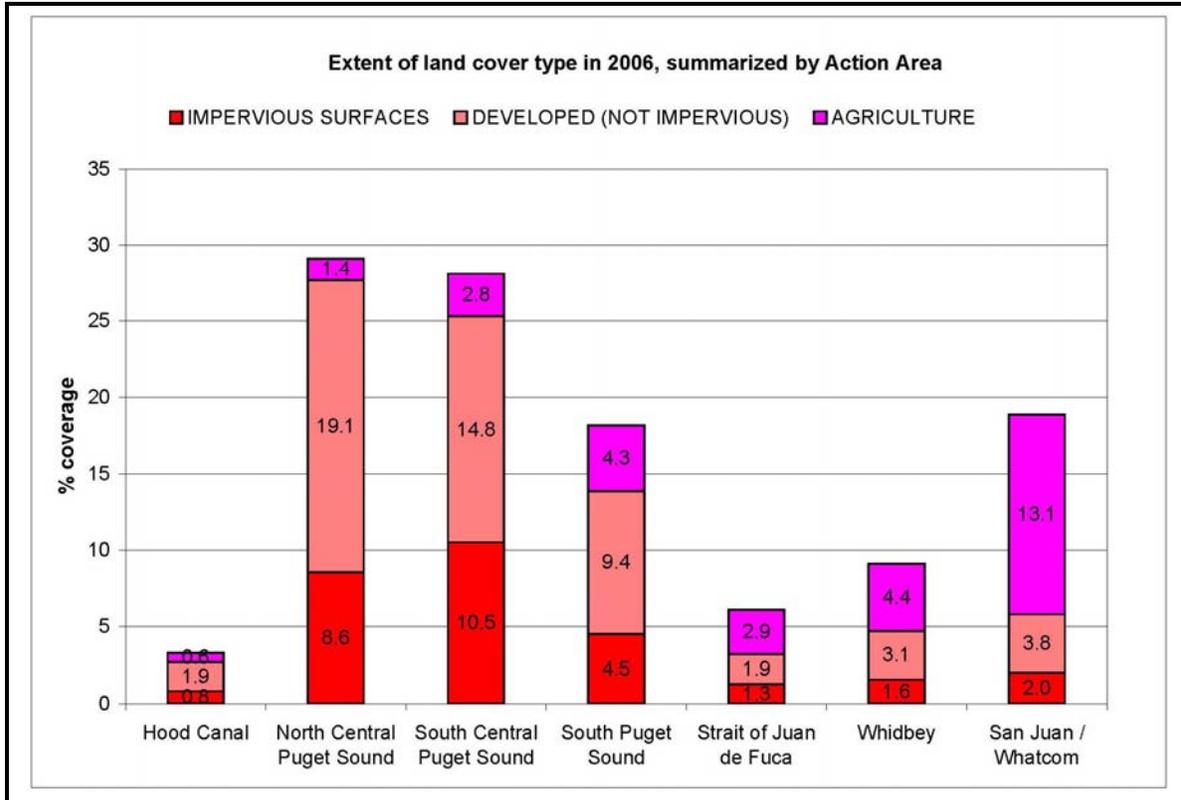


Figure 2-14 Status – Extent of land cover type in 2006, summarized by action areas

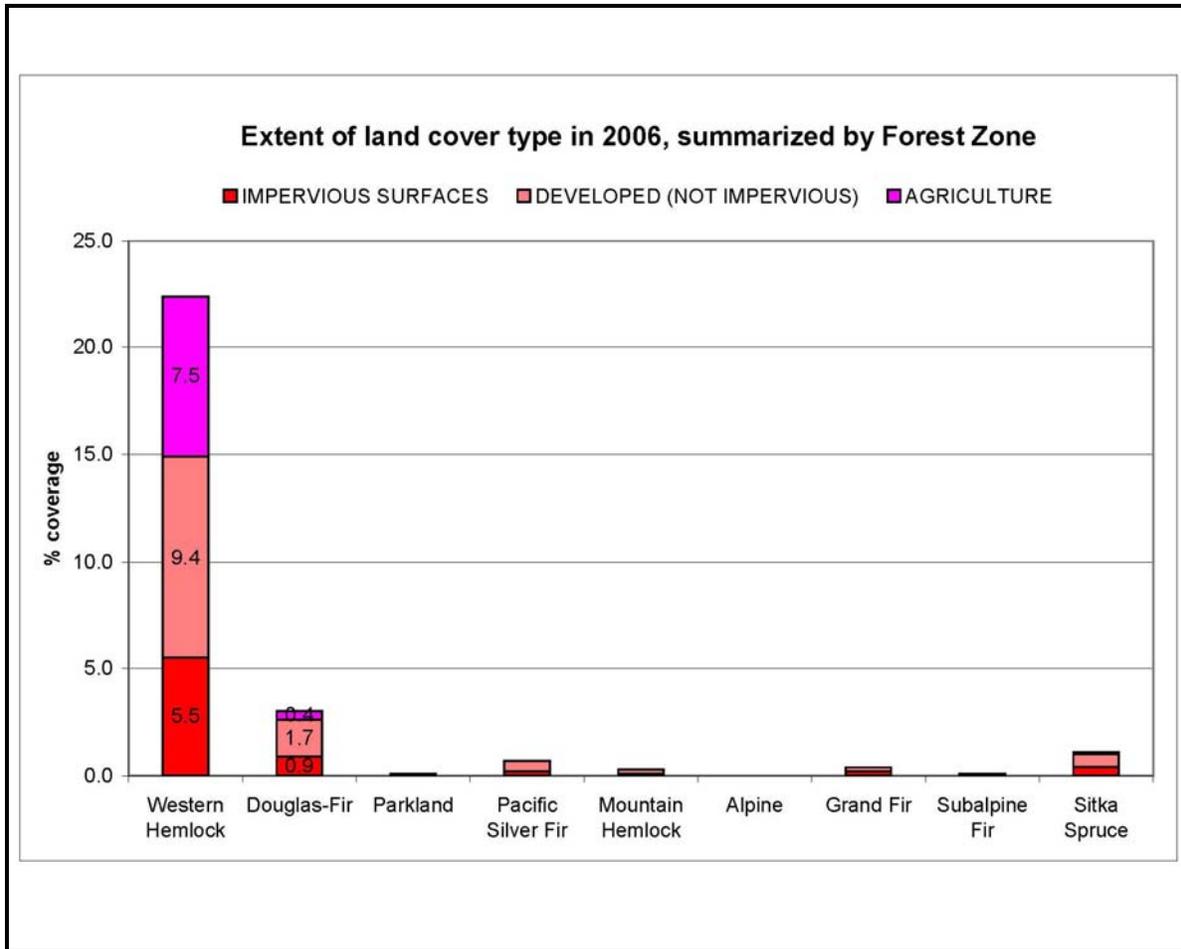


Figure 2-15 Status – Extent of land cover type in 2006, summarized by forest zones

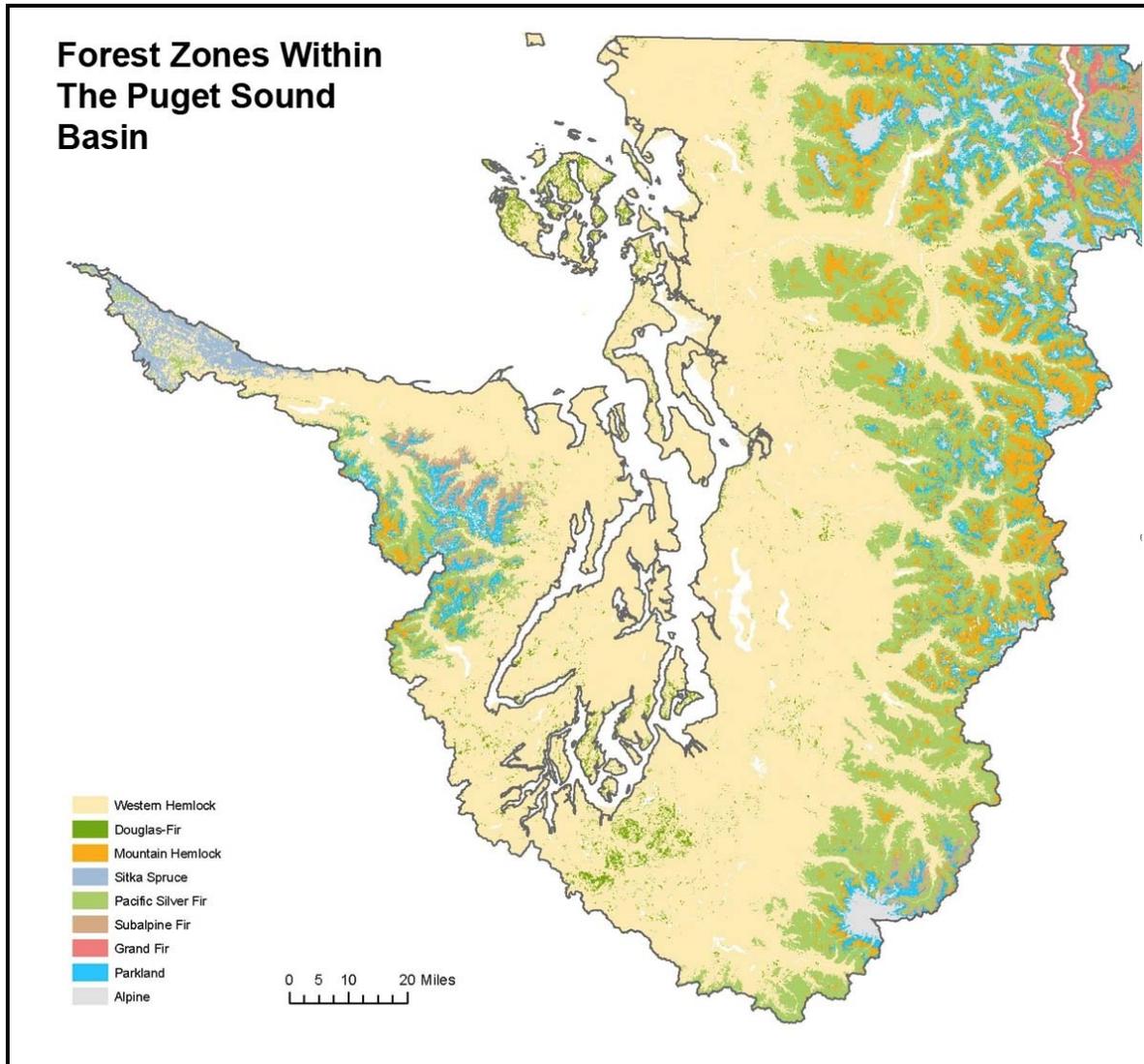


Figure 2-16 Forest zones within the Puget Sound basin

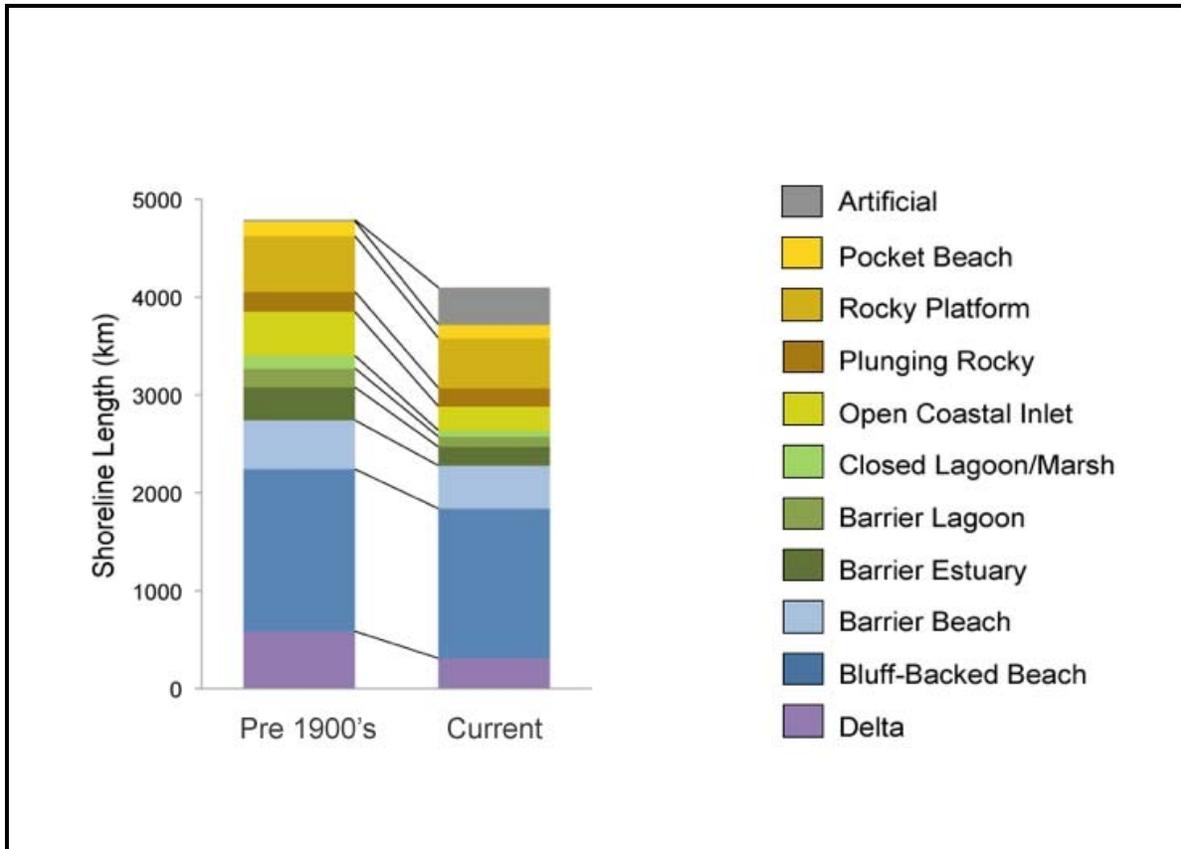


Figure 2-17 Shoreform change, 1850s – 2006

Shoreform change has been dominated by either a transition to an artificial form or the complete disappearance as a recognizable shoreform (i.e., filling a lagoon). Armoring constitutes as much as 27 percent of the shoreline length, nearshore roads (occurring within 25 m of the shoreline) 7.9 percent, and tidal barriers 10.5 percent. Tidal barriers are highly correlated with deltas (69 percent) where we have also identified significant wetland and intertidal loss.

Indicator: Eelgrass Area

Eelgrass (*Zostera marina L.*) is the dominant seagrass in Washington. It grows in tidelands and shallow waters along much of Puget Sound's shoreline. Eelgrass serves as a haven for many fish and wildlife species, providing them with food, breeding areas, and protective nurseries. Because eelgrass habitat supports intricate food webs and diverse fauna, it plays a critical role in the health of Puget Sound. Also because it is sensitive to environmental stressors it is a valuable indicator of estuarine health.

Overall there are about 50,000 acres of eelgrass in greater Puget Sound. The abundance and distribution of eelgrass varies greatly across Puget Sound (Figure 2-18). Over 25 percent of all Puget Sound eelgrass is found in two expansive embayments: Padilla and Samish bays in Skagit County.

What is the current status of eelgrass area? What affects eelgrass area? While overall eelgrass abundance has remained stable, the number of sites with year-to-year declines has outnumbered sites with increases in 7 out of the last 8 years. Sites with long term declines also outnumber sites with long term increases. These small-scale eelgrass losses are distributed at sites throughout Puget Sound. The observed eelgrass declines could reflect increased environmental stressors, such as excess nutrients, runoff, boat damage, docks, algae blooms, and climate change. Because it is protected by many regulations, eelgrass condition reflects, in part, the success of management actions. Observed decreases suggest that there may be gaps in regulatory protections or their implementation.

There has been an overall pattern of slight decline in eelgrass beds since monitoring began in 2000. The number of sites with significant annual declines has outnumbered those with increases in 7 out of the last 8 years. Declines have generally occurred at smaller sites, while the extensive meadows in the region, such as Padilla Bay and Samish Bay, remained stable. As a result, the site declines are not large enough to produce a declining trend in the overall area of eelgrass in greater Puget Sound. The regions of greatest concern for eelgrass losses are Hood Canal, and the San Juan islands. Understanding the processes that lead to seagrass decline is critical to the development of management policies that target the restoration or protection of this resource.

Additional indicators of the extent of ecological systems are introduced in the *Ecosystem Status and Trends* report but have not been developed for reporting in 2009: extent of focal upland habitats (e.g., oak and grassland systems), intertidal wetlands, and freshwater wetlands.

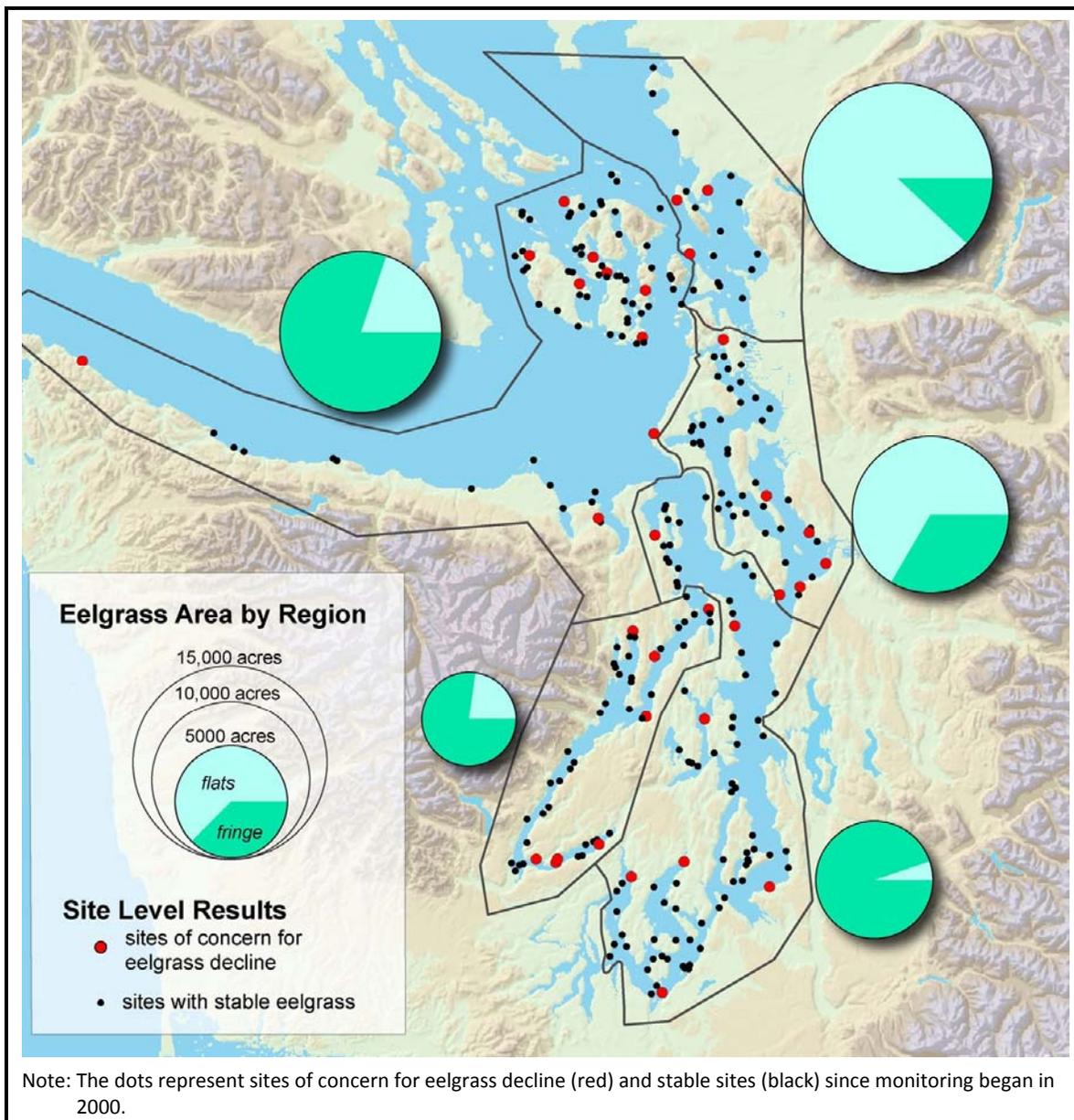


Figure 2-18 Eelgrass area in five regions of greater Puget Sound, and the proportion of eelgrass in broad flats and narrow fringe habitat types

Water Quality

Marine waters and freshwater can be degraded by the introduction of toxic chemicals, pathogens, nutrients, and suspended sediments. These types of pollution can impair the beneficial use of waters by humans, aquatic life, and wildlife.

A healthy ecosystem requires that pollution not harm human health or negatively affect the viability of species or habitats. The statutory goal for ecosystem recovery articulates the Partnership's interest in water quality as follows:

Fresh and marine waters and sediments of a sufficient quality so that the waters in the region are safe for drinking, swimming, shellfish harvest and consumption, and other human uses and enjoyment, and are not harmful to the native marine mammals, fish, birds, and shellfish of the region.

In describing the status and trends of Puget Sound's water quality, the Partnership is focusing on two indicators: chemical contamination in marine environments, and water quality in fresh and marine waters. The Partnership's 2009 indicators and reporting do not address chemical contamination of freshwater environments or the full array of water quality issues in marine waters. Continued development of indicators will support a more comprehensive evaluation of water quality status and trends in the future.

Chemical Contamination in Marine Environments

Puget Sound and its inhabitants have been contaminated with a wide range of chemical pollutants. We monitor a short list of representative contaminants in the ecosystem, focusing on fish, invertebrate, and marine mammals that live in a broad range of habitats. We also measure these toxins in the habitats (such as sediments) where they reside, and evaluate how these toxins move from sediments or water into organisms, and measure the harm they cause (such as disease).

Toxic contaminants enter Puget Sound from a huge number of sources, carried there by stormwater, river runoff, industrial effluents, sewage treatment plants, the atmosphere, and others. Once in the Sound, these molecules typically attach to particles in the water. Some of these particles sink to the seafloor and become part of the sediments, contributing to the reservoir of toxics there, and some particles, such as living bacteria, plankton, and other microorganisms may be consumed by any number of organisms, resulting in the entry of these toxics into the food chain (Figure 2-19). Contaminant molecules that bind to particle and sink to the sediments may also enter the food chain via benthic, or seafloor organisms, or may be buried by subsequent sedimentation. In this report we summarize two indicators of chemical contamination in marine waters: contaminants in benthic environments and contaminants in pelagic environments.

What is the current status of water quality (other than chemical contamination)?
What affects water quality? Localized issues exist in certain areas of Puget Sound. Water quality is affected by pollutant loads, watershed and riparian habitat changes, and hydrologic, climate, and ocean conditions that affect flushing and density stratification of Puget Sound.

How does water quality affect other aspects of the Puget Sound ecosystem?
Water quality affects almost every aspect of the Puget Sound ecosystem addressed by the Puget Sound Partnership. Chemical and pathogen contamination threatens seafood safety, safety of drinking water supplies, and affects human well-being that depends on the provision of clean food and water. It also affects people's ability to use water for residential, agricultural, commercial and industrial purposes. Typical water quality problems, such as those related to dissolved oxygen and temperature and chemical contamination affect the viability of species and food webs and is a key determinant of the quality of marine, estuarine, and freshwater habitats.

Indicator: Contaminants in Benthic Environments

Monitoring of English sole and sediments has shown us that polycyclic aromatic hydrocarbon (PAH) contamination may be on the decline in Elliott Bay, one of Puget Sound's most polluted bays. In the late 1990s, 20 to 40 percent of these bottom-feeding flatfish exhibited liver cancer related to PAH contaminants they are exposed to from consuming contaminated prey (Figure 2-20). In the following 10 years, liver disease dropped dramatically; currently these fish show no more liver disease than those from our cleanest habitats. Also during this 10-year period, one measure of exposure to PAHs (i.e., PAH metabolites in English sole bile) declined significantly (Figure 2-20).

What is the current status of chemical contamination in benthic environments? Though PAH levels and English sole liver disease have declined in Elliott Bay over the past 10 years, a problem still exists with this group of contaminants because concentrations still exceed Washington State sediment quality standards.

What affects chemical contamination of benthic environments? Chemical contamination in Puget Sound's benthic environments reflects the remnants of historic loads and current day loads. For PAHs, historic and current contamination might arise from combustion of oil and/or wood and spills or seeps of oil or petroleum products. An improvement similar that reported for Elliott Bay was seen in Eagle Harbor in response to contaminated sediment site clean-up but the cause of the improvement in Elliott Bay has not been investigated.

This recovery of one aspect of English sole health may be related to reductions in PAHs from Elliott Bay sediments. Ecology's long-term monitoring studies in Elliott Bay showed a significant decline in sediment PAHs across the time period where we observed improvements in English sole health, especially in inner harbor areas where their population is monitored (Figure 2-21). We don't yet know how or why PAHs have declined; a number of sediment cleanup or capping activities have occurred in Elliott Bay during this time period, which may have been effective in protecting its inhabitants from exposure to pre-existing PAHs. Alternatively, new PAH inputs to Elliott Bay from stormwater, aerial deposition, and other sources may have declined.

This case and others illustrate what appears to be an effective recovery strategy for fish health in a benthic species, related to their exposure to one class of toxic contaminants. Long-term monitoring of these sites will tell us whether this is a permanent recovery.

Other indicators of contamination in marine benthic environments are introduced in the *Ecosystem Status and Trends* report, including contaminants in marine sediments and endocrine disrupting compounds in English sole.

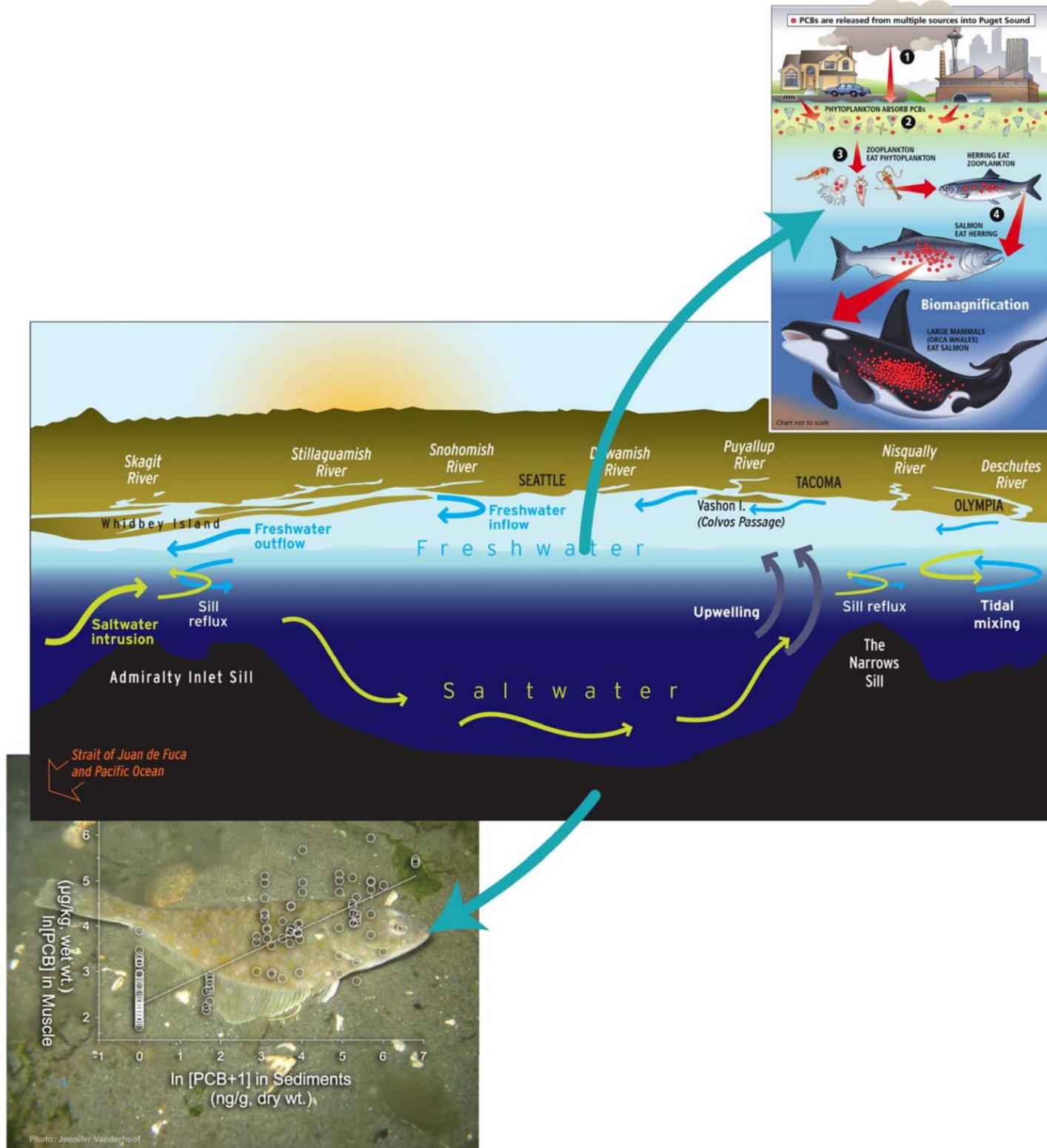


Figure 2-19 Sources and distribution of chemical contaminants in the marine environments of Puget Sound

