

STATE OF THE SOUND

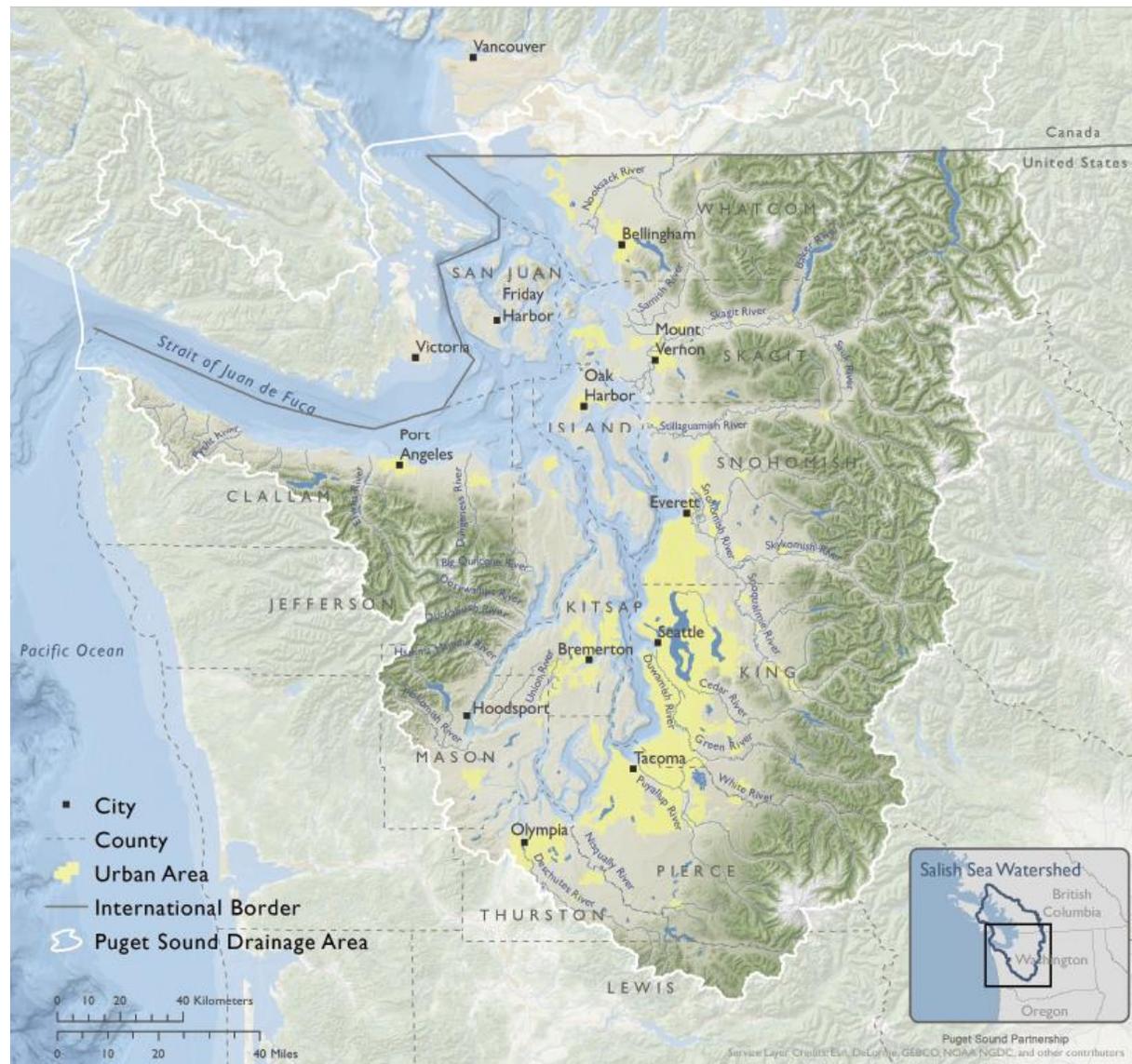
REPORT

DECEMBER 2, 2019



PUGET SOUND
PARTNERSHIP

MAP OF PUGET SOUND



Puget Sound is the largest estuary by water volume in the United States and connects with international waters to form the Salish Sea. Carved by glaciers and fed by more than 10,000 rivers and streams, Puget Sound is defined by the movement of water. Beginning as snow in the Cascades and Olympics, fresh water flows down from these mountain ranges through streams, fertile river valleys, rural and urban areas into Puget Sound, connecting to a complex network of salt marshes, wetlands, river deltas, bluffs, beaches, and bays.

Puget Sound is a vast and beautiful estuary—a semi-enclosed, glacial fjord—where salt water from the Pacific Ocean mixes with fresh water draining from the surrounding watersheds. From the Canadian border south to Olympia and west to the Pacific Ocean, about 2,800 square miles of inland marine waters and 2,500 miles of shoreline comprise Puget Sound. Nearly 85 percent of Puget Sound’s annual surface water runoff comes from 10 major river systems: Nooksack, Skagit, Snohomish, Stillaguamish, Cedar/Lake Washington, Green/Duwamish, Puyallup, Nisqually, Skokomish, and Elwha.

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www.psp.wa.gov

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DECEMBER 2, 2019

MESSAGE FROM THE PARTNERSHIP'S DIRECTOR

On the surface, Puget Sound looks beautiful, but it's in grave trouble. Southern Resident orcas, Chinook salmon, steelhead, and many other species are listed under the Endangered Species Act; toxic chemicals and pharmaceuticals continue to pollute our waterways; and shellfish beds are routinely closed to commercial and recreational harvest due to fecal contamination. Despite a significant investment of energy and resources from federal, tribal, state, and local governments and non-governmental partners, habitat degradation continues to outpace restoration. While this situation at times seems impossibly bleak, the thousands of passionate people who are devoted to seeing the return of a healthy and resilient Puget Sound give us hope.



Scientists say that we can still recover Puget Sound, but only if we act boldly now. We know what we need to do ([2018-2022 Action Agenda for Puget Sound](#)). The primary barriers between us and more food for orcas, clean and sufficient water for people and fish, sustainable working lands, and harvestable shellfish are funding and political fortitude.

“ Scientists say that we can still recover Puget Sound, but only if we act boldly now.”

The single greatest step we could take to ensure a durable, systematic, and science-based effort to recover Puget Sound is to fully fund the implementation of habitat protection and restoration, water quality protection, and salmon recovery programs.

We also know that federal, state, and local governments can act boldly now, without additional funding, to improve our recovery system. We can work together to improve how we apply existing regulations and policies, strengthen the regulatory environment, develop new tools to make the recovery choice the easy choice, and share local and regional stories of recovery more broadly. The Puget Sound Partnership is committed to this work, and to the [Call to Action](#) in this report.

But we can't do this alone. Success requires investment of human and financial resources from all sectors of society. The stories in the 2019 State of the Sound illustrate this clearly: each story involves many partners and funding sources, working hard to bridge divides, and trying new approaches to solve old problems. Our partners in recovery are a tremendous source of strength, inspiration, innovation, and political will.

Failure is not an option. Last summer's 1,000-mile swim of mourning by the Southern Resident orca Tahlequah, carrying the body of her dead calf, drove this point home—sharply and poignantly—to millions of people around the world. We hold the future of Puget Sound in our hands. We can act now to protect this place we love, for our sake, for our children's sake, and for the sake of all the creatures that depend upon it.

Join us.

Laura Blackmore, Executive Director, Puget Sound Partnership

A CALL TO ACTION

Each of us has a role to play in achieving Puget Sound recovery. Each of us works hard to bring the day closer when our rivers once again run clean and teem with salmon, and our shellfish are safe to harvest throughout Puget Sound.

However, the numbers in the 2019 State of the Sound speak for themselves: our journey is far from over. While we're all working hard, it's not enough. We must redouble our efforts to combat climate change and the effects of a growing population that threaten ecosystems and disproportionately affect vulnerable communities. This call to action is from the Puget Sound Leadership Council to each of our partners. Each of us can, and must, do more to accelerate recovery, and we are committed to our partnership with you. Together, as we look to the future, let us be bold in our intent and actions to build a healthy, resilient, and economically prosperous Puget Sound for all.

FOR THE STATE LEGISLATURE

- Enact changes to our regulatory system as recommended by the Puget Sound Partnership Leadership Council (psp.wa.gov/recommendations) to protect and enhance salmon habitat, ensure human health and safety, provide irreplaceable ecosystem services, sustain tribal cultures, increase resiliency to climate change, and produce food for orcas.
- Authorize new funding that will provide reliable, dedicated funding in the amounts needed for Puget Sound recovery, as recommended by the Leadership Council.
- Fund a Puget Sound Budget that fully supports recovery, as recommended by the Leadership Council, which will include the following:
 - State agency budget requests that fund implementation of the 2018-2022 Action Agenda for Puget Sound.
 - Habitat protection and restoration programs, including the Puget Sound Acquisition and Restoration fund, the Salmon Recovery Funding Board, the Estuary and Salmon Restoration Program, the Floodplains by Design program, and state match for the federal Puget Sound Nearshore Ecosystem Restoration Project.
 - Stormwater pollution prevention programs, such as the Stormwater Financial Assistance Program.
 - Programs to protect and enhance shellfish beds, such as Pollution Identification and Control programs, and working lands and natural resource industries.
 - Scientific research to deepen our understanding of effective recovery mechanisms, and monitoring to report progress and identify emerging issues.
- Enact and fund implementation of the recommendations of the Governor's Southern Resident Orca Task Force (governor.wa.gov/issues/issues/energy-environment/southern-resident-orca-recovery/task-force).

FOR STATE AGENCIES

- Work with the Partnership and the Leadership Council to develop the Puget Sound Budget. Submit budget requests to implement the 2018-2022 Action Agenda for Puget Sound.
- Work with the Leadership Council to identify and implement changes to state policies and programs that will accelerate recovery and increase climate resiliency while sustaining vibrant human communities and working lands.
- Enhance collaboration with local governments and landowners to find effective ways to protect and restore habitat and water quality.
- Continue to collaborate with the Partnership to develop the 2022-2026 Action Agenda update. Commit to collaborating on a short, unified set of priorities for programs and projects that will accelerate recovery and enhance human wellbeing.
- Continue and enhance collaboration with British Columbia to ensure our recovery efforts don't stop at the border. Accelerate salmon recovery work with Oregon, Idaho, California, and Alaska.

FOR LOCAL GOVERNMENT

- Collaborate with the Leadership Council and other regional partners to identify ways that state agencies and other partners can support local government efforts to accelerate recovery while enhancing human wellbeing.
- Adopt, implement, and enforce land use policies that protect habitat, prevent stormwater pollution, and lead to the reopening and protection of shellfish beds. Look for ways to achieve environmental net gains while accommodating growth.
- Help constituents understand the connections between these land use policies, climate resiliency, and Puget Sound recovery.
- Participate in watershed-scale recovery planning and implementation efforts, via Local Integrating Organizations and salmon recovery Lead Entities.
- Continue to collaborate with the Partnership to develop the 2022-2026 Action Agenda update. Commit to identifying a short, unified set of priorities for programs and projects that will accelerate recovery and enhance human wellbeing.

FOR CONGRESS

- Fund the Puget Sound Geographic Program at a level commensurate with the Great Lakes and Chesapeake Bay.
- Pass the Promoting United Government Efforts to Save Our Sound (PUGET SOS) Act to establish a Puget Sound Program Office at the EPA and require federal agencies to align their efforts.
- Fund science and monitoring to increase our understanding of, and ability to report on, Puget Sound recovery.
- Double the annual funding for the Pacific Coastal Salmon Recovery Fund to ensure that salmon recovery actions occur throughout the U.S. range of the Southern Resident orcas.

FOR FEDERAL AGENCIES

- Implement the priorities of the Puget Sound Federal Task Force, and report progress regularly.
- Work with the Leadership Council to identify and implement changes to federal policies and programs that will accelerate recovery while benefitting all communities equitably.
- Continue to collaborate with the Partnership to develop the 2022-2026 Action Agenda update. Commit to identifying a short, unified set of priorities for programs and projects that will accelerate recovery and enhance human wellbeing.
- Develop a science enterprise to coordinate federal science and monitoring work, and implement the priorities in the Puget Sound Science Work Plan.
- Continue and enhance collaboration with Canada and its indigenous communities to ensure our recovery efforts don't stop at the border.

FOR NON-GOVERNMENTAL ORGANIZATIONS

- Continue and intensify advocacy for policies and funding that support Puget Sound recovery and healthy and resilient human populations.
- Continue to collaborate with the Partnership to develop the 2022-2026 Action Agenda update. Commit to identifying a short, unified set of priorities for programs and projects that will accelerate recovery and enhance human wellbeing.
- Help raise funds for implementation of the 2018-2022 Action Agenda.
- Increase public awareness of the condition of Puget Sound, why it matters, the effects of human activities and climate change on Puget Sound, and how individuals can support Puget Sound recovery.

FOR THE PARTNERSHIP

- Work with the Leadership Council and all partners to identify and implement changes to state, federal, and local policies that will accelerate recovery and increase climate resiliency while sustaining vibrant human communities and working lands.
- Lead development of the Puget Sound Budget with the Leadership Council and state agencies.
- Intensify efforts to diversify and enhance funding for Puget Sound recovery.
- Lead collaboration with all partners to implement the 2018-2022 Action Agenda, and to develop the 2022-2026 Action Agenda update. Commit to identifying a short, unified set of priorities for programs and projects that will accelerate recovery and enhance human wellbeing.
- Continue work to develop and enhance our accountability and ecosystem monitoring programs, to ensure investments in Puget Sound recovery are effective and targeted.
- Deploy cutting-edge science to diagnose pressures on Puget Sound, identify and test potential solutions, and stay abreast of emerging issues.
- Tell the story of Puget Sound recovery. Increase diversity, equity, and inclusion to represent everyone in the recovery effort.

FOR THE PUBLIC

- Get involved. Volunteer on a habitat restoration project or in a community-based science program. See orca.wa.gov for links to organizations to join. Or plant a tree at home.
- Quiet the waters of Puget Sound to help orcas find food. If you're a boater, give orcas space. Follow the BeWhaleWise (bewhalewise.org) guidelines for whale watching. And please use pump-out stations to keep sewage out of Puget Sound.
- Drive less. Support efforts to improve alternative transportation options in the Puget Sound region.
- Keep plastics and toxic chemicals out of our waterways. Recycle. Use environmentally friendly products in your home and on your landscape, fix vehicle leaks, use a commercial car wash, and have your vehicle oil changed by a professional.
- Speak up for Puget Sound. Vote. Tell a friend. Make sure your local, state, and federal representatives know how important Puget Sound is to you.

FOR TRIBES

The Partnership and the Leadership Council recognize that our tribal partners are sovereign nations. We invite them to continue to work with us in the following ways.

- Help us understand how best to uphold and protect tribal treaty rights.
- Identify changes to federal, state, and local laws, policies, and programs that will accelerate recovery and implement the tribal habitat strategy while enhancing human wellbeing.
- Participate in regional and watershed-scale recovery planning, implementation, and science and monitoring efforts.
- Work with the Department of Fish and Wildlife and the Leadership Council to help us integrate habitat, harvest, and hatchery efforts in Puget Sound.

FROM THE LEADERSHIP COUNCIL

As part of the Puget Sound Partnership’s work to accelerate the effort to protect and recover Puget Sound, we present the 2019 State of the Sound. On the doorstep of 2020—the legislature’s target date for restoring Puget Sound to good health—we must face the reality that our collective efforts have not been at the scale or pace sufficient to that task.

We look to our Vital Signs for more detailed information on how the ecosystem is doing, and soberly observe this year that the number of Southern Resident orcas, biomass of spawning Pacific herring, and an index for marine water conditions are evaluated as “getting worse”. Other key indicators of ecosystem health, such as Chinook salmon and eelgrass, are not showing improvement.

At the same time, important progress is being made. We’ve seen gains in harvestable shellfish beds, improvements to floodplains, and considerable increases in the number of septic systems that have been inspected and repaired. We’ve also seen reductions in permitted shoreline armoring and in the conversion of ecologically important lands. These are meaningful, positive changes that give us hope and help chart the course ahead.

These positive changes are the result of the work of the dedicated coalition of tribes, cities, counties, businesses, state and federal agencies, and other residents of Puget Sound who run the programs, raise the funding, and implement the projects. The collective gains include more production and jobs in Washington’s shellfish industry, improvements in the health of waterways that provide us with recreation and food, and more resilient shorelines and floodplains that protect biodiversity and property. When engaged with our partners in recovery, we remain optimistic that this vast network of people and programs is capable of a successful restoration effort, when we’re all pulling in the same direction.

In the same breath, we must acknowledge that the status quo will not lead to a resilient and healthy Puget Sound. Looking ahead, we see that the threats and challenges to the ecosystem are growing, asking even more of the coalition committed to regional recovery and resilience. Puget Sound is one of the most spectacular places on earth to live, work, and play. We can expect that people will continue to be drawn here for good jobs and easy access to mountains, forests, and beaches—and in ever-increasing numbers. Current growth projections predict a doubling of the region’s population by 2050 with significant potential impacts to the region. In addition, we are already experiencing climate impacts such as ocean acidification, changes to stream flows and ocean warming. These are harbingers of greater changes. If we are truly to heed the advice of our science advisors, tribes, and other partners that we can only recover Puget Sound by acting boldly now, some of our most important actions come sharply into focus:

1. We must fully fund the Puget Sound Budget, which will include programs and budget requests that protect and restore habitat, water quality, and species recovery, as well as the scientific research that enables us to understand which of our investments yield the greatest results.
2. We must identify and—most importantly—make changes to our regulatory system to protect and restore habitat, water quality, and species. This includes federal and state policies and programs, as well as supporting local governments to accelerate protection and recovery.

3. Perhaps most significantly, we must dive head-first into challenging conversations about the consequences that climate change and population growth are having and will have on our ecosystem and quality of life—and the trade-offs that we’re making when we shy away from discussing how and where that growth should occur.

We face a pivotal point in time. We know that with each passing day, the course to recovery becomes more challenging. We also see around the region a broad coalition of engaged citizens who recognize that the work to protect and recover Puget Sound is everlasting, with no end date. This 2019 State of the Sound report provides an opportunity for reflection, assessment, and deciding whether we’re up for some difficult conversations on how we can recover Puget Sound to health and long-term resilience, despite what we’re facing. We look forward together to take the actions needed to ensure a resilient Puget Sound—one that can adapt to the impacts of climate change and the pressures of a growing human population while meeting the needs of its native creatures. Now is the time—OUR time—to act.

PUGET SOUND PARTNERSHIP LEADERSHIP COUNCIL

Jay Manning, Chair
Stephanie Solien, Vice-Chair
Russell Hepfer, Member
Deborah Jensen, Member
Dennis McLerran, Member
Toby Murray, Member
Jim Wilcox, Member

CONDITION OF THE PUGET SOUND ECOSYSTEM

How is the Puget Sound ecosystem faring? That’s the question that the State of the Sound seeks to answer. Because the Puget Sound ecosystem is so complex and dynamic, the answer through the years has consistently been—and continues to be—“It depends.” In some localized areas, such as specific bays and watersheds where water quality no longer threatens to close shellfish beds, the answer is “Better.” Applied to an indicator species like orcas, however, the answer definitely is “Worse.” Assessing the condition of Puget Sound is also tied to human wellbeing. Toxic chemicals, for example, persist throughout the food web, reducing fishing opportunities and threatening human health-sometimes disproportionately for indigenous or minority communities. Finally, some indicators lack enough data to evaluate change over time, such as newer human wellbeing indicators like Sense of Place, for which we are only beginning to understand baseline conditions. Because of this variation in assessment of indicators, we continue to label the overall status and progress of conditions in Puget Sound as “Mixed.”

FROM WATER TO WHALES: TRACKING A CHANGING ECOSYSTEM VIA THE PUGET SOUND VITAL SIGNS

Using data collected from our partners, the Partnership tracks more than 50 indicators of ecosystem condition, including human wellbeing. These indicators and their targets support the Puget Sound Vital Signs, which are measures of ecosystem health that guide the assessment of progress toward Puget Sound recovery goals.

Want to know more about the Vital Signs and their indicators? Visit vitalsigns.pugetsoundinfo.wa.gov

As summarized in the Vital Sign assessment table 1 below (and also at vitalsigns.pugetsoundinfo.wa.gov/VitalSignIndicator/ViewAll), the evaluation of indicators shows that four indicators (one more than in 2017) are already meeting or are near their 2020 target. Of the 31 indicators with targets, 27 are below their 2020 target (3 indicators, included in the 27 below their 2020 target, lack the data needed to evaluate status) and most, if not all, are unlikely to meet it by next year.

Progress has been reported for ten indicators (listed under “Getting better” in the Vital Signs Assessment table), while decline or degradation has been reported for three indicators (“Getting worse”). Nine indicators do show signs of progress in some areas but decline in other areas-those indicators are labeled as having “Mixed results”. Seven indicators are not changing appreciably, and thus not improving or making any progress.