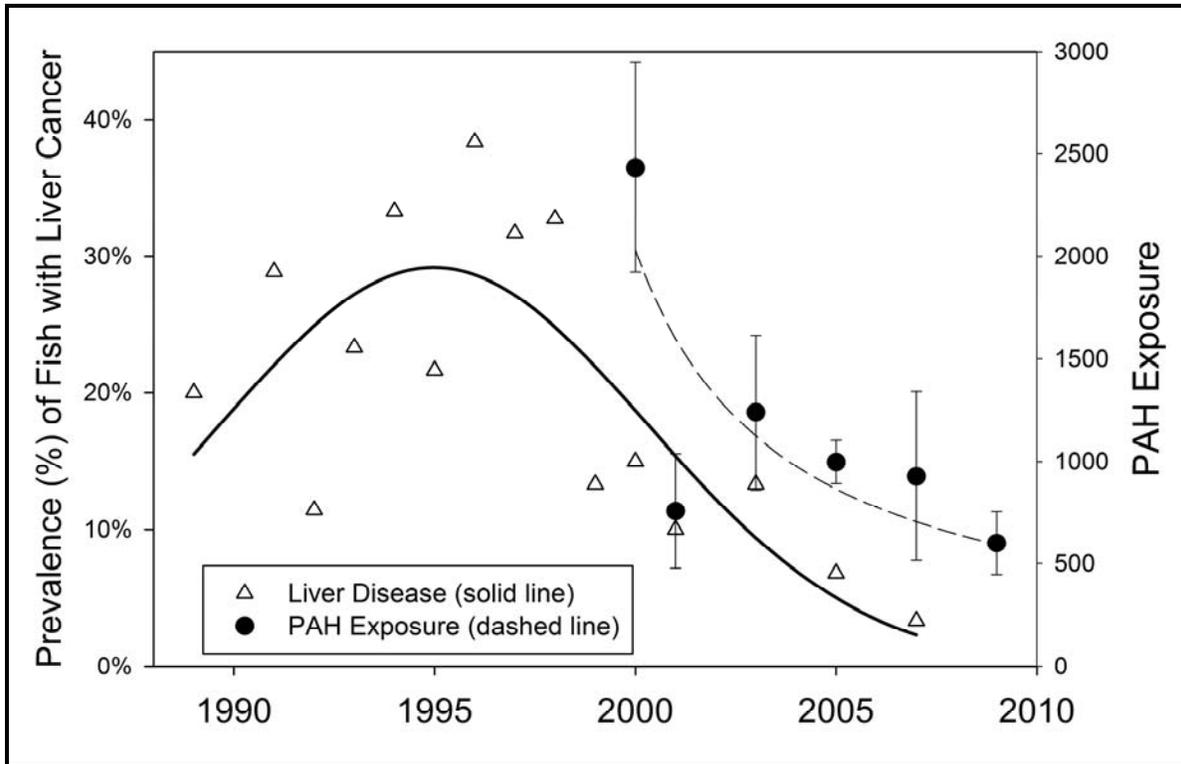


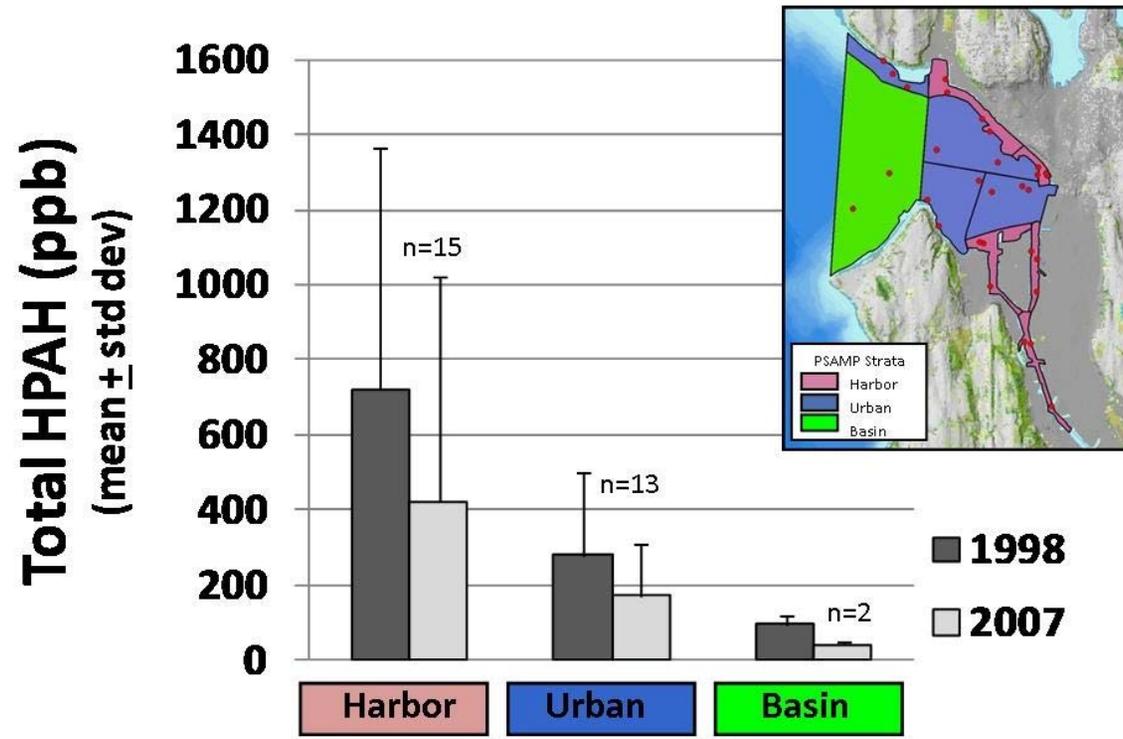
Figure 2-20 Liver disease and PAH exposure in English sole from Elliott Bay, Seattle

Indicator: Contaminants in Pelagic Environments

Although we have documented a strong correlation between some persistent bioaccumulative toxics (PBTs) in sediments and English sole, a benthic fish, the source of PBTs in pelagic fish species, such as herring, is unknown. Current studies are investigating whether small-sized primary producers and consumers such as plankton concentrate PBTs directly from the water, which then become entrained in the pelagic food web, somewhat independent of sediment conditions. The source of PBTs to plankton could be new inputs from rivers, stormwater, wastewater, and the atmosphere, or historic loads that are either resuspended from sediments or recycled within the body of biota in the ecosystem.

What is the current status of chemical contaminants in pelagic environments? Flame retardants have only recently been recognized as a class of compounds that is increasingly showing up in aquatic ecosystems. Other contaminants, such as PCBs which persists in the environment as a legacy of historic uses, are present but not increasing in pelagic food webs. Due in part to difficulties in measuring chemical contaminants in pelagic environments, little information exists about concentrations of many classes of pollutants, including pharmaceuticals, personal care products, flame retardants other than PBDEs, and plasticizers.

Analysis of archived harbor seal and Pacific herring tissues indicate that PBDE flame retardant chemicals were probably rare in the pelagic (open water) food web in the early 1980s, but appear



Note: Bay is divided into three strata types – harbor, urban, and basin – developed for the PSAMP sediment monitoring component.

Figure 2-21 Change in high molecular weight PAH concentrations in Elliott Bay, Seattle from 1998 to 2007

to have increased rapidly over the past 2 decades (Figure 2-22). PBDEs were present in herring by 1995, and have shown no consistent trend over the past decade. Monitoring results have shown that PBDEs are distributed differently in the pelagic food web than other Puget Sound pollutants such as PCBs.

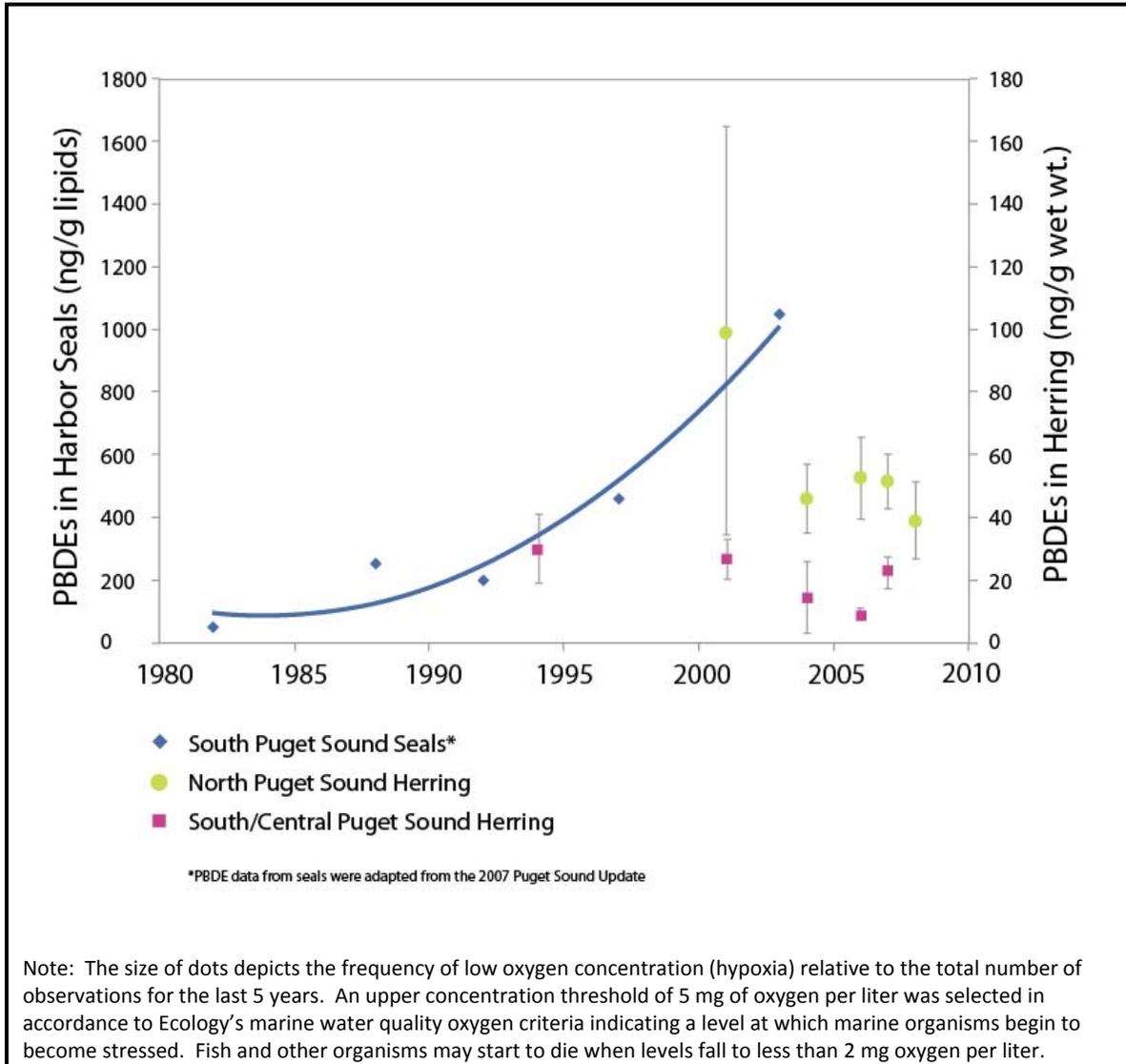


Figure 2-22 PBDEs in harbor seals and Pacific herring in Puget Sound

Water Quality in Fresh and Marine Waters

Indicators for this category include spatial distribution of hypoxia in Puget Sound, and the freshwater water quality index. In future reports, a new marine water quality index (provided by the Washington State Department of Ecology) will be used to track and report changes in Puget Sound's water quality and other properties, in the context of a suite of important environmental factors including near shore and large scale oceanic and climatic factors.

Indicator: Spatial Distribution of Hypoxia in Puget Sound

Dissolved oxygen is critical for supporting the life of marine species. The concentration of oxygen is the result of a delicate balance between many processes including changes in water temperature the consumption of oxygen by organisms and chemical processes, the production by aquatic plants, the atmosphere-ocean oxygen exchange, and ocean currents. Low oxygen concentrations (hypoxia) can be temporary or chronic and stress the environment according to severity and duration of the event.

What the current status of marine water? What affects marine water quality? Based on hypoxia alone, this is a fairly localized problem but with areas of strong concern. Natural processes, such as local biological production driven by ocean and climate driven influences, are responsible for much of the hypoxia observed in Puget Sound, but human contributions of excess nutrients in some areas are exacerbating the duration and intensity of the hypoxia.

Puget Sound, with its fjord-like topography, shallow sills, bays and estuaries, displays a very complex pattern of chronic hypoxia (Figure 2-23). Chronic hypoxias are found in Hood Canal, Budd Inlet, Sequim Bay, and increasingly in areas of Whidbey Basin and Quarter Master Harbor. These patterns are partially caused by local factors, such as eutrophication and poor water circulation resulting from large-scale oceanographic processes such as coastal upwelling and large scale climatic variability. These patterns are also influence by watershed activities and river discharge. As a result oxygen concentrations greatly fluctuate over the years, yet consistent problem areas remain and observations of low oxygen concentration become more numerous in restricted areas.

Indicator: Fresh Water Quality Index

Ecology routinely monitors rivers and streams in the Puget Sound ecosystem. The results are used to assign a water quality index (WQI) rating to each site. Sites are rated as either poor, fair, good, or excellent. In 2008, most freshwater monitoring stations received WQI scores of "fair" or "good" (Figure 2-24). Stations with the lowest scores tended to have high nitrogen concentrations. Nitrogen contributes to algae growth, particularly in the marine environment. Some stations, like the Skagit River at Marblemount, were considered "fair" rather than "good" because of naturally occurring sediment from glaciers in the watershed. No long-term stations had "poor" overall WQI scores in 2008. Leach Creek near Steilacoom, which is not a long-term station, had extremely high bacteria and nitrogen concentrations, and was the only station monitored in 2008 that received a "poor" score.

What is the current status of freshwater quality? Freshwater quality is quite variable, with some rivers, streams and lakes showing impacts and others not. The majority of the long term sites are rated as moderate with respect to water quality. There may be a slight trend to improvement in the overall rating of Puget Sound rivers and streams.

What affects freshwater quality? Freshwater quality is affected by pollutant loadings from point and non-point sources and by alteration of watershed and, especially, riparian habitats.

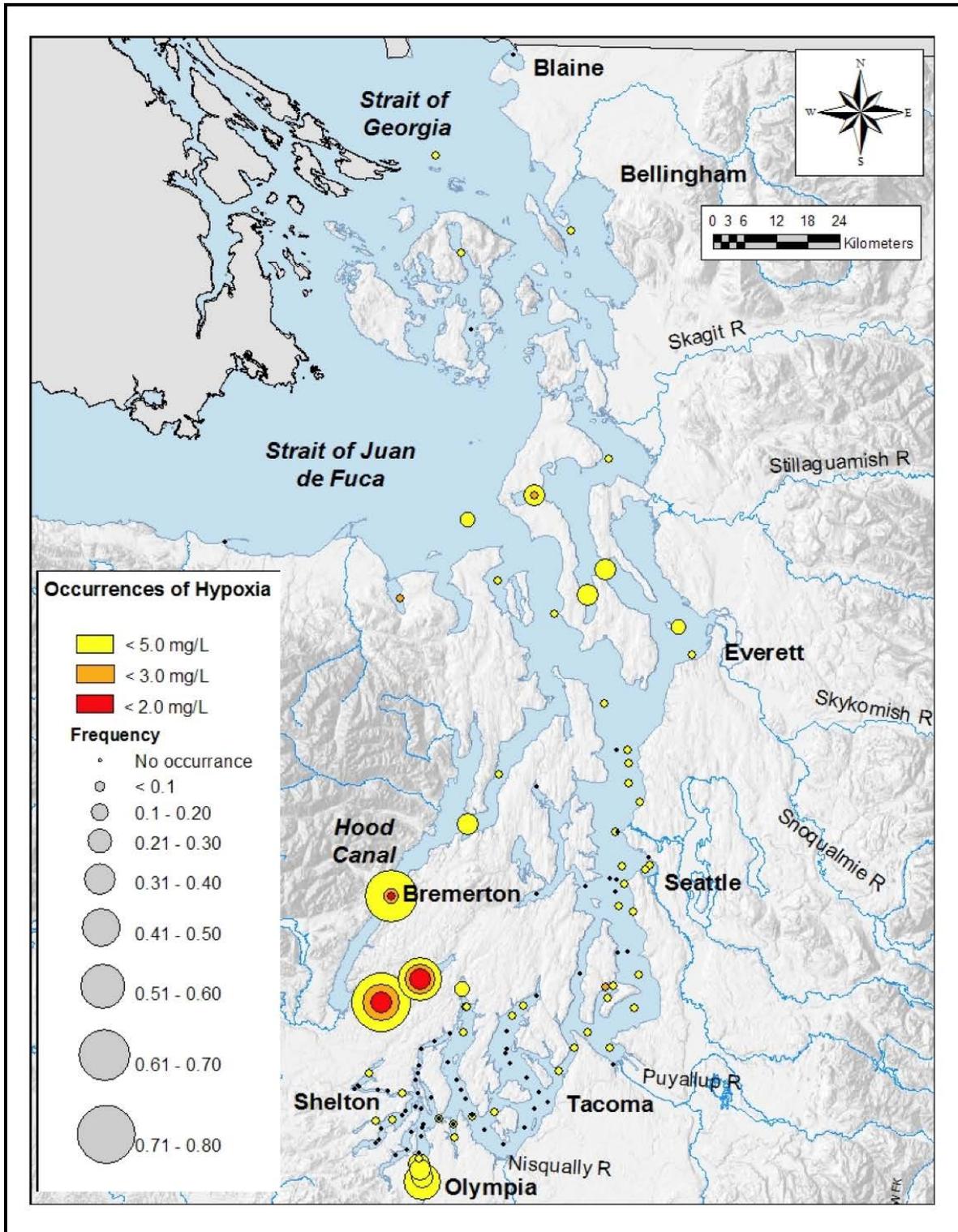


Figure 2-23 Surface map of Puget Sound illustrating the spatial patterns of chronic low oxygen concentration (hypoxia) below thresholds of 5 mg (yellow), 3 mg (orange) and 2 mg (red) oxygen per liter from 2003-2008

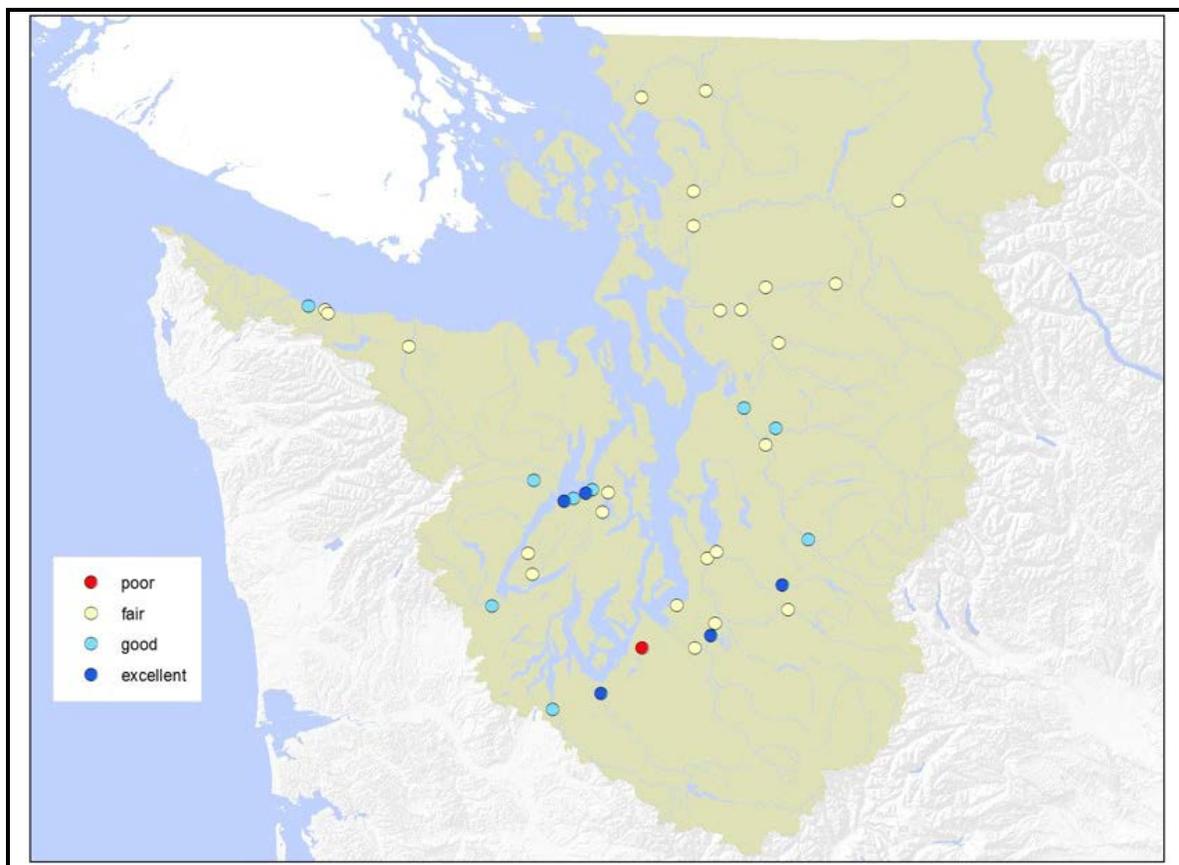


Figure 2-24 2008 water quality index ratings for freshwater stations in the Puget Sound basin

Since 1995, overall water quality in major Puget Sound rivers has been steady or even improving (Figure 2-25). Ecology's long-term monitoring stations are sentinel stations, which are downstream of most human impacts. Trends at these stations may reflect the good work being done by individuals and organizations to protect water quality in watersheds all around the Sound.

Water Quantity

Stream flows support aquatic life by moving sediments and organic matter to create and sustain a diversity of habitats in fresh, estuarine, and marine waters by moderating stream temperatures and modifying water quality by aeration and dilution. Stream flows also support withdrawals of surface waters from human uses.

The Partnership's interests in water quantity are expressed in the statutory goal for ecosystem recovery:

An ecosystem that is supported by ground water levels and river and stream flow levels sufficient to sustain people, fish, and wildlife, and the natural functions of the environment.

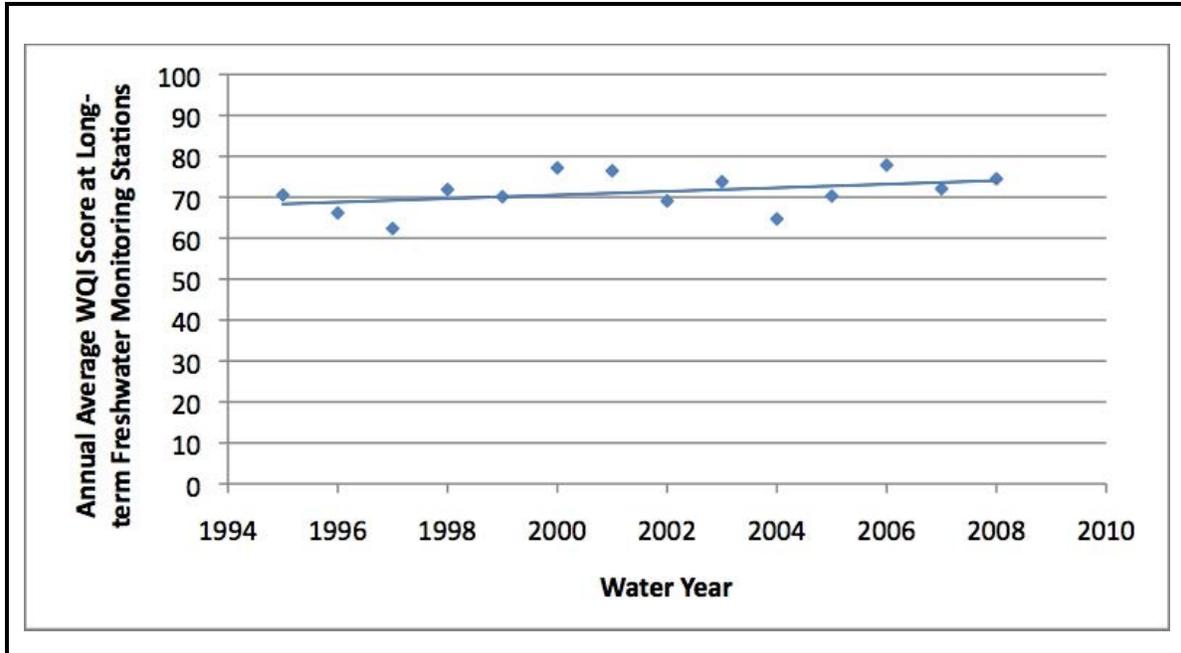


Figure 2-25 Average freshwater Water Quality Index scores at Puget Sound region long-term monitoring stations

One category of indicators of water quantity was identified for evaluating the status and trends of freshwater quantity: streamflows in major rivers. Stream flow in major rivers is most affected by climate change and variability, land use practices, and water withdrawals. A second category, hydrologic alteration, was also identified because it is considered to be a significant cause of declining biological richness as basins become urbanized. At present a specific indicator for this category has not been fully developed and tested, preliminary information is provided in the full *Ecosystem Status and Trends* report.

The Partnership's focused reporting on water quantity for 2009 does not include characterization of ground water levels or ground water storage. This version of the Partnership's reporting also does not describe

all aspects of surface water hydrology, surface water storage in natural or human-built reservoirs, or human use of fresh waters. It also does not describe water use or track trends in withdrawals

What is the current status of water quantity in Puget Sound? Stream flows in Puget Sound are affected by long-term climate influences (i.e., reduced summer flows and increased winter flows) and altered (i.e., more flashy) runoff in streams directly affected by urban development.

What affects the status of water quantity in Puget Sound? The primary influences on Puget Sound stream flows are climate, development of watersheds, withdrawals of water, and regulation of flows for flood control or power generation.

How does water quantity affect other aspects of the Puget Sound ecosystem? Water quantity affects human well-being by determining the amount of water available for human consumption and other uses. Stream flows affect species and food webs and the formation and maintenance of habitats. Water quantity can also affect water quality since it can drive circulation of marine waters and affect the distribution and concentration of pollutants in fresh and marine waters.

and consumptive use in Puget Sound’s major basins. These aspects of water quantity may be addressed in future reports by the Partnership.

Stream Flow in Major Rivers

Indicator: Magnitude and Timing of Stream Flow in Major Rivers

This assessment of the magnitude and timing of stream flows in the major, unregulated rivers includes some portion of 5 of the 12 largest Puget Sound rivers. As seen in Figure 2-26, the major unregulated river flows for 1984 to 2003 shows a shift to higher and earlier fall flows, higher spring flows, and summer flows that are lower and peak earlier compared to flows from 1939 to 1967. The pattern of higher and earlier fall flows observed from 1984 to 2003 has also continued in the most recent 5 years of data. Peak summer flows have also continued to occur earlier than they did in the mid-20th century, but are not reduced as were flows from 1984 to 2003. In recent years' annual flow has been near the long-term mean values for the period.

What is the current status of stream flows in major rivers? Stream flows have shifted over the past 70 years. Seasonal patterns of runoff have shifted towards higher winter stream flows and earlier and reduced summer flows supported by snowmelt.

What affects the status of stream flows in Puget Sound’s major rivers? Climate and flow regulation are the primary influences on stream flows of Puget Sound’s major rivers.

The combined summer flows of Puget Sound's major, unregulated rivers show a decreasing trend (Figure 2-27), which has been hypothesized as a regional effect of global climate change.