TABLE I. VITAL SIGNS ASSESSMENT

Progress of indicators:

GETTING BETTER

10

Indicator made gains relative to the baseline reference

MIXED RESULTS

9

Metrics show varying results (Applicable to indicators composed of multiple metrics)

NOT IMPROVING

7

No trend or change relative to the baseline reference

GETTING WORSE

3

Indicator lost ground relative to the baseline reference

INSUFFICIENT DATA

23

Not enough data to evaluate progress

- ESTUARIES**
 - ✗ Area of estuarine wetlands restored to tidal flooding
- FLOODPLAINS**
 - ✗ Restoration of floodplains
- LAND DEVELOPMENT AND COVER**
 - ✓ Rate of forest cover loss to development
 - ✓ Conversion of ecologically important lands
 - ✗ Restoration of freshwater riparian habitat
- MARINE SEDIMENT QUALITY**
 - ✗ Chemical measurements exceeding Sediment Quality Standards
- ONSITE SEWAGE SYSTEMS**
 - ✗ Inventory, inspection, and repair of onsite sewage systems
- SHELLFISH**
 - ✗ Area of shellfish beds re-opened for harvest
- SHORELINE ARMORING**
 - ✓ Armor on feeder bluffs
 - ✗ Net change in amount of permitted shoreline armor

- BIRDS**
 - ⊖ Marine bird population abundance
- ECONOMIC VITALITY**
 - ⊖ Employment in natural resource industries
 - ⊖ Natural resource industry output
 - ⊖ Percent of employment in natural resource industries
- FRESHWATER QUALITY**
 - ✗ Benthic Index of Biotic Integrity
- MARINE SEDIMENT QUALITY**
 - ✗ Sediment Quality Triad Index
- SUMMER STREAM FLOWS**
 - ✗ Long-term trend in summer low flows for 12 large rivers
- TOXICS IN FISH**
 - ✗ Contaminants in English sole and disease
 - ✗ Contaminants in Pacific herring

- AIR QUALITY**
 - ⊖ Exposure to impaired air quality
- CHINOOK SALMON**
 - ✗ Chinook salmon population abundance
- EELGRASS**
 - ✗ Sound-wide eelgrass area
- FRESHWATER QUALITY**
 - ✗ Water Quality Index
- MARINE SEDIMENT QUALITY**
 - ✓ Sediment Chemistry Index
- OUTDOOR ACTIVITY**
 - ✗ Condition of swimming beaches
- SOUND STEWARDSHIP**
 - ⊖ Sound Behavior Index

- MARINE WATER**
 - ⊖ Marine Water Condition Index
- ORCAS**
 - ✗ Number of Southern Resident killer whales
- PACIFIC HERRING**
 - ✗ Biomass of spawning Pacific herring
- ONSITE SEWAGE SYSTEMS**
 - ✗ Percent of unsewered shoreline that has inspection program
- OUTDOOR ACTIVITY**
 - ⊖ Nature-based recreation
 - ⊖ Nature-based work
- SENSE OF PLACE**
 - ⊖ Overall life satisfaction
 - ⊖ Psychological Wellbeing Index
 - ⊖ Sense of Place Index
- SHORELINE ARMORING**
 - ✗ Use of soft shore techniques
- SOUND STEWARDSHIP**
 - ⊖ Engagement in stewardship activities
- TOXICS IN FISH**
 - ✗ Contaminants in adult salmon
 - ✗ Contaminants in juvenile salmon

- BIRDS**
 - ⊖ Terrestrial bird population abundance
- CULTURAL WELLBEING**
 - ⊖ Participation in cultural practices
- DRINKING WATER**
 - ⊖ Index of vulnerability for elevated nitrates in groundwater
 - ⊖ Nitrate concentration in drinking water
- ESTUARIES**
 - ✗ Estuary restoration meeting salmon recovery goals
- FLOODPLAINS**
 - ✗ Floodplain function
- FRESHWATER QUALITY**
 - ✗ Freshwater impairments
- GOOD GOVERNANCE**
 - ⊖ Good Governance Index
- LAND DEVELOPMENT AND COVER**
 - ✗ Growth in Urban Growth Areas
- LOCAL FOODS**
 - ⊖ Bivalve harvester-days
 - ⊖ Locally harvested foods
 - ⊖ Recreational Dungeness crab catch
- MARINE WATER**
 - ✗ Dissolved oxygen in marine waters

Status of indicators relative to 2020 targets:

✓ 4

Meeting 2020 targets

✗ 27

Not meeting 2020 targets

⊖ 21

indicators do not have targets but are reported in this table for progress relative to a baseline reference

ONE VITAL SIGN ALONE CAN'T TELL THE WHOLE STORY

No Vital Sign, taken alone, can accurately tell the condition of Puget Sound. Vital Signs and their indicators often influence one another. When one falls short, it often predicts the worsening of other, linked Vital Signs. For example, the [Orcas](#), [Chinook Salmon](#), [Pacific Herring](#), [Local Foods](#), [Outdoor Activity](#) and [Economic Vitality](#) Vital Signs, taken together, reveal a bigger picture of trouble in the ecosystem than any one Vital Sign might alone portray.

The Center for Whale Research reported in August 2019 that the population of endangered [Southern Resident orcas](#) fell to 73 after the presumed deaths of three orcas not seen since early spring. The number of Southern Residents is the measure we use to determine whether the Orcas Vital Sign is getting better or worse. The Orcas Vital Sign, in turn, is just one of four that comprise the recovery goal of Thriving Species and Food Web.

“ One of the major factors scientists identify as contributing to the decline of the Southern Resident is the lack of Chinook salmon...”

One of the major factors scientists identify as contributing to the decline of the Southern Resident orcas is lack of [Chinook salmon](#), the primary prey of Southern Residents. Likewise [Pacific herring](#), a critical food source for Chinook salmon, are not faring well in Puget Sound.

The abundance of Chinook salmon is well below recovery goals and, in fact, the Puget Sound population has changed very little since the species was listed as threatened in 1999. Likewise, Pacific herring stocks are currently below both their 2020 targets and baselines, set as a 25-year average from 1986 to 2010.

[Contaminants found in both Chinook salmon and herring](#), caused by pollution, contribute to these declines. Reported contaminant levels represent a health risk for the fish themselves and are risky enough for humans that fish consumption advisories seek to limit their consumption. Research has shown that toxins in orcas are a contributing factor to the decline of Southern Residents. The impacts of polluted fish are particularly concerning for tribal communities and immigrant communities that rely on fish for cultural and subsistence reasons.

UNSUNG HEROES: PUGET SOUND MONITORING PROGRAMS

Every day, hundreds of dedicated people go out counting fish, measuring temperature, testing chemicals, and surveying human wellbeing, to gather precious information about the condition of the ecosystem. Because of the complex physical, biological, and human components of ecosystems, understanding their status and interactions requires time, consistent measurement, and a good dose of interdisciplinary collaboration. A sustained and collaborative study of the ecosystem is particularly important when evaluating the effects of intense pressure from human population growth, [development](#), and climate change, while also considering the benefits people receive from the ecosystem. The Partnership’s Vital Sign reporting program relies on data collected through long-standing monitoring programs managed by state and federal governments, tribal natural resource agencies, non-profit groups, local jurisdictions, and



PUGET SOUND ECOSYSTEM
MONITORING PROGRAM

academic institutions. Such programs are all too often an overlooked component of Puget Sound recovery when it comes to allocating funding. But without them, it would be impossible to interpret how well recovery efforts are working and what adjustments need to be made to improve recovery outcomes.

With diverse organizations conducting research and monitoring in the Puget Sound region, the [Puget Sound Ecosystem Monitoring Program](#) (PSEMP) brings together partners from all levels of government, tribes, non-governmental organizations, academia, Local Integrating Organizations and watershed groups, and businesses. PSEMP provides coordination support and a framework to help monitoring programs and partners engage in the recovery process, including improving monitoring of, filling data gaps for, and reporting on Vital Signs. PSEMP facilitates connections among this network of practitioners, helping them collaboratively answer questions critical to ecosystem recovery and clearly present their scientific findings to decision makers.

“ Such programs are all too often an overlooked component of Puget Sound recovery when it comes to allocating funding.”

Want to know more about monitoring programs and progress? Visit www.psp.wa.gov/PSEMP-overview

RISING TO THE CHALLENGE: SCIENCE PANEL OBSERVATIONS ON PROGRESS OF THE ACTION AGENDA

The Partnership’s enabling legislation directs the Science Panel to offer comments on progress in implementing the Action Agenda, as well as findings arising from the assessment and monitoring program.

SYNOPSIS

The Puget Sound region faces increasing pressures from accelerating population growth, development and climate change. To ensure the Puget Sound ecosystem can recover from disturbance and maintain and enhance the benefits it provides to people and nature across the region, we must increase the magnitude of action.

In its recovery efforts, the Puget Sound Partnership will always be confronted with the need to accomplish recovery and protection now while ensuring the actions we take are the most cost-effective and successful. The Puget Sound Partnership Science Panel acknowledges the progress made building the enterprise to “do it now” and implement the Action Agenda and we ask the important follow-up question, “Can we do it better?” Specifically, we ask:

With increasing pressures facing Puget Sound, is the current level of planning and effort to recover the Puget Sound ecosystem matched to the magnitude of action needed to achieve goals for a resilient Puget Sound?

We conclude that the elements of a science-based recovery enterprise that we developed to “do it now” are also what we need to “do it better.” To do that, we recommend:

- Invigorating the dialogue between scientists and decision makers to improve clarity around critical decisions and the scientific information needed to inform them
- Integrating goals, recovery targets, and ecosystem indicators by focusing on resilience
- Communicating about linkages between actions and results by making science more accessible and collaborative
- Continuing to build sustainable capacity for new science to guide our actions
- Strategically testing the best path forward using scenarios and leveraging best available science

INTRODUCTION

In 2009, shortly after the adoption of the first Action Agenda to recover Puget Sound, the Puget Sound Partnership Science Panel observed that our recovery efforts would always be caught between the dual needs to “do it now” and “do it better.” In our subsequent reviews in 2012, 2013, 2015 and 2017, we focused on the progress of building the capacity to “do it now”. More specifically, we discussed a framework for science and policy dialogue to guide priorities; an integrated system of goals, recovery targets, and ecosystem indicators to guide actions; opportunities to refine and communicate what we know about linkages between actions and results; and building sustainable capacity for collecting new information and analyses. A decade later, we have a science-based recovery enterprise, built on these elements, that is capable of getting needed actions done now.

But do we need to do it better? In this review, we acknowledge the progress we have made building the enterprise to implement the Action Agenda and we ask the important follow-up question:

With increasing pressures facing Puget Sound, is the current level of planning and effort to recover the Puget Sound ecosystem matched to the magnitude of action needed to achieve goals for a resilient Puget Sound?

PLANNING AND EFFORT: HOW ARE WE DOING NOW?

Elsewhere in this 2019 *State of the Sound* report, the Partnership presents encouraging stories of positive efforts contributing to improvements in ecosystem condition. The Partnership also identifies other areas where the recovery is not progressing or the ecosystem is worsening, and provides evidence that we continue to struggle to implement the planned recovery activities that we need to do now.

Progress in recovering the ecosystem is mixed. The Partnership has 52 Vital Signs that are key parts of the ecosystem that let us track the ecosystem's health and our recovery progress. Of these, 29 have indicators with data good enough to assess progress relative to baseline conditions. In this year's report, ten show improvements, three show declines or degradation, seven are not improving, and nine have mixed results (i.e., trends differ among indicator components or areas). Of the 31 indicators for which the Partnership established recovery targets to be achieved by 2020, four are reported to be at or near the target, and 27 are well below their target.

These results reflect the underlying forces of long-standing and extensive human influences on the Puget Sound ecosystem that are not yet counterbalanced by current approaches to Puget Sound recovery, protection and responsible redevelopment. The following explanations help us understand our apparent lack of progress for many of the indicators:

- We are not implementing all the right actions in the right places or at the right times
- We are taking the right actions but not enough of them
- We have not implemented a monitoring system that can detect progress at meaningful management scales
- We are taking the right actions, but detecting ecosystem response will take longer
- Increasing environmental pressures and stressors are offsetting benefits gained from restoration actions

While we know that the Near Term Actions (NTAs) do not encompass all of the actions needed to achieve the goals for a resilient Puget Sound, our review of implementation of NTAs alone clearly indicates that we are not doing enough. More than half-way through the anticipated implementation period of NTAs from the 2016 Action Agenda, only 23% of the 362 actions are fully implemented or on schedule. Additionally, proponents of recovery actions indicate that they struggle to implement their planned activities because of a lack of funding, staff resources and expertise (83% of actions); need to revise scope and approach of efforts (11% of actions); lack of social, political, or management support (5% of actions); and regulatory barriers (2% of actions). Importantly, however, we are not aware of any cases where lack of scientific knowledge is limiting *how much* we can do.

The Science Panel has highlighted ways to address the first four explanations of impediments to progress (above) in previous comments and documents. For this year's report, we address the last

explanation that “increasing environmental pressures and stressors are offsetting benefits gained from restoration actions”.

MATCHING THE MAGNITUDE OF CHANGE NEEDED: CAN WE DO IT?

Are we poised to address increasing environmental pressures and stressors? Present-day and anticipated future drivers of change present further challenges for a resilient Puget Sound ecosystem. The continued growth of the region’s human population and development of land for residential, commercial, and industrial uses threaten to further degrade habitat, pollute marine and fresh waters, and impair the viability of a number of species such as salmon and orca whales. Impacts from a changing climate and ocean—including higher temperatures, more intense weather, new patterns of high and low stream flow, rising sea levels, and acidification of marine waters—only add to our challenge.

The state Office of Financial Management projects that Puget Sound population will reach over 5.7 million by 2030, an increase of 18.2% from 2014 population estimates. The ecosystem will also be challenged by a warming and more variable climate. With this, the capacity of the ecosystem to absorb increasing pressures and disturbances will be further compromised, potentially overwhelming our collective attempts to restore Puget Sound. Avoiding this outcome requires us to consider both addressing past impacts, as well as increasing the resilience of Puget Sound to absorb new disturbances from population growth, increasing habitat loss, and climate impacts. Consideration of both ecosystem recovery and increasing regional resilience is essential to avoiding the vicious cycle of future disturbances overwhelming our recovery actions.

The Science Panel concludes that we need to improve the elements of a science-based recovery enterprise that we developed to “do it now” in order to ensure we “do it better”. These elements include:

- science and policy dialogue to guide priorities
- an integrated system of goals, recovery targets, and ecosystem indicators to guide actions
- opportunities to refine and communicate what we know and learn about linkages between actions and results; and
- building sustainable capacity for collecting new information and analyses

In the following sections, we explain why we need to improve these elements, how the Partnership and Science Panel has started, and what is needed as we continue this work to achieve a resilient Puget Sound.

Science-Policy Dialogue and Clarity of Leadership

The science is clear that as questions become more complex (*i.e.*, unable to be solved by technical solutions alone), science-policy dialogue is increasingly important because the kind of information that scientists need to bring will be different and they will need to communicate findings in new ways. We acknowledged the need for this dialogue in “Our Vision and Guiding Principles” in the Puget Sound 2018-2022 Action Agenda. When policy makers and scientists co-develop tools, such as scenario modeling, robust qualitative models, systems analyses, and visualization, we are more successful at yielding more enduring solutions.

Setting realistic and meaningful priorities needs to be a two-way street between policy makers and scientists. Leadership gives direction on how scientific information can be used to create opportunities for change and identify policy windows, (*i.e.*, circumstances that lend themselves to policy change, where science is needed). Scientists can describe current and potential future conditions and elucidate the relationship between system components and external pressures (*e.g.*, climate change) or actions (*e.g.*, restoration or land-use).

Together, scientists and policy makers can identify the issues that people care about, how people make choices, and the collective future we strive to achieve. The Partnership's sponsorship of policy-science workshops, involving the Leadership Council, Ecosystem Coordination Board, and the Science Panel, is a good start. To "do it better", we will need to develop and implement best practices for regular, deliberate, effective engagement between policy makers and scientists. We should also engage in unplanned opportunities, such as the Governor's convening of a task force to address the perilous condition of the Southern Resident Killer Whales. It is essential that we encourage effective dialogue to ensure scientists focus on and communicate information most relevant for improving Puget Sound resilience.

Focusing on Resilience: Integrated System of Goals, Recovery Targets, and Ecosystem Indicators to Guide Actions

In its contribution to the [2017 State of the Sound](#), the Science Panel recommended a shift away from using restoration endpoints and targets and to instead focus on resilience as our desired outcome. The Panel argues that the Puget Sound recovery community needs to view resilience—which we define as being adaptive to environmental challenges through restoration and protection and their respective targets—as a way to support and sustain resilient landscapes, species and economies and have an ecosystem that can bounce back from disturbance. With this emphasis, interim progress measures are all the more important towards understanding advancements.

In December 2017, the Science Panel convened a science-policy workshop to inform the Partnership's efforts and to bring the concept of resilience out of the academic realm and into general use as a frame for Puget Sound recovery. Presentations and interdisciplinary discussions at this workshop explored attributes of ecosystem function and condition that confer and indicate resilience (building from [Timpane-Padgam et al. 2017](#)); applying resilience concepts to institutional, social, and ecological domains; and the critical shift to managing for change rather than static conditions. Social science perspectives, including the guidance to be clear about "resilience from what and for whom" (as raised in [Olsson et al. 2015](#)), were prominent in these exploratory discussions. Collectively, the science-policy workshop focused on the ways in which the institutional, social, and ecological domains can be strengthened to support building conditions to allow the ecosystem to bounce back from disturbance. As well as accounting for the system being transformed to a different set of conditions from cumulative or major perturbations.

At this point, only limited progress has been made in framing specific resilience-focused strategies. At its core, resilience thinking presents an approach for managing natural and environmental resources that acknowledges that human and natural systems are linked, complex and continually adapting through cycles of change, with time lags that are both short and long for different system elements. For example, floodplain reconnection projects restore ecological processes rather than individual ecosystem components. In doing so, they provide benefits to salmon, but also to human communities who gain

greater protection from flooding and climate change. The Science Panel is working on strengthening the focus on resilience within the Partnership and the broader Puget Sound recovery community through the implementation and improvement of the strategies delineated in the 2018-2022 Action Agenda.

Communicating What We Know About Linkages between Actions and Results: Making Science More Accessible and Collaborative

What we know about the Puget Sound ecosystem grows by hundreds of research reports each year. Given the scope of the research, the large number of participants in the recovery effort that might use this information, and the growing complexity of scientific studies, we all benefit in having scientific findings communicated quickly and in ways easily accessible to a wide range of policy makers and restoration-practitioners. Collaboration between scientists and non-scientists has proven to be especially effective in making new information accessible and useful.

Numerous formats are available for communicating new information such as technical reports, peer-reviewed articles, conferences, general audience fact sheets and articles, online websites and other formats. Each has advantages and disadvantages. In [the appendix](#) to this letter we highlight several venues and means for disseminating the science of Puget Sound. The compilation represents examples not a comprehensive listing.

Building Sustainable Capacity for New Information

In addition to being explicit about objectives, policy makers can strengthen science by providing adequate funding for research. For the first time, the governor and legislature made a very encouraging statement in the 2019-2021 operating budget by providing \$2.222 million of ongoing funding to the Partnership for Puget Sound research. The intent of funding Puget Sound scientific research dates to the creation of the Partnership in 2007, (see RCW 90.71.110), but no appropriation for this purpose had been made until 2019. The budget expresses that a competitive, peer-reviewed process be used for soliciting, prioritizing and funding projects and stipulates that additional monitoring be conducted by the Puget Sound Ecosystem Monitoring Program (PSEMP). The budget further specifies that the initial research be focused on the [Salish Sea Marine Survival Project](#), effectiveness of Chinook recovery efforts, and effectiveness of actions to restore shellfish beds. These three topics are included on the Science Panel's list of fourteen top [priority work actions](#).

NEXT STEP: STRATEGICALLY TESTING THE BEST PATH FORWARD

The Science Panel concludes that the elements described above and priorities identified in the [2016 Biennial Science Work Plan](#) combine to allow us to strategically test the best path forward for increasing Puget Sound resilience. In the Work Plan, the Science Panel identified priority work actions including (1) conduct scenario-based analysis of ecosystem vulnerability, (2) develop and apply an integrated ecosystem model; and (3) develop and apply tools to support decision making. Scenario-based analysis provides an opportunity and process for scientists and decision-makers to work together toward solutions and strategically test the alternatives to achieve them. For example, scenarios can be used to explore how business-as-usual or specific policy actions affect mutually determined indicators of resilience. Scenarios invigorate this dialogue by fostering collaborative conversations about how the actions we take now affect outcomes in the future as well as the characteristics of the future we collectively envision.

To meet the demand for objective evaluations and comparisons, the scientific community is developing collaborations to integrate modeling across the Puget Sound. The Science Panel envisions utilizing advancements in Visualizing Ecosystem Land Management Assets (VELMA) and the Salish Sea Model with a Puget Sound application of Atlantis to integrate watershed and freshwater systems, marine circulation and water quality, and marine food webs.¹ The collaboration will link the ecological models with an agent-based modeling subsystem (e.g., Envision) that allows decision-makers to be represented in whole-basin simulations. The ability to integrate ecological and human systems as part of a scenario process will facilitate discourse among stakeholders, enabling them to compare the ecological, social and economic consequences of alternative choices. In doing so, modeling provides an effective decision support tool for understanding and addressing recovery of high priority endpoints, such as the Vital Signs and measures of ecosystem resilience.

These analyses, scenario formation, and the issues considered throughout this letter will raise other questions that the Science Panel believes are important for the Puget Sound recovery community, such as:

- Can we make long-term decisions? Do we have a long-term vision that can serve as the context for making and evaluating long-term decisions?
- Do we have alternative future scenarios to inform our long-term vision?
- Interconnectedness and networks are thought to be a key characteristic of ecological and social resilience. Do we understand what these are, how they can be developed, and how they work in the Puget Sound?
- What are good examples of stories that convey, in practical and accessible terms, the value of and need for adopting a resilience approach?
- Are there clear opportunities to revise or change course in policy, restoration, and recovery work?
- Does the organization's structure allow for innovation and bold ideas?

Support and resources for this approach are gaining traction. Modeling investigators are competing well for project funding (e.g., from EPA Region 10, Washington Sea Grant). The Science Panel is working closely with the Ecosystem Coordination Board to examine the impact of a range of population growth and climate solutions on salmon, habitat, and other variables. This process specifically will provide usable information for elected officials and other local policy makers. The Science Panel looks forward to working with policy makers, including the Orca Task Force and its successor, to secure resources for integrated ecosystem modeling and the development and analysis of scenarios (and other modes of strategic testing) that provide insights about how ecosystem recovery planning and effort can be adapted to achieve the goals for a resilient Puget Sound.

Our recovery efforts must be science-based and science-driven, and to address a problem of this magnitude we must aim for close integration of the efforts of a variety of stakeholders, including researchers across the natural science and social science disciplines; federal, state and local policy-makers; tribal governments; local integrating organizations and the residents of the Puget Sound region.

¹ For example, note the multiple food web modelling tools used by [Kaplan et al. 2019](#) to understand the role of Pacific sardine in California Current.

This close integration of efforts is crucial to ensure we achieve our shared objectives for a resilient Puget Sound.

PUGET SOUND PARTNERSHIP SCIENCE PANEL (IN 2019)

John Stein, Chair

Ken Currens and Robert Ewing, co-Vice Chairs

Joel Baker, Member

Bob Bilby, Member

Nick Bond, Member

Nives Dolšak, Member

Colin Grier, Member

Edward Kennedy, Member

Bill Labiosa, Member

Paul Mayer, Member

Jan Newton, Member

Timothy Quinn, Member

Theresa Satterfield, Member

Ruth Sofield, Member

Eric Strecker, Member

Trina Wellman, Member

MANAGEMENT OF PUGET SOUND RECOVERY

The Revised Code of Washington sets out in statute a requirement that the Partnership must produce a State of the Sound report by November 1 of each odd-numbered year. The report must, at a minimum, include the following (RCW 90.71.370, 3a–f):

- a) An assessment of progress by state and nonstate entities in implementing the action agenda, including accomplishments in the use of state funds for action agenda implementation;
- b) A description of actions by implementing entities that are inconsistent with the action agenda and steps taken to remedy the inconsistency;
- c) The comments by the panel on progress in implementing the plan, as well as findings arising from the assessment and monitoring program;
- d) A review of citizen concerns provided to the partnership and the disposition of those concerns;
- e) A review of the expenditures of funds to state agencies for the implementation of programs affecting the protection and recovery of Puget Sound, and an assessment of whether the use of the funds is consistent with the action agenda; and
- f) An identification of all funds provided to the partnership, and recommendations as to how future state expenditures for all entities, including the partnership, could better match the priorities of the action agenda.

The content in the following sections of the report (and the science Panel comments above) is largely a response to the questions posed in statute. Italicized text at the beginning of a section, or sub-section indicates where a statutory question is directly addressed.

The Washington State legislature created the Puget Sound Partnership to “oversee the restoration of the environmental health of Puget Sound” (RCW 90.71.210). Although the Partnership is a state agency, it does not have regulatory authority, nor is it a direct grant-making or public outreach organization. Instead, the Partnership creates, manages, and maintains the infrastructure and the relationships needed to synchronize the efforts of hundreds of diverse partners to undertake the actions and programs determined as the best available options for speeding Puget Sound recovery.

The management model for Puget Sound protection and recovery uses an approach known as collective impact to find and apply lasting solutions to complex problems. Collective impact describes the structures needed for large, diverse groups to work together toward shared goals.

Success in a collective impact model requires the following:

- **A common agenda** articulates a shared understanding of the problem developed through inclusive, collaborative processes, and builds a shared vision for the steps needed to make progress. The [Action Agenda](#), and the local and topic-specific plans and strategies that roll into it, play this role in Puget Sound recovery.
- **Shared measurement systems** provide data and evaluation tools held in common among partners. Such systems enable learning, improved planning, and smarter investments over time. The Action

[Agenda Report Card/Tracker](#), [effectiveness assessments](#), and the [Vital Signs](#) and their indicators and targets play this role in Puget Sound.

- **Backbone support and continuous communication** from a single organization enable that organization to serve as a hub to manage, communicate, convene, coordinate, and align the efforts of the collective. This is the Partnership’s role. In addition, the Partnership provides support to [multiple boards](#), who help communicate and leverage relationships and actions in the broader community. The Partnership also serves as a communication and education voice to key decision-makers locally, as well as at the state and federal levels, to ensure that these decision-makers understand the issues and interests of partners and the needs of Puget Sound recovery.

The Puget Sound recovery effort uses a results-based management system to enable continuous improvement over time. This means that lessons learned from each activity inform improvements to that activity the next time it is performed. The cycle of learning and improvement is commonly referred to as the “Plan-Do-Check- Adapt,” or PDCA, cycle (see Figure 1). The role of the Partnership as a backbone organization is to build stronger connections between the elements of the PDCA cycle so that Puget Sound recovery plans and actions improve continuously through each funding period.

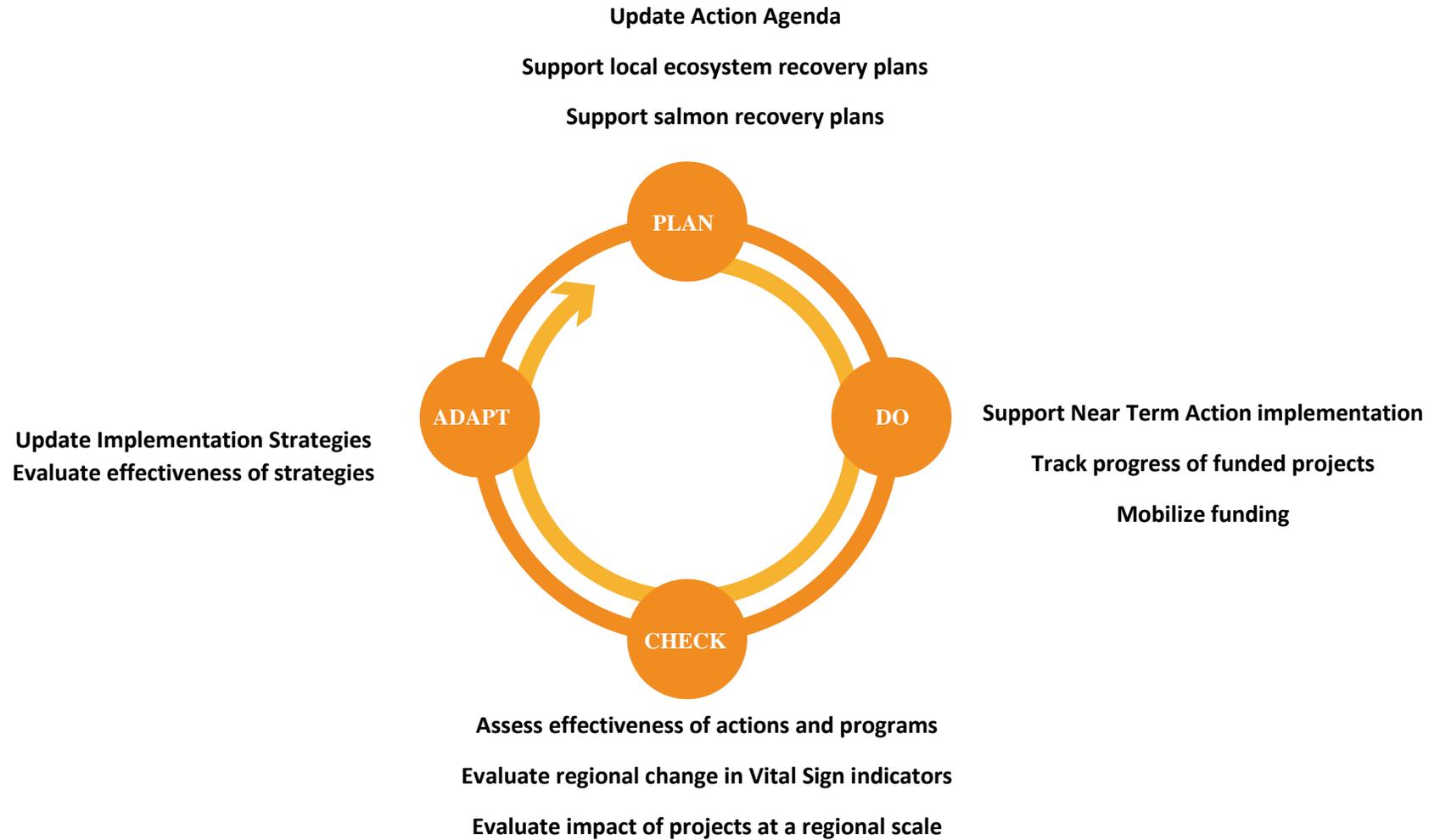


Figure 1: Plan-Do-Check-Adapt cycle with activities that are led by the Partnership, as required by legislation or as a component of funding agreements with other agencies

RESULTS-BASED MANAGEMENT GUIDES THE ACTION AGENDA

Results-based management underpins the Action Agenda and ensures that investments in recovery actions are sound and effective.

Between 2008 and 2018, the Puget Sound Partnership facilitated re-evaluation of the Action Agenda 4 times. These regular updates allowed ongoing adjustments to the Action Agenda processes and resulted in continuous improvement of the types of recovery and protection activities proposed for funding.

The 2008-2011 Action Agenda defined the problem and assessed solutions by seeking answers to the following:

- What is our definition of a “healthy” Puget Sound?
- What is the current status of Puget Sound?
- What are the trends and the biggest threats to Puget Sound?
- What actions should be taken that will move conditions from where they are today to a “healthy” Puget Sound by 2020?
- Where should recovery strategies and actions begin?

The 2012-2013 Action Agenda built a systematic approach to recovery by adding the following components:

- Near Term Actions with performance measures
- Vital Signs and ecosystem recovery targets linked to Action Agenda strategies, ongoing program activities, and Near Term Actions
- Three Strategic Initiatives
- 29 strategies to achieve ecosystem recovery targets and over 100 sub-strategies to narrow the focus and guide development of Near Term Actions

The 2014-2015 Action Agenda incorporated the broader recovery context by adding the following components:

- Locally developed approaches for identifying and prioritizing local Near Term Actions
- Crosscutting issues: salmon recovery, climate change, and tribal treaty rights

The 2016-2018 Action Agenda sharpened the focus:

- Began transitioning to alignment of Near Term Actions with Implementation Strategies
- Improved the integration of local and regional planning systems
- Improved alignment between the Science Work Plan and the Action Agenda

Legislature extends Action Agenda planning cycle

In 2017, the Washington State legislature extended the Action Agenda planning cycle from approximately every 2 years to every 4 years. The primary intent of this change was to enable Near Term Action owners to devote more time to putting their plans into action.

The 2018-2022 Action Agenda increases focus on Vital Signs:

- Identifies actions necessary to improve the status of 11 priority Vital Signs over the next 4 years.

- Adds Regional Priorities, which are specific approaches, desired outcomes, and action ideas (as determined in consultation with partners) for recovery of the 11 priority Vital Signs over the next 4 years.
- Adds a Regional Priority to increase funding (Leadership Council request). Inadequate and unreliable funding continues to be the most frequently cited barrier to achieving and maintaining a healthy and resilient Puget Sound ecosystem.
- Solicited Near Term Actions to address the Regional Priorities, and streamlined the submittal process for proposing a Near Term Action.
- Introduced the [Action Agenda Tracker](#) to improve transparency of Near Term Action progress and reporting.
- More fully used Implementation Strategies to guide Near Term Action proposal and development.

MANAGEMENT ACCOMPLISHMENTS ADVANCE PUGET SOUND RECOVERY

Since publication of the 2017 State of the Sound report, several results-based changes to the management of the recovery system have improved the chances for advancement of Puget Sound recovery. These changes are summarized below.

A new Action Agenda updates recovery actions

In December 2018, the Partnership’s Leadership Council approved the [2018-2022 Action Agenda](#). This Action Agenda update represents the largest number of proposed actions (631 Near Term Actions) to recover Puget Sound since the Partnership’s inception. Because each Near Term Action must be carefully planned, well supported in the community where it would take place, and thoroughly vetted by a panel of scientists and experts, the number of Near Term Actions submitted suggests an expanding degree of involvement in and enthusiasm for participation in the Action Agenda.

Development of Implementation Strategies continues

As noted in the 2017 State of the Sound, with partner input the Partnership developed and piloted Implementation Strategies, then transferred the continuation of the effort to partners. Since then, Strategic Initiative leads for the Stormwater Strategic Initiative, along with recovery partners from across the Sound, have been developing the next series of [Implementation Strategies](#), which address reducing toxics in fish, improving stream health and freshwater quality, and reducing the human contribution of depleted oxygen in marine waters. Implementation and results-based management of the seven existing Implementation Strategies continues.

Based on the [Regional Priorities](#) defined by the Leadership Council for the 2018-2022 Action Agenda, the next Vital Sign to be addressed by an Implementation Strategy is [Summer Stream Flows](#). Preparatory work on this Implementation Strategy has begun, including the compilation of existing Vital Sign-related and other Puget Sound-wide planning and analysis products that will form the technical basis for the Implementation Strategy.

Local protection and recovery forums participate in guiding Action Agenda updates

Local Integrating Organizations are local forums that meet regularly throughout the year to collaboratively work to develop, coordinate, and implement strategies and actions that that contribute

to the protection and recovery of the local ecosystem. While each LIO structure may differ as a result of the needs of the specific geography, most have an executive committee and a technical committee. Members may include elected officials, tribal staff, city and county government staff, non-profit organizations, land trusts and conservation districts, marine resource committees, local businesses, interest groups, citizens, and educational organizations. The Leadership Council has now approved 10 LIOs across Puget Sound, recognizing each LIO committee as the local expert body for ecosystem recovery. The Partnership supports these groups through capacity funding, resources, and liaison support via Ecosystem Recovery Coordinators (Puget Sound Partnership staff).

Partnership staff work closely with LIOs to solicit input for development of updates to the Action Agenda. Completion of the LIO ecosystem recovery plans in 2017 gave the LIOs a platform for contributing local context to the Regional Priorities. As part of the development of the 2018-2022 Action Agenda, LIOs reviewed hundreds of Near Term Actions, thus ensuring that Near Term Actions support both the local LIO plans and the Regional Priorities.

At the request of a coalition of local watershed groups, the Partnership and the Leadership Council supported formation of a new LIO in the Puyallup-White River watershed. The purpose of the new LIO is to better promote ecosystem recovery of the Puyallup and White rivers. The LIO intends to complete an ecosystem recovery plan in 2020.

LIOs continue to evolve, as does their role in Puget Sound recovery efforts. As with all areas of Puget Sound recovery efforts, funding and capacity constraints remain a challenge. LIOs are actively seeking opportunities to increase the resources available to implement the work that will drive meaningful change both locally and regionally.

NEW STATE AND FEDERAL POLICIES ADVANCE PUGET SOUND RECOVERY

Partnership tracks and supports legislation to benefit Puget Sound

The 2019 Washington State legislative session ran 105 consecutive days, from January 14 to April 28, 2019. Throughout the session, the Partnership periodically published highlights of the session in *Legislative Updates*, posted to the Partnership's website. The session resulted in many positive gains in policy and funding for Puget Sound recovery, as summarized below.

- Adoption of an Operating Budget for the 2019-21 fiscal biennium (beginning July 1, 2019) to include more than \$4 million to the Partnership to fund the following:
 - New scientific research
 - Increased monitoring and accountability as recommended by the Joint Legislative Audit and Review Committee (JLARC)
 - Updates to salmon recovery plans
 - Support of the Vessels Working Group, which reports to the Governor's Southern Resident Orca Task Force
- Adoption of a Capital Budget to include the following:
 - \$49.5 million for the Puget Sound Acquisition and Restoration (PSAR) program, which is the second largest appropriation since inception of the program in 2007. For the 2019-21 biennium, these funds provide \$30 million to continue the basic support of

watershed priorities throughout Puget Sound. The remaining \$19.5 million is distributed to three regionally significant large capital projects: the [Middle Fork Nooksack Fish Passage Project](#), the [Dungeness River Floodplain Restoration](#), and the [Riverbend Floodplain Restoration](#) on the Cedar River.

- \$50.4 million for the Floodplains by Design program, which focuses on coordinating investment in and strengthening of the integrated management of floodplain areas in Washington

The legislature passed four policy bills requested by Governor Inslee to implement the recommendations of the Governor’s Southern Resident Orca Task Force, as summarized below:

- An oil transportation safety bill, [ESHB 1578](#)
 - Requires tug escorts for large oil tankers (40,000 to 125,000 deadweight tons) operating in Puget Sound
 - Requires tug escorts for smaller oil tankers (5,000 to 40,000 deadweight tons) and other vessels designed to transport crude oil or petroleum products operating in Rosario Strait and connected waterways, beginning September 1, 2020
 - Requires the Board of Pilotage Commissioners to adopt rules for tug escorts in Puget Sound, by December 31, 2025
- A bill designed to increase abundance of Chinook salmon and other prey critical to the Southern Resident orcas, [2SHB 1579](#)
 - Creates a hydraulic project pre-application for project applicants to determine if a permit is required
 - Authorizes the Department of Fish and Wildlife to serve stop-work orders for violations of hydraulic project approvals that may cause significant harm to fish life
 - Removes the requirement that the Department of Fish and Wildlife issue permits (with or without additional conditions) for single-family residential bulkheads and rock walls
- A bill designed to reduce vessel noise and disturbance of orcas, [2SSB 5577](#)
 - Increases the distance within which a vessel or other object may not approach a Southern Resident orca
 - Establishes a speed limit of 7 knots within one-half nautical mile of a Southern Resident orca
 - Establishes commercial whale-watching and alternate operator licenses, sets fees for the licenses, and requires the Department of Fish and Wildlife to implement and report on the license program
 - Directs the Department of Fish and Wildlife to convene an independent science panel to analyze the most current and best available science regarding noise impacts to Southern Resident orcas by small vessels and whale watching vessels
 - Requires the Department of Fish and Wildlife to adopt rules for commercial whale-watch license holders regarding viewing of Southern Resident orcas in inland waters of Washington, by January 1, 2021
 - Provides for criminal penalties for violation of newly established whale-watching rules
 - Requires the topic of sustainable whale-watching to be included in the statewide tourism marketing plan
- A toxic pollution prevention bill, [SSB 5135](#), which will help implement another recommendation of the Task Force

- Directs the Department of Ecology to identify priority consumer products that are a significant source of or use priority chemicals—as defined in statute—by June 1, 2020
- Directs the Department of Ecology every 5 years to identify five additional priority chemicals and priority consumer products that are a significant source of or contain those priority chemicals, with the first process beginning June 1, 2024
- Directs the Department of Ecology to take regulatory actions with respect to priority consumer products containing priority chemicals, including restricting or prohibiting the manufacture, sale, or use of a priority chemical in a priority consumer product, or requiring a manufacturer to disclose certain information about the use of a priority chemical in a priority consumer product. Provides for public notice and comment and legislative review of new regulations before they take effect.
- Authorizes the Department of Ecology to require manufacturers to provide certain information about their use of a chemical to support the identification of priority consumer products containing priority chemicals
- Provides for civil penalties for manufacturer violations of newly established rules

Courts determine that fish-blocking culverts must be removed

In May 2017, the 9th U.S. Circuit Court of Appeals affirmed that the state must accelerate work to remove, replace, and repair fish-blocking culverts on Department of Transportation roads. This decision was subsequently affirmed by the Supreme Court of the United States in June 2018. The Washington State Legislature appropriated \$100 million in the 2019-21 biennial transportation budget for culvert removal. Governor Inslee also directed the Washington Department of Transportation to move an additional \$175 million – left over from other projects—to removing fish culverts, for a total of \$275 million for the 2019-21 biennium. Also making significant contributions to correct barriers on state, local, and private lands are the following:

- The Department of Fish and Wildlife/Recreation and Conservation Office (Brian Abbott Fish Barrier Removal Board)
- The Department of Natural Resources (Family Forest Fish Passage Program)
- Federal funds from the EPA Puget Sound Geographic Program and NOAA (Pacific Coastal Salmon Recovery Fund)

Federal legislation to benefit Puget Sound introduced

Congressional Representatives Denny Heck (WA-10) and Derek Kilmer (WA-06) introduced the Promoting United Government Efforts to Save Our Sound (PUGET SOS) bill to enhance the federal government's role and investment in Puget Sound. If passed, PUGET SOS would accomplish the following:

- Authorize the Puget Sound Geographic Program for up to \$50 million per federal fiscal year
- Establish an EPA Program Office for Puget Sound
- Codify a Federal Leadership Task Force, requiring federal agencies to help implement the Action Agenda, coordinate with the Tribal Management Conference, and report progress regularly

MOST PROPOSED NEAR TERM ACTIONS HAVE NOT YET BEEN IMPLEMENTED

The Partnership’s enabling legislation requires that the agency make “an assessment of progress by state and non-state entities in implementing the Action Agenda, including accomplishments in the use of state funds for Action Agenda implementation.”