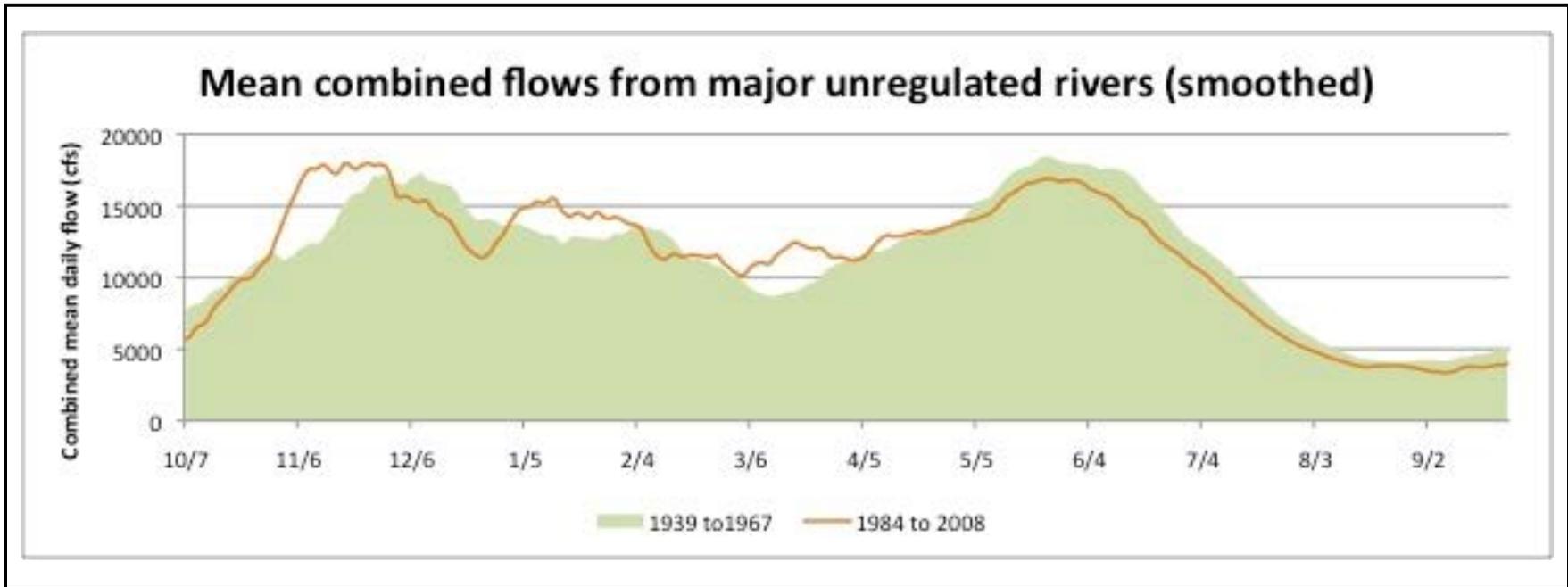


Figure 2-26 Seasonal pattern of runoff from Puget Sound’s major rivers has shifted from conditions observed in the mid-20th century

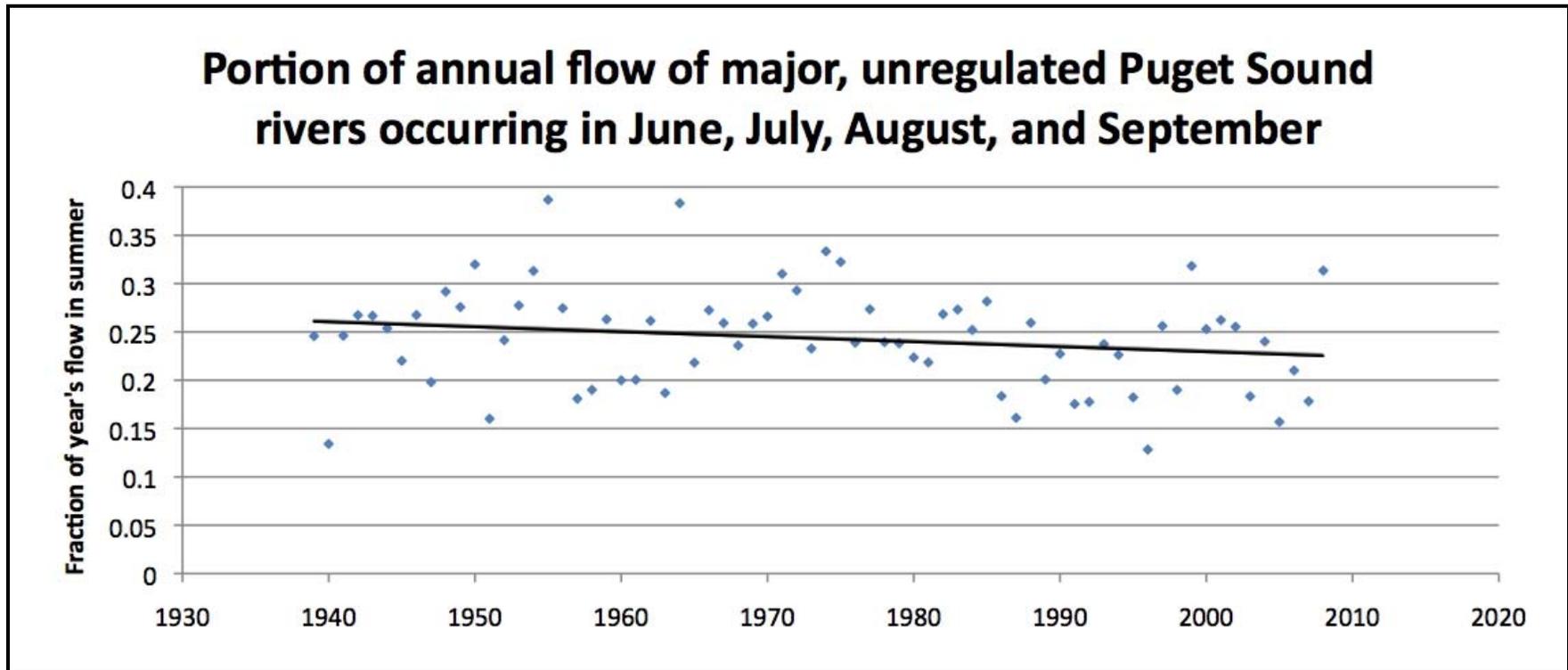


Figure 2-27 The combined summer flows of Puget Sound's major, unregulated rivers

Section III – The Action Agenda Performance Management System

Introduction

The Puget Sound Partnership's performance management system will allow us to measure how well the Action Agenda is being implemented and whether the health of Puget Sound is improving. The ultimate customers for this information are the citizens and their representatives who want to know if investments in programs, activities, and projects are advancing the region toward a healthy Puget Sound by 2020. This chapter introduces and defines the performance management system, provides an overview of the Partnership's principles for performance management, describes expected benefits of the Performance Management System, outlines the Action Agenda performance management cycle, reviews the work completed to date, and identifies the next steps for completion and implementation of the system.

Many elements of a successful performance management system are in place. The governor and legislature have provided leadership by setting goals and a deadline of 2020 for accomplishing them. The statutory structure of a leadership body (Puget Sound Partnership Leadership Council) with an independent science panel (Puget Sound Partnership Science Panel) is recommended by the U.S. Government Accountability Office. This structure is complemented by the Ecosystem Coordination Board, a stakeholder advisory group. The Action Agenda is widely supported and implementers are willing to participate and focus their efforts on the most important work to reach the 2020 goals. Washington State and many local governments already operate within a culture of performance management. Moving the Action Agenda into our new performance management system to explicitly align budgets and actions to goals, will build upon these assets.

Overview of the Performance Management System

The Partnership's approach to performance management will systematically link budgeting, planning, research, and actions to inform setting priorities and allocating resources to most effectively reduce threats and improve overall ecosystem conditions. Everyone committed to the achievement of the 2020 goals via the Action Agenda will work together within the same performance management system. The Partnership will be consistent and persistent in following up on results to ensure improvement in outcomes.

Our Principles for Performance Management

We propose the following principles to guide the management and decision making processes related to implementation and revision of the Action Agenda:

- The 2020 ecosystem targets and their benchmarks will guide all decisions and strategies related to implementing or revising the Action Agenda.
- The leadership of the Partnership will drive and actively engage in the development and implementation of the performance management system and ensure its ongoing effectiveness in achieving the 2020 recovery goals.
- Goals and measures used to evaluate progress will be relevant to what the public cares about and wants to achieve.
- Information, decisions, and processes related to the Action Agenda will be transparent, easy to access, and clearly presented to stakeholders.
- Decisions and processes will be driven by timely, accurate, and pertinent data, including science and ecosystem monitoring information. Processes and programs intended to provide these data will meet deadlines to ensure timeliness for decisions and processes.
- Accountability and adaptive processes will be sustainable over time and across organizational changes.
- The performance management system will align with existing financial, reporting, and data collections systems where they support progress toward 2020 goals.
- The performance management system will transform the Action Agenda, its management, and the policy-making process through innovation and continuous learning.

Expected Benefits of the Performance Management System

Using this performance management system will have the following benefits:

- **Better decisions:** Allows decision makers to make informed decisions and apply resources to the highest priority results and strategies as identified in the Action Agenda.
- **Better coordination:** Provides a consistent, unifying approach that will allow all implementers to align and integrate their planning, budgeting, and reporting with the rest of the efforts being implemented to achieve the 2020 goals.
- **Better integration of science and monitoring:** Explicitly aligns and uses science and ecosystem monitoring information to ensure that decisions about actions and allocation of resources are based upon facts and evidence.
- **Increased transparency and accountability:** Makes the expenditure of funds and the progress on goals transparent and accessible to the public, stakeholders, the Leadership Council, the Ecosystem Coordination Board, the Science Panel, the governor, and the legislature.
- **Increased credibility:** Builds credibility for the efforts of all implementers with funders and with the general public, which will result in growing confidence and willingness to provide support for Action Agenda implementation.
- **Improved capacity to learn, adapt, and achieve:** Allows a structured review of progress with implementers, stakeholders, and the Partnership to address lessons learned and to develop action plans to improve performance.

The Action Agenda Performance Management Cycle

Implementation and evaluation of the Action Agenda will be iterative. There will be a structured series of steps within which actions will be implemented, their results and the status of the Sound will be assessed, strategic decisions to sustain or improve effectiveness will be made, and action implementation will proceed again. A general depiction of this process is captured in Figure 3-1.

The Partnership's statute identifies a number of milestones that must be accounted for within this cycle. These milestones represent types of activities that are essential to ensuring effective performance toward achieving the 2020 goals. These activities include: incorporating current science into decision-making processes, providing timely input into state (and other) budget-making processes, and delivering current performance information to help guide policy-making processes and programs that must contribute toward progress. These milestones are shown in Figure 3-2.

Measuring Results

The Partnership is using the Open Standards for Conservation to logically align strategies and actions to reducing threats and achieving ecosystem goals, and to help develop clear, specific measurable outcomes. The Open Standards for the Practice of Conservation will help to integrate and logically align the Partnership's vision, mission, and goals with the strategies and near-term actions in the Action Agenda. The Open Standards for Conservation is recognized by practitioners

Partnership Working Performance Definitions

One of the first tasks in establishing the performance management system is to agree on terms and definitions. The current working definitions are:

- **Statutory goal:** This refers to one of the six aspirational goals identified in Chapter 90.71 RCW.
- **Component:** An element of the ecosystem that is directly related and representative of a statutory goal and is essential to its health.
- **Ecosystem status indicator:** A measure used to describe the condition of a component (for example, the number of salmon spawning or the amount of toxics in stormwater).
- **Objective:** A statement detailing a desired outcome. Objective statements are specific, measurable, practical, results oriented, and time-limited. Objectives can be set for ecosystem status indicators and threat reduction performance measures.
- **Performance measure:** A measure used to describe the effect of a strategy on a threat.
- **Target:** The desired future numeric value for an ecosystem status indicator or for a threat reduction performance measure (for example, how much riparian habitat needs to be restored by 2020). Targets are attached to objective statements.
- **Benchmark:** A measurable interim milestone set to demonstrate progress toward a target for an ecosystem status indicator or a threat reduction performance measure.

The performance management system will ultimately include quantitative targets for ecosystem indicators as they reflect statutory goals, reducing threats to the ecosystem, and actions.

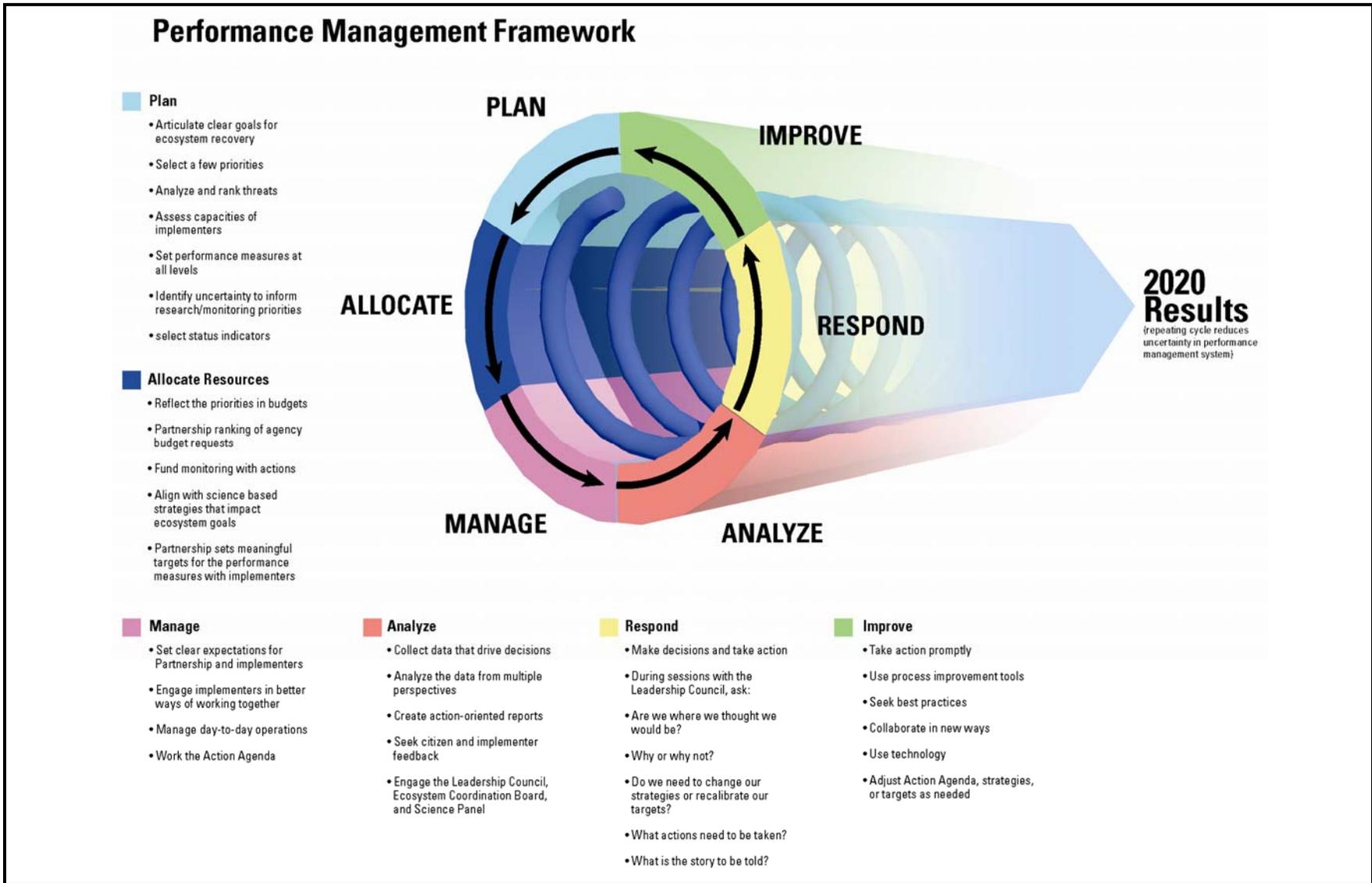


Figure 3-1 The Action Agenda Performance Management Cycle

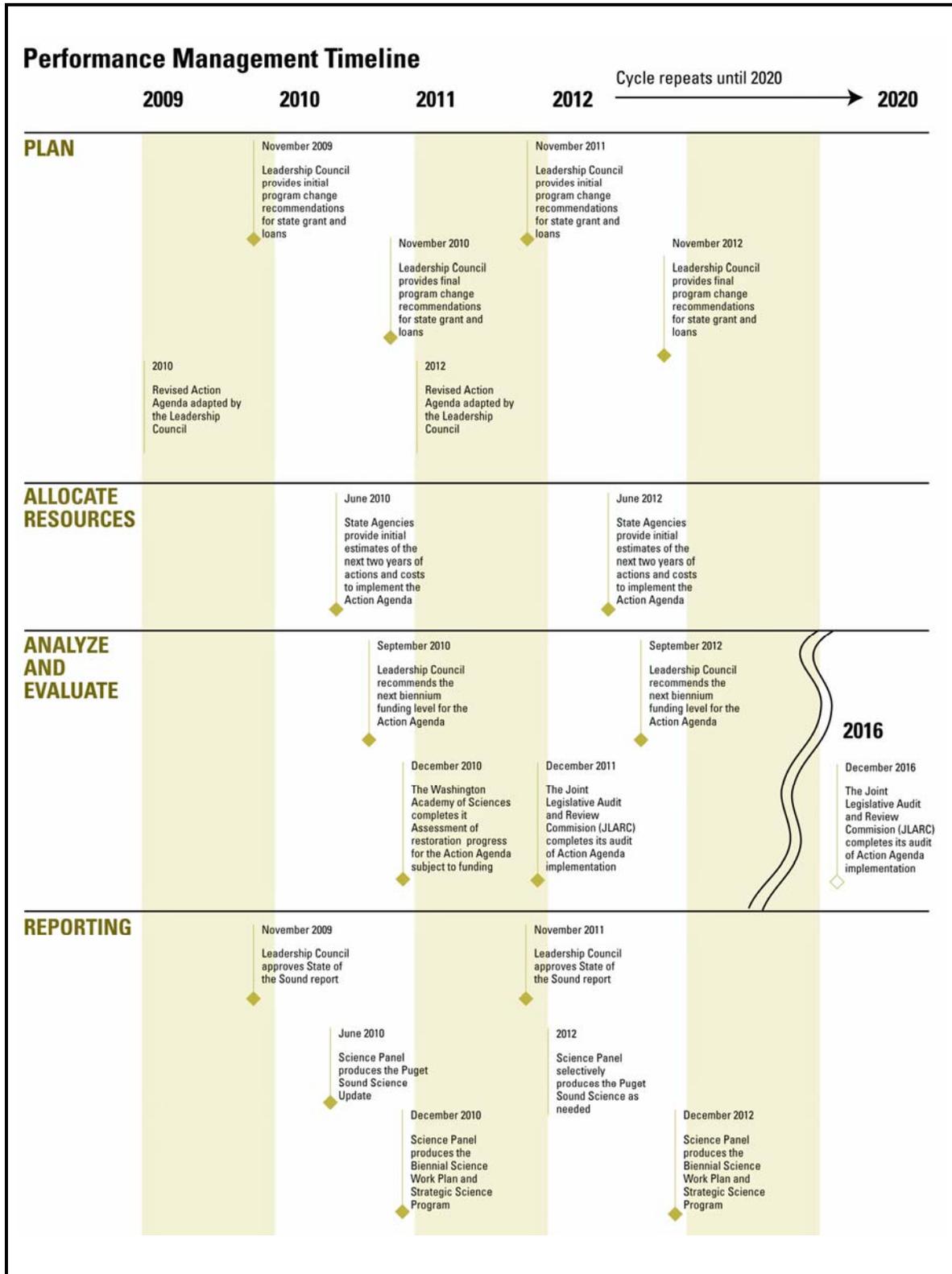


Figure 3-2 Performance management timeline

around the world as an effective way to systematically organize and adapt conservation work and there is a high degree of confidence in this approach. Using a common language for conservation performance will help us better identify what we are trying to conserve, prioritize threats to the ecosystem, prioritize strategies and actions, and develop clear, specific, measurable outcomes.

The Open Standards have been used by numerous governments, and nonprofits including The Nature Conservancy, Conservation International, and World Wildlife Fund. In the United States, this method has been used with ecosystem recovery projects in Lake Ontario and Lake Huron, the Hudson River estuary, and Morro and Humboldt bays, California. Partnership staff have discussed the Open Standards for Conservation with the Leadership Council, Ecosystem Coordination Board, Science Panel, and numerous key implementers. There is a high degree of confidence in using this approach. For more information about the Open Standards method, please see www.psp.wa.gov/pm.

Using the Open Standards, the logical alignment of actions and strategies to reduce threats and achieve ecosystem goals are established first. Next, objective statements are written to specify what to measure to assess progress – the performance measure – and the specific numerical value that is the desired result – the target. Targets can be set for each objective along the path towards the end goal. A hypothetical Puget Sound example is shown in Figure 3-3 and described in the following text.

- Hypothetical Objective 1: By 2011, the state's guidance manual for implementing low-impact development (LID) programs is updated.
 - Performance Measure: Date of completion of manual update
 - Target: 2011
- Hypothetical Objective 2: By 2012, 100 percent of cities and counties have updated their code to require the use of LID in new and redevelopment projects.
 - Performance Measure: Percentage of cities and counties with updated development code
 - Target: 100 percent
- Hypothetical Objective 3: By 2017, runoff from 100 percent of LID development or redevelopment project sites with stormwater monitoring show reduced levels of key stormwater contaminants relative to reference levels.
 - Performance Measure: Percentage of development and redevelopment project sites with reduced stormwater contaminant levels
 - Target: 100 percent

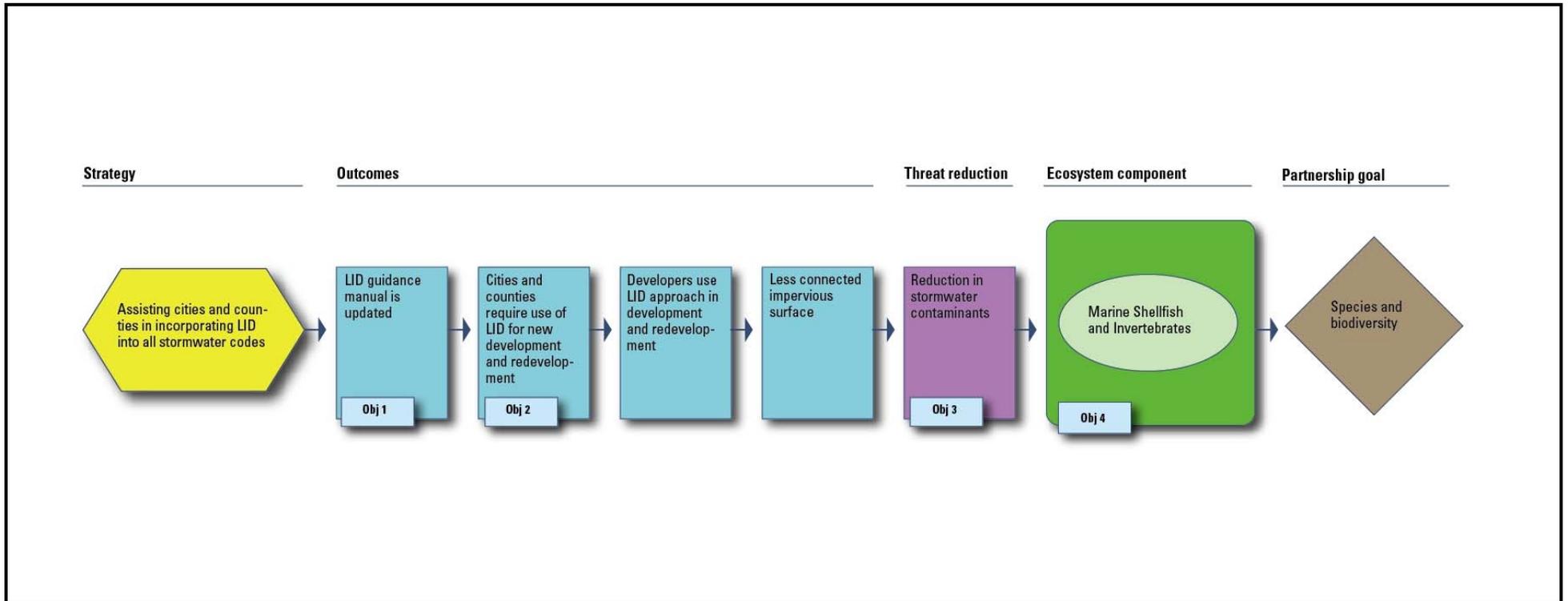


Figure 3-3 Example measurement strategy for implementing low-impact development guidance

- Hypothetical Objective 4: By 2020, 10,000 acres of shellfish beds currently closed due to contamination from surface runoff are re-opened.
 - Performance Measure: Acres reopened
 - Target: 10,000

Status of Measuring Progress Toward the Statutory Goals

The Partnership vision, mission, scope, and goals lay the groundwork for measuring progress. These statements are derived from the enabling statute and have been affirmed by the Leadership Council and the Science Panel.

Vision: Puget Sound is a healthy, sustainable ecosystem that supports the prosperity of present and future generations.

Mission: To lead a science based, results driven, publicly embraced partnership to implement the Action Agenda for the restoration and protection of Puget Sound.

Scope: "The Action Agenda shall...address all geographic areas of Puget Sound including upland areas and tributary rivers and streams that affect Puget Sound...." (RCW 90.71.310).

Goals: The Partnership's enabling statute establishes broad goals for the ecosystem:

1. A healthy human population supported by a healthy Puget Sound that is not threatened by changes in the ecosystem.
2. A quality of human life that is sustained by a functioning Puget Sound ecosystem.
3. Healthy and sustaining populations of native species in Puget Sound, including a robust food web.
4. A healthy Puget Sound where freshwater, estuary, nearshore, marine, and upland habitats are protected, restored, and sustained.
5. An ecosystem that is supported by ground water levels as well as river and stream flow levels sufficient to sustain people, fish, and wildlife, and the natural functions of the environment.
6. Fresh and marine waters and sediments of a sufficient quality so that the waters in the region are safe for drinking, swimming, shellfish harvest and consumption, and other human uses and enjoyment, and are not harmful to the native marine mammals, fish, birds, and shellfish of the region.

Goals tell us where we are headed. The broadly-stated statutory goals are being refined so that they become specific, timebound, and measureable as the ultimate outcomes for the Action Agenda. Using the Open Standards for Conservation, the Partnership has defined the statutory

goals as they relate to a set of ecosystem and human health components (Table 3-1). These components are important species, processes, or features that define what we care about in Puget Sound and that, through monitoring, will help the Partnership assess progress in recovery. A more detailed discussion about the purpose and identification of components can be found in the technical memorandum, *Identification of Ecosystem Components and Their Indicators and Targets*, available at www.psp.wa.gov/pm.

Table 3-1 Ecological components related to the 2020 statutory goals

Ecological Systems (goals addressed: water quality, water quantity, habitat)	Species and Food Webs (goals addressed: native species and food web)	Human Dimensions (goals addressed: human health and quality of life)
Marine waters	Marine mammals	Built environment
Marine shorelines	Marine birds	Human health
River deltas and coastal embayments	Marine fish	Working marine industries
Freshwater systems: streams	Marine invertebrates	Working resource lands and industries
Freshwater systems: wetlands	Salmon	Nature oriented recreation
Freshwater systems: lakes	Terrestrial birds	Scenic resources and existence values
Terrestrial systems	Food webs: marine	Tribal values and resources
	Food webs: freshwater	
	Food webs: terrestrial	

Specific status indicators for these components need to be identified in order to measure and track changes in ecosystem and human health resulting from Action Agenda implementation. An initial set of indicators, as developed by the Science Panel, are discussed in Section II. Status indicators for components will be based upon the work accomplished to date and augmented as appropriate through the work completed in the *Puget Sound Science Update* scheduled to be finished in the first half of 2010. Numeric targets could be set for status indicators after that time.

Status of Measuring Progress Toward Reducing Threats in the Ecosystem

While the public cares most about the endpoint of a healthy Puget Sound, the ecosystem status indicators are unlikely to improve quickly as a result of the near-term actions in the Action

Agenda. Therefore, the Partnership will use measurements related to the reduction of threats, and the results from implemented actions, to assess the progress of Action Agenda implementation and achieving the 2020 statutory goals.

Using the Open Standards for Conservation, the Partnership has defined and initially rated 27 direct threats for scope, severity, and irreversibility for the ecosystem component (see Table 3-2). The Partnership will be working over the next several months with implementers and stakeholders in the region to finalize the definitions, rating, and ranking of these threats. A more detailed discussion about the identification and rating of threats can be found in the technical memorandum, *Identification, Definition, and Rating of Threats to the Recovery of Puget Sound* at www.psp.wa.gov/pm.

Table 3-2 Alphabetical list of ecosystem threat categories for Puget Sound

Agriculture and livestock grazing	Air pollution and atmospheric deposition	Aquaculture
Climate change	Dams, levees, and tidegates	Derelict gear and vessels
Dredging and dredged material disposal	Invasive species and other problematic species—terrestrial	Invasive species and other problematic species—freshwater
Invasive species and other problematic species—marine	Large-scale timber harvest	Military exercises
Mineral and gravel mining	Oil and hazardous spills	Onsite sewage systems
Point source pollution	Recreational activities	Recreational marinas
Residential, industrial, commercial, port, and shipyard development	Roads, transportation, and utility infrastructure	Shoreline armoring
Surface water loading and runoff from the built environment	Unsustainable fishing and harvesting	Vessel traffic and interaction
Wastewater treatment plant discharge and combined sewer overflows (CSOs)	Water withdrawals and diversions	Governmental arrangements (indirect threat)

To measure progress and focus actions, the Partnership is working to identify a short list of quantitative threat reduction targets that will be adopted by May 2010. While numerous threat reduction objectives could be set, the direction from the Leadership Council is to set a few important targets first, as the Partnership needs to be strategic about focusing the regional work and our own efforts. In addition, the overall direction from the Partnership’s Executive Director,

the Leadership Council, and the Cross-Partnership Work Group on performance management (which includes representatives from the Leadership Council, Ecosystem Coordination Board, and Science Panel), is to set threat reduction targets that have a scientific basis. Finally, there is strong interest in adopting targets related to reducing the impact of growth and development and surface water loading and runoff from the built environment.

The Leadership Council, the Cross-Partnership Work Group on performance management, and several Ecosystem Coordination Board members have discussed potential threat reduction objectives for growth and development, surface water loading and runoff from the built environment, marine invasive species, marine shoreline armoring, water use, pollution from wastewater treatment and onsite septic systems, as well as the restoration of rivers and floodplains. More work is needed before any of the threat reduction objectives and targets can be adopted. More information on the in-process work can be found in the technical memorandum, *Using Results Chains to Develop Objectives and Performance Measures for the 2008 Action Agenda*, available at to www.psp.wa.gov/pm.

Status of Measuring Outputs From Actions

The Partnership is directed by statute to establish biennial benchmarks for near-term actions in the Action Agenda. In cooperation with the implementers, the Partnership will logically link each near-term action to the threat reduction objectives using a results chain. The Partnership and implementers will agree to performance measures that allow the Partnership to assess if near-term actions are being completed according to agreed upon scope, schedule, and budget. Final performance measures will be negotiated after the threat reduction objectives are determined.

Next Steps for Completing and Implementing the Performance Management System

The most important near-term function of the system is to provide budget guidance to the state agencies, as well as other implementers, in 2010.

Key milestones in this timeline include:

- December 4, 2009: Close the feedback period from interested parties on the performance management system information presented in the detailed technical memos.
- January 5, 2009: Complete a detailed work plan that will direct activities to ensure a performance management system is in place by May 2010 to inform the state, federal, and local government budgeting cycles.

- March 2010: Issue guidance to state, federal, and local governments for budget preparation work.

The highest priority tasks for 2010 include finalizing ecosystem and human health indicators, prioritizing threats, setting quantitative targets and benchmarks for reduction of threats, identifying potential revisions to the 2008 Action Agenda in the context of the quantitative targets and benchmarks, and establishing criteria to determine consistency of action with the Action Agenda. The tasks associated with developing status indicators and performance measures for the performance management system are addressed in the two Partnership technical memos, *Using Results Chains to Develop Objectives and Performance Measures for the 2008 Action Agenda* and *Identification, Definition, and Rating of Threats to the Recovery of Puget Sound*, available at www.psp.wa.gov/pm. In this timeframe, the Partnership will also negotiate outcome measures for actions implemented in the Action Agenda.

After May 2010, the Partnership will work to set quantitative targets for the components of the statutory goals and work within the performance management system to establish mechanisms and reporting systems to track performance data and improve reporting on expenditures. The Partnership will track performance on 2009-11 near-term actions and engage implementers in discussing their results. The Partnership will also negotiate performance measures associated with 2011-12 budget requests. The Partnership will propose a process to work with the Leadership Council, Ecosystem Coordination Board, Science Panel, and implementers to respond to data as a means to support dialogue around results and integration of the results into the adaptive management of the Action Agenda. Finally, the Partnership will confirm tasks and roles for implementing performance management, and provide operational details on how the performance management system will be used to inform the steps in the performance management cycle.