Since 2016, Near Term Action managers have provided an update on the implementation status of their actions twice per year, in November and April/May. These regular updates are valuable for the following reasons:

- They support local and regional communication about progress toward Puget Sound recovery and enable us to continue to demonstrate where further attention is still needed.
- They allow learning to be shared and inform discussions with Partnership boards, committees, and partners about exploring solutions to funding and other challenges.
- They allow the Partnership to provide regular updates on progress in the Action Agenda Report Card/Tracker and the State of the Sound Report.
- The information provided in the updates informs the Partnership’s evaluation and accountability responsibilities, and helps address the requirements of state and federal funders to monitor the progress of recovery efforts.

As of April 2019, almost 3 years after the 2016-2018 Action Agenda was approved by the Leadership Council, only 37 (10 percent) of the proposed 362 Near Term Actions have been completed, with a further 71 (20 percent) partially implemented (and no longer active). Another 47 (13 percent) remain active and continue to make progress. The remainder have either been abandoned or have not made sufficient progress (Table 2). The current low completion rate highlights the challenges and delays involved in securing sufficient funding to advance Near Term Actions (see [funding section](#) below).

Of the 37 fully implemented Near Term Actions, 22 were funded wholly or in part by the federal EPA National Estuary Program (NEP). The 2016-2018 Action Agenda Near Term Actions were intended to be implemented within a 2 to 4-year timeframe. Status and funding information about all 362 Near Term Actions in the 2016-2018 Action Agenda is available in the [Report Card Tool](#).

Table 2: Status of all 2016-2018 Action Agenda Near Term Actions (as of April 2019)

Near Term Action Status Categories	# of NTAs	% of Total NTAs
Active—On Schedule (currently on course to be completed)	47	13
Active—Off Schedule (not currently on course to be completed)	81	22
Closed—Fully Implemented (all tasks completed as planned)	37	10
Closed—Partially Implemented (not all tasks completed, but significant progress made)	71	20
Closed—Not Implemented (little or no progress made)	86	24
Not Reported (no recent update provided by Near Term Action manager)	40	11
Total	362	100

It is notable that 84 of the 2016-2018 Action Agenda Near Term Actions were resubmitted and included in the 2018-2022 Action Agenda (Table 3).

Table 3: Migration status of 2016-2018 Action Agenda Near Term Actions to the 2018-2022 Action Agenda

2016-2018 Action Agenda Near Term Action Migration Status	# of NTAs	% of Total NTAs
2016-2018 Action Agenda NTA replaced by an identical NTA in the 2018-2022 Action Agenda	84	23
2016-2018 Action Agenda NTA partially replaced by an NTA in the 2018-2022 Action Agenda	2	1
Next Phase of a 2016-2018 Action Agenda NTA included in the 2018-2022 Action Agenda	58	16
2016-2018 NTA not replaced, and does not have a next phase in 2018-2022 Action Agenda	218	60
Total	362	100

As shown in Table 4, a range of organization types own 2016-2018 Action Agenda Near Term Actions. A Fully Implemented/On Schedule rate of 30 percent or less for almost all owner types suggests that successful Near Term Action implementation is a common challenge across all sectors.

Table 4: Percentage of fully implemented/on schedule Near Term Actions, by type of owner (as of April 2019)

Near Term Action Owner Type	# of NTAs Fully Implemented/On Schedule	Total # of NTAs	% of NTAs Fully Implemented/On Schedule
Federal	2	4	50
State	24	81	30
Special District	15	52	29
City	11	40	28
Non-Profit	13	51	25
Tribe	2	11	18
Academic	4	23	17
County	12	76	16
Local Integrating Organization	1	9	11
Business	0	3	0
Lead Entity	0	9	0
Other	0	3	0
Total	84	362	23

By far the most commonly cited reason for a Near Term Action not to have been implemented was lack of adequate funding and resources (Table 5). This finding does not represent a change from previous Action Agendas, where lack of funding has been persistently the most commonly identified barrier to implementation. Reassessment or re-scoping of a Near Term Action was the second most common reason for non-implementation.

Table 5: Near Term Actions reporting a barrier to implementation (as of April 2019)

Near Term Action Barrier to Implementation	# of NTAs Reporting Barrier	% by Barrier Type
1a. Inadequate resources: Funding not fully secured	204	78
1b. Inadequate resources: Lack of staff resources	13	5
1d. Inadequate resources: Inadequate staff/contractor expertise	1	0
2a. Lack of social, political or management support: Opposition to implementing action	5	2
2b. Lack of social, political or management support: Withdrawal of partner support for action	2	1
2c. Lack of social, political or management support: Change in support by decision-makers	4	2
3. Regulatory barriers	4	2
4. Re-scoping required for other reasons	28	11
Total	261	100

2018-2022 ACTION AGENDA NEAR TERM ACTIONS—MOST STILL IN PLANNING STAGES

The Leadership Council approved the 2018-2022 Action Agenda in late 2018. The process for soliciting and ranking Near Term Actions changed significantly from the process used for the 2016-2018 Action Agenda. The new process led to the adoption of a tiered list of 631 proposed Near Term Actions, significantly more than the 362 actions in the previous Action Agenda. For details, visit [the Action Agenda Tracker](#).

Because Near Term Action managers were introduced to the new Action Agenda Tracker reporting system recently—in May 2019—status updates as of September 2019 have been received for just over 60 percent of the 2018-2022 Action Agenda proposed actions. Most Near Term Action currently categorized in the planning/design stage (Table 6). For actions where a status update has been provided, the number reported to be “On Track” is similar to the number reported as “Off Track” (Table 7).

Table 6: 2018-2022 Action Agenda Near Term Actions, by stage of implementation (as of September 2019)

Near Term Action Stage	# of NTAs	% of all NTAs
Planning/Design	577	91
Implementation	41	7
Terminated	5	0.8
Deferred	6	0.9
Completed	2	0.3
Total	631	100

Table 7: 2018-2022 Action Agenda Near Term Actions, by implementation status (as of September 2019)

Implementation Status	# of NTAs	% of all NTAs
On-Track	201	32
Off-Track	194	31
Not Reported	236	37
Total	631	100

FULLY IMPLEMENTED NEAR TERM ACTIONS SHOW RESULTS

Despite a continued shortfall in completed Near Term Actions, there are still many examples of actions that have contributed to Puget Sound recovery. The 2019 State of the Sound features three stories of Puget Sound recovery, highlighting Near Term Actions from the 2016-2018 Action Agenda (see www.stateofthesound.wa.gov).

In addition, the following examples provide snapshots of other Near Term Action successes led by partners from across Puget Sound. Each Near Term Action featured here demonstrates how state funding is making a difference, and is critical in helping to leverage other federal and local funding sources. More stories yet are included on the Partnership's [Puget Sound Innovation Stories blog](#).

Henderson Inlet Habitat Protection and Restoration (Capitol Land Trust)

Capitol Land Trust acquired 105 acres of biologically sensitive estuary, nearshore, and riparian habitat along the shoreline of Henderson Inlet in Thurston County. Following acquisition, derelict structures and other debris posing a pollution threat to soil and water were removed. The nearshore and riparian area, spanning 20 acres, was then planted with native trees and shrubs.

Funding: State funding was provided by the Puget Sound Acquisition and Restoration (PSAR) program and the Washington Wildlife and Recreation Program (WWRP), with federal matching funds from a U.S. Fish and Wildlife Service (USFWS) National Coastal Wetlands grant and local matching funds from Thurston County Conservation Futures.

Kristoferson Creek Fish Passage Improvements (Snohomish Conservation District)

This project corrected two fish passage barriers at the mouth of Kristoferson Creek on Camano Island, improving access to rearing habitat for juvenile Chinook salmon and steelhead, and opening 1.6 miles of spawning and rearing access.

Funding: State funding was provided by PSAR, the Salmon Recovery Funding Board (SRFB), and a grant from the Conservation Commission. Federal contributions came from a USFWS National Coastal Wetlands grant and the EPA National Estuary Program. Island County provided in-kind contributions in the form of staff time.

Beach Lake Acquisition and Restoration (Coastal Watershed Institute)

A 25-acre shoreline property adjacent to the Elwha River delta was acquired to protect natural processes and restore critical nearshore habitat for Endangered Species Act-listed salmon. Existing buildings, livestock, and approximately 8,000 cubic yards of shoreline armor have been removed and public access established. Planning for long-term conservation is underway.

Funding: State and federal funding has enabled implementation monitoring, including biophysical response monitoring. State funding for the project came from PSAR, SRFB and the Estuary and Salmon Restoration Program (ESRP). Federal funding was supplied by the U.S. Fish and Wildlife Service.

McNeil Island Shoreline Restoration (Department of Natural Resources)

The Department of Natural Resources Aquatic Restoration Program restored functions and natural processes of the nearshore ecosystem on McNeil Island through the removal of shoreline armoring and other debris. The project removed 727 tons of shoreline armoring composed of 907 feet of bulkhead, 86 creosote-treated piles, submarine nets, concrete, metal, and other debris for a total of 26,450 square feet of shoreline restored. One of the primary goals of the project is to enhance migratory and rearing habitat for juvenile Chinook salmon.

Funding: The McNeil Island restoration was funded by the state's Aquatic Lands Enhancement Account (ALEA). ALEA is responsible for providing funds for public access projects and to protect and re-establish the natural ecological functions of aquatic lands within Washington State.

Cedar River Stewardship-in-Action (City of Seattle)

Stewardship-in-Action (SiA) is a private-public partnership working to restore and maintain riparian ecosystems in the Cedar River watershed by re-establishing native plant communities and engaging landowners in the long-term stewardship of their property. Results from the SiA initiative include the following:

- 460 acres of knotweed and butterfly bush treated
- 84,480 linear feet of riverfront free from knotweed for 2 consecutive years
- 80 acres of planting installed on private property
- 350 landowners participated for 2 consecutive years or more

Funding: Cedar River SiA was implemented using state funding from PSAR and SRFB. Additional funding was provided by Seattle Public Utilities and the King County Noxious Weed Control Program.

Copper-free Boat Paint Implementation (Department of Ecology)

The Department Ecology worked with boatyards and boat owners to replace the use of copper boat paint with effective alternatives that eliminate copper releases to the Puget Sound waters, including the stormwater pathway. The objective of the project is to move toward eliminating use of copper paint on recreational boats, since the copper can build up in and near marina waters and harm marine animals and plants. The Department of Ecology completed the following activities as part of the project:

- Convened a quarterly stakeholder roundtable
- Published an updated boat-paint scorecard with identified alternatives
- Published recommendations on hull cleaning to reduce copper releases, including releases to stormwater
- Published baseline water-quality monitoring data related to copper in stormwater
- Produced a final report

Funding: The project was implemented with funding from the state hazardous waste assistance account, and the EPA via the National Estuary Program.

Woodland and Rody Stream Corridor Improvements (Pierce County)

Woodland and Rody Creek channels are both eroding severely, creating downstream sedimentation. Pierce County has undertaken improvements that include roughening the Rody Creek channel and acquiring land for a sedimentation pond for Woodland Creek. The goal of the project is to reduce sediment, thus improving levels of dissolved oxygen and other aspects of water quality.

Funding: Pierce County is funding this project, with additional funding from the Department of Ecology's Stormwater Financial Assistance Program and the Pierce County Flood Control Zone.

Improving Soil Health to Reduce Runoff and Conserve Water (San Juan Islands Conservation District)

The San Juan Islands Conservation District acquired a no-till drill to share with agricultural operators. By enabling crop seeding without the traditional method of removing groundcover and tilling before planting, the no-till drill is intended to improve soil health, sequester carbon, retain and conserve water, and reduce runoff. The project involved the creation of an easy-to-use factsheet to inform farmers about how to improve soil health. In addition to decreasing soil erosion and nutrient runoff into marine waters, a goal of this project is to increase climate resiliency in agriculture production.

Funding: The San Juan Islands Conservation District received Centennial Clean Water program funding from the Department of Ecology and provided match funding. The state Centennial Clean Water Program provides grants for water-quality infrastructure and nonpoint source pollution projects.

Don't Drip and Drive Vehicle Leak Reduction Program (King County)

The "Don't Drip and Drive" initiative is a multi-pronged integrated regional program intended to reduce the amount of toxic contaminants from automobile leaks in stormwater. The program works through research, development of partnerships and tools, and implementation of a behavior change campaign. The goals of this action are to reduce automotive fluids on paved surfaces due to reduced leaks, decrease the time it takes vehicle owners to fix leaks, and broaden the program to be more widely applied.

Funding: This project was funded by Department of Ecology Stormwater Grants of Regional or Statewide Significance and match funding from multiple cities, nonprofits, and counties that participated through events, promotions, advertising, and hosting workshops, among other methods. Municipal Stormwater Grants of Regional or Statewide Significance have supported

implementation of the National Pollutant Discharge Elimination System (NPDES) Municipal Stormwater General Permits in Washington State.

Land Application of Manure Practices in North Puget Sound Counties (Department of Agriculture)

The Department of Agriculture used water-quality monitoring, source identification sampling, and surveillance to evaluate manure use in crop production in north Puget Sound counties. The goal of the project is to reduce pathogen inputs from manure use in crop production and reduce fecal coliform inputs from discharges from land applications of manure by dairy operations. The project includes a significant monitoring, evaluation, and education component in addition to working directly with land applicators to implement manure application best management practices.

Funding: The project was funded by the Department of Agriculture’s Dairy Nutrient Management Program (state General Fund), and a one-time legislative proviso for education of manure applicators from the state toxics control account. Federal funding was also secured from the EPA National Estuary Program.

WHAT CONCERNS DO CITIZENS EXPRESS, AND HOW ARE THEY BEING ADDRESSED?

The Partnership’s enabling legislation directs the agency to offer “a review of citizen concerns provided to the Partnership and the disposition of those concerns.”

The public and partners express concerns to us about the health, productivity, and future of Puget Sound. Though concerns may be raised to the Partnership through many different forums and in multiple formats, the summary below focuses on public comments expressed at the Partnership’s Leadership Council meetings and responses to the official public review opportunity for the draft 2018-2022 Action Agenda. The summary includes common concerns raised and what the recovery community and the Partnership are doing to address them.

The Governor’s Southern Resident Orca Task Force proceedings also included opportunities for [public comment](#).

CONCERN	DISPOSITION OF CONCERNS
<p>RESOURCES AND FUNDING ARE INADEQUATE:</p> <ul style="list-style-type: none"> Resources and funding are inadequate for accomplishing the work necessary to advance Puget Sound recovery The Partnership needs to further develop its funding strategy, while ensuring that existing funding is strategically and systematically invested 	<ul style="list-style-type: none"> The Partnership recognizes that funding continues to be the biggest barrier to Puget Sound recovery. Chapter 6 of the 2018-2022 Action Agenda Comprehensive Plan describes the strategy for funding Puget Sound recovery, which includes maintaining and enhancing existing funding sources, prioritizing the most important recovery actions, and increasing public-private partnerships. Each line of work is important to narrow the funding gap for recovery and requires the assistance of all the partners in recovery. Recognizing the need for increased funding, the Leadership Council added a Funding Priority to solicit Near Term Actions for the 2018-2022 Action Agenda Implementation Plan. The purpose of the Funding Priority is to seek ideas from the broader recovery community on ways to increase funding for Puget Sound recovery. See the Funding the Puget Sound Recovery Effort section below for more information about funding for Puget Sound recovery.
<p>PROTECTION AND ENFORCEMENT OF REGULATIONS: Puget Sound habitat and native salmon populations, as well as other treaty protected resources, need better protection.</p> <ul style="list-style-type: none"> There needs to be effective enforcement of shoreline and other regulations that protect ecologically important areas. 	<ul style="list-style-type: none"> Regional partners have developed Implementation Strategies that identify habitat protection measures for a variety of ecologically important lands, including estuary, floodplain, and nearshore environments. Prioritized actions and programs in the both the 2016-2018 and 2018-2022 Action Agendas include those that protect critical habitat, as well as habitat functions and processes.

CONCERN	DISPOSITION OF CONCERNS
<ul style="list-style-type: none"> • The Action Agenda should prioritize and incentivize growth in urban areas. Growth Management Act and Critical Area Ordinance implementation should be priorities. • More attention should be paid to commercial development, upland land use, and new development, particularly in rural communities with looser regulations. A stronger focus on land use planning decisions is needed to help accelerate water quality recovery in salmon-bearing streams. 	<ul style="list-style-type: none"> • The 2016-2018 Action Agenda listed 40 Near Term Actions that align with the Habitat Strategic Initiative to protect habitat. Similarly, the 2018-2022 Action Agenda includes 41 proposed actions addressing ecosystem protection, as well as several actions intended to address regulatory issues. Regional Priorities, which formed the basis for the 2018-2022 Action Agenda Implementation Plan, were developed collaboratively by distilling the priority strategies identified in Implementation Strategies, Local Integrating Organization ecosystem recovery plans, and tribal priorities, all of which elevate protection efforts as a priority need. The 2018-2022 Action Agenda Regional Priorities reflect this emphasis on protection by describing specific protection approaches, and the Near Term Actions directly address the Regional Priority outcomes. • The 2018-2022 Action Agenda includes Land Development and Cover as a priority Vital Sign. The Implementation Plan lists Regional Priorities, Near Term Actions, and ongoing programs that are essential for addressing land use. The Land Development and Cover Implementation Strategy is likely to be updated in the coming years. The recovery community may decide to further prioritize and emphasize the importance of land use over other Vital Signs in the 2022-2026 Action Agenda. • The Partnership agrees with the importance of encouraging compact urban development and rural lands protection and will support protection of habitat and improvement of stormwater management and retrofits within existing urban areas. The primary mechanisms for achieving this work are through the habitat and water quality-related Vital Signs, Implementation Strategies, and Regional Priorities. • The Partnership’s Ecosystem Coordination Board (ECB) formed a subcommittee to discuss possible approaches to infill and redevelopment in Urban Growth Areas. The ECB has focused on developing ways to support local jurisdictions as they make land use decisions (see Aligning Actions with the Action Agenda section below for more details on this work). • The Partnership supported improvements to the Hydraulic Project Approval (HPA) program—a recommendation of the Orca Task Force—which Governor Inslee

CONCERN	DISPOSITION OF CONCERNS
	<p>signed into law in May 2019. The legislation (HB 1579) increases the authority of the Department of Fish and Wildlife to ensure people follow HPA rules (this legislation is also discussed in the <i>New state and federal policies advance Puget Sound recovery</i> section above, and <i>Aligning Action Actions with the Action Agenda</i> section below).</p> <ul style="list-style-type: none"> • See recommendations related to the protection and enforcement of regulations in the Call to Action section above.
<p>INTEGRATION BETWEEN SALMON RECOVERY AND PUGET SOUND RECOVERY:</p> <ul style="list-style-type: none"> • Salmon recovery is a cornerstone of Puget Sound recovery. Better integration of Puget Sound recovery and salmon recovery processes, programs, and funding is fundamental. 	<ul style="list-style-type: none"> • Historically, Puget Sound-wide recovery efforts and those focused on salmon recovery have proceeded with separate, but sometimes overlapping, systems and processes. Participants in both systems agree that the work is not advancing at the rate and scale needed, that significantly more resources are needed, and that efficiencies and increased impact could likely be gained through more effective coordination of these related efforts. • The Partnership has an internal working group to help shape activities and objectives related to ecosystem and salmon recovery integration. A successful integrated approach should also bring together the multiple interests represented in Puget Sound-wide recovery and those traditionally engaged with salmon recovery to find common agreement for more integrated ecosystem recovery visions, strategies, and actions. To this end, the Partnership has collaborated with Local Integrating Organizations, Lead Entities for salmon recovery, and other state and federal partners to seek input and feedback to shape integration efforts. As part of this effort the Partnership organized two partner integration workshops in 2019.
<p>CLIMATE CHANGE:</p> <ul style="list-style-type: none"> • There is not enough emphasis on the causes of, impacts from, and solutions to climate change. The recovery effort needs to continue to adapt based on new information about climate change. 	<ul style="list-style-type: none"> • Changing climate and ocean conditions remain an important issue for Puget Sound given their capacity to exacerbate current stressors. A Preliminary Climate Change Assessment examined how changing climate and ocean conditions projected for the 2050s will affect the region’s ability to achieve recovery goals. The assessment found that all six recovery goals are threatened by climate change impacts, and the majority of Vital Signs are at high risk to be negatively affected by climate change by 2050. This underscores the importance of integrating climate change into recovery planning, as described in Chapter 4 of the 2018-2022 Action Agenda, “Framework for Recovering Puget Sound.” The

CONCERN	DISPOSITION OF CONCERNS
	<p>2018-2022 Action Agenda solicited actions to address several climate change-related Regional Priorities. As a result, there are many Near Term Actions seeking to address issues directly related to climate change.</p> <ul style="list-style-type: none"> • The Partnership convenes a Puget Sound Climate Change Advisory Team with EPA and other EPA awardees. The Advisory Team supports and provides technical advice on integrating climate change into the Action Agenda and associated processes to advance smarter, more climate-resilient investments in Puget Sound. • In late 2017, the Partnership published guidance for salmon recovery lead entities to use when reviewing and evaluating restoration and protection projects. The guidance is intended to ensure that project selection takes into account both short-term and long-term project effectiveness in light of climate change projections.
<p>RISK OF OIL SPILLS:</p> <ul style="list-style-type: none"> • The Salish Sea continues to not be well-enough protected from the risk of oil spills, particularly along the Strait of Georgia and the Strait of Juan de Fuca, posing risks to orca and treaty rights. Changes in vessel traffic transportation patterns, the oil export ban repeal, increased ship size, under-regulated barges, shipping by rail, and use of pipelines highlight the risk. • Oil spill prevention actions and activities need to be prioritized above and disaggregated from oil spill response. 	<ul style="list-style-type: none"> • The 2018-2022 Action Agenda Implementation Plan addresses oil spill prevention through Regional Priorities (CHIN 6.1 and 6.2). • The Governor’s Southern Resident Orca Task Force created a Vessels Working Group composed of representatives from state, federal, Canadian government, tribal, non-governmental and private industry to inform its recommendations. The Partnership chaired and provided staff support to this Working Group. • In response to a legislative directive, the Department of Ecology worked with the Partnership, the Washington State Board of Pilotage Commissioners, and other stakeholders to produce a report on vessel traffic and vessel traffic safety in the Strait of Juan de Fuca and Puget Sound. Published in January 2019, this report, plus recommendations from the Governor’s Southern Resident Orca Task Force, helped lead to the passing of an oil transportation safety law (HB 1578) requiring tug boat escorts for certain barges that have not required escorts in the past.
<p>INCLUSIVITY:</p> <ul style="list-style-type: none"> • The Partnership should be ever more inclusive of all partners, highlighting the work of and seeking to involve a diverse range of local partners, those with lower levels of income, volunteers, and people of diverse races and backgrounds. 	<ul style="list-style-type: none"> • The Partnership recognizes the importance of and need for diversity, equity, and inclusion (DEI) within planning and implementation. Starting in 2017, the Partnership began working to better understand, assess, and integrate aspects of DEI into its ecosystem recovery efforts. Such work includes promoting discussion and integration of equity into regional planning, as well as the development of a Human Dimensions Protocol for inclusion in the Implementation Strategy Starter Package.