Section IV – Action Agenda Funding Accomplishments and Performance

The Action Agenda and performance management system help focus Puget Sound spending on the most important priorities. In this section, the Partnership presents an estimate of the funding provided by the state to implement the 2020 Action Agenda for the 2009-11 biennium, highlights expected accomplishments, and looks back at the results achieved in the 2007-09 biennium.

Action Agenda Funding Analysis Summary

The Partnership's enabling statute requires an analysis for funding spent on implementing the Action Agenda. A detailed funding analysis has not been done before for Puget Sound. This work is complex and limited by existing financial systems and self-reporting of data, both of which will need to be augmented. For the 2009 report, the Partnership first focused on the state agency budgets because of statutory requirements, and the need to pilot this funding analysis report. Future reports will better analyze the total funding, including money spent by federal agencies, tribes, and local governments.

In September of 2008, state agencies submitted their 2009-11 biennial budget requests to the Office of Financial Management for inclusion in the governor's biennial budget request, 3 months before the Partnership completed the Action Agenda. As a result, these proposals were not submitted in the context of the near-term actions identified in the Action Agenda. With the Action Agenda in place and the performance management system underway, the Partnership will provide more guidance to state and other agencies in May 2010 to align actions with ecosystem recovery goals for the next biennium.

In order to account for the final budget passed by the legislature and to clarify funding amounts related to each near-term action, the Partnership requested that state agencies complete a questionnaire on each near-term action that they were identified as a lead agency or as a contributing partner. The information provided in these initial questionnaires, coupled with further refinements by agencies provide the basis for estimates of funding for overall Action Agenda implementation. Selected information collected on federal stimulus funding was also included. The result of this work is presented in Appendix D, Table D-1.

Estimate of Total Funds Allocated to Implement the Action Agenda

Approximately \$400 million has been allocated through the state budget to actions identified in the Action Agenda for the 2009-11 biennium. Although not a comprehensive estimate, an additional \$132 million in additional contributions by federal agencies and local governments has

also been identified. In order to clearly track appropriations across biennia, we asked agencies to report only on funds appropriated for the 2009-11 biennium. As a result, any reappropriation of funding to ongoing capital projects is not included in this report. This tends to underestimate the capital investments actually occurring on the ground at a particular time. It is also important to understand that due to limitations in the state accounting system agencies were not able to report all funding related to implementing the Action Agenda.

Given these limitations, it is important to note that this is the best estimate of state funding tied to the implementation of a Puget Sound recovery plan. It also departs from previous efforts to calculate total funding in that it strategically ties funding estimates to specific actions in the Action Agenda, rather than simply rolling up a loose collection of competing priorities (see Figure 4-1).

When the Action Agenda was approved on December 1, 2008, the estimated costs of implementing the plan for state agencies was estimated at \$602 million for the 2009-11 biennium. State funding to implement the Action Agenda is found in the three budgets adopted by the legislature: operating, capital, and transportation. A gap of \$199 million was identified between the estimated costs and ongoing state operating, capital, and transportation funding. In comparing estimated state spending to the original Action Agenda estimate, the gap has increased only slightly to \$202 million. To achieve recovery by the 2020 deadline additional resources will need to be found to close this gap.

Almost 64 percent of state Action Agenda funding is found in the capital budget at \$260 million, 29 percent in the operating budget or \$116 million and 6 percent or \$23.7 million in the transportation budget (Table 4-1).

Current Performance Reporting Limitations

- Performance Measures: Quantitative targets and appropriate, related performance measures will better allow us to gauge the effectiveness of the overall recovery effort (see Section III). As part of this work, we will clarify the intent of near-term actions and the relationship of them to ongoing activities.
- Reporting System: A web-based reporting system and performance reporting guidance for federal, tribal, and local governments will broaden the ability to report on the overall effort.
- Financial systems. Agencies typically organize their work on a statewide basis. State budgets are based on state Office of Financial Management activity categories that do not line up with Action Agenda goals, objectives, strategies, or actions.
- Data reliability. For both *2007-09 Puget Sound Conservation and Recovery Plan* actions and Action Agenda near-term actions, agencies reported financial and performance data themselves and there were no means for us to verify reliability or validity.
- Partnership capacity. The Puget Sound Partnership, as a relatively new agency, does not yet have the full capacity to implement a robust reporting system for the Action Agenda. As we develop the performance management system, our staffing levels, data systems, and processes will continue to influence reporting robustness.

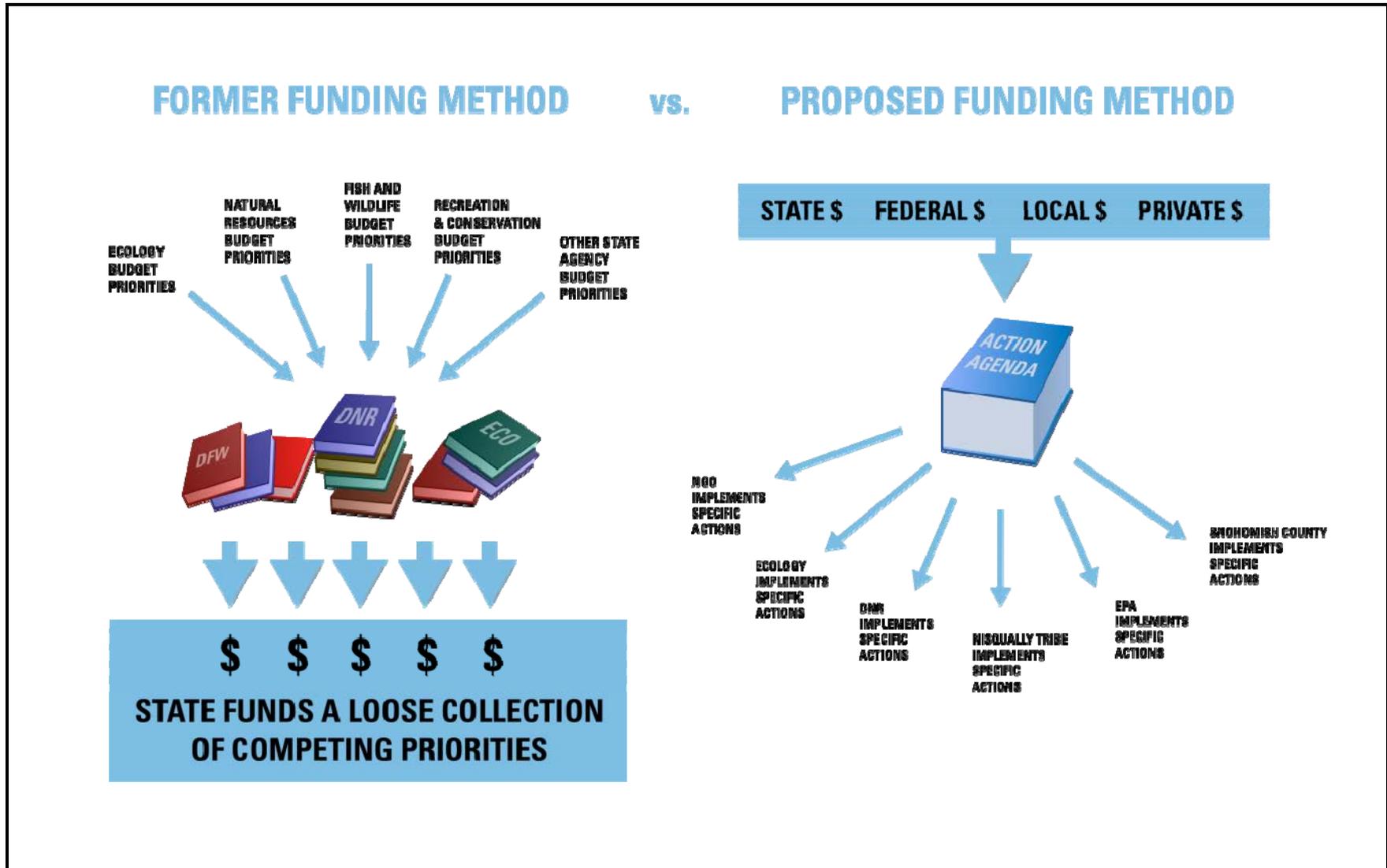


Figure 4-1 Funding methods for Puget Sound

Table 4-1 Action Agenda funding estimates from state budgets

State Budget	Dollars	Percentage
Operating Budget	\$116,582,192	29%
Capital Budget	\$260,152,657	65%
Transportation Budget	\$23,797,000	6%
Total	\$400,531,849	100%

Estimate of Funds Directed to Specific Ecosystem Threats

There are 146 near-term actions identified in the Action Agenda, 112 of which are aligned with 18 direct and indirect threats significant to the Puget Sound ecosystem (Table 4-2). The remaining 34 actions are directed at activities that impact all threats in the Action Agenda including implementing the performance management system, science and monitoring, and public education and outreach actions.

The largest number of actions aligns with an indirect threat: the institutional arrangements related to implementation and funding. Example actions include integrating planning and implementation for an ecosystem, rather than agency views or single issue perspective; building and sustaining the capacity of partners to implement the Action Agenda; reforming and improving compliance with the environmental regulatory system; and working to provide sufficient and stable funding.

The second greatest number of actions are directed at reducing the impact of residential and commercial development (16 actions) followed by surface water runoff in the built environment (11 actions) and water withdrawals and diversions (9 actions).

More informative than the number of actions per threat is the amount of estimated funding allocated to address these threats (Table 4-2). The greatest amount of funding is directed at addressing the impacts of wastewater treatment plant discharges (\$97 million), followed by residential and commercial development (\$83 million), and dams, levees, and tidegates (\$51 million). Spending on these three threats alone amounts to 58 percent of total spending on Action Agenda implementation. This is in general alignment with the Action Agenda strategies on preventing water pollution and restoring habitat and ecosystem processes.

For the remaining threats, none individually amount to more than 10 percent of estimated spending. The next largest categories include point source pollution (\$32 million), surface water loading and runoff in the built environment (\$27 million), onsite sewage systems (\$19 million), and oil and hazardous spills (\$11.2 million).

Section IV – Action Agenda Funding Accomplishments and Performance

Table 4-2 Threats, actions, and funding

Threat	Number of Actions	% of NTA ^a	Dollars	Funding % by NTA	AA ^b Estimate	Preliminary Non State Funding	Difference Between AA and Funding by NTA
Agriculture & livestock grazing	3	2.7%	\$3,730,922	1.0%	\$6,780,000	\$-	\$(3,049,078)
Air pollution & atmospheric deposition	1	0.9%	\$1,633,067	1.0%	\$13,579,114	\$-	\$(11,946,047)
Aquaculture	2	1.8%	\$2,967,942	0.7%	\$17,053,800	\$-	\$(14,085,858)
Climate change	1	0.9%	\$-	0.0%	\$80,000	\$-	\$(80,000)
Dams, levees, & tidegates	4	3.6%	\$51,032,071	12.7%	\$16,700,000	\$77,117,547	\$34,332,071
Derelict gear & vessels	1	0.9%	\$100,000	0.0%	\$1,225,000	\$4,600,000	\$(1,125,000)
Institutional arrangement (indirect threat/driver)	35	31.3%	\$9,931,212	2.5%	\$31,541,982	\$-	\$(21,610,770)
Invasives – marine	4	3.6%	\$1,739,768	0.4%	\$2,492,400	\$-	\$(732,542)
Large scale timber harvest	2	1.8%	\$14,957,632	3.8%	\$28,922,404	\$-	\$(13,964,772)
Oil & hazardous spills	2	1.8%	\$11,285,000	2.8%	\$12,017,542	\$-	\$(732,542)
Onsite sewage systems	6	5.4%	\$18,996,346	4.7%	\$50,156,800	\$-	\$(31,160,454)
Point source pollution	6	5.4%	\$32,394,000	8.1%	\$69,560,166	\$15,000,000	\$(37,166,166)
Residential, commercial, port & shipyard development	16	14.3%	\$83,228,966	20.8%	\$133,909,920	\$34,601,270	\$(50,680,954)
Shoreline armoring	3	2.7%	\$2,000,000	0.5%	\$1,210,000	\$800,000	\$790,000

Section IV – Action Agenda Funding Accomplishments and Performance

Table 4-2 (continued) Threats, actions, and funding

Threat	Number of Actions	% of NTA ^a	Dollars	Funding % by NTA	AA ^b Estimate	Preliminary Non State Funding	Difference Between AA and Funding by NTA
Surface water loading and runoff from the built environment	11	9.8%	\$26,797,188	6.7%	\$78,265,079	\$-	\$(51,285,891)
Unsustainable fishing/harvesting	2	1.8%	\$1,841,880	0.5%	\$1,307,000	\$-	\$534,880
Wastewater treatment plant discharge & CSOs	4	3.6%	\$96,826,141	24.8%	\$30,894,569	\$-	\$65,931,572
Water withdrawals & diversions	9	8.0%	\$5,970,264	1.5%	\$41,303,960	\$-	\$(35,333,696)
Subtotal	112	100%	\$365,614,399	92%	\$536,999,736	\$132,118,817	\$(171,385,337)
Cross-cutting actions							
Performance management	7	20.6%	\$1,636,958	0.4%	\$1,014,000	\$-	\$622,958
Science and monitoring	12	35.3%	\$25,305,365	6.3%	\$60,402,000	\$-	\$(35,096,635)
Public education and outreach	15	44.1%	\$4,299,056	1.1%	\$4,259,000	\$-	\$40,056
Puget Sound Partnership Action Agenda management			\$588,236	0.1%			
Puget Sound Partnership administration			\$3,087,835	.8%			
Subtotal	34	100%	\$30,367,916	8%	\$65,675,000	\$-	\$(35,307,085)
Grand Total	146		\$400,531,849	100%	\$602,674,736	\$132,118,817	\$(205,818,959)

^a Near-Term Action

^b Action Agenda

Section IV – Action Agenda Funding Accomplishments and Performance

In comparing actual funding estimates to what was recommended in the Action Agenda, some significant threats are underfunded. Although significant investments are being made to address the threat from residential, commercial, port, and shipyard development as well as from surface water loading and runoff in the built environment, there is still a gap of \$51 million for each of these threats. Slightly smaller gaps are identified in addressing point source pollution (\$37 million), water withdrawals (\$35 million) and onsite sewage systems (\$31 million). On the other hand, some threats received amounts larger than identified in the Action Agenda these include wastewater treatment (\$66 million) and dams, levees, and tidegates (\$34 million). Much of this additional funding is coming through one-time federal stimulus dollars provided for wastewater treatment plant upgrades. Table 4-3 provides a summary of the number of near-term actions assigned to each state agency along with information on funding for those actions.

Table 4-3 Near-term actions by state agency

Agency	Number of Actions		NTA Lead	NTA	% of Lead
	Implementing	NTA Lead	Reported Funding	Partner Funded	Actions Funded
Washington State Department of Commerce	5	5	1	0	20 %
Washington State Department of Natural Resources	6	3	3	6	100 %
Washington State Department of Health	7	5	3	3	60 %
Washington State Department of Ecology	39	29	15	10	58%
Washington State Parks and Recreation Commission	2	0	0	2	N/A
Puget Sound Partnership	76	74	45	11	60.8%
Recreation and Conservation Office	8	1	1	7	100 %
University of Washington Sea Grant	6	0	0	6	N/A
Washington State Conservation Commission	3	3	3	0	100 %
Washington State Department of Fish and Wildlife	21	6	6	14	100 %
Washington State Department of Agriculture	2	0	0	2	N/A
Washington State Department of Transportation	4	0	0	4	N/A
Washington State University Extension	1	0	0	1	N/A
Total	190	132	81	65	

The Partnership is assigned to be the lead on 76 actions (56 percent), the greatest number of actions in the Action Agenda. The Department of Ecology (Ecology) is the lead on the next greatest number at 31 actions (23 percent) followed by Department of Fish and Wildlife (WDFW) (6 actions), the Department of Commerce, and the Washington State Department of Health (DOH, 5 actions each), the Department of Natural Resources (DNR) and Washington State Conservation Commission (3 actions each), and the National Marine Fisheries Service (2 actions). The Washington State Recreation and Conservation Office (RCO), the EPA, the National Oceanic and Atmospheric Administration, and the Northwest Straights Commission (NWSC) are lead on one action.

Agencies reporting dedicated funding for actions for which they are the lead are mixed. Four state agencies with a small number of actions reported funding for all their assigned actions for which they are the lead including DNR, RCO, Washington State Conservation Commission, and WDFW. The DOH has reported funding associated with 60 percent of its lead actions and the Department of Commerce with 20 percent of its lead actions.

Ecology, with the second largest number of lead actions, is reporting dedicated funding for just over 58 percent of actions. The greatest numbers of actions are related to addressing surface water loading and runoff in the built environment (nine actions), followed by water withdrawals and diversions (seven actions). The greatest gap in funding is related to work reducing the threat from water withdrawals and diversions. The agency did not report expenditures related to four actions, including setting and updating instream flows, and evaluating and implementing solutions to exempt wells. Other major actions without funding relate to institutional arrangements, including revisions to state water quality permit fees to maintain and enhance Ecology water quality permit compliance staff as well as additional staff to improve compliance with shoreline and aquatic regulations.

The Puget Sound Partnership currently has identified funding for 59 percent of the actions that it is identified as a lead agency. Thirty-four of these actions are related to implementation of work cutting across the Action Agenda, including performance management, science and monitoring, and public education and outreach. The areas with the greatest gaps in reported funding relate to actions focused on institutional arrangements (38 percent of actions funded) and performance management activities (57 percent of actions funded).

There are a number of reasons for these gaps. First, because the Action Agenda was not finalized until December 2008, when the governor's budget was essentially completed, state agencies were not able to develop full-scale budget requests to implement the Action Agenda. In some cases, state agencies did receive additional funding in the governor's proposal but saw these items unfunded or provided at reduced levels in the final budget which passed the legislature. Also,

Section IV – Action Agenda Funding Accomplishments and Performance

because of unspecified reductions made by the legislature, state agencies made reductions in programs that have contributed to Puget Sound restoration. Now that the Action Agenda has been completed, the Partnership will be working with state agencies to develop proposals that can fully fund Action Agenda implementation.

Estimate of Funds by Implementing Agency

Analysis of spending by agency shows Ecology leading all state agencies with reported investments of \$203 million or 50 percent of all funding for the biennium. The next largest expenditures are anticipated from the Recreation and Conservation Office at \$76 million and 19 percent and the DNR at \$39 million and 10 percent of reported funding. Table 4-4 provides an estimate of funds to state agency budgets.

Table 4-4 Estimate of state agency funding for Action Agenda Implementation

Agency	Total Funding in State Agency Budgets	% of State Funding
Washington State Department of Commerce	\$5,179,784	1.3%
Washington State Department of Natural Resources	\$39,104,365	10.0%
Washington State Department of Health	\$5,396,800	1.3%
Washington State Department of Ecology	\$203,067,578	51%
Washington State Parks and Recreation Commission	\$7,672,000	2.0%
Puget Sound Partnership	\$16,158,175	4.0%
Recreation and Conservation Office	\$76,368,528	18.1%
University of Washington Sea Grant	\$504,455	.1%
Washington State Conservation Commission	\$7,752,042	2.0%
Washington State Department of Fish and Wildlife	\$13,996,122	3.5%
Washington State Department of Agriculture	\$1,460,000	.04%
Washington State Department of Transportation	\$23,797,000	5.9%
Washington State University Extension	\$75,000	
Total	\$400,531,849	100%

In addition to funding by state agencies, non-state partners such as federal agencies and local governments are also providing funding to implement the Action Agenda. Although not an exhaustive effort, a total of \$132 million in funding was reported from these partners. Funding by federal agency is shown below in Table 4-5.

Table 4-5 Estimate of funds from federal agencies

Agency	Total Funding Identified
EPA	\$15,000,000
National Oceanic and Atmospheric Administration	\$11,888,000
Northwest Straits Commission	\$4,600,000
Local and Federal Governments (identified by RCO)	\$41,930,817
US Army Corps of Engineers	\$800,000
US Fish and Wildlife Service	\$3,200,000
National Park Service	\$54,700,000
Total	\$132,118,817

The largest of the identified contributions is \$54.7 million in federal stimulus funding provided to the National Parks Service for completion of projects associated with removal of the Elwha dam. A discussion of the details of the federal stimulus funding was provided earlier in this chapter.

Funding provided directly to the Partnership for the 2009-11 biennium is shown in Table 4-6.

Table 4-6 Funding for the Partnership during the 2009-11 biennium

Washington State Fund/Source	Amount	Percentage of Total Partnership Funding
General Fund-State	\$6,315,000 ^a	39%
General Fund-Federal	\$6,717,000	41%
State Toxics Control Account	\$896,000	6.0%
Aquatic Land Enhancement Account	\$500,000	3.0%
WA State Recreation and Conservation Office –Interagency Agreement	\$1,806, 539	11%
Total	\$16,234,539	100%

^a Assumes \$105,000 General Fund-State reduction directed by the governor in June 2009.

Section IV – Action Agenda Funding Accomplishments and Performance

As part of the biennial budget process, we have divided Partnership efforts into four sets of activities shown in Table 4-7. A complete description of these activities and their expected outputs can be found at <http://www.ofm.wa.gov/budget/activity/09-11/478inv.pdf>.

Table 4-7 Partnership activities and funding sources

Activity	Staff ^a	General Fund- State	General Fund- Federal	Other	Total ^b
Action Agenda: Implementation, Science, and Performance Measurement	12.8	\$1,387,595	\$4,663,467	\$318,131	\$6,369,193
Public Education and Outreach	3.0	\$2,228,724			\$2,228,724
Salmon Recovery, Local Integration, and Technical Assistance	11.75	\$115,375	\$1,773,008	\$2,649,408	\$4,537,791
Administration	10.0	\$2,583,307	\$280,525	\$235,000	\$3,098,832
Total	37.4	\$6,315,000	\$6,717,000	\$3,202,539	\$16,234,539

^a Full time equivalent; i.e., number of employees.

^b Dollar amounts reported here are greater than those shown in the Office of Financial Management activity reporting system. The table shows funding provided from the Recreation and Conservation Office for salmon recovery activities and assumes additional federal from EPA that has been received but appropriation authority has not yet been provided by the legislature.

In addition to paying for staff and the operation of the agency, the Partnership provides grants to local governments, nonprofit organizations, and others to help implement the Action Agenda. For the 2009-11 biennium, the Partnership anticipates providing \$2.3 million or 14 percent of its budget as grants. The largest of these grants are awarded to groups involved in increasing the public's understanding of Puget Sound (\$920,000) and to support local watershed groups implementing salmon and watershed plans (\$735,000).

Over the last several years, partners implementing the Action Agenda and the Partnership itself has benefited from additional federal funding for Action Agenda implementation. Beginning in federal fiscal year 2007, the EPA received \$2 million directly for Puget Sound conservation and recovery. This was increased to \$20 million per year in federal fiscal year (FFY) 2008 and FFY 2009, and \$50 million for FFY 2010 (see Table 4-8). Funds awarded to date by EPA from the 2007 and 2008 appropriations have gone to various state agencies (the Partnership, Ecology, RCO), federal agencies (EPA, USFWS, US Geological Survey, and others), and tribes. EPA has not yet awarded funding from the 2009 and the 2010 federal appropriations, which generally must be

awarded competitively. It is anticipated that the Partnership, along with other state agencies, will be able to apply for this funding, but it is unknown at this time how much will be received.

Table 4-8 Federal funding for Action Agenda implementation

Federal Fiscal Year	Total Appropriation	Partnership Award
FFY 2007	\$2,000,000	\$868,000
FFY 2008	\$19,700,000	\$5,026,619
FFY 2009*	\$20,000,000	\$0
FFY 2010*	\$50,000,000	\$0
Total	\$91,700,000	\$5,894,619

* To date, EPA has not awarded any grants from these appropriations.

As a National Estuary, the Partnership also receives an annual grant from the EPA under the National Estuary Program (NEP). These grants are awarded in equal amounts to each estuary. For FFY 2008 and FFY 2009, the Partnership received an annual grant of \$600,000. For FFY 2010, this amount has been increased for all NEPs to \$800,000.

Highlights of Expected Results from 2009-11 Funding

This section highlights key priority actions from the Action Agenda and expected results based upon funding provide in the 2009-11 biennium. These highlights, organized by threat, represent new and ongoing on-the-ground efforts, as well as tools that will put strategies, actions, and science into an ecosystem context for more strategic implementation of the agenda and greater improvements in ecosystem health.

- Reducing the threat from growth and development: Ecology is leading, with coordination from the Partnership, a collaborative effort to produce maps for each of the watersheds in the Puget Sound region that identify areas to target for protection, restoration projects, or for allowing building and new growth. Building upon a method developed in the previous biennium and with \$1.4 million from the EPA, Ecology plans to produce initial assessments of all watersheds by December 2009. More detailed assessments from Ecology are due by the end of the biennium in June 2011. The collaborative project team (which also includes WDFW, tribes, and local government representatives) will work with local planning departments to use the

watershed assessment products from this near-term action to help them tie together their planning and regulatory processes. This will enable the team to meet the Action Agenda objective of protecting and restoring ecosystem processes and functions while reducing the threat of growth and development to ecologically sensitive areas.

The collaborative team will also coordinate its outreach to local governments according to deadline schedules for updating Shoreline Management Plans by 2013. Furthermore, Ecology will provide funding and technical assistance for the Shoreline Management Plan updates as work on the watershed assessments takes place, creating strong coordination between the two initiatives. The legislature provided \$3.5 million to the Department of Ecology to provide grants to local governments to complete Shoreline Master Program updates on the schedule adopted by the legislature. This funding will also improve Ecology's oversight of compliance with regulations that protect aquatic habitat.

- Reducing surface water loading and runoff from the built environment: The Partnership will urge Ecology to implement the near-term action calling for developing criteria for prioritizing projects for stormwater retrofit. In the meantime, \$10.7 million from Ecology's Centennial Clean Water Grant Program and federal stimulus funding will support local government stormwater retrofit projects. In addition, Ecology is developing standards for low-impact development that it plans to include as a requirement in National Pollutant Discharge Elimination System (NPDES) permits for municipalities by the end of the biennium. The Stormwater Work Group of the Washington Monitoring Consortium is working to develop a more effective and efficient Puget Sound-focused strategy to fulfill NPDES monitoring requirements. A more effective program will better inform stormwater runoff policies and strategies.
- Reducing the threat of marine shoreline armoring: The Partnership is working with the Department of Fish and Wildlife to garner an additional \$1 million in funding to ensure that the Puget Sound Nearshore Restoration Partnership finishes its nearshore general investigation on schedule to identify 10 to 15 scientifically defensible restoration projects in key areas. Once the investigation is complete, the goal is to present these projects, with preliminary design work completed, to the Congress by June 2011.
- Restoring rivers and floodplains: Significant restoration and protection activities, many identified through the existing salmon recovery plans, will be completed or authorized during the coming biennium. These projects address threats from dams, levees and tidegates, large scale timber harvest, agriculture, and livestock grazing. The RCO expects to award grants for \$35 million to acquire important habitat and more than \$38.6 million for river and floodplain restoration projects

across the Puget Sound region. Matched by at least \$42 million in local and federal funds these projects are anticipated to result in the acquisition of 3,000 acres of habitat and the restoration of 3,800 acres of upland and estuary habitat.

- Reducing the impact of water pollution from wastewater treatment and onsite septic systems: Efforts in the coming biennium to reduce the impact of wastewater and septic systems on the ecosystem include a mixture of capital projects, implementation of Marine Protected Area plans, and ongoing outreach and education to homeowners and boat owners. The Belfair sewage treatment plant will be constructed while the Potlatch and Hoodspout facilities are expected to break ground. All Puget Sound counties have onsite sewage system management plans that will be implemented this biennium based on available resources and funding.
- Reducing the threat of oil and hazardous spills: The passage of Engrossed Substitute Senate Bill 5344 (2009) created a permanent mechanism for providing an emergency resource vessel at Neah Bay, shifting the funding burden from the state to the maritime industry (beginning in the second year of the biennium). Ecology received \$3.6 million to maintain the response tug for the first year of the biennium.
- Institutional Arrangements: Several actions to address current institutional arrangements that impede an ecosystem approach to recovery are underway. The Partnership is working with local implementers to identify how to best implement the Action Agenda in their area. These local integrating organizations are tasked with better coordination and integration of efforts to improve efficiency and effectiveness. The Hood Canal Coordinating Council is expected this biennium to build its own local implementation plan and strategy to align with the Action Agenda. This effort will inform other efforts to devise local strategies and actions that address regionally critical threats while using the Action Agenda framework for guidance and standards. Ecology, working with the Partnership, will spend \$4.4 million to develop and implement an innovative pilot program that will help reform and improve the effectiveness of wetland mitigation. With a \$499,000 EPA grant, the Partnership is working with WDFW and the Northwest Indian Fisheries Commission to demonstrate how collaborators could share more juvenile migrant salmon data and make it more accessible.

American Recovery Action Stimulus Funding Federal Stimulus Funding

The Action Agenda was completed just as the nation faced a financial crisis. Having the Action Agenda in place simplified the task of distributing stimulus dollars quickly to boost the local economy and create jobs, while recovering the Puget Sound ecosystem. More than \$150 million was contributed from the federal stimulus fund to help implement near-term actions through five

Section IV – Action Agenda Funding Accomplishments and Performance

different federal agencies, increasing resources for Action Agenda implementation. Table 4-9 provides a summary of near term action items and the source of their funding and is followed by descriptions of a few example projects . These funds were distributed to many implementers across Puget Sound.

Table 4-9 American Recovery Act stimulus funding to implement the Action Agenda (shown in \$ million)

Action Agenda Near-Term Action	Funding from EPA	Funding from NOAA	Funding from U.S. Fish and Wildlife Service	Funding from USDA	Funding from U.S. Park Service	Total
Larg- scale restoration at river mouths		8.9	3.2			12.1
Restore floodplain and river processes		2.9				2.9
Remove significant blockages of ecosystem processes					54.7	54.7
Remove derelict fishing gear		4.5				4.5
Build or upgrade wastewater treatment plants	27.7			28.8		56.5
Stormwater retrofit projects	7.0					7.0
Toxic site clean up projects	7.2					7.2
Implement air management plans	5.9					5.9
Total	47.8	16.3	3.2	28.8	54.7	150.8

- NOAA awarded \$11.8 million, or about 10 percent of funding awarded nationally, to three large scale restoration projects at the mouths of major rivers (Nooksack, Snohomish, and Skagit Rivers), and two projects to restore floodplain and river processes (Elwha and Skagit Rivers).
- The restoration of Nisqually estuary and the removal of the Elwha dams were funded and their schedules accelerated. In the Nisqually estuary, stimulus funding restored 762 acres of estuary habitat. The entire Nisqually project alone could increase salt marsh habitat in south Puget Sound by 50 percent. The US Park Service directed \$54.7 million to the many faceted effort to remove two dams on the Elwha River inside the Olympic National Park, and open up 75 miles of salmon habitat. The injection of stimulus allowed the project schedule to be accelerated by a year.

- A \$4.5 million project with the Northwest Straits Initiative will remove 90 percent of the derelict fishing gear littering the Puget Sound. In 18 months, 3,000 nets (an anticipated 200 metric tons of marine debris) will be removed and over 600 acres of marine habitat will be restored.
- In Tacoma, \$5 million will help clean up the ASARCO/Ruston Superfund site.
- On Bainbridge Island, at the Wyckoff/Eagle Harbor site, \$2.2 million in EPA funds will help install new groundwater extraction wells and upgrade existing ones, removing arsenic and lead.
- EPA and the U.S. Department of Agriculture brought \$27.6 million and \$28.8 million, respectively, to the Puget Sound for sewage treatment plant improvements. Among the sewage treatment upgrades and construction projects awarded funding are the Belfair Wastewater and Water Reclamation Facility that broke ground in October 2009, and upgrades to two wastewater treatment plants in Shelton.

Consistency with the Action Agenda

State statute requires the Partnership to identify whether the use of state funds is consistent with the Action Agenda and to identify actions that are inconsistent with the Action Agenda. The statute, however, does not provide a definition of what is meant by consistency. The 2009-11 state operating and capital budgets also include specific proviso language requiring that state agencies consult with the Partnership to ensure that projects and expenditures are either in or consistent with the Action Agenda (ESHB 1216, Section 6010, ESHB 1244, Section 908, both Laws of HB 1244).

For now, the Partnership is assuming that an action or project is consistent with the Action Agenda if it aligns with an action specifically mentioned in the Action Agenda. As the Partnership works with state agencies to define the outcomes of their individual actions for the 2009-11 biennium, we will determine consistency. The Partnership has also been working with state grant and loan agencies to develop a method for preventing funding projects that are inconsistent with the Action Agenda as required by statute. Through this process, the Partnership and state agencies have generally set the standard that an action is inconsistent with the Action Agenda if the project results in a negative impact on a major priority of the Action Agenda (e.g., does the project result in an unmitigated loss of ecosystem function or does the project result in an unmitigated increase in water pollution). The result of state agencies work to align state grant and loan programs is provided in a separate Partnership report, *Puget Sound Partnership Review of State Grant and Loan Programs* that will be published in November of 2009 and 2010.

When the performance management framework is fully developed, it will include quantifiable ecosystem goals and threat reduction objectives. This framework will help the Partnership develop an agreed-upon method to determine consistency (e.g., how well an action aligns with these overall objectives). Furthering work to determine whether an action is consistent with the Action Agenda will be developed as part of the 2010 performance management work plan.

Recommendations for How Future Expenditures Could Better Align with Action Agenda Priorities

In order to achieve recovery of Puget Sound by 2020, expenditures by state agencies, federal, tribal and local governments will need to align with the priorities of the Action Agenda. The development of the Performance Management system (see Section III) with clear threat reduction targets is the best mechanism to align regional expenditures. The Partnership plans to provide guidance to state agencies and others by May 2010 on how they can align programs and develop budget proposals for the 2011-13 biennium. Once the Partnership and state agencies agree on the outputs of this work, the Partnership will work to see that they are supported through the governor's and legislative budget process.

Highlights of State Recovery Accomplishments from 2007-09

The 2007-09 Puget Sound Conservation and Recovery Plan prepared by the Puget Sound Action Team guided state agency actions from July 2007-2009 until the Action Agenda became effective in July 2009. Although the Conservation and Recovery plan was completed a year and a half before the Action Agenda, many of the actions align with the strategies and threats described in the Action Agenda.

The 2007-09 plan included 239 activities shared by 15 state agencies and their partners. Approximately \$460 million in funding was allocated to the 2007-09 plan. (Agencies were not required to report on spending for actions in the 2007-09 plan so actual expenditures cannot be reported.) Each agency was asked to report on results as of June 30, 2009, and rate whether actions were on track (expected to be accomplished without major obstacles) and on schedule. As shown in Figure 4-2, the majority of actions (57 percent) were completed on track and on schedule. Eighteen percent of actions are behind schedule but generally on track. Only 5 percent of actions had extreme difficulties or were not accomplished. Twenty percent of the actions were not funded and therefore not implemented.

Highlighted 2007-09 accomplishments are presented by significant threats to the ecosystem. More information on the 2007-09 results can be found in the appendix, *GMAP Table Summary for 2007-2009 Conservation and Recovery Plan*, available at www.psp.wa.gov/pm.

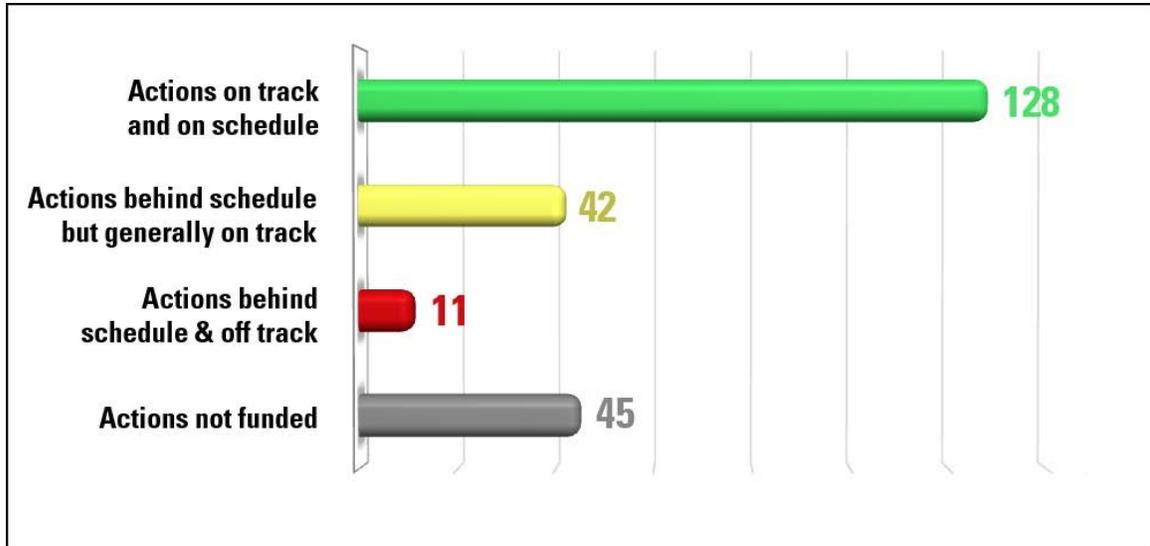


Figure 4-2 Status of 2007-09 actions as of June 30, 2009

Specific recovery highlights are summarized below:

- Reducing threat from growth and development. In 2007-09, Ecology developed and implemented a watershed assessment tool in Issaquah and Redmond. This tool will be applied to all 12 counties as part of the Action Agenda's implementation. The watershed assessment will offer guidance of the best choices in a watershed of where to protect, where to restore, and where to build.
- Reducing the threat from surface water runoff in the built environment: The Department of Ecology completed Phase I and Phase II toxic loading studies that will help prioritize which sources of toxics entering the Puget Sound to address first. The study results will also help orient the Action Agenda to targeting the most important toxics and the most important sources of runoff. Ecology reports a 22 percent reduction in mercury in waste to streams from the 2005-07 biennium. This 669-pound reduction exceeded a 500-pound target for the biennium. Ecology and the Partnership provide assistance to 17 local governments and trained 1,105 participants in the use of low impact stormwater development throughout the region.
- Reducing pollution from onsite sewage systems: The DOH, in conjunction with many local partners, reopened 1,309 acres of formerly polluted and unsafe commercial and recreational shellfish beds over the course of the biennium, more than doubling its target of 500 acres. The primary threat to these shellfish beds was from nonpoint pollution sources such as onsite sewage systems. DOH points to the success of Kitsap County's Pollution Identification and Control program as being

responsible for the upgrade of approximately 1,100 acres of the upgraded shellfish beds and recommends other counties replicate this program. The Action Agenda also identifies replicating this program.

- Restoring rivers and floodplains: Work to restore rivers and floodplains results from threats from dams, levees, and tidegates, agriculture, and livestock grazing. While each of these accomplishments represents progress, future reporting is likely to indicate whether the projects were the right ones, done in the right places to have maximum impact on restoring ecosystem structure, process, and function.
 - Washington State Conservation Commission: Protected 400 new acres and 20 stream miles of freshwater riparian habitat on farmland through the federal Conservation Reserve Enhancement Program
 - Washington State Recreation and Conservation Office: Grants provided through the Puget Sound Acquisition and Restoration program and Salmon Recovery Funding Board restored 726 acres of estuarine wetlands, 5 stream miles, and 90 acres of estuarine/freshwater habitat, and protected 2,990 acres of habitat.

- Reduction of other threats to the ecosystem:
 - Wastewater treatment plants and CSOs: Ecology is catching up on issuing a backlog of municipal sewage treatment plant NPDES permits.
 - Marine shoreline armoring: DNR designated Cypress Island and Fidalgo Bay as aquatic reserves, providing greater protection on 6,560 acres of state aquatic lands. Management plans for these reserves were also completed.
 - Marine invasive species: Washington State Department of Agriculture cleared 164 acres of shoreline infested with the spartina, a non-native invasive plant species, restoring nearshore habitat critical to shellfish and other marine organisms.
 - Air pollution and atmospheric deposition: Ecology reported an approximate 12 percent reduction in diesel emissions in the Puget Sound region. This exceeded their target.
 - Derelict gear and vessels: DNR pulled 33 derelict vessels, vastly exceeding their target of three.

APPENDIX A

Science Panel Comments on Progress Implementing the 2008 Action Agenda

SCIENCE PANEL

October 30, 2009

TO: William Ruckelshaus, Chair, PSP Leadership Council

FROM: Joel Baker, Chair, PSP Science Panel

SUBJECT: Science Panel Comments on Progress Implementing the 2008 Action Agenda

Background and Scope

This memorandum addresses the assignment in RCW 90.71.370(3) that the State of the Sound report includes “comments by the (Science) panel on progress in implementing the plan (*i.e.*, the Action Agenda), as well as findings arising from the assessment and monitoring program.” To meet this charge, this memorandum consists of the following:

1. An interpretation of the charge, defining terms and defining the scope of the memorandum,
2. Progress and opportunities in establishing ecosystem indicators, benchmarks, and goals,
3. Progress and opportunities in understanding linkages between actions and results,
4. Progress and opportunities in building the necessary science-policy dialog, and
5. Progress and opportunities in building a sustainable capacity for monitoring, analysis, research, and evaluation.

The Purpose and Scope of this Memorandum

The purpose of this memorandum is to provide a perspective on the key science-policy issues facing the Puget Sound Partnership as they wrote and began to implement the Action Agenda while building a new state agency during a time of economic downturn. The legislation establishing the Puget Sound Partnership, including the Leadership Council, the Ecosystem Coordination Board, and the Science Panel, calls for an appropriately aggressive approach to address the worsening conditions in the Puget Sound.

The prescribed workload and schedule, likely reflecting both the urgency of the situation and concern about ineffective and uncoordinated efforts in the past, requires an extremely ambitious and aggressive effort based on science. This establishes a natural but healthy tension between ‘do it now’ and ‘do it better.’ As we review the considerable progress made in writing and implementing the 2008 Action Agenda, we remind the reader of this tension, which sits at the heart of any scientifically-complex endeavor.

In this memorandum, we focus on the deliberations and actions of the Puget Sound Partnership during the time when the first Action Agenda and companion Biennial Science Workplan were being drafted, reviewed, and approved. Our goal is to comment constructively on how and where science was used to inform both the evolution of the Partnership and the content of the Action Agenda. This scope of this review therefore goes beyond ‘implementation of the plan’ to include decisions made during the development of the Action Agenda. As the creation, implementation, and revision of the Action Agenda, the evolving organization and operation of the Partnership, and the development of better Puget Sound science are intertwined, this review

touches on all aspects of Partnership activities. In addition, the high priority and focus placed on developing the Action Agenda within one year of creating the Partnership, precluded developing a reasoned and focused scientific assessment to identify and rank hazards and threats to the ecosystem, limited the ability to establish a baseline monitoring program to inform adaptive learning from ongoing restoration, and lessened the ability to scientifically prioritize needed actions.

Findings from selected assessment and monitoring results are summarized in the *Ecosystem Status and Trends* section of the *State of the Sound* report. The Science Panel reviewed the status and trends and assisted in preparation of the overall ecosystem summary at the beginning of that chapter. In the interest of brevity, those results are not repeated in this memorandum. To be clear, what we know about the status and trends of the Puget Sound ecosystem is based largely on observations and analyses done prior to 2008, as there simply has not been sufficient time for Partnership activities, including implementation of the Action Agenda, to be reflected in demonstrable improvements in the Puget Sound.

This memorandum does not review the analysis of program effectiveness presented in the 2009 State of the Sound report, as these sections were prepared in parallel and were outside our purview.

Establishing Ecosystem Indicators, Benchmarks, and Goals

The foundational goal of the Puget Sound Partnership is to insure 'a healthy Puget Sound by 2020,' interpreted to the public as a Sound that is 'fishable, swimmable, and diggable.' While a laudable goal, almost immediately the Partnership was faced with the prospect of more explicitly defining 'healthy' within the context of measurable outcomes. The term 'ecosystem health' is subjective and has no universally accepted definition. The demands for program accountability suggest a framework in which ecosystem health is defined (the goal), the current condition assessed (the starting point), and a schedule with mileposts (benchmarks) developed. Selection of ecosystem indicators is largely a scientific process, informed by policy, while selection of goals and benchmarks is clearly policy informed by science. Scientists may advise policy makers on whether chosen actions and benchmarks will likely meet the stated goals.

Establishing ecosystem indicators, benchmarks, and goals is more difficult than it may first appear, as each step of the way requires technical data and policy decisions informed by science. Such a framework has the apparent advantage of specific numeric targets achieved by certain dates, which is often seen as driving actions. However, there may be a false sense of certainty in the numbers, as the framework implies that the underlying relationships between cause and effect are quantitatively understood.

Progress: The Partnership engaged the scientific community through an Indicators Workgroup to review and refine the broad collection of ecosystem indicators used elsewhere and previously in the Puget Sound. This activity built strong ties with a large number of ecosystem scientists and provided an early signal that the Partnership valued input from the community. Through a series of workshops, the Indicators Workgroup substantially narrowed the number of indicators that were available to serve the needs of the Partnership. The Science Panel and the Leadership Council used this list of provisional indicators to identify the 'reporting indicators' currently available to assess the state of the Sound.

Since a comprehensive set of ecosystem indicators and the rigorous data needed to support them are still under development, the analysis provided in the 2009 State of the Sound should be considered transitional in nature providing a link between previous State of the Sound

summaries and the evolving ecosystem reporting framework being developed for the Partnership. Coincident with the development of indicators, the Partnership examined frameworks to evaluate stressors and pressures on the ecosystem, with the goal of understanding and communicating the relative importance of different 'drivers' of ecosystem degradation. The Partnership leveraged work done by a national-scale NOAA 'Integrated Ecosystem Assessment' program to further develop the framework and models necessary to rationally understand current conditions, stressors, and the meaning of ecosystem health.

Opportunities: Continued analysis of potential ecosystem indicators, especially those capturing the human health and human well being goals is needed. Another important component of the ecosystem reporting framework that is incomplete is setting targets and benchmarks for some or all of the ecosystem indicators. This is a very difficult task requiring integration of ecological sciences, perhaps economic and engineering feasibility analyses, and policy debate and deliberations. In the end, setting targets and benchmarks will require Puget Sound leaders to make informed policy decisions, likely based on weight-of-evidence arguments, to guide restoration and protection actions. The Partnership will need to continue to balance the desire for benchmarks and targets against the difficulties in choosing rational and defensible numbers, and must continue dialog to clarify what can be expected from this framework. The principles of adaptive management may likely result in changing goals as more information becomes available.

Understanding Linkages Between Actions and Results

Complex systems such as the Puget Sound ecosystem consist of myriad of interrelated components. Developing management actions to restore and protect the Sound requires understanding the relationship between actions and results in the ecosystem. Some linkages are, for example, straightforward discharge of copper-containing wastewater into an embayment increases levels of this metal in the local environment and may directly affect survival of biota, specifically returning adult salmon. Many other relationships are indirect—elevated levels of copper in a stream may subtly affect neural develop in juvenile salmon, which in turn may harm the fishes ability to evade predation, which leads to fewer adult salmon returning to the stream years later. Meanwhile, increasing population growth may exert even more pressure on the ability of natural systems to provide ecosystem services. Clearly, identifying the dominant logical sequences from external stressors to impacts is required for a rational, accountable ecosystem management program. Addressing environmental issues at the ecosystem scale will require addressing social, economic, energy, transportation, and other issues as well.

Progress: The Partnership has taken important first steps to identify and articulate these 'results chains' through the use of the 'Open Standards' framework and through support of the Integrated Ecosystem Assessment framework. They have made substantial progress working across scientific disciplines to harmonize terminology and approaches, and now have an evolving scientifically-rigorous framework to establish chains of results. As with the indicators work, the Partnership is developing and adapting these frameworks to the needs in the Sound as the analyses are on-going. As in all technologically- or conceptually complex arena, such simultaneous development and implementation of tools is a bit inefficient and frustrating at times, but likely is the best course to follow.

Opportunities: The Partnership must continue to develop and apply the models and tools that tie actions to results and collect the underlying data needed to understand the connections and verify hypothesis and assumptions. These data and tools will not only support the program accountability system but will also allow the Puget Sound community to understand the threats to the system and to prioritize responses. Done properly, this effort may also establish Puget

Sound as a national model for accountability-based ecosystem restoration. There currently is no ongoing analysis and ranking of external stressors to the ecosystem; a serious deficiency that must be corrected. The Partnership must also support the targeted monitoring and identify high priority research that provides the feedback information for the results chain analyses.

Building the Necessary Science-policy Dialog

The Partnership's goals will not be met without a strong interface between science and policy. Most of the difficult issues faced by the Partnership sit at the science-policy interface, and it is important to recognize the limits of either science without policy or policy without science. While there may be several suitable models to encourage dialog between scientists and policy makers, all share the common ingredient of frequent and open dialog focused on outcomes. The organizational structure of the Partnership, advised by three boards (Leadership Council, Science Panel, and Ecosystem Coordination Board) does not lend itself readily to facilitate science-policy dialog. However, all three bodies are essential for developing an effective model for an ecosystem level recovery in which scientific information is fed into policy decisions and translated into implementation of management actions. It is also important that the Partnership, through the Ecosystem Coordination Board, closely monitor actions resulting from implementation of the Action Agenda, providing essential information back to into the science-policy dialog.

Progress: The decision to adopt the principles of adaptive management for the Puget Sound program significantly focused the need for science-policy communication within the Partnership. Adaptive management requires the timely collection and analysis of the proper information and the ability to evaluate outcomes and make informed decisions. While adaptive management is a sound approach in principle, in practice its application to the Puget Sound restoration and protection places incredible stress on the organization, requiring substantial investments in monitoring, analysis, and communication tools.

To address this issue, the Partnership has initiated the development of coordinated Science-Policy workgroups focused on specific topics including: performance management, threats to ecosystem health, implementation strategies, social and outreach strategies, and finance/funding strategies. These groups, consisting of members of the Leadership Council, Science Panel, and Ecosystem Coordination Board, have the tremendous advantage of having the proper mix of people at the table to make informed decisions to the Partnership's management team. While all of these groups have not yet met, early results from the Performance Management workgroup and social and outreach strategies group have been quite encouraging.

Another notable accomplishment in this area is the restructuring of the *Puget Sound Science Update* report to more fully engage the science and policy communities. Based on the Intergovernmental Panel on Climate Change (IPCC) model, the *Update* is being written by author teams led by preeminent scientists charged with preparing synthesis and meta-analysis that will [hopefully] go beyond simply reviewing the available literature. This approach will facilitate peer review by a broader community and will signal the Partnership's interest in applying the best science available.

Opportunities: The Partnership must work to maintain strong science-policy dialog through support of the Science-Policy workgroups, continuation of the *Sound Science Update* process, and by fostering workshops, seminars, and exchanges with the regional, national, and international communities. Of particular importance is better integration of the 'human dimension' elements into the Puget Sound program. Moreover, the Partnership must establish

a strong commitment to technical accuracy, consistency, and open dissemination of technical data and information throughout the organization and participating groups.

While there may be differences of opinions and interpretations of the meaning of data and information from the ecosystem, we strongly agree that the underlying data and facts should be freely available, subject to scientific review, and that open and frank discussions will lead to workable solutions and testable hypothesis.

Building a Sustainable Capacity for Monitoring, Analysis, Research, and Evaluation

Science-based ecosystem management programs are built upon a base of monitoring, analysis, and research built up over many years. While the initial Action Agenda is based largely on science established sometimes decades before, further optimization of the Partnership's stewardship will require investment in focused monitoring, analysis, and research. As the lead Puget Sound agency, the Partnership is responsible for 'carrying the ball' to ensure that science programs targeted on achieving the Partnership's goals for the Sound are maintained and enhanced.

Progress: In 2008, the Science Panel assessed the regional capacity for monitoring, analysis, and research and recommended in their Biennial Science Workplan specific enhancements required to meet the needs of the Partnership. In particular, the Workplan calls for (1) expansion of existing ecosystem monitoring and research programs to provide the information required to employ adaptive management and to document accountability; (2) substantial investment in science personnel to increase the Partnership's capacity to analyze, integrate, and synthesize information into a coherent understanding of Puget Sound; (3) enhancing monitoring of on-going and planned ecosystem restoration programs to explore effectiveness with a sound scientific basis, and; (4) development of exploratory science efforts to allow the Partnership to detect and understand evolving threats.

During 2009, only a small portion of the Biennial Science Workplan has been implemented and, due to resource limitations, significant amounts of capacity building, and enhancements of monitoring and science will not be completed this biennium.

Opportunities: The Partnership must continue to evolve its organizational structure and funding model to insure a sustained science program. Creative cooperation and collaboration among local, state and federal agencies, the tribes, NGO's, universities and others will be required.

Although progress has been made during the past year, much remains to be done and the Partnership must continue to build capacity. At this point a coordinated monitoring program has not yet been developed, the integrated ecosystem assessment framework is incomplete, a risk-based assessment of hazards and threats to the Puget Sound Ecosystem is still needed, an integrated information management system is only nascent, a peer-review process for Partnership science products, policy initiatives, and implementation strategies needs to be put in place, education and outreach activities needs to be infused with a strong scientific and technical basis, and many of the critically needed monitoring, modeling, and assessment tools are missing. Additionally, greater coordination with scientific investigations and monitoring being conducted by Canadian science and resource management agencies needs to be achieved to better inform the decision-making process." The Partnership must continue to send a clear message that peer-reviewed, rigorous science is integral to its operations and planning

Summary

The Puget Sound Partnership is tackling a very large undertaking on an aggressive schedule during difficult economic times. Although implementation of the Action Agenda has just begun, the Science Panel believes that overall the Partnership is moving in the right direction by setting scientific processes in place that will further the recovery efforts using the available scientific information. Ecosystems are inherently complex, variable, and may respond to management actions in complicated patterns that will take time and empirical evidence to evaluate. Therefore it is premature to judge the implementation of the Action Agenda in terms of measurable results on-the-ground.

However, if the Partnership is able to leverage available resources, gain assistance and collaboration of interested parties and stakeholders, focus resources on key science and technical needs, and if it continues to build capacity, set indicators, benchmarks, and goals, foster a strong science-policy interface, and follow the principles of adaptive management, by 2011 implementation should be well underway and demonstrable benefits apparent.

The Science Panel also suggest that the Leadership Council examine the timing of when this progress report is required. As currently mandated, the report is due at the beginning of the state biennium and one year from release of the Action Agenda. To better report on progress, it would be more strategically timed to have this report due June or July of even years. This would provide time to implement funding decisions and actions and still have time to promote needed legislative changes and to update the latest version of the Action Agenda as needed.

APPENDIX B

Final Results from the 2007-2009 Puget
Sound Conservation and Recovery Plan,
July 1, 2007 – June 30, 2009

Located at: www.psp.wa.gov/pm

APPENDIX C

Ecosystem Status & Trends: A 2009 Supplement to State of the Sound Reporting

Located at: www.psp.wa.gov/pm

APPENDIX D

Funded Near-Term Actions by State Agency

Table D-1. Funded near-term actions by threat and implementer

Primary Threat Addressed	Near-Term ID	Near-Term Action	Lead Implementer	Funded Agency	Action Agenda Proposed FY 09-11 Budget (lead)	Confirmed FY 09-11 Budget	Difference b/w AA Proposed Budget and Confirmed Budget	Non-State Match
Agriculture & livestock grazing	A.4.N2.0	Coordinate with the SSB 5248 project by the Ruckelshaus Center that is working to resolve conflicts between agricultural activities and critical areas regulations.	Ruckelshaus CTR	Ruckelshaus CTR	\$ 80,000	\$ -		
	B.3.N1.0	Implement coordinated incentive and technical assistance programs for private landowners through the Conservation Commission, Conservation Districts, Department of Natural Resources, other state agencies, Washington State University Extension, local governments, non-governmental organizations, and others as appropriate.	WA CC	WA CC	\$ 500,000	\$ 2,689,352		
	C.2.N8.0	Implement private property stewardship, incentive, and technical assistant programs (e.g. Conservation Districts, WSU Extension, Washington Sea Grant, local government programs) that focus on reducing sources of water pollution, from commercial and non-commercial farms and other nonpoint sources, particularly in priority areas.	WA CC	WA CC	\$ 6,200,000	\$ 1,041,570		
	Subtotal				\$ 6,780,000	\$ 3,730,922	\$ (3,049,078)	
Air pollution & atmospheric deposition	C.1.N6.0	Implement existing air management plans consistent with the Action Agenda.	Ecology	Ecology	\$ 13,579,114	\$ 1,633,067		
	Subtotal				\$ 13,579,114	\$ 1,633,067	\$ (11,946,047)	
Aquaculture	A.4.N5.0	Continue ongoing work to resolve conflicts between aquaculture and upland uses.	Ecology	Ecology	\$ 4,053,800	\$ 50,000		
	A.4.N5.9	Continue ongoing work to resolve conflicts between aquaculture and upland uses.	Ecology	UW-Sea Grant		\$ 379,455		
	D.1.N6.0	Implement the priority hatchery reform recommendations to update state and tribal hatcheries to protect wild salmon stocks, as well as achieve fisheries objectives.	WDFW	WDFW	\$ 13,000,000	\$ 2,538,487		
	Subtotal				\$ 17,053,800	\$ 2,967,942	\$ (14,085,858)	
Climate change	D.2.N1.0	Once the recommendations of the Climate Change Study Groups are available, integrate and coordinate them with the Action Agenda.	PSP	PSP	\$ 80,000	\$ -		
	Subtotal				\$ 80,000	\$ -	\$ (80,000)	
Dams, levees, & tidegates	B.1.N3.0	Restore floodplain and river processes where there is a high likelihood of re-creating ecosystem function.	PSP	NOAA		\$ -	\$ 2,988,000	
	B.1.N3.1	Restore floodplain and river processes where there is a high likelihood of re-creating ecosystem function.	PSP	RCO		\$ 16,721,463	\$ 3,109,870	
	B.1.N4.0	Remove significant blockages of ecosystem processes and provide access to habitat.	PSP	USPS		\$ -	\$ 54,700,000	
	B.1.N4.2	Remove significant blockages of ecosystem processes and provide access to habitat.	PSP	WSDOT		\$ 18,766,000		
	B.1.N4.3	Remove significant blockages of ecosystem processes and provide access to habitat.	PSP	WDFW		\$ 1,000,000		
	B.1.N4.4	Remove significant blockages of ecosystem processes and provide access to habitat.	PSP	RCO		\$ 635,142	\$ 712,635	
	D.4.N4.0	Convene a process with Corps, NMFS, USFWS, jurisdictions responsible for levee maintenance, and stakeholders to identify and describe conflicts between levee maintenance standards and healthy habitat.	PSP	PSP	\$ -	\$ 21,996		
	B.1.N2.0	Complete large-scale restoration projects at the mouths of major river systems in Puget Sound where there is a high likelihood of re-creating ecosystem function.	PSP	PSP	\$ 16,700,000	\$ -		