CONCERN	DISPOSITION OF CONCERNS
	<ul style="list-style-type: none"> The Partnership also formed an internal DEI Working Group with the purpose of discussing and finding practical solutions to better include DEI within the Partnership’s structure and ongoing recovery efforts. The DEI Working Group drafted a collaborative memo to the agency with specific recommendations related to DEI (stemming from DEI research, case studies, and recognized needs), including the implementation of DEI trainings for all Partnership staff. The Partnership will integrate this work into planning and implementation over time. The 2018-2022 Action Agenda and past Action Agendas have included Near Term Actions that engage and elevate the work of local volunteers. Examples include “Depave Puget Sound”, citizen science programs, and more. The Partnership and partners will continue to elevate these “social approaches” to recovery and increase their prevalence throughout the region.
<p>ENSURE ACCOUNTABILITY:</p> <ul style="list-style-type: none"> The Partnership should improve and describe mechanisms to ensure accountability of the Partnership and partners for Puget Sound recovery. 	<ul style="list-style-type: none"> As a backbone organization, the Partnership has focused on developing shared priorities and shared measures with partners through a number of different forums. This collaborative approach helps to ensure that partners are working from the same plan, toward the same goals. This also demonstrates whether, collectively, partners are following through on their commitments, and if the associated activities are having the intended effect on the ecosystem. To evaluate follow-through, the Partnership collects data on whether Near Term Actions are being implemented as proposed. To evaluate the effect of activities on the ecosystem, the Partnership collects monitoring data from partners that indicates progress toward statutorily mandated recovery goals via the Vital Sign indicators. Though this approach is arguably an important and effective way of fostering a collective form of accountability, the Partnership’s foundational statute is clear that the agency should hold itself and its partners accountable for implementing the Action Agenda, laying out several mechanisms for ensuring consistency and compliance. As the Joint Legislative Audit and Review Committee (JLARC) pointed out in a 2016 report on the Partnership, there is a great deal of ongoing and near term Puget Sound recovery work that the Partnership does not track, prioritize, or evaluate. Though recovering Puget Sound is a complex task undertaken with limited resources, the Partnership agreed with JLARC’s recommendations and the need for improvements. The Partnership is committed to strengthening the

CONCERN	DISPOSITION OF CONCERNS
	<p>accountability aspect of its work in the coming years. Chapter 2 of the 2018-2022 Action Agenda Implementation Plan describes work to strengthen accountability for Puget Sound recovery. This work includes improving the Partnership's inventory of ongoing programs, and increasing capacity to evaluate investments in recovery actions and programs. The Partnership received 2019-21 biennial funding from the Washington State legislature to pursue this work and looks forward to collaborating with partners to improve accountability for Puget Sound recovery. In addition, the Partnership formed a new team dedicated to further developing the agency's accountability function in July 2019.</p>
<p>ISSUES OF EMERGING CONCERN:</p> <ul style="list-style-type: none"> The Action Agenda should provide an objective, risk-based analysis procedure for addressing emerging issues, such as plastics and chemicals of emerging concern (CECs). 	<ul style="list-style-type: none"> The Partnership has solicited Near Term Actions for the last two Action Agendas according to priorities chosen collectively by regional partners. The Partnership and its partners will reassess priorities for each Action Agenda update, but the region has not identified all emerging issues as critical to address in the near term. Priorities are likely to change for subsequent updates to the Action Agenda as awareness, science, and urgency coalesce around particular issues. It is notable that both the 2016-2018 and 2018-2022 Action Agendas included proposed actions related to chemicals of emerging concern, while the 2018-2022 Action Agenda includes three Near Term Actions related to plastics pollution.
<p>IMPORTANCE OF ONGOING PROGRAMS:</p> <ul style="list-style-type: none"> Better highlight the work of a wide range of partners and the fundamental value of ongoing programs. The Action Agenda under-emphasizes ongoing programs to protect and restore Puget Sound. The list of ongoing programs is incomplete and does not fully represent the scale, scope, and financial contribution of Puget Sound recovery efforts at the local level by municipalities, businesses, nonprofit organizations, and tribes. 	<ul style="list-style-type: none"> The 2018-2022 Action Agenda considers and includes work besides Near Term Actions in Chapter 5 of the Implementation Plan. The Partnership refers to this work as ongoing programs. The 2018-2022 Action Agenda indicates that the current list of ongoing programs in Chapter 5 is not comprehensive. We have attempted to capture many important ongoing programs that contribute to Puget Sound recovery. While a comprehensive list will likely never exist, we strive to ensure that the Action Agenda is always improving in this area. In response to 2016 recommendations from JLARC, the Partnership committed to improving the inventory of recovery actions and funding, focusing initially on state agency programs. The 2018-2022 Action Agenda includes an expanded inventory of Puget Sound recovery-related ongoing programs. The Partnership collected financial information on those programs for the first time in May 2019 (see section below for a summary of this financial information). The Partnership also secured funding from the legislature in April 2019 to fund staff and contract

CONCERN	DISPOSITION OF CONCERNS
	<p>support for the first evaluations of Puget Sound-related state ongoing programs. The agency is currently soliciting input from a variety of partners on the scope of this approach. In the future, the Partnership will pursue similar efforts to improve the inventory of recovery actions and funding for non-state agency activities.</p>
<p>COMMUNICATION AND PUBLIC ENGAGEMENT</p> <ul style="list-style-type: none"> The Action Agenda should have a stronger focus on communication and public engagement, and more clearly educate the public on how to engage in the process of recovery or take action to reduce personal impact. 	<ul style="list-style-type: none"> The Partnership recognizes the importance of public education and stewardship in advancing recovery. Methods and actions that focus on human attitude and behaviors are essential elements of a strategic recovery approach. As a backbone agency, the Partnership's approach to public education and stewardship is to align, support, and leverage the work and expertise of the many organizations in the region that focus on this work. Numerous non-profit groups, as well as city and county staff, are engaged in these types of efforts. For example, Marine Resources Committees of the Northwest Straits Initiative train volunteers and engage school-aged children in local projects—from derelict vessel removal to spearheading whale warning flag initiatives. Similarly, programs like Conservation Districts and Regional Fisheries Enhancement Groups deliver regionally coordinated programs with strong local resonance. The Partnership's role is to ensure that necessary actions related to social approaches and human wellbeing are documented and integrated in the development of regional planning documents. We highlight the needs and priorities and hope to increase work with existing partners to ensure public education and stewardship are robust, aligned with the rest of the work of the region, and supported with the resources necessary for success.
<p>DANGERS FROM EUROPEAN GREEN CRAB</p> <ul style="list-style-type: none"> An invasion of European green crab poses a danger to the Puget Sound ecosystem. 	<ul style="list-style-type: none"> Washington Department of Fish and Wildlife, Department of Fisheries and Oceans (Canada), Washington Sea Grant, and the Partnership released a Salish Sea Transboundary Action Plan for Invasive European Green Crab in February 2019. This action plan focuses on six objectives calling for the following: <ul style="list-style-type: none"> Collaborative management Prevention of human-mediated introduction and spread Early detection Rapid response to newly detected incursions Control of infested sites Strategic research to improve adaptive management

CONCERN	DISPOSITION OF CONCERNS
	<ul style="list-style-type: none"> • The plan states that “there is still opportunity to avoid major impacts from European Green Crab in the Salish Sea by continuing decisive and aggressive actions to contain populations and to prevent further introduction and spread of EGC in other parts of the Salish Sea.” The Washington State legislature, in the 2019-21 biennial budget, provided \$400,000 to the Washington Sea Grant Crab Team to continue their work to protect against the impacts of invasive European Green Crab.
<p>CHINOOK SALMON AND THE SKAGIT TOTAL MAXIMUM DAILY LOAD (TMDL):</p> <ul style="list-style-type: none"> • A specific concern was raised on the importance of focusing on implementing the Skagit TMDL through regulatory efforts. Related concerns were raised that farmers and agriculture in general are being unfairly blamed for high water temperatures in the Lower Skagit. 	<ul style="list-style-type: none"> • The Partnership approved Resolution 2019-02 (Advancing Implementation of the Lower Skagit Temperature TMDL for the Benefit of Chinook Salmon and Southern Resident Orca Recovery) in March 2019, with the following elements: <ul style="list-style-type: none"> ○ The Department of Ecology develop and implement a nonpoint strategy to achieve the temperature standards called for in the TMDL. ○ Ecology should develop the strategy by December 31, 2019, and provide the Leadership Council with an update at its October 2019 meeting. ○ Ecology should use the full mix of tools at its disposal in its strategy, including incentives, technical assistance, development of local partnerships, and enforcement. ○ All state agencies should work with the Governor’s Office, the tribes, the agricultural community, local governments, and other interested parties to improve the state’s approach to meeting water quality standards for temperature in salmon-bearing streams. ○ The Washington State Legislature should include funding for increased capacity for Ecology to achieve compliance with the Lower Skagit TMDL in its 2019-2021 budget. ○ (See <i>Aligning Actions with the Action Agenda</i> section below for more details.) • The Leadership Council held its June 11-12, 2019, meeting in the Skagit Watershed to learn more about diverse partner perspectives on this topic.
<p>ENDANGERED SOUTHERN RESIDENT ORCAS</p> <ul style="list-style-type: none"> • The Action Agenda should reference and incorporate the Governor’s Southern Resident Orca Task Force findings and recommendations 	<ul style="list-style-type: none"> • After the Governor’s Southern Resident Orca Task Force finalized its Year One <u>recommendations</u>, the Partnership revised the 2018-2022 Action Agenda to incorporate language that describes support for the Task Force recommendations, including a recommended study on ways to address issues

CONCERN	DISPOSITION OF CONCERNS
<ul style="list-style-type: none"> Dams along western Washington rivers impede fish passage and contribute to the starvation of Southern Resident orcas. 	<p>associated with potential dam breaching or removal (Recommendation 9). The Washington State legislature provided funding for this study in the 2019-2021 biennial budget. The study began in the fall of 2019.</p> <ul style="list-style-type: none"> The Partnership stands with Governor Inslee, the Governor’s Southern Resident Orca Task Force, and the many tribes, government agencies, organizations, businesses, and individuals who are committed to helping recover the Southern Resident orca population. Together, we can help by restoring salmon runs, quieting the waters of Puget Sound, and getting toxic chemicals out of our waterways. The state’s Puget Sound Acquisition and Restoration (PSAR) program is investing \$11.4 million to remove two dams to reestablish salmon passage. The dams are located on the Middle Fork of the Nooksack River in Whatcom County, and the Pilchuck River in Snohomish County, and are set to open up a combined 53 miles of salmon spawning and rearing habitat.

ALIGNING ACTIONS WITH THE ACTION AGENDA

The Partnership’s enabling legislation requires that the agency provide “a description of actions by implementing entities that are inconsistent with the Action Agenda and steps taken to remedy the inconsistency.”

The Partnership periodically convenes partners with the goal of reaching consensus about the most important work the region needs to do to implement the Action Agenda. The achievement of this broad regional consensus is critical in preventing or minimizing actions that are inconsistent with the Action Agenda.

The Partnership has no regulatory authority, but does help to ensure that actions are consistent with the Action Agenda through the following methods:

- The Partnership annually ranks state budget requests related to Puget Sound recovery and shares the results with the Governor, the Office of Financial Management, and state legislators. As state decision-makers become better informed about the alignment of budget and policy choices with Puget Sound recovery priorities, actions inconsistent with the Action Agenda are less likely to occur.
- The results-based management of ecosystem recovery includes processes to identify and address barriers, some of which represent inconsistencies with the Action Agenda.
- The Partnership monitors projects to gauge whether they are completed as planned and produce the results intended.
- Where the Partnership identifies an inconsistency with the Action Agenda, statute directs the agency to hold management conferences with entities involved with the objective of remedying the inconsistency. In practice, Partnership boards, including the Leadership Council, Ecosystem Recovery Board, and the Salmon Recovery Council hold forums with partners to formulate solutions to overcoming some of the most critical barriers to Puget Sound recovery.

The following examples refer to efforts by the Leadership Council and two of its advisory boards to address barriers to Puget Sound recovery.

Leadership Council forum about Chinook salmon and the Skagit River Total Maximum Daily Load, June 2019

Many concerns have been raised with the Leadership Council about lack of Chinook salmon abundance and the continued danger this poses to Puget Sound’s Southern Resident orcas. One specific example was the Salmon Recovery Council’s recommendation to the Leadership Council in November 2018 that it focus on implementing the Skagit River Total Maximum Daily Load (TMDL).

As a result, the Leadership Council approved [Resolution 2019-02](#) (Advancing Implementation of the Lower Skagit Temperature TMDL for the Benefit of Chinook Salmon and Southern Resident Orca Recovery) in March 2019, that called for the following:

- The Department of Ecology develop and implement a nonpoint strategy to achieve the temperature standards called for in the TMDL.
- Ecology should develop the strategy by December 31, 2019, and provide the Leadership Council with an update at its October 2019 meeting.

- Ecology should use the full mix of tools at its disposal in its strategy, including incentives, technical assistance, development of local partnerships, and enforcement.
- All state agencies should work with the Governor’s Office, the tribes, the agricultural community, local governments, and other interested parties to improve the state’s approach to meeting water quality standards for temperature in salmon-bearing streams.
- The Washington State Legislature should include funding for increased capacity for Ecology to achieve compliance with the Lower Skagit TMDL in its 2019-2021 budget.

After adopting this Resolution, the Leadership Council held its June meeting in the Skagit Watershed to hear from diverse partners about their perspectives on this topic. The Department of Ecology provided an update to the Leadership Council at its October 1 meeting, and plans to deliver an implementation strategy by December 31, 2019.

Ecosystem Coordination Board subcommittee on infill and redevelopment in Urban Growth Areas gets to work

Informed by the Partnership’s Land Development and Cover Implementation Strategy, the Ecosystem Coordination Board (ECB) identified a lack of progress on infill and redevelopment in Urban Growth Areas (UGAs). Issues raised include the following:

- A lack of incentives for developers discourages them from pursuing infill or redevelopment.
- Legacy contamination affects many properties in UGAs and significantly increases the difficulty of redevelopment.
- The situation is made worse by scarce funding for toxics cleanup, regulatory backlogs, and lenders’ reluctance to finance projects that have uncertain cleanup costs and timescales.
- Significant variation in land-use policies exists between jurisdictions, and many cities and counties still need to complete updates of their Critical Areas Ordinances, under the Growth Management Act (GMA).

As a result, the ECB formed a subcommittee in October 2017 and developed three proposals to address infill and redevelopment in UGAs. The Departments of Ecology and Commerce moved forward with one of the proposals to complete an analysis of contaminated lands in UGAs. The agencies created a set of maps as proof-of-concept for general analysis. The ECB subcommittee would like to engage a jurisdiction in a pilot program to assess the utility of the maps/data products for local planning purposes and is interested in fostering connections within city planning departments to help identify a candidate jurisdiction and advance this work.

Salmon Recovery Council funding strategy

The Partnership and its partners consistently cite lack of funding as a major barrier to protecting and recovering Puget Sound salmon populations. Protection and restoration actions require time and money to implement, as well as planning, scientific research, monitoring, and collaboration.

The work plan for the Partnership’s Salmon Recovery Council (SRC), Chinook Implementation Strategy, and list of “bold actions” for Chinook salmon recovery all continue this theme, specifically calling for convening partners to develop a funding strategy.

In 2018, the SRC convened a subcommittee to explore funding concepts that could “grow the pie” to support and accelerate implementation of salmon recovery in Puget Sound. The subcommittee is working to integrate the SRC’s funding concepts that would meaningfully accelerate salmon recovery into the “portfolio” of funding options being explored through that effort.

Ecosystem Coordination Board backs a successful incentives-based program for healthy shorelines

Seawalls continue to damage critical nearshore habitat in places where other options for shoreline management may be feasible. The Partnership’s Ecosystem Coordination Board collaborated with Kitsap County and the state’s Habitat Strategic Initiative Lead to plan and facilitate a workshop focused on sustaining funding for county-level “Shore Friendly” incentive programs that encourage alternatives to seawalls. As a result of the workshop and further discussion with the members of the subcommittee, the ECB recommended funding in the 2019-21 biennium for the maintenance of a regional network of Shore Friendly-type programs, as well as for a small grants program for projects to remove seawalls and restore shorelines. The Department of Fish and Wildlife received a \$10 million 2019-21 biennial appropriation for the Estuary and Salmon Restoration Program (ESRP) from the Washington State Legislature, including limited funds to continue the Shore Friendly Program. The Habitat Strategic Initiative also agreed to support the transition of Shore Friendly programs to ESRP in the short-term using EPA National Estuary Program funds.

Other actions supporting healthy shorelines included the following:

- In May 2019, Governor Inslee signed into law HB 1579, which increases the authority of the Department of Fish and Wildlife to ensure people follow Hydraulic Project Approval (HPA) rules. The legislation also requires the Department provide information and technical assistance to landowners and local government.
- In collaboration with the Partnership and others, the Habitat Strategic Initiative leads finalized the [Shoreline Armoring Implementation Strategy](#) in April 2018. The Shoreline Armoring Implementation Strategy describes the regional outcomes necessary to accelerate progress toward the Vital Sign indicator target.

Puget Sound Partnership and Department of Fish and Wildlife coordinate the Governor’s Southern Resident Orca Task force

Puget Sound’s critically endangered Southern Resident orcas have declined to a 30-year low of just 73 animals in August 2019, following the death of several individuals in 2017, 2018, and 2019. This alarming decline signals that the Southern Resident population is in severe jeopardy and at risk of extinction if no action is taken.

In March 2018, Governor Inslee issued an executive order requiring state agencies to take immediate action to protect the remaining orca. His order established the Governor’s Southern Resident Orca Task Force to recommend the best actions to recover the Southern Residents. The order directed the Puget Sound Partnership and the Department of Fish and Wildlife to convene and support the Task Force. In this role, Partnership staff have filled the following roles:

- Served on the Task Force, and on the Task Force steering committee
- Chaired the Vessels Working Group of the Task Force
- Coordinated communication across state and federal agencies and to the public

In addition, the Governor appointed the vice chair of the Leadership Council, Stephanie Solien, to serve as co-chair of the Task Force, alongside former Evergreen State College President, Les Purce.

The Task Force released its Year 1 report along with 36 recommendations in November 2018, focusing on three key threats to Puget Sound's endangered orcas: Lack of food, disturbance from noise and vessel traffic, and toxic contaminants. The Partnership's Leadership Council expressed support for the recommendations.