Primary Threat Addressed	Near-Term ID	Near-Term Action	Lead Implementer	Funded Agency	Action Agenda Proposed FY 09-11 Budget (lead)	Confirmed FY 09-11 Budget	Difference b/w AA Proposed Budget and Confirmed Budget	Non-State Match
Dams, levees, & tidegates (cont'd)	B.1.N2.2	Complete large-scale restoration projects at the mouths of major river systems in Puget Sound where there is a high likelihood of re-creating ecosystem function.	PSP	NOAA		\$ -		\$ 8,900,000
	B.1.N2.3	Complete large-scale restoration projects at the mouths of major river systems in Puget Sound where there is a high likelihood of re-creating ecosystem function.	PSP	USFWS		\$ -		\$ 3,200,000
	B.1.N2.1	Complete large-scale restoration projects at the mouths of major river systems in Puget Sound where there is a high likelihood of re-creating ecosystem function.	PSP	RCO		\$ 13,887,470		\$ 3,507,042
Subtotal					\$ 16,700,000	\$ 51,032,071	\$ 34,332,071	\$ 77,117,547
Derelict gear & vessels	B.1.N6.0	Remove derelict fishing gear as proposed by the Northwest Straits Commission and local Marine Resource Committees in sites with known problems for species.	NWSC	NWSC	\$ 1,225,000	\$ -		\$ 4,600,000
	B.1.N6.3	Remove derelict fishing gear as proposed by the Northwest Straits Commission and local Marine Resource Committees in sites with known problems for species.	NWSC	WDFW		\$ 100,000		
Subtotal					\$ 1,225,000	\$ 100,000	\$ (1,125,000)	\$ 4,600,000
Institutional arrangement (indirect threat/driver)	A.4.N6.0	Implement components of the Washington Department of Natural Resources Aquatic HCP that protect critical habitat.	DNR	DNR	\$ 4,200,000	\$ 644,000		
	A.4.N6.1	Implement components of the Washington Department of Natural Resources Aquatic HCP that protect critical habitat.	DNR	PSP		\$ 65,773		
	D.1.N1.0	Coordinate implementation of existing plans and programs that support the Action Agenda, and realign or discontinue plans and programs that conflict with the strategies and actions set forth in the Action Agenda.	PSP	PSP	\$ 320,000	\$ -		
	D.1.N3.0	Continue the integration of habitat, harvest, and hatchery efforts in the salmon recovery plans and watershed three-year work plans.		Tribes	\$ 160,000	\$ -		
	D.3.N1.0	Integrate the work of PSNERP, including the Estuary and Salmon Restoration Program, into the Puget Sound Partnership to improve efficiency, coordination, and to avoid overlap and duplication of efforts, as well as focus sufficient state, federal, tribal, and nonprofit organizational resources on protecting and restoring sites identified as part of the General Investigation.	PSP	PSP	\$ -	\$ 91,423		
	D.3.N2.0	Fund salmon recovery lead entities and other collaborative groups such as Regional Fisheries Enhancement Groups, marine resource committees, and RCW 90.82 watershed planning groups in the near term to continue existing work and address Action Agenda priorities.	PSP	PSP	\$ 3,415,299	\$ 735,000		
	D.3.N2.2	Fund salmon recovery lead entities and other collaborative groups such as Regional Fisheries Enhancement Groups, marine resource committees, and RCW 90.82 watershed planning groups in the near term to continue existing work and address Action Agenda priorities.	PSP	RCO		\$ 2,033,103		
	D.3.N2.3	Fund salmon recovery lead entities and other collaborative groups such as Regional Fisheries Enhancement Groups, marine resource committees, and RCW 90.82 watershed planning groups in the near term to continue existing work and address Action Agenda priorities.	PSP	WDFW		\$ 1,015,000		
	D.3.N3.0	Fund tribes to participate in the refinement and implementation of the Action Agenda, including salmon recovery plans.	PSP	PSP	\$ 4,400,000	\$ 91,423		
D.3.N4.0	Establish a Federal Puget Sound Office. Work with the congressional delegation to pass federal legislation explicitly authorizing Puget Sound recovery work, including establishing a federal Puget Sound Office to improve coordination of federal agencies and codify ongoing federal authorization for funding.	Fed Delegation	Fed Delegation		\$ -			

Primary Threat Addressed	Near-Term ID	Near-Term Action	Lead Implementer	Funded Agency	Action Agenda Proposed FY 09-11 Budget (lead)	Confirmed FY 09-11 Budget	Difference b/w AA Proposed Budget and Confirmed Budget	Non-State Match
Institutional arrangement (indirect threat/driver) (cont'd)	D.3.N5.0	Consider the recommendations of the Partnership's Local Integration Task Force and implement appropriate follow up actions.	PSP	PSP				
	D.3.N6.0	Support appropriations to federal agencies to implement specific priorities in the Action Agenda, especially those that are actively coordinating with state and local partners to implement Action Agenda priorities.	Non-Feds	Non-Feds	\$ 80,000	\$ -		
	D.3.N6.1	Support appropriations to federal agencies to implement specific priorities in the Action Agenda, especially those that are actively coordinating with state and local partners to implement Action Agenda priorities.	Non-Feds	PSP	\$ 80,000	\$ 148,000		
	D.3.N7.0	Engage with stakeholders throughout the region to advance shared priorities.	PSP	PSP	\$ 480,000	\$ 302,488		
	D.3.N8.0	Develop a joint federal agency work plan for Puget Sound restoration and protection actions in coordination with the Partnership.	EPA	EPA	\$ -	\$ -		
	D.3.N9.0	Work with federal delegation to support reauthorization of the Coastal Zone Management Act and other federal legislation vital to Puget Sound protection and restoration.	PSP	PSP	\$ -	\$ -		
	D.4.N1.0	Conduct an institutional analysis of local, state, and federal agencies with regulatory authority over upland terrestrial and aquatic habitats, species protection, and water quality.	PSP	PSP	\$ 160,000	\$ -		
	D.4.N1.1	Conduct an institutional analysis of local, state, and federal agencies with regulatory authority over upland terrestrial and aquatic habitats, species protection, and water quality.	PSP	PSP		\$ -		
	D.4.N2.0	Evaluate the effectiveness of the Clark County pilot project related to aquatic habitats of the Office of Regulatory Assistance's iPermit program.	Commerce	Commerce	\$ 250,000	\$ -		
	D.4.N3.0	Convene a process for making recommendations to the Partnership about streamlining permitting processes for habitat restoration projects.	PSP	PSP	\$ 80,000	\$ -		
	D.4.N5.0	Support funding and legislation to allow state loans to local governments to conduct environmental reviews under SEPA at the planning or programmatic level.	Commerce	Commerce	\$ -	\$ -		
	D.4.N6.0	Develop, fund, and implement a pilot in-lieu-fee mitigation program for aquatic habitats in one to three Puget Sound watersheds.	PSP	PSP	\$ 11,022,683	\$ 91,423		
	D.4.N6.3	Develop, fund, and implement a pilot in-lieu-fee mitigation program for aquatic habitats in one to three Puget Sound watersheds.	PSP	Ecology		\$ 4,400,000		
	D.4.N7.0	Resolve issues related to the Hydraulic Project Approval including effectiveness, compliance, and enforcement.	WDFW	WDFW		\$ -		
	D.5.N1.0	Convene a process with federal, state, and local jurisdictions and tribes to develop an ideal compliance assistance and inspection program that would leverage existing fragmented inspection programs into an integrated program without co-opting the regulatory and enforcement authority of any jurisdiction.	PSP	PSP	\$ 80,000	\$ -		
	D.5.N3.0	Support state water quality fee revisions and short-term funding to maintain existing, and if possible, enhance compliance staff at Department of Ecology	Ecology	Ecology	\$ 4,600,000	\$ -		
	D.5.N4.0	Provide additional staff at the Department of Ecology to conduct field visits to improve compliance with shoreline and aquatic regulations.	Ecology	Ecology	\$ 2,054,000	\$ -		
	E.2.N1.0	Align state agency budget proposals for the 2009-2011 and 2011-2013 biennial budgets with the priorities in the Action Agenda.	PSP	PSP	\$ 80,000	\$ 133,000		

Primary Threat Addressed	Near-Term ID	Near-Term Action	Lead Implementer	Funded Agency	Action Agenda Proposed FY 09-11 Budget (lead)	Confirmed FY 09-11 Budget	Difference b/w AA Proposed Budget and Confirmed Budget	Non-State Match
Institutional arrangement (indirect threat/driver) (cont'd)	E.2.N2.0	Pursue state legislation authorizing the creation of a Puget Sound regional improvement district.	PSP	PSP		\$ -		
	E.2.N3.0	For grant requests to the state, per RCW 90.71.340, review grant and loan criteria to prohibit the funding of projects that are in conflict with the Action Agenda.	PSP	PSP		\$ 33,250		
	E.2.N4.0	For federal and local budgets, to the extent possible, review and comment to encourage alignment with the Action Agenda.	PSP	PSP		\$ 33,250		
	E.2.N5.0	Implement targeted procurement on a pilot basis for a portion of the Puget Sound Acquisition and Restoration program that is focused on salmon recovery.	PSP	PSP		\$ -		
	E.2.N6.0	Continue to evaluate potential state funding sources in greater detail, including full legal and fiscal analysis, and prepare proposals for enactment of revenue sources in the 2010 or 2011 legislative sessions.	PSP	PSP	\$ 20,000	\$ 80,830		
	E.2.N7.0	For state agency grant programs, advocate for changes to policies and priorities of the Public Works Trust Fund, Salmon Recovery Funding Board, Washington Wildlife and Recreation Program, and other state grant and loan programs, to encourage consistency with Action Agenda goals.	PSP	PSP	\$ 40,000	\$ 33,250		
	E.2.N8.0	Develop financial incentives and provide financial and technical assistance to local governments to develop high-priority projects in the Action Agenda for funding with existing Department of Ecology and the Public Works Board programs.	PSP	PSP		\$ -		
	E.2.N9.0	As part of implementing the Mitigation That Works recommendations (D.4.2), develop agreements with Corps, Ecology, and other relevant permitting agencies by 2010 on the design of a regional in-lieu-fee program.	PSP	PSP		\$ -		
	E.2.N10.0	Identify and implement one or more pilot projects to demonstrate the application of the in-lieu-fee program.	PSP	PSP		\$ -		
	E.2.N11.0	Evaluate, and if possible implement a water quality trading program to address dissolved oxygen issues in southern Puget Sound.	PSP	PSP		\$ -		
	E.2.N12.0	Develop proposals for the 2011-2013 biennium to establish, improve, or expand the use of ecosystem markets.	PSP	PSP	\$ 10,000	\$ -		
	E.2.N13.0	In cooperation with a local government or stormwater utility, implement a pilot cap-and-trade program for the removal of impervious surface and/or removal of shoreline armoring.	PSP	PSP	\$ 10,000	\$ -		
	E.2.N14.0	Evaluate, and incorporate as appropriate into the Action Agenda, the recommendations in the Washington State Conservation Commission's 2008 conservation markets study for farmlands and forest landowners.	PSP	PSP		\$ -		
		Subtotal				\$ 31,541,982	\$ 9,931,212	\$ (21,610,771)
Invasives - marine	A.5.N1.0	Advocate for national or West Coast regional ballast water discharge standards.	Ecology	Ecology	\$ 60,000	\$ 13,368		
	A.5.N1.5	Advocate for national or West Coast regional ballast water discharge standards.	Ecology	WDFW		\$ 60,000		
	A.5.N2.0	Enhance state ballast water compliance program and support a federal/state and/or West Coast cooperative management approach.	WDFW	WDFW	\$ 538,400	\$ 220,400		
	A.5.N3.0	Develop a Puget Sound baseline and database of invasive species to guide control efforts.	RCO	RCO	\$ 694,000	\$ 206,000		
	A.5.N3.7	Develop a Puget Sound baseline and database of invasive species to guide control efforts.	RCO	Sea Grant		\$ 40,000		

Primary Threat Addressed	Near-Term ID	Near-Term Action	Lead Implementer	Funded Agency	Action Agenda Proposed FY 09-11 Budget (lead)	Confirmed FY 09-11 Budget	Difference b/w AA Proposed Budget and Confirmed Budget	Non-State Match
Invasives - marine (cont'd)	A.5.N4.0	Enhance and target existing capacity to rapidly respond to immediate invasive species risks.	PSP	PSP	\$ 1,200,000	\$ 500,000		
	A.5.N4.4	Enhance and target existing capacity to rapidly respond to immediate invasive species risks.	PSP	WSDA	\$ -	\$ 700,000		
Subtotal					\$ 2,492,400	\$ 1,739,768	\$ (752,632)	
Large scale timber harvest	A.4.N4.0	Continue to implement existing forest practice plans and regulations consistent with the Action Agenda, including the state trust lands HCP, state forest practices rules, and Road Maintenance and Abandonment Plans as informed by the Forest and Fish Plan, and others.	DNR	DNR	\$ 10,491,384	\$ 7,190,000		
	C.2.N7.0	Continue to implement road maintenance and abandonment programs for federal, state (including trustlands), and private timber lands.	DNR	DNR	\$ 18,431,020	\$ 7,660,000		
	C.2.N7.4	Continue to implement road maintenance and abandonment programs for federal, state (including trustlands), and private timber lands.	DNR	WDFW		\$ 107,632		
Subtotal					\$ 28,922,404	\$ 14,957,632	\$ (13,964,772)	
Oil & hazardous spills	C.1.N3.0	Permanently fund a rescue tug at Neah Bay.	Ecology	Ecology	\$ 6,400,000	\$ 3,600,000		
	C.1.N4.0	Continue the Department of Ecology's oil spill inspection and prevention programs. Obtain delegated authority from the Coast Guard to expand and enhance the scope of authority of the Department of Ecology's vessel and facility inspections, marine incident investigations, and the agency's ability to augment Coast Guard prevention activities and review spill prevention and response plans on behalf of the Coast Guard.	Ecology	Ecology	\$ 5,617,542	\$ 7,490,000		
	C.1.N4.1	Continue the Department of Ecology's oil spill inspection and prevention programs. Obtain delegated authority from the Coast Guard to expand and enhance the scope of authority of the Department of Ecology's vessel and facility inspections, marine incident investigations, and the agency's ability to augment Coast Guard prevention activities and review spill prevention and response plans on behalf of the Coast Guard.	Ecology	PSP		\$ 150,000		
	C.1.N4.2	Continue the Department of Ecology's oil spill inspection and prevention programs. Obtain delegated authority from the Coast Guard to expand and enhance the scope of authority of the Department of Ecology's vessel and facility inspections, marine incident investigations, and the agency's ability to augment Coast Guard prevention activities and review spill prevention and response plans on behalf of the Coast Guard.	Ecology	Sea Grant		\$ 45,000		
Subtotal					\$ 12,017,542	\$ 11,285,000	\$ (732,542)	
Onsite sewage systems	C.1.N7.0	Implement Shellfish Protection District plans, on-site sewage treatment plans in marine recovery areas, and related projects to restore water quality at commercial and recreational shellfish areas that are degraded or threatened.	Varies	PSP	\$ 244,000	\$ 76,414		
	C.1.N8.0	Implement immediate remediation actions to address Hood Canal's low dissolved oxygen concentrations through the Hood Canal Dissolved Oxygen Program.	Ecology	Ecology	\$ 31,000,000	\$ 6,838,934		
	C.1.N8.1	Implement immediate remediation actions to address Hood Canal's low dissolved oxygen concentrations through the Hood Canal Dissolved Oxygen Program.				\$ 76,414		
	C.1.N9.0	Implement priority strategies and actions to address low dissolved oxygen in South Sound, targeted areas of the Whidbey Basin, and other vulnerable areas. This includes the Ecology-led South Sound Dissolved Oxygen Study.	Ecology	Ecology	\$ 5,734,000	\$ 1,204,875		

Primary Threat Addressed	Near-Term ID	Near-Term Action	Lead Implementer	Funded Agency	Action Agenda Proposed FY 09-11 Budget (lead)	Confirmed FY 09-11 Budget	Difference b/w AA Proposed Budget and Confirmed Budget	Non-State Match
Onsite sewage systems (cont'd)	C.1.N9.1	Implement priority strategies and actions to address low dissolved oxygen in South Sound, targeted areas of the Whidbey Basin, and other vulnerable areas. This includes the Ecology-led South Sound Dissolved Oxygen Study.				\$ 76,414		
	C.4.N1.0	Develop and implement on-site sewage system management plans in each Puget Sound county.	Health Districts	Health Districts	\$ 12,744,800	\$ -		
	C.4.N1.2	Develop and implement on-site sewage system management plans in each Puget Sound county.	Health Districts	DOH		\$ 3,944,800		
	C.4.N2.0	Revise the current on-site sewage treatment rule no later than June 30, 2011, so standards are established to address new on-site sewage treatment technologies.	DOH	DOH	\$ 394,000	\$ -		
	C.4.N3.0	Enhance and target on-site sewage treatment loan programs and grants to ensure programs are targeted to areas of with demonstrated loading issues and vulnerable waters.	Ecology	Ecology	\$ 40,000	\$ 6,778,494		
	Subtotal				\$ 50,156,800	\$ 18,996,346	\$ (31,160,454)	
Performance Management	E.1.N1.0	Develop a performance management framework by November 1, 2009. This will include: a. Identifying measurable ecosystem outcomes and indicators for reporting. b. Identifying measurable intermediate outcomes with targets and benchmarks. c. Developing a logic framework that links the actions in the Action Agenda to funding, intermediate outcomes, and ecosystem goals and objectives. d. Creating an updated list of near-term actions based on 2009 funding decisions. e. Identifying processes by November 1, 2009 by which ecosystem results and action performance will be assessed and adaptive management actions identified. f. Identifying a management cycle for the Action Agenda with processes, timing, and reporting by November 1, 2009. This will include a schedule and process to update the near-term actions, the work plan, and revise the Action Agenda strategies as necessary. Incorporate salmon recovery planning adaptive management plan as much as possible. g. Submitting recommendations to the Legislature to better align funding and resources with the Action Agenda as required in the Partnership statute (RCW 90.71.370 (3)).	PSP	PSP	\$ 80,000	\$ 238,630		
	E.1.N2.0	Clarify and document roles of the Leadership Council, Ecosystem Coordination Board, Science Panel, and Partnership staff. Clarify relationships with the Salmon Recovery Council, local coordinating groups, caucuses, and strategic planning bodies working on issues relevant to the Action Agenda.	PSP	PSP	\$ 40,000	\$ -		
	E.1.N3.0	Develop a detailed work plan for near-term actions in the Action Agenda, identifying lead implementers, partners, timelines, and funding source and amount. Negotiate performance agreements with action leads related to salmon recovery plans, state agency work programs, and projects funded by state grant or loan programs to include timelines, outputs, immediate outcomes, intermediate outcomes, and environmental outcomes, as well as reporting requirements.	PSP	PSP	\$ 40,000	\$ 691,205		
	E.1.N4.0	Develop a Web-based reporting system. a. Develop an "activity integration database" to support the Action Agenda accountability where implementers will report on outcomes and use of funds. The system will rely on existing data sources whenever possible to avoid burdening implementers with additional reporting requirements. The system will capture salmon actions, monitoring programs, science, and any other administrative or staff support funded through the Action Agenda priorities. b. Implementers of monitoring supported by the Action Agenda will make monitoring data accessible to the Partnership and begin steps to make it available to the other implementers, scientists, and the public. c. Begin reporting ecosystem and action implementation results on the Web by November 1, 2009.	PSP	PSP	\$ 734,000	\$ 670,000		
	E.1.N5.0	Finalize the salmon recovery adaptive management plan as required by NOAA and incorporate this program into the broader ecosystem adaptive management approach.	PSP	PSP	\$ 80,000	\$ -		

Primary Threat Addressed	Near-Term ID	Near-Term Action	Lead Implementer	Funded Agency	Action Agenda Proposed FY 09-11 Budget (lead)	Confirmed FY 09-11 Budget	Difference b/w AA Proposed Budget and Confirmed Budget	Non-State Match
Performance Management (cont'd)	E.1.N6.0	Develop a system to identify and track actions that are inconsistent with the Action Agenda.	PSP	PSP		\$ -		
	E.1.N7.0	Develop and implement a Partner Program as specified in the Partnership statute (RCW 90.71.340 (3)).	PSP	PSP	\$ 40,000	\$ 37,123		
	Subtotal				\$ 1,014,000	\$ 1,636,958	\$ 622,958	
Point source pollution	B.2.N1.0	Fund a one-year demonstration program to develop a coordinated cleanup and restoration plan for the Port Angeles Harbor and waterfront and work plan for project completion.	Ports	Ports		\$ -		
	B.2.N2.0	Continue Bellingham Bay Pilot Program to clean up Bellingham Bay in a coordinated way.	Ports	Ports		\$ -		
	B.2.N3.0	Continue to control pollutant sources and remediate toxics in Elliott Bay.	Ecology	Ecology		\$ 300,000		
	C.1.N5.0	Petition EPA to establish Puget Sound as a No Discharge Zone for commercial and/or recreational vessels to eliminate bacteria, nutrients, and pathogens from being discharged into Puget Sound.	Ecology	Ecology	\$ 300,000	\$ -		
	C.5.N1.0	Continue to implement ongoing, high-priority remediation and cleanup projects.	Ecology	Ecology	\$ 69,220,166	\$ 31,964,000		
	C.5.N1.1	Continue to implement ongoing, high-priority remediation and cleanup projects.	Ecology	EPA		\$ -		\$ 15,000,000
	C.5.N1.3	Continue to implement ongoing, high-priority remediation and cleanup projects.	Ecology	WSDOT		\$ 130,000		
	C.5.N2.0	Refine the Department of Ecology near-term prioritization criteria for site cleanups to be consistent with the Action Agenda and incorporate criteria into toxic cleanup grant programs.	Ecology	Ecology	\$ 40,000	\$ -		
Subtotal				\$ 69,560,166	\$ 32,394,000	\$ (37,166,166)	\$ 15,000,000	
Public Education and Outreach	E.4.N1.0	Develop a science-based, prioritized menu of best management practices for residents to be targeted through various outreach strategies.	PSP	PSP	\$ 15,000	\$ 93,100		
	E.4.N2.0	Identify and develop solutions for barriers (individual and institutional) to the adoption of targeted practices and behaviors.	PSP	PSP	\$ 50,000	\$ 67,600		
	E.4.N3.0	Create a prioritized list of potential audiences according to issue and best management practices. Conduct formative research and message development work for priority audiences for use by local practitioners. Implement identified communication strategies at regional and local levels, through both centralized and decentralized means.	PSP	PSP	\$ 30,000	\$ 67,100		
	E.4.N4.0	Maintain and enhance ECO Net (Education, Communication, and Outreach Network), a Soundwide network that builds and strengthens relationships among Puget Sound organizations working on public awareness, involvement, and environmental education. Utilize the broad ECO Net, as well as local and regional networks, to align and enhance participant efforts in support of Action Agenda goals.	PSP	PSP	\$ 220,000	\$ 329,200		
	E.4.N5.0	Assess regional dissemination opportunities. Identify gaps, and prioritize mechanisms by their ability to reach targeted audiences, incorporate new messages/elements into appropriate existing programs.	PSP	PSP	\$ 20,000	\$ 119,200		
	E.4.N6.0	Develop and support regional multi-media awareness campaigns related to Puget Sound health.	PSP	PSP	\$ 800,000	\$ 218,500		
	E.4.N7.0	Develop and maintain the technology/social media infrastructure necessary to coordinate implementers and connect the public to local activities and resources related to education, volunteerism, and stewardship.	PSP	PSP	\$ 240,000	\$ 248,700		

Primary Threat Addressed	Near-Term ID	Near-Term Action	Lead Implementer	Funded Agency	Action Agenda Proposed FY 09-11 Budget (lead)	Confirmed FY 09-11 Budget	Difference b/w AA Proposed Budget and Confirmed Budget	Non-State Match	
Public Education and Outreach (cont'd)	E.4.N8.0	Expand regional coordination of communication efforts and behavior change programs. Support regional coalitions, such as the STORM coalition (STormwater Outreach for Regional Municipalities), a Sound-wide consortium of municipalities collaborating on a Sound-focused campaign, and effectiveness enhancement of respective local programs.	PSP	PSP	\$ 174,000	\$ 236,400			
	E.4.N9.0	Develop a coordinated regional system of place-based K-12 education programs, and adult education and stewardship programs, such as WSU Beachwatchers, restoration/volunteer programs, and related efforts.	PSP	PSP		\$ 20,300			
	E.4.N9.2	Develop a coordinated regional system of place-based K-12 education programs, and adult education and stewardship programs, such as WSU Beachwatchers, restoration/volunteer programs, and related efforts.	PSP	WSU Extension		\$ 75,000			
	E.4.N9.3	Develop a coordinated regional system of place-based K-12 education programs, and adult education and stewardship programs, such as WSU Beachwatchers, restoration/volunteer programs, and related efforts.	PSP	Ecology		\$ 1,772,000			
	E.4.N9.4	Develop a coordinated regional system of place-based K-12 education programs, and adult education and stewardship programs, such as WSU Beachwatchers, restoration/volunteer programs, and related efforts.	PSP	WDFW		\$ 176,742			
	E.4.N10.0	Promote the inclusion of Puget Sound-related environmental, social, and economic issues in curriculum where possible K-12 curricula and work to increase Puget Sound environmentally related environmental service projects.	PSP	PSP	\$ 280,000	\$ 44,600			
	E.4.N10.4	Promote the inclusion of Puget Sound-related environmental, social, and economic issues in curriculum where possible K-12 curricula and work to increase Puget Sound environmentally related environmental service projects.	PSP	WDFW		\$ 140,000			
	E.4.N11.0	Develop and implement a coordinated citizen science program. This will include cataloging and analyzing existing efforts, coordinating existing efforts, and replicating those that are effective, providing technical and scientific assistance to community members to conduct local monitoring and assessment that supports connect citizens and scientists to not only increase engagement opportunities but provide cost-effective data collection in support of Action Agenda priorities.	PSP	PSP	\$ 500,000	\$ 81,900			
	E.4.N12.0	Coordinate with the Pacific Northwest NOAA B-WET grant provider to increase the "Meaningful Watershed Education Experience" model for students in Puget Sound.	PSP	PSP	\$ 850,000	\$ 2,300			
	E.4.N13.0	Promote Conduct a pilot program with the use of Washington State Ferries to inform and engage riders in Puget Sound-related curriculum widely available to all teachers recovery.	PSP	PSP	\$ 20,000	\$ 10,000			
	E.4.N14.0	Develop a "toolbox" program of awareness, education, and schools stewardship programs. Include program strategies, materials, information, templates, evaluation metrics, etc. to be used by a range of implementers. Highlight and disseminate effective programs and models from around the region and beyond.	PSP	PSP	\$ 160,000	\$ 209,300			
	E.4.N15.0	Procure funding for and implement a grant program to support local and regional organizations engaged in outreach. Use funding to stimulate innovation, collaboration, implementation of targeted strategies, and/or reaching new audiences to advance recovery efforts.	PSP	PSP	\$ 900,000	\$ 387,114			
	Subtotal					\$ 4,259,000	\$ 4,299,056	\$ 40,056	
	Residential, commercial, port &	A.1.N1.0	Convene a regional planning forum to create a coordinated vision for guiding growth at an ecosystem scale.	PSP	PSP	\$ 80,000	\$ -		
		A.1.N2.0	Prepare a set of criteria to guide decisions for acquiring and protecting high-value, high-risk habitat.	PSP	PSP	\$ 80,000	\$ -		

Primary Threat Addressed	Near-Term ID	Near-Term Action	Lead Implementer	Funded Agency	Action Agenda Proposed FY 09-11 Budget (lead)	Confirmed FY 09-11 Budget	Difference b/w AA Proposed Budget and Confirmed Budget	Non-State Match
Residential, commercial, port & shipyard development (cont'd)	A.1.N3.0	Initiate or complete Action Agenda-based watershed assessment and related maps for each of the watersheds within the Puget Sound basin to identify sites and functions that are the most urgent and important for protection.	PSP	PSP	\$ 1,300,000	\$ 91,423		
	A.1.N3.6	Initiate or complete Action Agenda-based watershed assessment and related maps for each of the watersheds within the Puget Sound basin to identify sites and functions that are the most urgent and important for protection.	PSP	Ecology		\$ 1,400,000		
	A.1.N4.0	Support legislation that seeks to continue to direct growth away from rural and working resource lands and into cities.	Commerce	Commerce	\$ -	\$ -		
	A.2.N1.0	Protect high-value habitat and land at immediate risk of conversion as identified through existing processes such as the salmon recovery plans and others.	Varies	Varies	\$ 11,500,000	\$ -		
	A.2.N1.1	Protect high-value habitat and land at immediate risk of conversion as identified through existing processes such as the salmon recovery plans and others.	Varies	DNR		\$ 11,450,000		
	A.2.N1.2	Protect high-value habitat and land at immediate risk of conversion as identified through existing processes such as the salmon recovery plans and others.	Varies	Parks		\$ 2,000,000		
	A.2.N1.3	Protect high-value habitat and land at immediate risk of conversion as identified through existing processes such as the salmon recovery plans and others.	Varies	RCO		\$ 35,202,092		\$ 31,132,769
	A.2.N1.4	Protect high-value habitat and land at immediate risk of conversion as identified through existing processes such as the salmon recovery plans and others.	Varies	Ecology		\$ 5,980,000		
	A.2.N1.5	Protect high-value habitat and land at immediate risk of conversion as identified through existing processes such as the salmon recovery plans and others.	Varies	WDFW		\$ 1,063,000		
	A.2.N2.0	Advocate for proposed Wilderness designations: a) support Alpine Lakes Wilderness addition; and b) Pratt River Wild and Scenic Designation.	Sierra Club	Sierra Club	\$ 20,000	\$ -		
	A.2.N3.0	Convene a task force to develop a funding mechanism to rapidly acquire properties with high ecological value and imminent risk of conversion.	PSP	PSP	\$ 80,000	\$ -		
	A.2.N5.0	Provide funding and technical assistance to local jurisdictions to update local shoreline management programs by current deadlines, with all updates complete by 2013.	Ecology	Ecology	\$ 11,509,920	\$ 6,072,600		
	A.2.N5.3	Provide funding and technical assistance to local jurisdictions to update local shoreline management programs by current deadlines, with all updates complete by 2013.	Ecology	WDFW		\$ 376,573		
	A.2.N6.0	Provide local governments with guidance on how to achieve and measure no-net-loss of ecological function as required by the Shoreline Management Act and the Shoreline Master Program guidelines.	Ecology	Ecology	\$ 350,000	\$ -		
	A.2.N8.0	Provide funding and technical assistance to local governments that have not yet completed their Critical Area Ordinance updates.	Commerce	Commerce	\$ 6,900,000	\$ 5,179,784		
	A.2.N8.2	Provide funding and technical assistance to local governments that have not yet completed their Critical Area Ordinance updates.	Commerce	WDFW		\$ 136,408		
	A.2.N9.0	Support and implement recommendations from the CTED TDR Policy Advisory Committee.	Commerce	Commerce	\$ 800,000	\$ -		
	A.2.N9.1	Support and implement recommendations from the CTED TDR Policy Advisory Committee.	Commerce	PSP		\$ 65,773		

Primary Threat Addressed	Near-Term ID	Near-Term Action	Lead Implementer	Funded Agency	Action Agenda Proposed FY 09-11 Budget (lead)	Confirmed FY 09-11 Budget	Difference b/w AA Proposed Budget and Confirmed Budget	Non-State Match
Residential, commercial, port & shipyard development (cont'd)	A.4.N1.0	Purchase or transfer development rights or use conservation easements for working lands at immediate risk of conversion.	Varies	Varies	\$ 25,000,000	\$ -		
	A.4.N3.0	Support the Conservation Commission's efforts to protect productive agricultural areas consistent with the Action Agenda priorities.	WA CC	WA CC	\$ 1,700,000	\$ 4,021,120		
	B.1.N1.0	Implement restoration projects in the salmon recovery three-year work plans and the Estuary and Salmon Restoration Program of the Nearshore Partnership.	PSP	PSP	\$ 69,110,000	\$ 2,021,935		
	B.1.N1.3	Implement restoration projects in the salmon recovery three-year work plans and the Estuary and Salmon Restoration Program of the Nearshore Partnership.	PSP	RCO		\$ 7,382,258		\$ 3,468,501
	B.1.N1.9	Implement restoration projects in the salmon recovery three-year work plans and the Estuary and Salmon Restoration Program of the Nearshore Partnership.	PSP	DNR		\$ 200,000		
	B.1.N1.10	Implement restoration projects in the salmon recovery three-year work plans and the Estuary and Salmon Restoration Program of the Nearshore Partnership.	PSP	WDFW		\$ 415,000		
	D.1.N2.0	Develop and implement the required Steelhead Recovery Plan, building on the Chinook Recovery Plan and integrating the Action Agenda priorities.	NMFS	NMFS	\$ 1,180,000	\$ -		
	D.1.N2.7	Develop and implement the required Steelhead Recovery Plan, building on the Chinook Recovery Plan and integrating the Action Agenda priorities.	NMFS	WDFW		\$ 171,000		
	D.1.N4.5.0	Implement the southern resident killer whale plan and continue to prioritize and identify actionable recovery measures with assignments and implementation timelines.	NMFS	NMFS	\$ 4,300,000	\$ -		
Subtotal					\$ 133,909,920	\$ 83,228,966	\$ (50,680,954)	\$ 34,601,270
Science and Monitoring	E.3.N1.0	Sustain ongoing monitoring programs to provide status, trend, and effectiveness information to inform State of the Sound reporting and other synthesis.	PSP	PSP	\$ 35,080,000	\$ 1,231,171		
	E.3.N1.2	Sustain ongoing monitoring programs to provide status, trend, and effectiveness information to inform State of the Sound reporting and other synthesis.	PSP	DNR		\$ 11,960,365		
	E.3.N1.3	Sustain ongoing monitoring programs to provide status, trend, and effectiveness information to inform State of the Sound reporting and other synthesis.	PSP	DOH		\$ 468,000		
	E.3.N1.4	Sustain ongoing monitoring programs to provide status, trend, and effectiveness information to inform State of the Sound reporting and other synthesis.	PSP	WSDOT		\$ 230,000		
	E.3.N1.5	Sustain ongoing monitoring programs to provide status, trend, and effectiveness information to inform State of the Sound reporting and other synthesis.	PSP	Ecology		\$ 6,023,000		
	E.3.N1.6	Sustain ongoing monitoring programs to provide status, trend, and effectiveness information to inform State of the Sound reporting and other synthesis.	PSP	WDFW		\$ 2,634,000		
	E.3.N1.7	Sustain ongoing monitoring programs to provide status, trend, and effectiveness information to inform State of the Sound reporting and other synthesis.	PSP	WSDA		\$ 760,000		
	E.3.N1.8	Sustain ongoing monitoring programs to provide status, trend, and effectiveness information to inform State of the Sound reporting and other synthesis.	PSP	RCO		\$ 301,000		

Primary Threat Addressed	Near-Term ID	Near-Term Action	Lead Implementer	Funded Agency	Action Agenda Proposed FY 09-11 Budget (lead)	Confirmed FY 09-11 Budget	Difference b/w AA Proposed Budget and Confirmed Budget	Non-State Match
Science and Monitoring (cont'd)	E.3.N2.0	Implement transition to a coordinated regional program for monitoring ecosystem status and trends, program and project effectiveness, and cause-and-effect relationships.	PSP	PSP	\$ 10,480,000	\$ 272,853		
	E.3.N3.0	Use the framework of Integrated Ecosystem Assessment to refine ecosystem indicators, assess threats to the ecosystem, and evaluate potential management strategies.	PSP	PSP	\$ 3,872,000	\$ 243,609		
	E.3.N4.0	Design and implement studies to collect new information about: a) the effects of a nearshore restoration actions; b) watershed-wide pollutant loading and effects of runoff; c) stressors affecting forage fish and pelagic food webs; and d) ecosystem services and socioeconomic indicators.	PSP	PSP	\$ 7,960,000	\$ -		
	E.3.N5.0	Assemble and synthesize findings that describe ecosystem conditions and threats for the 2009 State of the Sound report during mid-2009. using the indicators in the Action Agenda. Conduct peer review of science contributions to 2009 State of the Sound.	PSP	PSP	\$ 280,000	\$ 100,000		
	E.3.N6.0	Publish 2010 Puget Sound Science Update, required by the Partnership statute (RCW 90.71.290 (3)) to provide best available answers about how the ecosystem works, how it has changed over time, and how it is affected by management actions. Producing the Science Update will include commissioning lead authors for various sections of the report, encouraging peer contributions, and conducting an open peer review.	PSP	PSP	\$ 580,000	\$ 580,000		
	E.3.N7.0	Identify research priorities and recommend topics for Partnership sponsored science in 2011-13 (e.g., for the next Biennial Science Work Plan).	PSP	PSP		\$ -		
	E.3.N8.0	Develop and coordinate the organization to support implementation of the Partnership's science program, especially by convening working groups to organize the regional science community's participation.	PSP	PSP	\$ 672,000	\$ -		
	E.3.N9.0	Develop processes for: a) soliciting science projects via competitive requests for proposals; b) conducting peer review of materials that form the science basis for Partnership decisions; and c) establishing a process for external peer review of the Partnership's science program.	PSP	PSP	\$ 198,000	\$ 235,367		
	E.3.N10.0	Develop a technical plan for increasing capabilities for modeling future scenarios by identifying the goals and milestones for this work, defining the requirements, functions and assets needed to support ecosystem recovery, and describing the roles and relationships of collaborators carrying forward portions of this work.	PSP	PSP	\$ 580,000	\$ 156,000		
	E.3.N11.0	Identify priorities for research to fill gaps in knowledge about ecosystem processes; design and implement studies to fill gaps.	PSP	PSP	\$ 500,000	\$ 50,000		
	E.3.N12.0	Coordinate with science programs of state and federal agencies to better align them with Partnership interests and contribute to Partnership science program needs.	PSP	PSP	\$ 200,000	\$ 60,000		
	Subtotal				\$ 60,402,000	\$ 25,305,365	\$ (35,096,635)	
Shoreline armoring	A.2.N7.0	Change Shoreline Management Act statutes and regulations to require a shoreline conditional use permit for: bulkheads and docks associated with all residential development; all new and replacement shoreline hardening; all seawall/bulkhead/revetment repair projects; and new docks and piers.	PSP	PSP	\$ 160,000	\$ -		
	B.1.N5.0	Complete the Puget Sound Nearshore Partnership's General Investigation in a timely way to help identify and refine nearshore restoration opportunities and move toward implementation.	WDFW	WDFW	\$ 800,000	\$ 2,000,000		
	B.1.N5.0	Complete the Puget Sound Nearshore Partnership's General Investigation in a timely way to help identify and refine nearshore restoration opportunities and move toward implementation.	WDFW	USACE		\$ -	\$ 800,000	
	D.5.N5.0	Develop and implement a training program for designers and contractors who work in nearshore areas.	PSP	PSP	\$ 250,000	\$ -		
	Subtotal				\$ 1,210,000	\$ 2,000,000	\$ 790,000	\$ 800,000

Primary Threat Addressed	Near-Term ID	Near-Term Action	Lead Implementer	Funded Agency	Action Agenda Proposed FY 09-11 Budget (lead)	Confirmed FY 09-11 Budget	Difference b/w AA Proposed Budget and Confirmed Budget	Non-State Match
Surface water loading and runoff from the built environment	C.1.N1.0	Conduct a focused outreach campaign for the public and businesses to reduce pollutants identified in toxic loading and other studies that are priority threats to Puget Sound.	Ecology	Ecology	\$ 970,000	\$ -		
	C.1.N1.5	Conduct a focused outreach campaign for the public and businesses to reduce pollutants identified in toxic loading and other studies that are priority threats to Puget Sound.	Ecology	Sea Grant		\$ 13,333		
	C.1.N2.0	Assist the Department of Ecology in implementing its PBT program to reduce and eventually eliminate the use of all chemicals on the PBT list, and other programs to reduce toxins such as metals.	Ecology	Ecology	\$ 658,553	\$ 659,000		
	C.2.N1.0	Establish a regional coordinated monitoring program for stormwater, working with the Monitoring Consortium of the Stormwater Work Group.	Ecology	Ecology	\$ -	\$ 383,030		
	C.2.N1.4	Establish a regional coordinated monitoring program for stormwater, working with the Monitoring Consortium of the Stormwater Work Group.	Ecology	PSP		\$ 148,000		
	C.2.N2.0	Provide financial and technical assistance to cities and counties to implement NPDES Phase I and II permits, as well as Ecology for permit oversight and implementation.	Ecology	Ecology	\$ 4,466,000	\$ 7,728,426		
	C.2.N2.1	Provide financial and technical assistance to cities and counties to implement NPDES Phase I and II permits, as well as Ecology for permit oversight and implementation.	Ecology	PSP	\$ 4,466,000	\$ 47,580		
	C.2.N3.0	Assist cities and counties in incorporating LID requirements for development and redevelopment into all stormwater codes.	PSP	PSP	\$ 500,000	\$ 250,000		
	C.2.N3.3	Assist cities and counties in incorporating LID requirements for development and redevelopment into all stormwater codes.	PSP	Ecology	\$ 500,000	\$ 353,470		
	C.2.N4.0	Develop and implement LID incentives.	Ecology	Ecology	\$ 10,000,000	\$ -		
	C.2.N4.5	Develop and implement LID incentives.	Ecology	PSP		\$ 350,000		
	C.2.N5.0	Convene a group of regulating agencies, implementers with key funding responsibilities, and other stakeholders as appropriate to evaluate the technical and programmatic solutions for CSOs to meet overall program goals of improving water quality in fresh and marine water.	PSP	PSP	\$ 160,000	\$ 65,773		
	C.2.N6.0	Retrofit existing stormwater systems by: a) developing high-level criteria that can be used in 2009 to determine the highest priority areas around the Sound for stormwater retrofits and b) implementing stormwater retrofit projects in the highest priority areas based upon these criteria to bring areas into compliance with current stormwater regulations.	PSP	PSP	\$ 30,000,000	\$ -		
	C.2.N6.3	Retrofit existing stormwater systems by: a) developing high-level criteria that can be used in 2009 to determine the highest priority areas around the Sound for stormwater retrofits and b) implementing stormwater retrofit projects in the highest priority areas based upon these criteria to bring areas into compliance with current stormwater regulations.	PSP	Ecology		\$ 10,747,806		
	C.2.N6.4	Retrofit existing stormwater systems by: a) developing high-level criteria that can be used in 2009 to determine the highest priority areas around the Sound for stormwater retrofits and b) implementing stormwater retrofit projects in the highest priority areas based upon these criteria to bring areas into compliance with current stormwater regulations.	PSP	WSDOT		\$ 2,286,000		
	C.2.N9.0	Implement NPDES industrial permits and Washington State Department of Transportation permits, including Ecology for permit oversight and implementation.	Ecology	Ecology	\$ 16,854,626	\$ 872,436		
	C.2.N9.2	Implement NPDES industrial permits and Washington State Department of Transportation permits, including Ecology for permit oversight and implementation.	Ecology	WSDOT		\$ 2,385,000		

Primary Threat Addressed	Near-Term ID	Near-Term Action	Lead Implementer	Funded Agency	Action Agenda Proposed FY 09-11 Budget (lead)	Confirmed FY 09-11 Budget	Difference b/w AA Proposed Budget and Confirmed Budget	Non-State Match
Surface water loading and runoff from the built environment (cont'd)	C.6.N2.0	Continue to fund the shellfish and fish advisory monitoring and advisory programs.	DOH	DOH	\$ 2,511,300	\$ 676,000		
	C.6.N2.5	Continue to fund the shellfish and fish advisory monitoring and advisory programs.	DOH	Sea Grant		\$ 13,333		
	D.5.N2.0	Provide additional state compliance inspectors to ensure that businesses producing hazardous waste are complying with regulations.	Ecology	Ecology	\$ 7,178,600	\$ -		
	Subtotal				\$ 78,265,079	\$ 26,979,188	\$ (51,285,891)	
Unsustainable Fishing/harvesting	A.2.N4.0	Work with the Marine Managed Areas Work Group chaired by DFW to develop recommendations to improve the effectiveness of MPAs by December 2009.	WDFW	WDFW	\$ 105,000	\$ 60,000		
	D.1.N5.0	Implement the 2008 revision to the Pacific Salmon Treaty.	WDFW	WDFW	\$ 1,202,000	\$ 1,781,880		
	Subtotal				\$ 1,307,000	\$ 1,841,880	\$ 534,880	
Wastewater Treatment Plant Discharge & CSOs	C.3.N1.0	Use advanced wastewater treatment where needed in nutrient sensitive recoverable shellfish, and tribal shellfish areas, such as Hood Canal, South Sound, and the Whidbey Basin.	Ecology	Ecology	\$ 160,000	\$ 400,000		
	C.3.N2.0	Pursue stimulus package funding to implement priority upgrades of municipal and industrial wastewater facilities, especially in nutrient sensitive, recoverable shellfish, and tribal shellfish areas of Puget Sound.	PWTF	PWTF	\$ 28,502,569	\$ -		
	C.3.N2.2	Pursue stimulus package funding to implement priority upgrades of municipal and industrial wastewater facilities, especially in nutrient sensitive, recoverable shellfish, and tribal shellfish areas of Puget Sound.	PWTF	Ecology		\$ 90,190,808		
	C.3.N2.3	Pursue stimulus package funding to implement priority upgrades of municipal and industrial wastewater facilities, especially in nutrient sensitive, recoverable shellfish, and tribal shellfish areas of Puget Sound.	PWTF	Parks		\$ 5,672,000		
	C.3.N3.0	Support federal and other facilities in reducing nutrient and pathogens, particularly in already impaired areas.	EPA	EPA	\$ 40,000	\$ -		
	C.6.N1.0	Continue to fund the swimming beach monitoring program.	DOH	DOH	\$ 1,096,000	\$ 208,000		
	C.6.N1.1	Continue to fund the swimming beach monitoring program.	DOH	Ecology	\$ 1,096,000	\$ 342,000		
	C.6.N1.3	Continue to fund the swimming beach monitoring program.	DOH	Sea Grant		\$ 13,333		
	Subtotal				\$ 30,894,569	\$ 96,826,141	\$ 65,931,572	
Water withdrawals & diversions	A.3.N1.0	Set flow rules in watersheds that currently do not have instream flow rules, with priority given to critical basins or those with known significant problems meeting instream or out-of-stream demands.	Ecology	Ecology	\$ 355,579	\$ -		
	A.3.N1.1	Set flow rules in watersheds that currently do not have instream flow rules, with priority given to critical basins or those with known significant problems meeting instream or out-of-stream demands.	Ecology	WDFW	\$ -	\$ -		
	A.3.N2.0	Update instream flow rules based on current science.	Ecology	Ecology	\$ 1,728,000	\$ -		
	A.3.N2.1	Update instream flow rules based on current science.	Ecology	WDFW		\$ -		
	A.3.N3.0	Develop and implement the comprehensive basin flow protection and enhancement programs called for in the recovery plans for Puget Sound Chinook and Hood Canal/Strait of Juan de Fuca summer chum.	Ecology	Ecology	\$ 320,000	\$ -		

Primary Threat Addressed	Near-Term ID	Near-Term Action	Lead Implementer	Funded Agency	Action Agenda Proposed FY 09-11 Budget (lead)	Confirmed FY 09-11 Budget	Difference b/w AA Proposed Budget and Confirmed Budget	Non-State Match
Water withdrawals & diversions (cont'd)	A.3.N4.0	Implement the recommendations from approved watershed plans prepared under the Watershed Planning Act (RCW 90.82) consistent with the Action Agenda and coordinated with other local restoration and protection efforts.	Ecology	Ecology	\$ 36,548,606	\$ 4,973,124		
	A.3.N5.0	Evaluate and implement solutions to exempt well issues.	Ecology	Ecology	\$ 160,000	\$ -		
	A.3.N6.0	Establish local water masters in each watershed to increase water code compliance and enforcement.	Ecology	Ecology	\$ 1,777,847	\$ -		
	A.3.N7.0	Support municipal water systems' implementation of Washington Department of Health's Water Use Efficiency Rule, including establishing water conservation goals, metering, and reporting from all municipal suppliers.	DOH	DOH	\$ 163,928	\$ -		
	A.3.N8.0	Develop a treated grey water reuse rule by December 31, 2010.	DOH	DOH	\$ 250,000	\$ 100,000		
	A.3.N9.0	Adopt water reuse rules.	Ecology	Ecology		\$ 897,140		
	Subtotal				\$ 41,303,960	\$ 5,970,264	\$ (35,333,696)	
			Puget Sound Action Agenda Management			\$ 588,236	\$ 588,236	
			Puget Sound Partnership Administration			\$ 3,087,835	\$ 3,087,835	
Grand Total				\$ 602,674,736	\$ 400,531,848	\$ (202,142,888)	\$ 132,118,817	

Table D-2. Funded near-term actions by state agency

Funded Agency	Near-Term ID	Near-Term Action	Confirmed FY 09-11 Budget	Conference Operating Budget Confirmed	Conference Capital Budget Confirmed	Conference Transportation Budget Confirmed
Commerce	A.1.N4.0	Support legislation that seeks to continue to direct growth away from rural and working resource lands and into cities.	\$ -			
	A.2.N8.0	Provide funding and technical assistance to local governments that have not yet completed their Critical Area Ordinance updates.	\$ 5,179,784	\$ 5,179,784		
	A.2.N9.0	Support and implement recommendations from the CTED TDR Policy Advisory Committee.	\$ -			
	D.4.N2.0	Evaluate the effectiveness of the Clark County pilot project related to aquatic habitats of the Office of Regulatory Assistance's permit program.	\$ -			
	D.4.N5.0	Support funding and legislation to allow state loans to local governments to conduct environmental reviews under SEPA at the planning or programmatic level.	\$ -			
	Subtotal		\$ 5,179,784	\$ 5,179,784		
DNR	A.2.N1.1	Protect high-value habitat and land at immediate risk of conversion as identified through existing processes such as the salmon recovery plans	\$ 11,450,000		\$ 11,450,000	
	A.4.N4.0	Continue to implement existing forest practice plans and regulations consistent with the Action Agenda, including the state trust lands HCP, state forest practices rules, and Road Maintenance and Abandonment Plans as informed by the Forest and Fish Plan, and others.	\$ 7,190,000	\$ 7,190,000		
	A.4.N6.0	Implement components of the Washington Department of Natural Resources Aquatic HCP that protect critical habitat.	\$ 644,000	\$ 644,000		
	B.1.N1.9	Implement restoration projects in the salmon recovery three-year work plans and the Estuary and Salmon Restoration Program of the Nearshore Partnership.	\$ 200,000		\$ 200,000	
	C.2.N7.0	Continue to implement road maintenance and abandonment programs for federal, state (including trustlands), and private timber lands.	\$ 7,660,000	\$ 7,660,000		
	E.3.N1.2	Sustain ongoing monitoring programs to provide status, trend, and effectiveness information to inform State of the Sound reporting and other synthesis.	\$ 11,960,365	\$ 11,960,365		
	Subtotal		\$ 39,104,365	\$ 27,454,365	\$ 11,650,000	
DOH	A.3.N7.0	Support municipal water systems' implementation of Washington Department of Health's Water Use Efficiency Rule, including establishing water conservation goals, metering, and reporting from all municipal suppliers.	\$ -	\$ -		
	A.3.N8.0	Develop a treated grey water reuse rule by December 31, 2010.	\$ 100,000		\$ 100,000	
	C.4.N1.2	Develop and implement on-site sewage system management plans in each Puget Sound county.	\$ 3,944,800	\$ 3,944,800		
	C.4.N2.0	Revise the current on-site sewage treatment rule no later than June 30, 2011, so standards are established to address new on-site sewage treatment technologies.	\$ -			
	C.6.N1.0	Continue to fund the swimming beach monitoring program.	\$ 208,000	\$ 208,000		
	C.6.N2.0	Continue to fund the shellfish and fish advisory monitoring and advisory programs.	\$ 676,000	\$ 676,000		
	E.3.N1.3	Sustain ongoing monitoring programs to provide status, trend, and effectiveness information to inform State of the Sound reporting and other synthesis.	\$ 468,000	\$ 468,000		
	Subtotal		\$ 5,396,800	\$ 5,296,800	\$ 100,000	

Funded Agency	Near-Term ID	Near-Term Action	Confirmed FY 09-11 Budget	Conference Operating Budget Confirmed	Conference Capital Budget Confirmed	Conference Transportation Budget Confirmed
Ecology	A.1.N3.6	Initiate or complete Action Agenda-based watershed assessment and related maps for each of the watersheds within the Puget Sound basin to identify sites and functions that are the most urgent and important for protection.	\$ 1,400,000	\$ 1,400,000		
	A.2.N1.4	Protect high-value habitat and land at immediate risk of conversion as identified through existing processes such as the salmon recovery plans and others.	\$ 5,980,000		\$ 5,980,000	
	A.2.N5.0	Provide funding and technical assistance to local jurisdictions to update local shoreline management programs by current deadlines, with all updates complete by 2013.	\$ 6,072,600	\$ 6,072,600		
	A.2.N6.0	Provide local governments with guidance on how to achieve and measure no-net-loss of ecological function as required by the Shoreline Management Act and the Shoreline Master Program guidelines.	\$ -	\$ -		
	A.3.N1.0	Set flow rules in watersheds that currently do not have instream flow rules, with priority given to critical basins or those with known significant problems meeting instream or out-of-stream demands.	\$ -			
	A.3.N2.0	Update instream flow rules based on current science.	\$ -			
	A.3.N3.0	Develop and implement the comprehensive basin flow protection and enhancement programs called for in the recovery plans for Puget Sound Chinook and Hood Canal/Strait of Juan de Fuca summer chum.	\$ -			
	A.3.N4.0	Implement the recommendations from approved watershed plans prepared under the Watershed Planning Act (RCW 90.82) consistent with the Action Agenda and coordinated with other local restoration and protection efforts.	\$ 4,973,124	\$ 3,747,094	\$ 1,226,030	
	A.3.N5.0	Evaluate and implement solutions to exempt well issues.	\$ -			
	A.3.N6.0	Establish local water masters in each watershed to increase water code compliance and enforcement.	\$ -			
	A.3.N9.0	Adopt water reuse rules.	\$ 897,140	\$ 897,140		
	A.4.N5.0	Continue ongoing work to resolve conflicts between aquaculture and upland uses.	\$ 50,000	\$ 50,000		
	A.5.N1.0	Advocate for national or West Coast regional ballast water discharge standards.	\$ 13,368	\$ 13,368		
	B.2.N3.0	Continue to control pollutant sources and remediate toxics in Elliott Bay.	\$ 300,000	\$ 300,000		
	C.1.N1.0	Conduct a focused outreach campaign for the public and businesses to reduce pollutants identified in toxic loading and other studies that are priority threats to Puget Sound.	\$ -	\$ -		
	C.1.N2.0	Assist the Department of Ecology in implementing its PBT program to reduce and eventually eliminate the use of all chemicals on the PBT list, and other programs to reduce toxins such as metals.	\$ 659,000	\$ 659,000		
	C.1.N3.0	Permanently fund a rescue tug at Neah Bay.	\$ 3,600,000	\$ 3,600,000		
	C.1.N4.0	Continue the Department of Ecology's oil spill inspection and prevention programs. Obtain delegated authority from the Coast Guard to expand and enhance the scope of authority of the Department of Ecology's vessel and facility inspections, marine incident investigations, and the agency's ability to augment Coast Guard prevention activities and review spill prevention and response plans on behalf of the Coast Guard.	\$ 7,490,000	\$ 7,490,000		
	C.1.N5.0	Petition EPA to establish Puget Sound as a No Discharge Zone for commercial and/or recreational vessels to eliminate bacteria, nutrients, and pathogens from being discharged into Puget Sound.	\$ -	\$ -		
	C.1.N6.0	Implement existing air management plans consistent with the Action Agenda.	\$ 1,633,067	\$ 1,633,067		
	C.1.N8.0	Implement immediate remediation actions to address Hood Canal's low dissolved oxygen concentrations through the Hood Canal Dissolved Oxygen Program.	\$ 6,838,934		\$ 6,838,934	
	C.1.N9.0	Implement priority strategies and actions to address low dissolved oxygen in South Sound, targeted areas of the Whidbey Basin, and other vulnerable areas. This includes the Ecology-led South Sound Dissolved Oxygen Study.	\$ 1,204,875	\$ 1,204,875		

Funded Agency	Near-Term ID	Near-Term Action	Confirmed FY 09-11 Budget	Conference Operating Budget Confirmed	Conference Capital Budget Confirmed	Conference Transportation Budget Confirmed
Ecology (cont'd)	C.2.N1.0	Establish a regional coordinated monitoring program for stormwater, working with the Monitoring Consortium of the Stormwater Work Group.	\$ 383,030	\$ 383,030		
	C.2.N2.0	Provide financial and technical assistance to cities and counties to implement NPDES Phase I and II permits, as well as Ecology for permit oversight and implementation.	\$ 7,728,426	\$ 7,728,426		
	C.2.N3.3	Assist cities and counties in incorporating LID requirements for development and redevelopment into all stormwater codes.	\$ 353,470	\$ 353,470		
	C.2.N4.0	Develop and implement LID incentives.	\$ -			
	C.2.N6.3	Retrofit existing stormwater systems by: a) developing high-level criteria that can be used in 2009 to determine the highest priority areas around the Sound for stormwater retrofits and b) implementing stormwater retrofit projects in the highest priority areas based upon these criteria to bring areas into compliance with current stormwater regulations.	\$ 10,747,806		\$ 10,747,806	
	C.2.N9.0	Implement NPDES industrial permits and Washington State Department of Transportation permits, including Ecology for permit oversight and implementation.	\$ 872,436	\$ 872,436		
	C.3.N1.0	Use advanced wastewater treatment where needed in nutrient sensitive recoverable shellfish, and tribal shellfish areas, such as Hood Canal, South Sound, and the Whidbey Basin.	\$ 400,000		\$ 400,000	
	C.3.N2.2	Pursue stimulus package funding to implement priority upgrades of municipal and industrial wastewater facilities, especially in nutrient sensitive, recoverable shellfish, and tribal shellfish areas of Puget Sound.	\$ 90,190,808		\$ 90,190,808	
	C.4.N3.0	Enhance and target on-site sewage treatment loan programs and grants to ensure programs are targeted to areas of with demonstrated loading issues and vulnerable waters.	\$ 6,778,494		\$ 6,778,494	
	C.5.N1.0	Continue to implement ongoing, high-priority remediation and cleanup projects.	\$ 31,964,000		\$ 31,964,000	
	C.5.N2.0	Refine the Department of Ecology near-term prioritization criteria for site cleanups to be consistent with the Action Agenda and incorporate criteria into toxic cleanup grant programs.	\$ -			
	C.6.N1.1	Continue to fund the swimming beach monitoring program.	\$ 342,000	\$ 342,000		
	D.4.N6.3	Develop, fund, and implement a pilot in-lieu-fee mitigation program for aquatic habitats in one to three Puget Sound watersheds.	\$ 4,400,000		\$ 4,400,000	
	D.5.N2.0	Provide additional state compliance inspectors to ensure that businesses producing hazardous waste are complying with regulations.	\$ -			
	D.5.N3.0	Support state water quality fee revisions and short-term funding to maintain existing, and if possible, enhance compliance staff at Department of Ecology	\$ -			
	D.5.N4.0	Provide additional staff at the Department of Ecology to conduct field visits to improve compliance with shoreline and aquatic regulations.	\$ -	\$ -		
	E.3.N1.5	Sustain ongoing monitoring programs to provide status, trend, and effectiveness information to inform State of the Sound reporting and other synthesis.	\$ 6,023,000	\$ 6,023,000		
	E.4.N9.3	Develop a coordinated regional system of place-based K-12 education programs, and adult education and stewardship programs, such as WSU Beachwatchers, restoration/volunteer programs, and related efforts.	\$ 1,772,000	\$ 1,772,000		
	Subtotal		\$ 203,067,578	\$ 44,541,506	\$ 158,526,072	
Parks	A.2.N1.2	Protect high-value habitat and land at immediate risk of conversion as identified through existing processes such as the salmon recovery plans and others.	\$ 2,000,000		\$ 2,000,000	
	C.3.N2.3	Pursue stimulus package funding to implement priority upgrades of municipal and industrial wastewater facilities, especially in nutrient sensitive, recoverable shellfish, and tribal shellfish areas of Puget Sound.	\$ 5,672,000		\$ 5,672,000	
	Subtotal		\$ 7,672,000		\$ 7,672,000	