Based on the Task Force recommendations, four key bills supporting Southern Resident recovery were signed into law in May 2019. See [Management Accomplishments Advance Puget Sound Recovery](#) section, above, for details.

HOW ARE WE RESPONDING TO JLARC'S FINDINGS?

The Partnership's enabling legislation directed the Joint Legislative Audit and Review Committee (JLARC) to conduct two performance audits of the Partnership, the first in 2011 and the second in 2016. JLARC routinely conducts state agency performance audits, program evaluations, sunset reviews, and other analyses. JLARC's non-partisan staff auditors, under the direction of the Legislative Auditor, independently seek answers to audit questions and issue recommendations to improve state agency performance.

JLARC designed the 2016 audit to answer the following questions:

- What progress has been made in restoring Puget Sound by 2020?
- Are restoration efforts and expenditures across Puget Sound tracking with the priorities and strategic initiatives set by the Partnership to meet legislative goals?
- How is the Partnership meeting key oversight and accountability requirements directed by statute? Specifically, how has the Partnership improved linking actions to progress on restoration goals, prioritizing actions, and monitoring effectiveness?
- Has the Partnership identified any barriers to implementing the Action Agenda? If there are barriers, have solutions been identified and communicated to the Governor and legislature?

JLARC reported that progress has been made on the recommendations included in the 2011 report. It also found that the 2020 target set by the legislature for Puget Sound recovery involved much shorter timeframes than similar recovery targets for other large systems. For example, efforts to recover the Chesapeake Bay began 42 years ago and are ongoing, with no designated timeframe for accomplishing recovery. Likewise, recovery efforts for San Francisco Bay have been ongoing for 35 years. JLARC also stressed the importance of having a comprehensive monitoring system to gauge the progress of Puget Sound recovery, one in which lessons learned inform future recovery plans, actions, and funding decisions.

The audit identified areas of improvement for the structure of the current Puget Sound Ecosystem Monitoring Program. It also noted that the salmon recovery system is not yet fully integrated into the Puget Sound recovery system, as the legislature had originally envisioned.

At JLARC's request, the Partnership submitted descriptions in December 2017 of how it could accomplish the following:

- **Recommendation 1:** Identify and address needed revisions to planning and recovery timeframes.
- **Recommendation 2:** Create a more complete inventory of recovery actions and funding.
- **Recommendation 3:** Meet the essential requirements for a monitoring program and improve and clarify links between monitoring and planning.

The Partnership, with JLARC’s approval, has made the following progress:

- **Recommendation 1 progress:**
In 2017, the Partnership requested that the state legislature extend the Action Agenda planning cycle from every 2 years to every 4 years. The primary intent of this change is to enable Near Term Action owners to devote more time to putting their plans into action. The legislature approved this revision to the Action Agenda.
- **Recommendation 2 progress:**
The Partnership committed to improving the inventory of recovery actions and funding, focusing initially on state agency programs. The 2018-2022 Action Agenda includes an expanded inventory of Puget Sound recovery-related ongoing programs, and the Partnership collected financial information on those programs for the first time in May 2019. (See [funding section](#) below for a summary of this financial information.) The Partnership also secured funding from the legislature in April 2019 to hire staff and contract support for the first evaluations of Puget Sound-related state ongoing programs. The agency is currently scoping out the approach to these evaluations by soliciting input from a variety of partners. In the future, budget permitting, the Partnership will pursue similar efforts to improve the inventory of recovery actions and funding for non-state agency activities.
- **Recommendation 3 progress:**
Partnership staff and members of the Puget Sound Ecosystem Monitoring Program (PSEMP) Steering Committee and work groups led development of a [new PSEMP Strategic Plan](#), adopted in November 2018. Developed through an inclusive process that engaged recovery partners and scientific experts representing disciplines from across Puget Sound, the strategic plan addresses the deficiencies identified by JLARC’s 2016 audit by clarifying the following:
 - To whom and for what PSEMP is accountable
 - Program participants’ roles and responsibilities
 - Types of decisions to be made and who has authority to make decisions
 - The Partnership’s role in guiding PSEMP
 - Interactions among PSEMP and the Partnership’s boards
 - Approaches to technical oversight and consultation from throughout the Puget Sound recovery system

The strategic plan emphasizes the importance of PSEMP’s interaction with the Partnership’s boards system, and its engagement with the Partnership and Strategic Initiative Leads to ensure that knowledge from monitoring and assessment advises the development and adaptation of Action Agenda updates and Implementation Strategies. The strategic plan outlines the tactics and approaches that PSEMP leadership and Partnership staff are pursuing with current levels of funding and staffing, and identifies areas that need additional capacity and support to achieve the essential functions of a coordinated monitoring and assessment program.

The Partnership asked the legislature to appropriate funding in the 2019-21 biennial budget to ensure that PSEMP has the capacity and support to deliver the monitoring and assessment products and services that inform more effective, efficient, and accountable actions and investments to recover Puget Sound. The final 2019-21 biennial budget funded a new permanent position, the Monitoring Network Coordinator, and provided about \$200,000 per biennium (ongoing) to fill gaps in monitoring needed to evaluate progress toward recovery goals.

Since the PSEMP strategic plan was adopted, progress has been made on implementing several strategic actions, including the following:

- Clarifying the roles and responsibilities of Steering Committee members and recruiting 10 new members
- Developing updated work plans for the Steering Committee and all work groups
- Creating a new and improved [PSEMP website](#) to increase access to information about activities and products
- Production of new synthesis reports on marine water quality and conditions, toxics research and monitoring, and avian monitoring in estuaries
- Creation of a new process to solicit project proposals for PSEMP projects in a fairer, more transparent, and efficient way to invest the new state funds allocated in the 2019-21 biennium and existing ongoing funds from EPA.
- Development of a [PSEMP communication plan](#) and product templates for work groups to improve communication within the monitoring community and to a range of audiences, from local and regional decision-makers, natural resource managers, and elected officials.
- Hired a Monitoring Network Coordinator to increase capacity to better link PSEMP expertise and products to decision-makers, and thus improve our ability to inform decisions with the best available information.

FUNDING THE PUGET SOUND RECOVERY EFFORT

STATE AND FEDERAL FUNDING SOURCES

The Partnership’s enabling legislation requires the agency to conduct a “review of the expenditures of funds to state agencies for the implementation of programs affecting the protection and recovery of Puget Sound, and an assessment of whether the use of the funds is consistent with the Action Agenda.”

One of the Puget Sound Partnership’s key responsibilities as a backbone organization is to mobilize funding, which means that we evaluate the funding need for recovery work, advocate for state and federal appropriations, and support our partners in their quest for funding.

The following information focuses on state and federal funding. However, the Partnership also recognizes the very significant local and private investments which—though more difficult to quantify—are unquestionably critical to Puget Sound recovery.

State funding delivers essential support to Puget Sound recovery

RANKING PUGET SOUND BUDGET REQUESTS

Each year the Partnership provides the Governor, the Office of Financial Management, and legislative fiscal committees with a ranked list of state agency budget proposals that stand to affect Puget Sound recovery. The ranking process objectively assesses the extent to which a funding proposal is consistent with the science-based priorities of the Action Agenda. For the 2019-21 biennium the Partnership ranked 105 different state agency budget requests with benefits to Puget Sound amounting to nearly \$1.9 billion in proposed funding needs – with the Puget Sound portion of this amount estimated to be \$1.15 billion. In response to the budget requests the legislature enacted an estimated \$672 million for Puget Sound recovery in May 2019, with over 80 percent of the funding coming from the capital budget. This estimate includes a significant portion of the \$100 million appropriated statewide in the transportation budget for Department of Transportation fish barrier corrections. Note that Governor Inslee also ordered the Washington Department of Transportation to reallocate an additional \$175 million to correcting fish barriers on state highways.

Table 8 shows a historical comparison of state budget investments for a selection of major Puget Sound protection and recovery-related programs, including amounts appropriated by the legislature for the 2019-21 biennium.

Table 8: Historical comparison of major Puget Sound state capital budget investments*

PROGRAM	2013-2015 BIENNIAL BUDGET (\$ millions)	2015-2017 BIENNIAL BUDGET (\$ millions)	2017-2019 BIENNIAL BUDGET (\$ millions)	2019-2021 BIENNIAL BUDGET (\$ millions)
Centennial Clean Water Fund (CCWF)	50	20	35	30
Floodplains by Design (FbD)	50	35.6	35.4	50.4
Puget Sound Acquisition and Restoration (PSAR)	70	37	40	49.5
Salmon Recovery Funding Board (SRFB)	15	16.5	19.7	25
— <i>Salmon Recovery Funding Board (SRFB) – Federal**</i>	<i>plus 60</i>	<i>plus 50</i>	<i>plus 50</i>	<i>plus 50</i>
Stormwater Financial Assistance Program (SFAP)	100	53 (-30)***	55.1	44****
Water Pollution Control Revolving Program	200	153	150	148
— <i>Water Pollution Control Revolving Program – Federal</i>	<i>plus 50</i>	<i>plus 50</i>	<i>plus 50</i>	<i>plus 56</i>
— <i>Water Pollution Control Revolving Program – State Match</i>	<i>plus 15.5</i>	<i>plus 12</i>	<i>plus 10</i>	<i>plus 12</i>
Estuary and Salmon Restoration Program (ESRP)	10	8	8	10
Brian Abbott Fish Passage Barrier Removal Board (FBRB)	---	---	19.7	26.5
Washington Wildlife and Recreation Program (WWRP)	65	55.3	80	85

*Mostly statewide programs administered by state agencies, with benefits to Puget Sound

**NOAA Pacific Coastal Salmon Recovery Fund (PCSRF)

***The 2015-2017 appropriation for the SFAP was cut by \$30 million in 2016 due to a shortfall in Model Toxics Control Act (MTCA) revenue.

**** \$29.75 million of the appropriation is provided solely for 32 grants directed to areas of Puget Sound that will benefit Southern Resident orcas.

STATE AGENCY ONGOING PROGRAMS

Ongoing programs are continuing efforts that provide regulatory oversight, technical support, implementation resources, financial resources, or other guidance.² State, federal, local, tribal, and non-governmental ongoing programs are the critical foundation for Puget Sound recovery. They form the base of activities upon which Puget Sound recovery priorities and actions are built and dependent. The Partnership maintains an inventory of ongoing programs, which was included in the 2016-2018 and 2018-2022 Action Agendas.³ Many of the programs are essential to Puget Sound recovery and continued investment in them is a priority of the Puget Sound Partnership.

In May 2019, the Partnership and several Washington State agencies collaborated to gather and report financial information about the ongoing programs administered by state agencies. This resulted in the assembly of budget information for the 2015-17 and 2017-19 biennia on 102 of 113 inventoried state agency programs in the 2018-2022 Action Agenda. This inaugural effort will enable the Partnership and partners to better identify and understand investment needs and trends for Puget Sound recovery. The following narrative and figures contain information on the allocation of state budgets to Puget Sound recovery as compared to other activities and geographies; the kinds of programs with the largest budgets; short-term trends in budgets;⁴ and more. The narrative does not assess or support conclusions about the effectiveness of any individual investment.

Estimated Puget Sound ongoing program budgets (2015-17 and 2017-19 biennia)

The total estimated budgeted amounts for all state agency programs that provided information is provided in Table 9.

Table 9: Estimated state agency budgets for Puget Sound recovery-related programs (operating, capital, and transportation), 2015-17 and 2017-19

Biennia	Total of Inventoried Program Budgets (statewide, including Puget Sound) (\$000's)	Estimated Amount Budgeted for Puget Sound Recovery (\$000's)
2015-17	1,043,000	692,000
2017-19	1,313,000	835,000
Total 2015-19	2,356,000	1,527,000

The estimated Puget Sound budgets for inventoried programs in the 2017-19 biennium of \$835 million was only 0.8 percent of the entire 2017-19 state biennial budget of \$103 billion (operating,

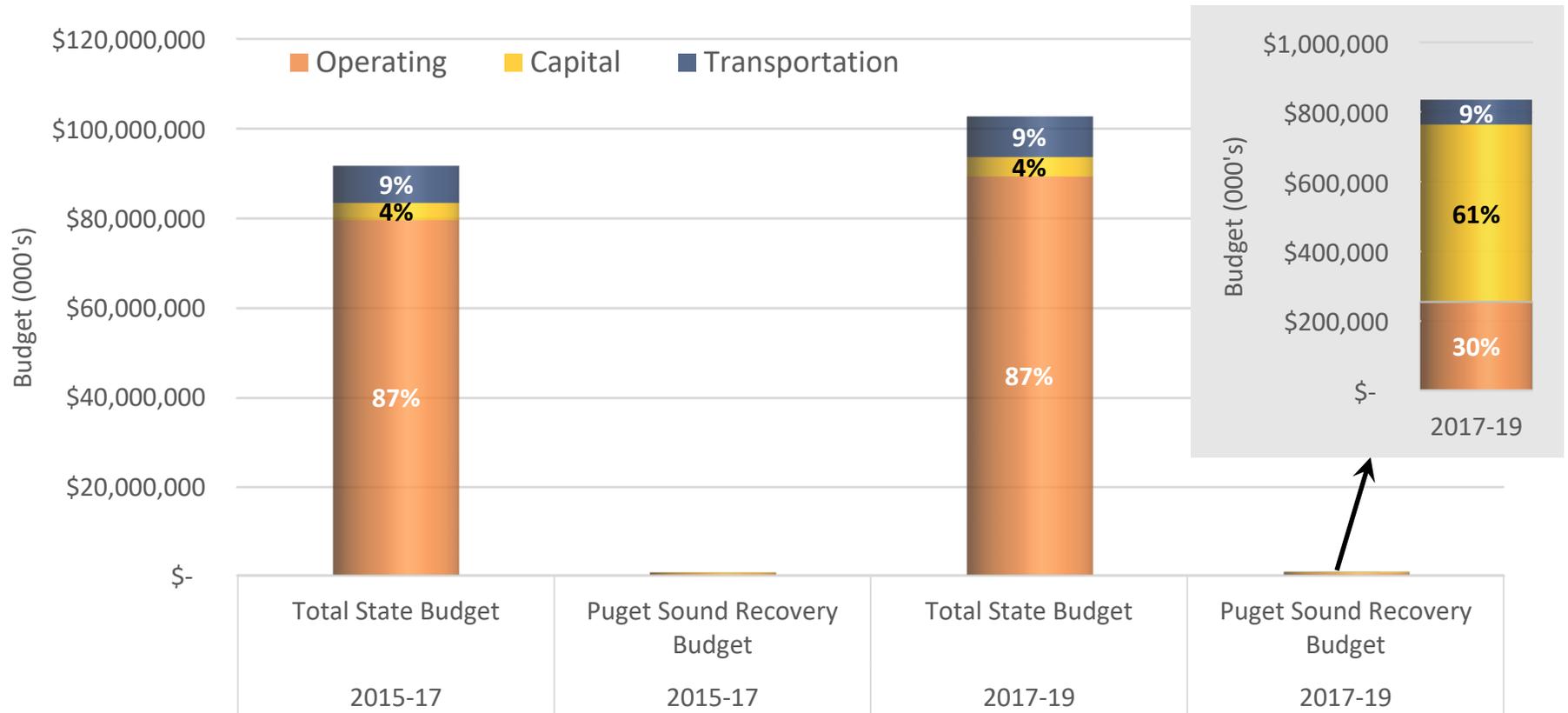
² Examples include programs related to implementation of the Growth Management Act at both the state and local levels, salmon recovery programs, and Washington Department of Ecology clean water programs.

³ The Puget Sound Partnership has a robust inventory of ongoing programs. Yet the existing list should not be considered comprehensive and the Partnership is committed to improving this inventory. Refer to the 2018-2022 Action Agenda Implementation Plan for the most recently published inventory of programs ([https://pspwa.box.com/s/uxtx0uv2fqsnl\\$bv2cgahs8o52mtsdb](https://pspwa.box.com/s/uxtx0uv2fqsnl$bv2cgahs8o52mtsdb)).

⁴ Due to the short time series of data available for this inaugural effort, long-term trends are not included.

transportation and new capital appropriations). Specifically, for new capital appropriations, the estimated Puget Sound budget represented around 12 percent of the total state capital budget in the 2017-19 biennium. The estimated Puget Sound budget for the inventoried programs represented 25% of the total statewide natural resources budget⁵ in the same biennium.

Figure 2: Comparison between total statewide budget and Puget Sound recovery budget, 2015-17 and 2017-19 biennia (operating, capital and transportation)



⁵ The statewide natural resources budget includes the Departments of Ecology, Natural Resources, Fish and Wildlife, Agriculture, as well as the State Parks and Recreation Commission, State Conservation Commission, Recreation and Conservation Office, and a few smaller programs. This amount does not include certain important Puget Sound recovery-related activities undertaken by the Departments of Health, Commerce, and Transportation that are included in the Partnership’s inventory of ongoing programs.

Capital, Operating, and Transportation budgets

As figure 2 shows, most Puget Sound-related program funding comes from the state’s capital budget. A 27 percent increase in the capital budget and a 30 percent increase in the transportation budget led to an overall 21 percent increase in funding for inventoried programs from the 2015-17 to the 2017-19 biennium.

Geography and allocation of state budgets

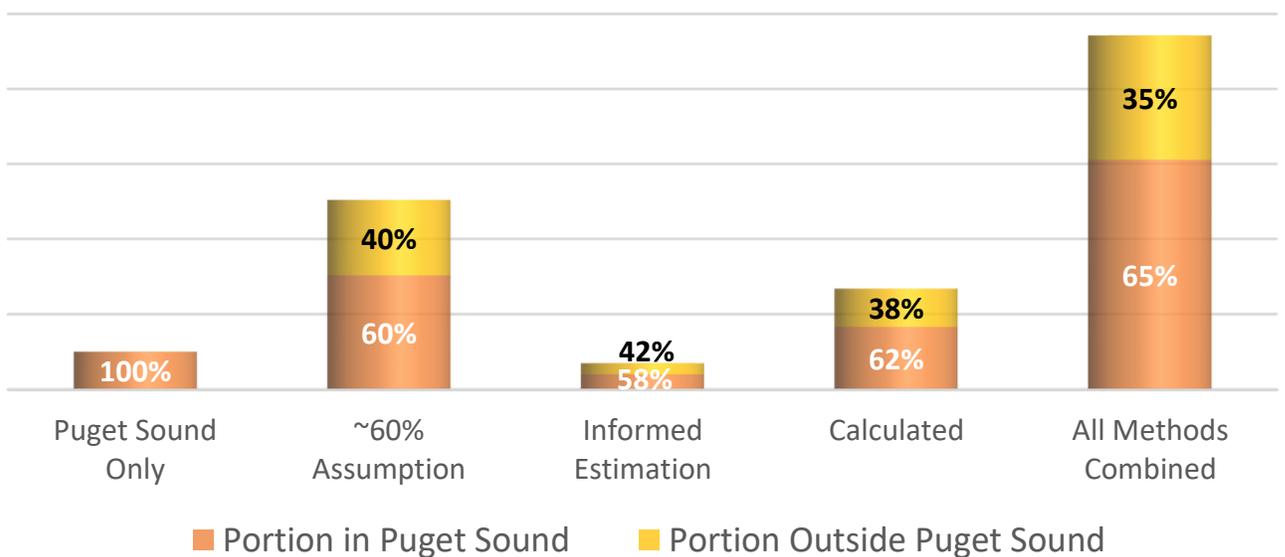
Most of the 102 ongoing programs for which budget information was gathered are implemented statewide with a portion of their work in the Puget Sound region. Twenty-eight of the programs are dedicated exclusively to the Puget Sound region, 13 of which are housed within the Puget Sound Partnership. A variety of methods were used to calculate or estimate the portion of inventoried budgets that was dedicated to the Puget Sound region (see text box). Figure 3 shows the estimated or calculated Puget Sound portion for each of the methods described. Approximately 11 percent of the estimated budgets that were inventoried for both the 2015-17 and 2017-19 biennia—or \$251 million—went to programs exclusively dedicated to Puget Sound.

A note on methods (for estimating budgets)

The majority of statewide programs lack precise methods to calculate the proportion of program budgets that can be assumed to contribute to Puget Sound recovery. Several methods were used to estimate the amount of budgeted funds for Puget Sound.

1. For the 28 programs that are dedicated exclusively to Puget Sound, the total budgeted amount is reported.
2. For the 74 statewide programs, one of three methods was used.
 - a. 37 programs estimated the Puget Sound portion of their budget using a simple assumption (for example: ~60% of the state’s population living in the Puget Sound area).
 - b. 17 programs were able to bring more accuracy to their estimation by considering the number of staff, events, or projects in the Puget Sound region.
 - c. 14 programs calculated budgets for Puget Sound based on allocations to the region or geographic location of contracted projects.

Figure 3: Estimates of Puget Sound portion of statewide program budgets using 4 different methods (2015-17 and 2017-19 biennial data combined)



Notable programs

Table 10 below shows the top ten largest Puget Sound state ongoing programs by size of budget. The list is dominated by large capital programs. The majority of these highest budgeted programs are grant making or financial assistance programs that pass funding to local and private groups for environmental protection and Puget Sound recovery actions. For example, the Department of Ecology’s “Water Quality-Provide Financial Assistance”—the largest inventoried program—provides grants, low interest loans, and technical assistance to local governments, state agencies, and tribes to enable them to build, upgrade, repair, or replace facilities to improve and protect water quality.