Funded Agency	Near-Term ID	Near-Term Action	Confirmed FY 09-11 Budget	Conference Operating Budget Confirmed	Conference Capital Budget Confirmed	Conference Transportation Budget Confirmed
PSP	A.1.N1.0	Convene a regional planning forum to create a coordinated vision for guiding growth at an ecosystem scale.	\$	-		
	A.1.N2.0	Prepare a set of criteria to guide decisions for acquiring and protecting high-value, high-risk habitat.	\$	-		
	A.1.N3.0	Initiate or complete Action Agenda-based watershed assessment and related maps for each of the watersheds within the Puget Sound basin to identify sites and functions that are the most urgent and important for protection.	\$	91,423	\$	91,423
	A.2.N3.0	Convene a task force to develop a funding mechanism to rapidly acquire properties with high ecological value and imminent risk of conversion.	\$	-		
	A.2.N7.0	Change Shoreline Management Act statues and regulations to require a shoreline conditional use permit for: bulkheads and docks associated with all residential development; all new and replacement shoreline hardening; all seawall/bulkhead/revetment repair projects; and new docks and piers.	\$	-		
	A.2.N9.1	Support and implement recommendations from the CTED TDR Policy Advisory Committee.	\$	65,773	\$	65,773
	A.4.N6.1	Implement components of the Washington Department of Natural Resources Aquatic HCP that protect critical habitat.	\$	65,773	\$	65,773
	A.5.N4.0	Enhance and target existing capacity to rapidly respond to immediate invasive species risks.	\$	500,000	\$	500,000
	B.1.N1.0	Implement restoration projects in the salmon recovery three-year work plans and the Estuary and Salmon Restoration Program of the Nearshore Partnership.	\$	2,021,935	\$	2,021,935
	B.1.N2.0	Complete large-scale restoration projects at the mouths of major river systems in Puget Sound where there is a high likelihood of re-creating ecosystem function.	\$	-		
	C.1.N4.1	Continue the Department of Ecology's oil spill inspection and prevention programs. Obtain delegated authority from the Coast Guard to expand and enhance the scope of authority of the Department of Ecology's vessel and facility inspections, marine incident investigations, and the agency's ability to augment Coast Guard prevention activities and review spill prevention and response plans on behalf of the Coast Guard.	\$	150,000	\$	150,000
	C.1.N7.0	Implement Shellfish Protection District plans, on-site sewage treatment plans in marine recovery areas, and related projects to restore water quality at commercial and recreational shellfish areas that are degraded or threatened.	\$	76,414	\$	76,414
	C.1.N8.1	Implement immediate remediation actions to address Hood Canal's low dissolved oxygen concentrations through the Hood Canal Dissolved Oxygen Program.	\$	76,414	\$	76,414
	C.1.N9.1	Implement priority strategies and actions to address low dissolved oxygen in South Sound, targeted areas of the Whidbey Basin, and other vulnerable areas. This includes the Ecology-led South Sound Dissolved Oxygen Study.	\$	76,414	\$	76,414
	C.2.N1.4	Establish a regional coordinated monitoring program for stormwater, working with the Monitoring Consortium of the Stormwater Work Group.	\$	148,000	\$	148,000
	C.2.N2.1	Provide financial and technical assistance to cities and counties to implement NPDES Phase I and II permits, as well as Ecology for permit oversight and implementation.	\$	47,580	\$	47,580
	C.2.N3.0	Assist cities and counties in incorporating LID requirements for development and redevelopment into all stormwater codes.	\$	250,000	\$	250,000
	C.2.N4.5	Develop and implement LID incentives.	\$	350,000	\$	350,000
	C.2.N5.0	Convene a group of regulating agencies, implementers with key funding responsibilities, and other stakeholders as appropriate to evaluate the technical and programmatic solutions for CSOs to meet overall program goals of improving water quality in fresh and marine water.	\$	65,773	\$	65,773
	C.2.N6.0	Retrofit existing stormwater systems by: a) developing high-level criteria that can be used in 2009 to determine the highest priority areas around the Sound for stormwater retrofits and b) implementing stormwater retrofit projects in the highest priority areas based upon these criteria to bring areas into compliance with current stormwater regulations.	\$	-		
	D.1.N1.0	Coordinate implementation of existing plans and programs that support the Action Agenda, and realign or discontinue plans and programs that conflict with the strategies and actions set forth in the Action Agenda.	\$	-		

Funded Agency	Near-Term ID	Near-Term Action	Confirmed FY 09-11 Budget	Conference Operating Budget Confirmed	Conference Capital Budget Confirmed	Conference Transportation Budget Confirmed
PSP (cont'd)	D.2.N1.0	Once the recommendations of the Climate Change Study Groups are available, integrate and coordinate them with the Action Agenda.	\$	-		
	D.3.N1.0	Integrate the work of PSNERP, including the Estuary and Salmon Restoration Program, into the Puget Sound Partnership to improve efficiency, coordination, and to avoid overlap and duplication of efforts, as well as focus sufficient state, federal, tribal, and nonprofit organizational resources on protecting and restoring sites identified as part of the General Investigation.	\$	91,423	\$	91,423
	D.3.N2.0	Fund salmon recovery lead entities and other collaborative groups such as Regional Fisheries Enhancement Groups, marine resource committees, and RCW 90.82 watershed planning groups in the near term to continue existing work and address Action Agenda priorities.	\$	735,000	\$	735,000
	D.3.N3.0	Fund tribes to participate in the refinement and implementation of the Action Agenda, including salmon recovery plans.	\$	91,423	\$	91,423
	D.3.N5.0	Consider the recommendations of the Partnership's Local Integration Task Force and implement appropriate follow up actions.	\$	-		
	D.3.N6.1	Support appropriations to federal agencies to implement specific priorities in the Action Agenda, especially those that are actively coordinating with state and local partners to implement Action Agenda priorities.	\$	148,000	\$	148,000
	D.3.N7.0	Engage with stakeholders throughout the region to advance shared priorities.	\$	302,488	\$	302,488
	D.3.N9.0	Work with federal delegation to support reauthorization of the Coastal Zone Management Act and other federal legislation vital to Puget Sound protection and restoration.	\$	-		
	D.4.N1.0	Conduct an institutional analysis of local, state, and federal agencies with regulatory authority over upland terrestrial and aquatic habitats, species protection, and water quality.	\$	-		
	D.4.N1.1	Conduct an institutional analysis of local, state, and federal agencies with regulatory authority over upland terrestrial and aquatic habitats, species protection, and water quality.	\$	-		
	D.4.N3.0	Convene a process for making recommendations to the Partnership about streamlining permitting processes for habitat restoration projects.	\$	-		
	D.4.N4.0	Convene a process with Corps, NMFS, USFWS, jurisdictions responsible for levee maintenance, and stakeholders to identify and describe conflicts between levee maintenance standards and healthy habitat.	\$	21,996	\$	21,996
	D.4.N6.0	Develop, fund, and implement a pilot in-lieu-fee mitigation program for aquatic habitats in one to three Puget Sound watersheds.	\$	91,423	\$	91,423
	D.5.N1.0	Convene a process with federal, state, and local jurisdictions and tribes to develop an ideal compliance assistance and inspection program that would leverage existing fragmented inspection programs into an integrated program without co-opting the regulatory and enforcement authority of any jurisdiction.	\$	-	\$	-
	D.5.N5.0	Develop and implement a training program for designers and contractors who work in nearshore areas.	\$	-		
	E.1.N1.0	Develop a performance management framework by November 1, 2009. This will include: a. Identifying measurable ecosystem outcomes and indicators for reporting. b. Identifying measurable intermediate outcomes with targets and benchmarks. c. Developing a logic framework that links the actions in the Action Agenda to funding, intermediate outcomes, and ecosystem goals and objectives. d. Creating an updated list of near-term actions based on 2009 funding decisions. e. Identifying processes by November 1, 2009 by which ecosystem results and action performance will be assessed and adaptive management actions identified. f. Identifying a management cycle for the Action Agenda with processes, timing, and reporting by November 1, 2009. This will include a schedule and process to update the near-term actions, the work plan, and revise the Action Agenda strategies as necessary. Incorporate salmon recovery planning adaptive management plan as much as possible. g. Submitting recommendations to the Legislature to better align funding and resources with the Action Agenda as required in the Partnership statute (RCW 90.71.370 (3)).	\$	238,630	\$	238,630
	E.1.N2.0	Clarify and document roles of the Leadership Council, Ecosystem Coordination Board, Science Panel, and Partnership staff. Clarify relationships with the Salmon Recovery Council, local coordinating groups, caucuses, and strategic planning bodies working on issues relevant to the Action Agenda.	\$	-		

Funded Agency	Near-Term ID	Near-Term Action	Confirmed FY 09-11 Budget	Conference Operating Budget Confirmed	Conference Capital Budget Confirmed	Conference Transportation Budget Confirmed
PSP (cont'd)	E.1.N3.0	Develop a detailed work plan for near-term actions in the Action Agenda, identifying lead implementers, partners, timelines, and funding source and amount. Negotiate performance agreements with action leads related to salmon recovery plans, state agency work programs, and projects funded by state grant or loan programs to include timelines, outputs, immediate outcomes, intermediate outcomes, and environmental outcomes, as well as reporting requirements.	\$ 691,205	\$ 691,205		
	E.1.N4.0	Develop a Web-based reporting system. a. Develop an "activity integration database" to support the Action Agenda accountability where implementers will report on outcomes and use of funds. The system will rely on existing data sources whenever possible to avoid burdening implementers with additional reporting requirements. The system will capture salmon actions, monitoring programs, science, and any other administrative or staff support funded through the Action Agenda priorities. b. Implementers of monitoring supported by the Action Agenda will make monitoring data accessible to the Partnership and begin steps to make it available to the other implementers, scientists, and the public. c. Begin reporting ecosystem and action implementation results on the Web by November 1, 2009.	\$ 670,000	\$ 670,000		
	E.1.N5.0	Finalize the salmon recovery adaptive management plan as required by NOAA and incorporate this program into the broader ecosystem adaptive management approach.	\$ -			
	E.1.N6.0	Develop a system to identify and track actions that are inconsistent with the Action Agenda.	\$ -			
	E.1.N7.0	Develop and implement a Partner Program as specified in the Partnership statute (RCW 90.71.340 (3)).	\$ 37,123	\$ 37,123		
	E.2.N1.0	Align state agency budget proposals for the 2009-2011 and 2011-2013 biennial budgets with the priorities in the Action Agenda.	\$ 133,000	\$ 133,000		
	E.2.N10.0	Identify and implement one or more pilot projects to demonstrate the application of the in-lieu-fee program.	\$ -			
	E.2.N11.0	Evaluate, and if possible implement a water quality trading program to address dissolved oxygen issues in southern Puget Sound.	\$ -	\$ -		
	E.2.N12.0	Develop proposals for the 2011-2013 biennium to establish, improve, or expand the use of ecosystem markets.	\$ -	\$ -		
	E.2.N13.0	In cooperation with a local government or stormwater utility, implement a pilot cap-and-trade program for the removal of impervious surface and/or removal of shoreline armoring.	\$ -	\$ -		
	E.2.N14.0	Evaluate, and incorporate as appropriate into the Action Agenda, the recommendations in the Washington State Conservation Commission's 2008 conservation markets study for farmlands and forest landowners.	\$ -			
	E.2.N2.0	Pursue state legislation authorizing the creation of a Puget Sound regional improvement district.	\$ -			
	E.2.N3.0	For grant requests to the state, per RCW 90.71.340, review grant and loan criteria to prohibit the funding of projects that are in conflict with the Action Agenda.	\$ 33,250	\$ 33,250		
	E.2.N4.0	For federal and local budgets, to the extent possible, review and comment to encourage alignment with the Action Agenda.	\$ 33,250	\$ 33,250		
	E.2.N5.0	Implement targeted procurement on a pilot basis for a portion of the Puget Sound Acquisition and Restoration program that is focused on salmon recovery.	\$ -			
	E.2.N6.0	Continue to evaluate potential state funding sources in greater detail, including full legal and fiscal analysis, and prepare proposals for enactment of revenue sources in the 2010 or 2011 legislative sessions.	\$ 80,830	\$ 80,830		
	E.2.N7.0	For state agency grant programs, advocate for changes to policies and priorities of the Public Works Trust Fund, Salmon Recovery Funding Board, Washington Wildlife and Recreation Program, and other state grant and loan programs, to encourage consistency with Action Agenda goals.	\$ 33,250	\$ 33,250		
	E.2.N8.0	Develop financial incentives and provide financial and technical assistance to local governments to develop high-priority projects in the Action Agenda for funding with existing Department of Ecology and the Public Works Board programs.	\$ -	\$ -		
	E.2.N9.0	As part of implementing the Mitigation That Works recommendations (D.4.2), develop agreements with Corps, Ecology, and other relevant permitting agencies by 2010 on the design of a regional in-lieu-fee program.	\$ -	\$ -		

Funded Agency	Near-Term ID	Near-Term Action	Confirmed FY 09-11 Budget	Conference Operating Budget Confirmed	Conference Capital Budget Confirmed	Conference Transportation Budget Confirmed
PSP (cont'd)	E.3.N1.0	Sustain ongoing monitoring programs to provide status, trend, and effectiveness information to inform State of the Sound reporting and other synthesis.	\$ 1,231,171	\$ 1,231,171		
	E.3.N10.0	Develop a technical plan for increasing capabilities for modeling future scenarios by identifying the goals and milestones for this work, defining the requirements, functions and assets needed to support ecosystem recovery, and describing the roles and relationships of collaborators carrying forward portions of this work.	\$ 156,000	\$ 156,000		
	E.3.N11.0	Identify priorities for research to fill gaps in knowledge about ecosystem processes; design and implement studies to fill gaps.	\$ 50,000	\$ 50,000		
	E.3.N12.0	Coordinate with science programs of state and federal agencies to better align them with Partnership interests and contribute to Partnership science program needs.	\$ 60,000	\$ 60,000		
	E.3.N2.0	Implement transition to a coordinated regional program for monitoring ecosystem status and trends, program and project effectiveness, and cause-and-effect relationships.	\$ 272,853	\$ 272,853		
	E.3.N3.0	Use the framework of Integrated Ecosystem Assessment to refine ecosystem indicators, assess threats to the ecosystem, and evaluate potential management strategies.	\$ 243,609	\$ 243,609		
	E.3.N4.0	Design and implement studies to collect new information about: a) the effects of a nearshore restoration actions; b) watershed-wide pollutant loading and effects of runoff; c) stressors affecting forage fish and pelagic food webs; and d) ecosystem services and socioeconomic indicators.	\$ -	\$ -		
	E.3.N5.0	Assemble and synthesize findings that describe ecosystem conditions and threats for the 2009 State of the Sound report during mid-2009. using the indicators in the Action Agenda. Conduct peer review of science contributions to 2009 State of the Sound.	\$ 100,000	\$ 100,000		
	E.3.N6.0	Publish 2010 Puget Sound Science Update, required by the Partnership statute (RCW 90.71.290 (3)) to provide best available answers about how the ecosystem works, how it has changed over time, and how it is affected by management actions. Producing the Science Update will include commissioning lead authors for various sections of the report, encouraging peer contributions, and conducting an open peer review.	\$ 580,000	\$ 580,000		
	E.3.N7.0	Identify research priorities and recommend topics for Partnership sponsored science in 2011-13 (e.g., for the next Biennial Science Work Plan).	\$ -	\$ -		
	E.3.N8.0	Develop and coordinate the organization to support implementation of the Partnership's science program, especially by convening working groups to organize the regional science community's participation.	\$ -	\$ -		
	E.3.N9.0	Develop processes for: a) soliciting science projects via competitive requests for proposals; b) conducting peer review of materials that form the science basis for Partnership decisions; and c) establishing a process for external peer review of the Partnership's science program.	\$ 235,367	\$ 235,367		
	E.4.N1.0	Develop a science-based, prioritized menu of best management practices for residents to be targeted through various outreach strategies.	\$ 93,100	\$ 93,100		
	E.4.N10.0	Promote the inclusion of Puget Sound-related environmental, social, and economic issues in curriculum where possible K-12 curricula and work to increase Puget Sound environmentally related environmental service projects.	\$ 44,600	\$ 44,600		
	E.4.N11.0	Develop and implement a coordinated citizen science program. This will include cataloging and analyzing existing efforts, coordinating existing efforts, and replicating those that are effective, providing technical and scientific assistance to community members to conduct local monitoring and assessment that supports connect citizens and scientists to not only increase engagement opportunities but provide cost-effective data collection in support of Action Agenda priorities.	\$ 81,900	\$ 81,900		
	E.4.N12.0	Coordinate with the Pacific Northwest NOAA B-WET grant provider to increase the "Meaningful Watershed Education Experience" model for students in Puget Sound.	\$ 2,300	\$ 2,300		
	E.4.N13.0	Promote Conduct a pilot program with the use of Washington State Ferries to inform and engage riders in Puget Sound-related curriculum widely available to all teachers recovery.	\$ 10,000	\$ 10,000		
	E.4.N14.0	Develop a "toolbox" program of awareness, education, and schools stewardship programs. Include program strategies, materials, information, templates, evaluation metrics, etc. to be used by a range of implementers. Highlight and disseminate effective programs and models from around the region and beyond.	\$ 209,300	\$ 209,300		

Funded Agency	Near-Term ID	Near-Term Action	Confirmed FY 09-11 Budget	Conference Operating Budget Confirmed	Conference Capital Budget Confirmed	Conference Transportation Budget Confirmed
PSP (cont'd)	E.4.N15.0	Procure funding for and implement a grant program to support local and regional organizations engaged in outreach. Use funding to stimulate innovation, collaboration, implementation of targeted strategies, and/or reaching new audiences to advance recovery efforts.	\$ 387,114	\$ 387,114		
	E.4.N2.0	Identify and develop solutions for barriers (individual and institutional) to the adoption of targeted practices and behaviors.	\$ 67,600	\$ 67,600		
	E.4.N3.0	Create a prioritized list of potential audiences according to issue and best management practices. Conduct formative research and message development work for priority audiences for use by local practitioners. Implement identified communication strategies at regional and local levels, through both centralized and de-centralized means.	\$ 67,100	\$ 67,100		
	E.4.N4.0	Maintain and enhance ECO Net (Education, Communication, and Outreach Network), a Soundwide network that builds and strengthens relationships among Puget Sound organizations working on public awareness, involvement, and environmental education. Utilize the broad ECO Net, as well as local and regional networks, to align and enhance participant efforts in support of Action Agenda goals.	\$ 329,200	\$ 329,200		
	E.4.N5.0	Assess regional dissemination opportunities. Identify gaps, and prioritize mechanisms by their ability to reach targeted audiences, incorporate new messages/elements into appropriate existing programs.	\$ 119,200	\$ 119,200		
	E.4.N6.0	Develop and support regional multi-media awareness campaigns related to Puget Sound health.	\$ 218,500	\$ 218,500		
	E.4.N7.0	Develop and maintain the technology/social media infrastructure necessary to coordinate implementers and connect the public to local activities and resources related to education, volunteerism, and stewardship.	\$ 248,700	\$ 248,700		
	E.4.N8.0	Expand regional coordination of communication efforts and behavior change programs. Support regional coalitions, such as the STORM coalition (Storm water Outreach for Regional Municipalities), a Sound-wide consortium of municipalities collaborating on a Sound-focused campaign, and effectiveness enhancement of respective local programs.	\$ 236,400	\$ 236,400		
	E.4.N9.0	Develop a coordinated regional system of place-based K-12 education programs, and adult education and stewardship programs, such as WSU Beachwatchers, restoration/volunteer programs, and related efforts.	\$ 20,300	\$ 20,300		
		Puget Sound Action Agenda Management	\$ 588,236	\$ 588,236		
	Puget Sound Partnership Administration	\$ 3,087,835	\$ 3,087,835			
	Subtotal	\$ 16,158,175	\$ 16,158,175			
RCO	A.2.N1.3	Protect high-value habitat and land at immediate risk of conversion as identified through existing processes such as the salmon recovery plans and others.	\$ 35,202,092		\$ 35,202,092	
	A.5.N3.0	Develop a Puget Sound baseline and database of invasive species to guide control efforts.	\$ 206,000	\$ 206,000		
	B.1.N1.3	Implement restoration projects in the salmon recovery three-year work plans and the Estuary and Salmon Restoration Program of the Nearshore Partnership.	\$ 7,382,258		\$ 7,382,258	
	B.1.N2.1	Complete large-scale restoration projects at the mouths of major river systems in Puget Sound where there is a high likelihood of re-creating ecosystem function.	\$ 13,887,470		\$ 13,887,470	
	B.1.N3.1	Restore floodplain and river processes where there is a high likelihood of re-creating ecosystem function.	\$ 16,721,463		\$ 16,721,463	
	B.1.N4.4	Remove significant blockages of ecosystem processes and provide access to habitat.	\$ 635,142		\$ 635,142	
	D.3.N2.2	Fund salmon recovery lead entities and other collaborative groups such as Regional Fisheries Enhancement Groups, marine resource committees, and RCW 90.82 watershed planning groups in the near term to continue existing work and address Action Agenda priorities.	\$ 2,033,103		\$ 2,033,103	
	E.3.N1.8	Sustain ongoing monitoring programs to provide status, trend, and effectiveness information to inform State of the Sound reporting and other synthesis.	\$ 301,000	\$ 301,000		
	Subtotal	\$ 76,368,528	\$ 507,000	\$ 75,861,528		

Funded Agency	Near-Term ID	Near-Term Action	Confirmed FY 09-11 Budget	Conference Operating Budget Confirmed	Conference Capital Budget Confirmed	Conference Transportation Budget Confirmed
UW-Sea Grant	A.4.N5.9	Continue ongoing work to resolve conflicts between aquaculture and upland uses.	\$ 379,455	\$ 379,455		
	A.5.N3.7	Develop a Puget Sound baseline and database of invasive species to guide control efforts.	\$ 40,000	\$ 40,000		
	C.1.N1.5	Conduct a focused outreach campaign for the public and businesses to reduce pollutants identified in toxic loading and other studies that are priority threats to Puget Sound.	\$ 13,333	\$ 13,333		
	C.1.N4.2	Continue the Department of Ecology's oil spill inspection and prevention programs. Obtain delegated authority from the Coast Guard to expand and enhance the scope of authority of the Department of Ecology's vessel and facility inspections, marine incident investigations, and the agency's ability to augment Coast Guard prevention activities and review spill prevention and response plans on behalf of the Coast Guard.	\$ 45,000	\$ 45,000		
	C.6.N1.3	Continue to fund the swimming beach monitoring program.	\$ 13,333	\$ 13,333		
	C.6.N2.5	Continue to fund the shellfish and fish advisory monitoring and advisory programs.	\$ 13,333	\$ 13,333		
Subtotal			\$ 504,455	\$ 504,455		
Conservation Commission	A.4.N3.0	Support the Conservation Commission's efforts to protect productive agricultural areas consistent with the Action Agenda priorities.	\$ 4,021,120	\$ 4,021,120		
	B.3.N1.0	Implement coordinated incentive and technical assistance programs for private landowners through the Conservation Commission, Conservation Districts, Department of Natural Resources, other state agencies, Washington State University Extension, local governments, non-governmental organizations, and others as appropriate.	\$ 2,689,352	\$ 2,689,352		
	C.2.N8.0	Implement private property stewardship, incentive, and technical assistance programs (e.g. Conservation Districts, WSU Extension, Washington Sea Grant, local government programs) that focus on reducing sources of water pollution, from commercial and non-commercial farms and other nonpoint sources, particularly in priority areas.	\$ 1,041,570		\$ 1,041,570	
Subtotal			\$ 7,752,042	\$ 6,710,472	\$ 1,041,570	
WDFW	A.2.N1.5	Protect high-value habitat and land at immediate risk of conversion as identified through existing processes such as the salmon recovery plans and others.	\$ 1,063,000		\$ 1,063,000	
	A.2.N4.0	Work with the Marine Managed Areas Work Group chaired by DFW to develop recommendations to improve the effectiveness of MPAs by December 2009.	\$ 60,000	\$ 60,000		
	A.2.N5.3	Provide funding and technical assistance to local jurisdictions to update local shoreline management programs by current deadlines, with all updates complete by 2013.	\$ 376,573	\$ 376,573		
	A.2.N8.2	Provide funding and technical assistance to local governments that have not yet completed their Critical Area Ordinance updates.	\$ 136,408	\$ 136,408		
	A.3.N1.1	Set flow rules in watersheds that currently do not have instream flow rules, with priority given to critical basins or those with known significant problems meeting instream or out-of-stream demands.	\$ -	\$ -		
	A.3.N2.1	Update instream flow rules based on current science.	\$ -	\$ -		
	A.5.N1.5	Advocate for national or West Coast regional ballast water discharge standards.	\$ 60,000	\$ 60,000		
	A.5.N2.0	Enhance state ballast water compliance program and support a federal/state and/or West Coast cooperative management approach.	\$ 220,400	\$ 220,400		
	B.1.N1.10	Implement restoration projects in the salmon recovery three-year work plans and the Estuary and Salmon Restoration Program of the Nearshore Partnership.	\$ 415,000	\$ 415,000		
	B.1.N4.3	Remove significant blockages of ecosystem processes and provide access to habitat.	\$ 1,000,000		\$ 1,000,000	
B.1.N5.0	Complete the Puget Sound Nearshore Partnership's General Investigation in a timely way to help identify and refine nearshore restoration opportunities and move toward implementation.	\$ 2,000,000	\$ 1,000,000	\$ 1,000,000		

Funded Agency	Near-Term ID	Near-Term Action	Confirmed FY 09-11 Budget	Conference Operating Budget Confirmed	Conference Capital Budget Confirmed	Conference Transportation Budget Confirmed
WDFW (cont'd)	B.1.N6.3	Remove derelict fishing gear as proposed by the Northwest Straits Commission and local Marine Resource Committees in sites with known problems for species.	\$ 100,000	\$ 100,000		
	C.2.N7.4	Continue to implement road maintenance and abandonment programs for federal, state (including trustlands), and private timber lands.	\$ 107,632	\$ 107,632		
	D.1.N2.7	Develop and implement the required Steelhead Recovery Plan, building on the Chinook Recovery Plan and integrating the Action Agenda priorities.	\$ 171,000	\$ 171,000		
	D.1.N5.0	Implement the 2008 revision to the Pacific Salmon Treaty.	\$ 1,781,880	\$ 1,781,880		
	D.1.N6.0	Implement the priority hatchery reform recommendations to update state and tribal hatcheries to protect wild salmon stocks, as well as achieve fisheries objectives.	\$ 2,538,487	\$ 300,000	\$ 2,238,487	
	D.3.N2.3	Fund salmon recovery lead entities and other collaborative groups such as Regional Fisheries Enhancement Groups, marine resource committees, and RCW 90.82 watershed planning groups in the near term to continue existing work and address Action Agenda priorities.	\$ 1,015,000	\$ 1,015,000		
	D.4.N7.0	Resolve issues related to the Hydraulic Project Approval including effectiveness, compliance, and enforcement.	\$ -			
	E.3.N1.6	Sustain ongoing monitoring programs to provide status, trend, and effectiveness information to inform State of the Sound reporting and other synthesis.	\$ 2,634,000	\$ 2,634,000		
	E.4.N10.4	Promote the inclusion of Puget Sound-related environmental, social, and economic issues in curriculum where possible K-12 curricula and work to increase Puget Sound environmentally related environmental service projects.	\$ 140,000	\$ 140,000		
	E.4.N9.4	Develop a coordinated regional system of place-based K-12 education programs, and adult education and stewardship programs, such as WSU Beachwatchers, restoration/volunteer programs, and related efforts.	\$ 176,742	\$ 176,742		
Subtotal			\$ 13,996,122	\$ 8,694,635	\$ 5,301,487	
WSDA	A.5.N4.4	Enhance and target existing capacity to rapidly respond to immediate invasive species risks.	\$ 700,000	\$ 700,000		
	E.3.N1.7	Sustain ongoing monitoring programs to provide status, trend, and effectiveness information to inform State of the Sound reporting and other synthesis.	\$ 760,000	\$ 760,000		
Subtotal			\$ 1,460,000	\$ 1,460,000		
WSDOT	B.1.N4.2	Remove significant blockages of ecosystem processes and provide access to habitat.	\$ 18,766,000			\$ 18,766,000
	C.2.N6.4	Retrofit existing stormwater systems by: a) developing high-level criteria that can be used in 2009 to determine the highest priority areas around the Sound for stormwater retrofits and b) implementing stormwater retrofit projects in the highest priority areas based upon these criteria to bring areas into compliance with current stormwater regulations.	\$ 2,286,000			\$ 2,286,000
	C.2.N9.2	Implement NPDES industrial permits and Washington State Department of Transportation permits, including Ecology for permit oversight and implementation.	\$ 2,385,000			\$ 2,385,000
	C.5.N1.3	Continue to implement ongoing, high-priority remediation and cleanup projects.	\$ 130,000			\$ 130,000
	E.3.N1.4	Sustain ongoing monitoring programs to provide status, trend, and effectiveness information to inform State of the Sound reporting and other synthesis.	\$ 230,000			\$ 230,000
Subtotal			\$ 23,797,000			\$ 23,797,000
WSU Extension	E.4.N9.2	Develop a coordinated regional system of place-based K-12 education programs, and adult education and stewardship programs, such as WSU Beachwatchers, restoration/volunteer programs, and related efforts.	\$ 75,000	\$ 75,000		
Subtotal			\$ 75,000	\$ 75,000		
Grand Total			\$ 400,531,849	\$ 116,582,192	\$ 260,152,657	\$ 23,797,000