Table 10: Ten largest state agency ongoing programs in Puget Sound, by size of budget (operating, capital, and transportation), 2015-17 and 2017-19 biennia

Ongoing Program	Estimated Amount Budgeted for Puget Sound Recovery (\$000's)		
	Biennium	Amount	Budget Type
Water Quality—Provide Financial Assistance (Department of Ecology)		395,864	Op., Cap.
Provides grants, low interest loans, and technical assistance to local governments, state agencies, and tribes to enable them to build, upgrade, repair, or replace facilities to improve and protect water quality.	2015-17	175,762	
	2017-19	220,102	
Fish Barrier Correction (Department of Transportation)*		125,558	Trans.
State highways cross streams and rivers in thousands of places in Washington State, which can impede fish migration. This program improves fish passage and reconnects streams to help keep waterways healthy.	2015-17	54,477	
	2017-19	71,081	
Air—Reducing Toxic Diesel Emissions (Department of Ecology)		85,560	Cap.
Helps to reduce toxic diesel emissions, at their source by providing pass through grants to local air agencies, ports, and fleet managers to repower, replace, or retrofit high polluting, dirty diesel engines.	2015-17	600	
	2017-19	84,960	
Water Quality—Control Stormwater/Wastewater Pollution (Department of Ecology)		77,081	Op.
Implements a municipal stormwater program and permitting system working with local governments and other stakeholders. Ecology also regulates point source discharges of pollutants to surface and ground waters through a wastewater permit program.	2015-17	38,747	
	2017-19	38,334	
Puget Sound Acquisition and Restoration (Puget Sound Partnership)		77,000	Cap.
	2015-17	37,000	

Ongoing Program		Estimated Amount Budgeted for Puget Sound Recovery (\$000's)	
PSAR supports projects that recover salmon and protect and recover salmon habitat in Puget Sound and is co-managed by the Puget Sound Partnership and the Recreation and Conservation Office. Local entities identify and propose PSAR projects and the Salmon Recovery Funding Board prioritizes them for funding.	2017-19	40,000	
Washington Wildlife and Recreation Program (Recreation and Conservation Office)		72,891	Cap.
Provides funding for a broad range of land protection and outdoor recreation, including park acquisition and development, habitat conservation, farmland and forestland preservation, and construction of outdoor recreation facilities.	2015-17	27,722	
	2017-19	45,169	
Salmon Recovery Funding Board (Recreation and Conservation Office)		59,038	Cap.
The board funds projects that protect existing, high quality habitats for salmon, and that restore degraded habitat to increase overall habitat health and biological productivity. The board also awards grants for project feasibility assessments and other salmon related activities.	2015-17	29,519	
	2017-19	29,519	
Shorelands—Floodplains by Design (Department of Ecology)		57,850	Cap.
Grant program for large-scale multi-benefit floodplain restoration projects that improve habitat, prevent flood hazards and protect farmland.	2015-17	32,830	
	2017-19	25,020	
Toxic Cleanup Program—Remedial Action Grant Program (Department of Ecology)		53,214	Cap.
Grant program that supports the cleanup of some of the most dangerous contamination and important habitat around Puget Sound.	2015-17	51,104	
	2017-19	2,110	
Forest Practices Program including the Habitat Conservation Plan (Department of Natural Resources)		50,238	Op.
Protects aquatic and riparian-dependent species habitat on state and private forestlands. Projects completed under this effort include fish passage barrier removal.	2015-17	24,589	
	2017-19	25,649	

*Addresses the 9th U.S. Circuit Court of Appeals ruling to accelerate work to remove, replace, and repair blocking culverts on state roads

Though large capital programs individually contribute large investments in Puget Sound recovery, smaller programs also make a major contribution. Many of the smaller programs are funded from the state’s operating budget (see table 11 below) and provide the critical administration and service functions necessary to implement recovery activities. It is worth noting that the Department of Ecology’s Water

Quality Financial Assistance program, the largest Puget Sound recovery program by budget, receives over 10 percent of its funding from the state operating budget. In addition, Ecology’s Storm/Wastewater Pollution Control and the Department of Natural Resource’s Forest Practices Program are funded entirely from the operating budget.

Table 11: Ten largest state agency Ongoing Programs in Puget Sound, by size of budget (operating only), 2015-17 and 2017-19

Ongoing Program	Biennium	Estimated Amount Budgeted for Puget Sound Recovery (\$000's)
Water Quality—Control Stormwater and Wastewater Pollution (Department of Ecology)		\$77,081
Implements a municipal stormwater program and permitting system working with local governments and other stakeholders. Ecology also regulates point source discharges of pollutants to surface and ground waters through a wastewater permit program.	2015-17	\$38,747
	2017-19	\$38,334
Forest Practices Program including the Habitat Conservation Plan (Department of Natural Resources)		\$50,238
Protects aquatic and riparian-dependent species habitat on state and private forestlands. Projects completed under this effort include fish passage barrier removal.	2015-17	\$24,589
	2017-19	\$25,649
Spill Response (Department of Ecology)		\$20,489
Responds to and cleans-up spills of oil, hazardous substances, and other pollutants. After spills occur, work begins to restore publicly-owned resources affected (Natural Resource Damage Assessment). Also provides funds to local communities to stage equipment around the state.	2015-17	\$9,359
	2017-19	\$11,130
Water Resources—Water Right Permitting Program (Department of Ecology)		\$17,092
Issues water rights only in areas where water is available. Protects streamflows for fish, wildlife, recreation, aesthetics, water quality, and navigation by setting instream flows, which are essentially water rights for rivers.	2015-17	\$8,627
	2017-19	\$8,465
National Estuary Program: Habitat Strategic Initiative (Department of Fish and Wildlife)		\$15,000
The Habitat Strategic Initiative Lead (SIL) led by the departments of Fish and Wildlife and Natural Resources grants federal EPA Puget Sound Geographic Program funds to implement habitat protection and restoration projects proposed in the Action Agenda's Implementation Plan.	2015-17	\$5,200
	2017-19	\$9,800
Supporting Local Recovery Planning and Implementation (Puget Sound Partnership)		\$13,804
Works with Local Integrating Organizations (LIOs) to support the actions and programs identified as high priority for the long-term health of local watersheds and Puget Sound. LIOs enable communities to guide the implementation of Action Agenda priorities at an ecosystem scale, and to prioritize local actions for investment.	2015-17	\$8,531
	2017-19	\$5,273
Water Quality—National Estuary Program (NEP) Stormwater SI (Department of Ecology)		\$13,600

Ongoing Program	Biennium	Estimated Amount Budgeted for Puget Sound Recovery (\$000's)
The Stormwater Strategic Initiative Lead (SIL) grants federal EPA Puget Sound Geographic Program funds to implement projects proposed in the Action Agenda's Implementation Plan that address stormwater pollution.	2015-17	\$5,200
	2017-19	\$8,400
Aquatics Land Acquisitions and Exchanges (Department of Natural Resources)		\$12,150
Uses land acquisitions and exchanges to maximize the return on state lands, protect unique state aquatic areas, and produce better public access opportunities.	2015-17	\$7,500
	2017-19	\$4,650
Leasing Program for State Owned Aquatic Lands (Department of Natural Resources)		\$12,150
Authorizes leases on lands owned and managed by the state, and may attach site specific provisions to the lease, such as the removal of toxic materials, to protect habitat and other resources.	2015-17	\$7,500
	2017-19	\$4,650
Water Quality—Clean Up Polluted Waters—Standards and Water Quality Improvement Plans (TMDLs) (Department of Ecology)		\$10,929
In accordance with the federal Clean Water Act, the program samples and reports on the water bodies that do not meet standards. The program produces water quality improvement reports (Total Maximum Daily Loads) in collaboration with local interests by establishing conditions in discharge permits and nonpoint source management plans.	2015-17	\$4,843
	2017-19	\$6,086

Short-term trends in budgets and case studies

The information that the Partnership and state agencies have gathered to date is limited to only two biennia and therefore does not reveal longer term trends in budgeting for Puget Sound recovery over time. Yet some short-term trends are apparent in the data. For example, Table 9 (above) shows that the estimated amount budgeted by state agencies for Puget Sound recovery between the two biennia rose by 21 percent. Table 10, above, contains a number of programs that saw notable increases in their budgets between the two biennia.

Two examples of ongoing programs which saw significant increases in funding between the 2015-17 and 2017-19 biennia:

- Reducing Toxic Diesel Emissions – Puget Sound received nearly \$85 million in the 17-19 biennium for Ecology’s Air - Reducing Toxic Diesel Emissions program. This amount (of the \$140 million statewide) was received by Washington State from Volkswagen to settle violations of the state and federal Clean Air Acts. These settlement funds are being used to reduce air pollution from transportation in Washington. This is a temporary increase in budget based on one-time settlement fees and is expected to decrease in future biennia.

- **WSDOT Fish Barrier Correction** – In May 2017, the 9th U.S. Circuit Court of Appeals affirmed that the state must accelerate work to remove, replace, and repair fish passage blocking culverts on Department of Transportation roads. This decision was subsequently affirmed by the Supreme Court of the United States in June 2018. The state increased funding for fish barrier removal projects in Puget Sound from \$54 million in the 2015-17 biennium to \$71 million in the 2017-19 biennium. For the current 2019-21 biennium, Washington State has budgeted \$275 million for culvert removal.

Origin of funding for Puget Sound recovery programs

Table 12 shows that federal pass through and private/local funding are important, but most Puget Sound recovery-related funding comes from the state government. From the 2015-17 to the 2017-19 biennium state funding accounted for 73% of total ongoing program funding, with federal and private/local at 22% and 5% respectively. Over the same period funding for Puget Sound-related state ongoing programs increased by 11 percent, compared to a 9 percent increase in federal funding. The significant increase in Private/Local funding was due to the Volkswagen settlement mentioned in the section above.

Table 12: State agency Puget Sound recovery-related budgets, by funding authority

Funding Authority	Estimated Amount Budgeted for Puget Sound Recovery (\$000’s)	Share (%)
State	1,112,966	73
2015-17	526,318	34
2017-19	586,648	38
Federal	335,251	22
2015-17	160,039	10
2017-19	175,212	11
Private/Local	78,599	5
2015-17	5,567	0
2017-19	73,032	5
Total	1,527,000	100

FEDERAL PROGRAMS PROVIDE CRITICAL FINANCIAL LEVERAGE

U.S. Environmental Protection Agency Program Funds

Between 2007 and 2018, the EPA Geographic Program provided \$330 million to support Puget Sound protection and recovery. These funds leveraged grants and awards from other federal, state, local, tribal, non-profit, and private sources. Geographic Program funding for Puget Sound totaled \$28.5 million in Federal Fiscal Years (FFY) 2018 and 2019.

In response to partner feedback, in 2016 EPA changed its funding model to allow more direct funding of Near Term Actions, greater local engagement in decision-making, and direct alignment with the Action Agenda. Under this funding model, in FFYs 2018 and 2019 nearly \$13.3 million of the annual \$28.5 million allocation for the Puget Sound region was designated to support a prioritized list of Near Term Actions associated with Strategic Initiatives. With the support of the Partnership and the Puget Sound Institute, the EPA-designated leads for each Strategic Initiative manage the collaborative development of Implementation Strategies and decide which Near Term Actions should receive the EPA funds. Table 13 shows the programs receiving funding from the EPA Geographic Program in Puget Sound, including the three Strategic Initiative leads.

Table 13: EPA Geographic Fund Programs, Federal Fiscal Years 2018 and 2019

Program	Funds received, FFY 2018 (\$)	Funds received, FFY 2019 (\$)
Habitat Strategic Initiative Lead: Departments of Fish and Wildlife and Natural Resources	4,900,000	4,859,771
Stormwater Strategic Initiative Lead: Department of Ecology in partnership with the Washington Stormwater Center at Washington State University, and the Department of Commerce	4,200,000	4,200,000
Shellfish Strategic Initiative Lead: Department of Health in partnership with the Departments of Ecology and Agriculture	4,200,000	4,200,000
Northwest Indian Fisheries Commission	4,000,000	4,000,000
Tribal Organizational Capacity	3,697,963	3,700,000
Puget Sound Partnership—including capacity for the Northwest Straits Initiative, Local Integrating Organizations, and Puget Sound Institute	5,386,857	5,554,229
Federal Interagency Agreements	946,935	995,000
EPA Staff/Operations	1,039,481	873,875
EPA Programmatic Contracts	91,764	80,125
TOTAL	28,463,000	28,463,000

NOAA Pacific Coastal Salmon Recovery Fund

The Pacific Coastal Salmon Recovery Fund (PCSRF), administered by the National Oceanic and Atmospheric Administration (NOAA), is a significant source of funding for developing and implementing critical salmon recovery projects in California, Oregon, Washington, Idaho, Nevada, and Alaska. The fund has been essential to preventing the extinction of 28 listed Pacific salmon and steelhead species on the West Coast and, in many cases, has stabilized the populations and contributed to their course of recovery. The state capital budget houses the PCSRF allocation to Washington State. These funds are distributed to each salmon recovery region based on a formula established by the Salmon Recovery Funding Board. For the Puget Sound region this amounted to over \$8 million in PCSRF funding for projects and capacity/administration for fiscal years 2018 and 2019.

PCSRF is the primary source of funds that allow Puget Sound regional and local salmon recovery organizations (established by RCW 77.85.090) to engage with their federal, state, tribal, and local partners to pursue the habitat, hatchery, harvest, and hydropower actions essential to achieving salmon recovery. This work includes managing the local grant processes that identify and prioritize salmon recovery projects. Matching dollars for implementing these projects are provided by local governments, tribal governments, businesses, property owners, foundations, and a variety of other sources.

Lack of funding continues to limit Near Term Action implementation

2016-2018 ACTION AGENDA – NEAR TERM ACTION FINANCIAL INFORMATION

The Partnership regularly tracks partners’ ability to acquire funding for their Near Term Actions. Near Term Actions in the 2016-2018 Action Agenda are tracked in the [Action Agenda Report Card](#). Lack of funding was cited by most Near Term Action owners as the primary reason they were not able to implement their actions.

Only 31 percent of the Near Term Actions in the 2016-2018 Action Agenda have been fully funded, with 24 percent partially funded and 45 percent not reporting any funding. A 59 percent funding shortfall currently exists (Figure 4). This gap was also broadly consistent among the three Strategic Initiatives (habitat, shellfish and stormwater) and among the different types of activities proposed.

One clear finding from reporting is that the state legislature provides the largest proportion of funding for 2016-2018 Action Agenda Near Term Actions. Table 14 shows that 46 percent of all secured funding for Near Term Actions came from state appropriations, with Federal National Estuary Program funding the second highest at 26 percent, and contributions from local jurisdictions at 17 percent.

The Partnership will continue to track the progress of 2016-2018 Action Agenda Near Term Actions until mid-2020. However, it is unlikely that this funding shortfall will be reduced significantly if funding trends from the last decade of Near Term Action implementation continue.

Figure 4: Near Term Action funding gap, 2016-2018 Action Agenda

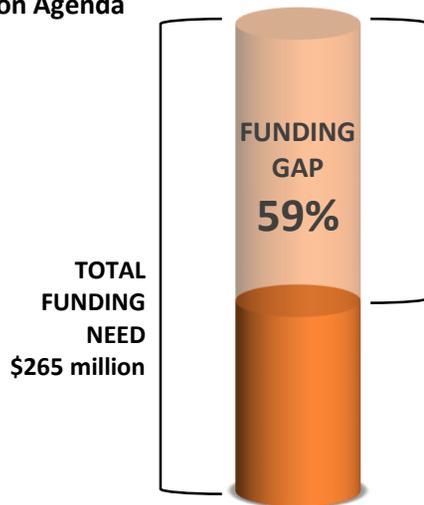


Table 14: Origin of funding for 2016-2018 Action Agenda Near Term Actions

Funding Origin	Secured Funding (\$ millions)	% of Secured Funding
State	49.5	46
Federal-National Estuary Program	28.4	26
Local Jurisdiction	18.5	17
Federal-Other	7.9	7
Other	3.7	3
Total	108.1	100

2018-2022 ACTION AGENDA – NEAR TERM ACTION FINANCIAL INFORMATION

When proposing a 2018-2022 Action Agenda Near Term Action, managers estimated their costs and the amount of funding secured for implementation. In August 2019, the Partnership introduced a new financial reporting system in the [Action Agenda Tracker](#) to better monitor how Near Term Actions are being funded. So far, around half of Near Term Action managers have used the new tool to update their financial information. The section below details the latest Near Term Action funding information from this new system.

Table 15 and Figure 5 show that the total cost of all 2018-2022 Action Agenda Near Term Actions is about \$1.3 billion, with a current funding gap of 80 percent. The Near Term Actions are intended to be implemented within 4 years. Though all sectors reported large funding gaps for their Near Term Actions, it is apparent from table 15 that cities and special districts currently have notably smaller shortfalls.

Another way to look at the costs of the 2018-2022 Action Agenda Near Term Actions is to select only the highest ranked actions (Tier 4 Near Term Actions). For the 284 Tier 4 ranked Near Term Actions, Figure 6 below shows that the total cost still reaches \$643 million, with a marginally lower funding gap (73 percent) than for Near Term Actions from all tiers.

Table 15: 2018-2022 Action Agenda Near Term Action Costs and funding by Owner Type (as of October 2019)

Owner Type	# of NTAs	Total Estimated Cost (\$000's)	Secured Funding (\$000's)	Funding Gap (\$000's)	Funding Gap (%)
Profit Organization	15	5,004	0	5,004	100
Other	1	199	0	199	100
Lead Entity	27	61,074	968	60,106	98
Not for Profit / Nonprofit	121	281,962	28,881	253,081	90
State Institute of Higher Learning	30	10,604	1,332	9,272	87
Tribal	65	202,198	26,647	175,551	87
Federal	23	15,607	2,121	13,486	86
State	102	79,581	14,472	65,109	82
County	129	280,354	59,937	220,417	79
Local Integrating Organization	1	104	30	74	71
Special District	54	143,691	43,559	100,132	70
City	63	234,344	85,455	148,889	64
Grand Total	631	1,314,723	263,402	1,051,321	80

Figure 5: Near Term Action funding gap, 2018-2022 Action Agenda, all NTAs (as of October 2019)

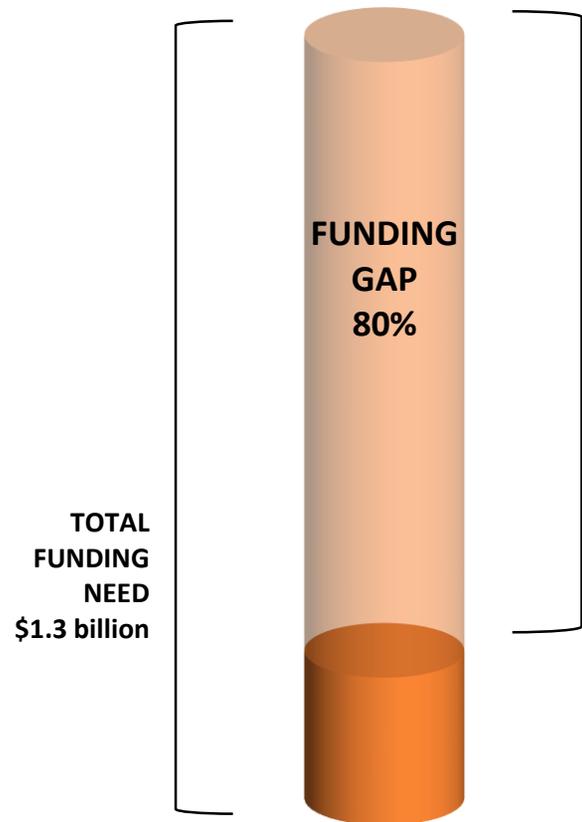
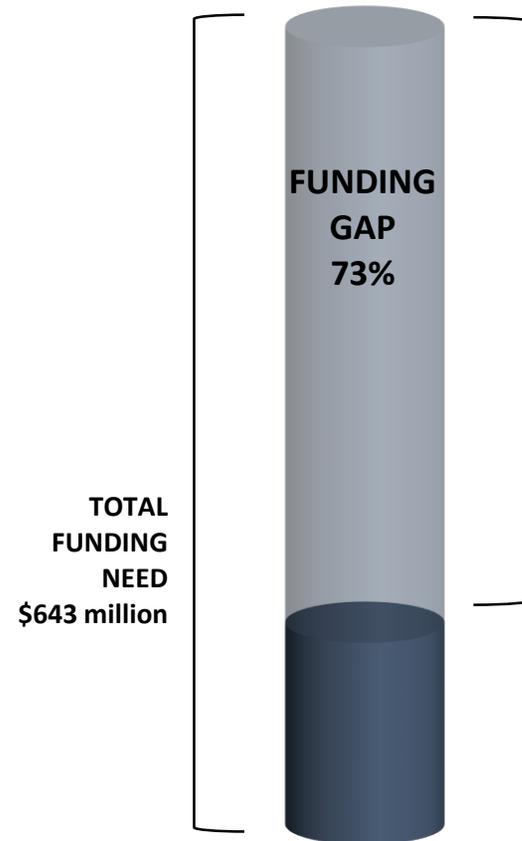


Figure 6: Near Term Action funding gap, 2018-2022 Action Agenda, Tier-4 NTAs (as of October 2019)



As of October 2019 funding secured for 2018-2022 Action Agenda Near Term Actions comes from over 100 different sources. These sources originate from a wide range of sectors, including state, federal and local governments, tribes, non-governmental organizations and private landowners. Around one third of the 250 Near Term Actions which have so far received full or partial funding, have secured that funding from more than one funding source. This indicates the importance for project sponsors to pursue and piece together multiple sources of funding to get projects off the ground.

Relatively little variation is apparent between the funding gaps for the three Near Term Action [activity types](#), Table 17.

Table 17: 2018-2022 Action Agenda Near Term Action costs and funding, by activity type (as of September 2019)

Activity Type	# of NTAs	Total Estimated Cost (\$000's)	Secured Funding (\$000's)	Funding Gap (\$000's)	Funding Gap (%)
1. Ecological Restoration and Management	251	1,024,601	227,203	797,398	78
2. Behavior Change	84	44,793	4,740	40,053	89
3. Enabling Conditions	296	245,329	31,459	213,870	87
Grand Total	631	1,314,723	263,402	1,051,321	80

To see the latest 2018 Strategic Initiative Lead funding recommendations (federal funding via the EPA’s National Estuary Program), follow these links: [2018 Stormwater recommendations](#); [2018 Habitat recommendations](#); [2018 Shellfish recommendations](#).

FUNDING FOR THE PUGET SOUND PARTNERSHIP

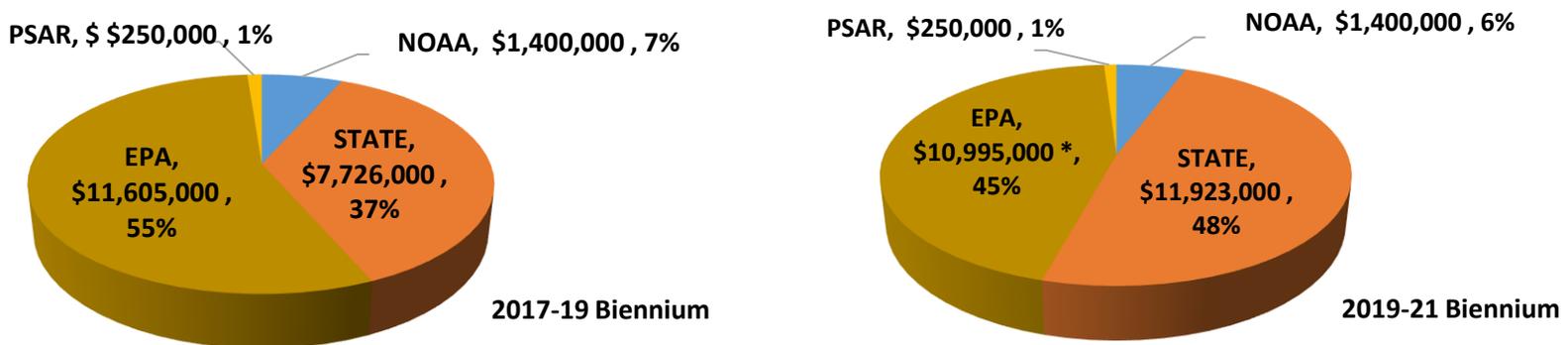
The Partnership’s enabling legislation requires the agency to provide “an identification of all funds provided to the Partnership.”

The Partnership’s operating budget comes from state and federal sources. Our state budget consists of funds from the following accounts: General Fund, Aquatic Lands Enhancement Account, and the Model Toxics Control Operating Account. The agency primarily uses these funds as match to federal grants provided by the EPA. State appropriations have not been made directly to two dedicated accounts established by the state legislature to support Puget Sound recovery (RCW 90.71.110 and RCW 90.71.400). However, the 2019-21 biennial budget includes \$2.222 million from the State General Fund for the Partnership to fund research projects designed to advance scientific understanding of Puget Sound recovery. This appropriation is closely linked to the intent of Puget Sound Scientific Research Account (RCW 90.71.110).

As shown in Figure 7, in the 2017-19 biennium, the Partnership’s operating budget totaled \$7.7 million in state funds and \$11.6 million in federal funds. The Partnership also received \$1.4 million from the NOAA Pacific Coastal Salmon Recovery Fund (PCSRF) to continue to serve as the regional salmon recovery organization for Puget Sound. The Partnership also received \$250,000 from the Puget Sound Acquisition and Restoration (PSAR) fund through an interagency agreement with the Recreation and Conservation Office (RCO) to co-manage PSAR project prioritization, monitoring, and investments.

In the 2019-21 biennium the state legislature appropriated \$11.9 million in state funds to the Partnership’s operating budget for the 2019-21 biennium and authorized spending up to \$12.7 million in federal funds to the Partnership, if additional federal funding is available. If additional federal funding is not available, this would represent the first time state funding for the Partnership exceeds federal funding since the 2019-11 biennium. The Partnership anticipates receiving NOAA PCSRF funds and PSAR program funds in amounts similar to 2017-19.

Figure 7: Puget Sound Partnership budget: 2017-19 and 2019-21



* If additional or carry-forward federal funding is available, the Partnership has authority to spend \$12,708,000 in federal funds.

FUNDING STRATEGIES

The Partnership’s enabling statute requires the agency to make “recommendations as to how future state expenditures for all entities, including the Partnership, could better match the priorities of the Action Agenda.”

The Partnership recommends the following strategies to improve how future state expenditures could better match the priorities of the Action Agenda:

1. The legislature should fully fund the Puget Sound Budget ([see Call to Action, for the Legislature](#)). State agencies should work with the Partnership to develop and propose the first Puget Sound Budget in time for the 2021 Legislative Session.
2. State agencies should work with the Partnership to design the 2022-2026 Action Agenda in a manner that expedites development of future Puget Sound budgets ([see Call to Action for State Agencies](#)).
3. The Partnership will continue to explore ways to improve the effectiveness of current state expenditures, through initiatives such as our new accountability program and our effectiveness monitoring program.
4. The Partnership will continue to facilitate partner alignment with a single recovery system, thus focusing and coordinating resources and efforts.
5. The Partnership also will engage more partners in the recovery system, and diversify and enhance funding sources to leverage state investments in Puget Sound.

For these strategies to succeed and be maintained over time, the Partnership needs resources to develop a comprehensive funding strategy—one that sets the course for generating durable, reliable, and multi-sector sources of funding.

CITATIONS

The Puget Sound Partnership staff reviewed and synthesized information from a number of studies and reports to inform the State of the Sound report. We are grateful to members of the science community and colleagues in partner institutions for their assistance in developing the material we have used and in helping us to develop the findings presented here. Though our reporting would not be possible without their contributions, any remaining errors are the responsibility of the Puget Sound Partnership.

Our reporting on Vital Signs depends on the scientific input and advice from scores of experts. Principal investigators, who we refer to as “indicator leads,” developed and delivered reports on Vital Sign indicators. Members of Puget Sound Ecosystem Monitoring Program workgroups discussed indicator status with indicator leads to advise our reporting on the status of Vital Signs. See the [Vital Signs website](#) for detailed information about indicator and Vital Sign reporting, as well as links to the underlying investigations, data and other references and sources.

We developed information about Action Agenda implementation, citizen concerns, and alignment of actions with the Action Agenda through engagement with implementing partners and engaged citizens. A primary source of information for this work is the status reporting on implementation of planned actions, as compiled in the [Action Agenda Report Card](#) (2016 Action Agenda) and the new [2018-2022 Action Agenda Tracker](#).

These information sources reflect only a portion of the broader recent and ongoing science that informs Puget Sound recovery. More information on other studies and reports, closely related to the work of the Partnership, include the following:

- Products and resources from the [Puget Sound Ecosystem Monitoring Program](#) (PSEMP)
- Inventory of ongoing or recent science activities from the [2016-2018 Science Work Plan](#)
- [Encyclopedia of Puget Sound’s](#) capture of significant recent papers
- [State of Our Watershed](#) reports by the Treaty Tribes in Western Washington
- [State of Salmon in Watersheds](#) biennial reports by the Governor’s Salmon Recovery Office (GSRO)
- [Monitoring Salmon Habitat Status and Trends in Puget Sound](#), 2017 Beechie et al., NOAA Northwest Fisheries Science Center Technical Memorandum
- [2017 Addendum to Ocean Acidification: From Knowledge to Action](#) Marine Resources Advisory Council (MRAC)
- [Preliminary Climate Change Assessment](#) for the Puget Sound Partnership, 2017, produced by the University of Washington Climate Impacts Group
- [Social Science for the Salish Sea – An action-oriented research agenda to inform ecosystem recovery](#). A report to the Puget Sound Partnership, 2019, Breslow et al.
- [Visualizing Human Wellbeing in the Puget Sound](#): A Report on the 2018 Subjective Human Wellbeing Vital Signs, Fleming and Biedenweg

APPENDIX TO SCIENCE PANEL COMMENTS – EXAMPLES: MAKING SCIENCE MORE ACCESSIBLE AND COLLABORATIVE

The following are examples of several venues and means for disseminating the science of Puget Sound:

Salish Sea Ecosystem Conference and Puget Sound Institute: The biennial Salish Sea Ecosystem Conference is a leading example of how best to expand the audience and content of Puget Sound science. In May, 2018, the conference celebrated its 30th anniversary with a three-day event held in Seattle. It featured 588 presentations across 17 topic areas. The information presented and discussed at the conference can be browsed [online](#). Science Panel members and others are assisting with the planning of the 2020 conference, which will be held April 20-22 in Vancouver, B.C.

As importantly as the conference itself, the Puget Sound Institute, with support from the Environmental Protection Agency, publishes reports on conference papers and presentations in their Salish Sea Currents magazine. Reports from the 2016 and 2018 conferences are now available on the [Encyclopedia of Puget Sound website](#). To broaden access to information discussed at the conference, the Institute engaged a number of reporters and experts to write stories covering the conference's major themes. The stories highlighted many of the critical questions currently confronting recovery efforts. Examples include the effects of declining food sources on orca health, ocean acidification and its potential impact on Dungeness crab habitat, studies on emerging threats to salmon, the steady decline of kelp beds, digital technologies' future role in recovery, and the effort to develop a computer model to help people make choices about the Puget Sound ecosystem as a whole. These write-ups mostly frame content in a narrative format, try to use common language, and make clear the implications of the science for current policy and management decisions.

Southern Resident Orca Task Force: The Governor's recent convening of a Southern Resident Orca Task Force also provides an important example of how to effectively produce a science-informed ecosystem recovery plan. Throughout its deliberations, the task force focused on three threats to endangered orca: lack of food, disturbance from noise and vessel traffic, and toxic contaminants. This emphasis on the three major threats was derived, in part, from an open access paper by [Lacy et. al. \(2017\)](#) in Nature, an international research journal. Nature is committed to the prompt dissemination of critical work and the Lacy paper was peer-reviewed and made public within six months of its submittal. This availability made a difference in the task force's work and the task force explicitly recommended a continuing role for the scientific community by calling for the conduct of research, science and monitoring to inform decision making, adaptive management and implementation of all future actions to recover southern resident orcas.

The Science Panel recommends continuing to build collaboration to expand the body of knowledge about the Puget Sound ecosystem and ensure that this information is communicated in a manner that guarantees its availability for science-informed recovery. We illustrate examples of these below. The Panel will look for opportunities to work with PSEMP and science programs in the region to improve and expand efforts such as these.

PSEMP Marine Waters Workshop and Report: The [PSEMP Marine Waters Workshop and Report](#) is an excellent example of the scientific community coming together to summarize biological, physical and chemical information obtained from various marine monitoring and observation programs in Puget

Sound. A key value of this collaborative effort is the synthesis of current information that can be useful to policy and decision-makers.

Salish Sea Marine Survival Project: The [Salish Sea Marine Survival Project](#) is a collaborative effort of more than 60 organizations working internationally to investigate how multiple factors may be interacting and contributing to the fate of juvenile salmon and steelhead in the Salish Sea. The project convenes scientists from U.S. and Canada to develop a comprehensive, multi-disciplinary, and highly coordinated research program at the ecologically-relevant scale of the entire Salish Sea. As the Marine Project enters its synthesis phase it is timely for the Partnership to facilitate the transition of the project to testing of management interventions and to implement monitoring and assessment recommendations from the project.

NOAA Northwest Fisheries Science Center's Sound Toxins Program: NOAA Northwest Fisheries Science Center's [Sound Toxins](#) program (a diverse partnership of shellfish farmers, fish farmers, environmental learning centers, volunteers, local health jurisdictions, colleges, and Native American tribes) is another good example of scientists, managers and the shellfish industry coming together to collaborate in a monitoring program that provides a seafood safety early warning system of the risks of toxic algal blooms. Again, the challenge is to effectively transition this effort to a program that can be supported long term. But it also highlights that within Puget Sound there is capacity and willingness to work together to implement collaborative efforts that harness the scientific capacity in the region to meet societal needs.

Puget Sound Federal Task Force Action Plan: The recent release of the Puget Sound Federal Task Force Action Plan, in support of meeting Federal obligations under Tribal treaty trust responsibilities for Puget Sound ecosystem recovery and salmon recovery, is promising. The Action Plan includes a section on increasing coordination in the science and monitoring activities across Federal agencies and between Federal agencies and the broader Puget Sound recovery science community. In particular, the Action Plan describes the need for a formal Science Enterprise that includes planning and budgeting across the many institutions that provide science and monitoring in support of Puget Sound recovery. While a formal Science Enterprise would require new resources and authorizations at both the Federal and State levels, describing what is needed is a positive step forward.

Salmon Recovery Council: The [salmon recovery efforts across the Puget Sound region](#) are truly impressive and again highlight the willingness within the region to collaborate. While we have been effective, we recognize that we must increase our efforts to both conserve and restore habitat across the region. We commend the efforts of the salmon recovery council to work within the recovery community to identify and prioritize recovery actions. There also is value to include in our recovery strategy the concept of 'proactive conservation', an approach that more explicitly includes actions that will reduce the likelihood that new species will become a conservation concern.

Forest and Fish Agreement: The Forest and Fish Agreement resulted in the most ambitious Habitat Conservation Plan in the history of the Endangered Species Act. The 1990 agreement represented a landmark collaboration that included science-based forest practice regulations that guide the conservation of more than 60,000 miles of streams running through 9.3 million acres of state and private forestland. Goals of the agreement include: 1) Compliance with the Endangered Species Act for aquatic and riparian dependent species, 2) Restore and maintain riparian habitat on non-federal forest

lands to support a harvestable supply of salmon, 3) Meet the requirement of the Clean Water Act and 4) To keep the timber industry economically viable in the state. Goal 4 helps to ensure that many of our upland and smaller rivers and streams will remain in forests for the foreseeable future. The agreement supports one of the more successful [adaptive management programs](#) in the history of Habitat Conservation Planning.

GLOSSARY

ACTION AGENDA

The Action Agenda for Puget Sound charts the course to recovery—it complements and incorporates the work of many partners from around Puget Sound to describe regional strategies and specific actions needed to recover Puget Sound. These strategies and actions provide opportunities for federal, state, local, tribal, and private entities to better invest resources and coordinate actions.

ADAPTIVE MANAGEMENT

The process of continuous improvement based on new data, analysis, and learning.

BACKBONE ORGANIZATION

A single organization that serves as a hub to manage, communicate, convene, coordinate, and align the efforts of the collective.

COLLECTIVE IMPACT

Describes a theory of affecting change in complex systems that involve many different types of stakeholders working toward a shared goal.

IMPLEMENTATION STRATEGIES

Flowcharted steps for getting from where we are today to the 2020 ecosystem recovery targets. Each target is associated with at least one Puget Sound Vital Sign indicator. The plans are designed to inform the Puget Sound Action Agenda, the Science Work Plan, and salmon recovery planning. Each Implementation Strategy accomplishes the following:

- Identifies priority approaches for achieving a specific recovery target
- Assesses and combines elements of local and regional recovery efforts, ongoing programs, Near Term Actions from the Puget Sound Action Agenda, and ecosystem pressures from the Puget Sound Pressures Assessment (<https://sites.google.com/site/pressureassessment/home>)
- Identifies monitoring activities, research priorities, and adaptive management components
- Identifies key geographic areas associated with the recovery target
- Estimates costs of achieving the recovery target

LOCAL INTEGRATING ORGANIZATION

Local Integrating Organizations (LIOs) play a critical role in identifying local priorities to inform regional recovery efforts. Partnership staff work closely with LIOs to solicit input for development of updates to the Action Agenda. Members may include elected officials, tribal staff, city and county government staff, non-profit organizations, land trusts and conservation districts, marine resource committees, local businesses, interest groups, citizens, and educational organizations.

LEAD ENTITY FOR SALMON RECOVERY

Lead entities are local, watershed-based organizations that develop local salmon habitat recovery strategies and then recruit organizations to do habitat protection and restoration projects that will implement the strategies.

NEAR TERM ACTIONS (NTAs)

Trackable and measurable actions that clearly contribute to achieving the recovery targets and which can reasonably be accomplished within 4 years. The status of 2016-2018 Action Agenda NTAs can be found on the [Action Agenda Report Card](http://www.psp.wa.gov/gis/ReportCard/) website (<http://www.psp.wa.gov/gis/ReportCard/>). 2018-2022 Action Agenda NTA information can be found on the [Action Agenda Tracker](https://actionagenda.pugetsoundinfo.wa.gov/) (<https://actionagenda.pugetsoundinfo.wa.gov/>).

ONGOING PROGRAMS

Ongoing programs are continuing efforts that provide regulatory oversight, technical support, implementation resources, financial resources, or other guidance. Examples include programs related to implementation of the Growth Management Act at both the state and local levels, salmon recovery programs, and Washington State Department of Ecology Clean Water Programs.

REGIONAL PRIORITY

Regional Priorities describe the specific approaches, desired outcomes, and action ideas that are a priority for recovery of the Vital Signs over the next 4 years. Regional Priority approaches constituted the basis for identifying priority actions in the 2018-2022 Action Agenda Implementation Plan.

SCIENCE WORK PLAN

An assessment of priority science for restoring and protecting Puget Sound, with research priority recommendations. Prepared by the Science Panel to accompany updates to the Action Agenda, the Science Work Plan identifies the near-term science activities and capacity needed to support ecosystem recovery and makes recommendations about how science can better support recovery.

TARGET

A quantitative milestone for recovering a specific component of the Puget Sound ecosystem. The Action Agenda specifies targets for 16 Vital Signs to be met by the year 2020, as well as interim targets for 12 Vital Signs to be met by 2014, 2016, and 2018.

- 2020 ecosystem recovery target: The desired future condition of human health and wellbeing, species and food webs, habitats, water quantity, and water quality. The 2020 targets are policy statements that were adopted by the Leadership Council as aspirational goals to motivate and reflect the region's commitment to ecosystem recovery. They are not regulatory in nature.
- Interim targets: These provide shorter-term milestones for measuring progress toward the 2020 ecosystem recovery targets and inform results-based management actions. They are aligned with the goals, indicators, and recovery targets of Vital Signs.

VITAL SIGNS

The Partnership tracks 25 Vital Signs to report on progress toward the six Puget Sound recovery goals established by the legislature: healthy human population, vibrant quality of life, thriving species and food webs, protected and restored habitat, healthy water quality, and abundant water quantity. The Vital Signs represent overarching measures for determining the health of Puget Sound. Vital Signs are part of our shared measurement system—the set of common data and evaluation tools used among partners.

VITAL SIGN INDICATORS

These specific and measurable metrics represent associated Vital Signs. Examples of indicators include eelgrass acreage under the Eelgrass Vital Sign, Chinook salmon abundance under the Chinook Vital Sign, and the number of Southern Resident orcas under the Orca Vital Sign. Each Vital Sign is represented by one or more indicators. Because many indicators are assigned quantitative targets, they provide a mechanism for measuring progress toward a specific goal. The Vital Sign indicators are used to inform policy makers and the public about the condition of the Puget Sound ecosystem at different points in time and to give us indications of trends and connections in the system.

Stories of Puget Sound recovery

Look for these stories of Puget Sound recovery on
WWW.STATEOFTHESOUND.WA.GOV

Kids kick asphalt out of the school yard for cleaner water

Students, their parents, and local volunteers pried up thousands of pounds of asphalt to bring a community together, create a sense of accomplishment, and help children renew their love of nature.



Trekking backroads to count culverts for salmon

Walking countless miles and feeling for pipes in chest deep water, local volunteers clocked nearly 300 days identifying and recording hundreds of road culverts blocking salmon passage.



Setting the table for fish, farms, and floodplains

Dialogue, collaboration and the development of a shared ethos have brought the agricultural community, tribes, local government, state and federal agencies, and environmental stakeholders together.

To see more proposed and active recovery projects featured in the Puget Sound Action Agenda, visit
ACTIONAGENDA.PUGETSOUNDINFO.WA.GOV



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