



# 2022-2026 Action Agenda for Puget Sound

Approved on August 12, 2022 by the United States Environmental Protection Agency as the  
Puget Sound Comprehensive Conservation and Management Plan (CCMP)  
Version: June 15, 2022

# LEADERSHIP COUNCIL LETTER



**To the People of Puget Sound,**

**We are grateful, now and always, to call the Puget Sound region our home.**

**As we release our recovery plan for Puget Sound, we have many reasons to be optimistic.**

Champions in Congress and the federal government are directing unprecedented levels of funding to our region. This will provide a game-changing boost to Puget Sound recovery. The Action Agenda will be an important tool to help guide this funding.

The Governor and State Legislature's renewed focus on salmon recovery means that we are moving toward rebuilding this iconic species. This focus includes investments in restoration project funding, new policy, and support for recovery partners.

We are meeting this once-in-a-lifetime opportunity with a visionary recovery plan. This plan calls on all the communities that live within the Puget Sound region to commit to protecting and restoring this ecosystem.

Despite seeing worrying trends in our Puget Sound Vital Signs – which measure the health of the ecosystem around us – we saw some promising data last year:

- ▶ the conversion of forests and ecologically important lands slowed down;
- ▶ some salmon runs in Hood Canal have improved; and
- ▶ even in the face of climate change and population growth we have stopped the decline in some key salmon populations.

While we have much work ahead of us, we should be inspired by this evidence that positive change is possible.

**The 2022-2026 Action Agenda charts the course for Puget Sound recovery.**

It aligns our partners behind the most effective strategies and actions for Puget Sound recovery, and it guides funding and policy proposals.

It is rooted in strong science and robust partner engagement.

It addresses the magnitude of problems caused by human activities, the most significant of which are climate change and population growth.

It fulfills the Puget Sound Partnership's statutory mandate to protect and restore an estuary of national significance.

Perhaps most importantly, this Action Agenda will help us clean our waters, protect important habitat, and restore Puget Sound – for all people who live here.

This Action Agenda focuses the recovery plan on multi-benefit strategies and actions. It also integrates human wellbeing, tribal nations' treaty and sovereign rights, and environmental justice.

## **It takes all of us.**

We offer our sincere thanks to the hundreds of partners from around the region who helped identify the high priority actions in the document. Tribal nations, representatives of business, agriculture, and all levels of government, non-profit organizations, and many others are the foundation of our collective efforts. Only together will we be able to carry out the recovery plan and achieve its goals.

Our commitment, as the Puget Sound Partnership Leadership Council, is to accelerate Puget Sound recovery and the implementation of the Action Agenda. We do this by advocating for funding, removing barriers to progress, and ensuring that Puget Sound recovery remains a priority for our congressional and legislative representatives in Washington, D.C. and Washington State.

Recovering this special place is one of this generation's greatest challenges – but together, it is something we are unquestionably capable of doing. Join us in rising to the occasion.

- ▶ Jay Manning, Chair
- ▶ Dennis McLellan, Vice Chair
- ▶ Kate Dean
- ▶ Will Hall
- ▶ Russell Hepfer
- ▶ Deborah Jensen
- ▶ Toby Murray



*Laura Blackmore, Executive Director*



## LETTER FROM THE DIRECTOR

---

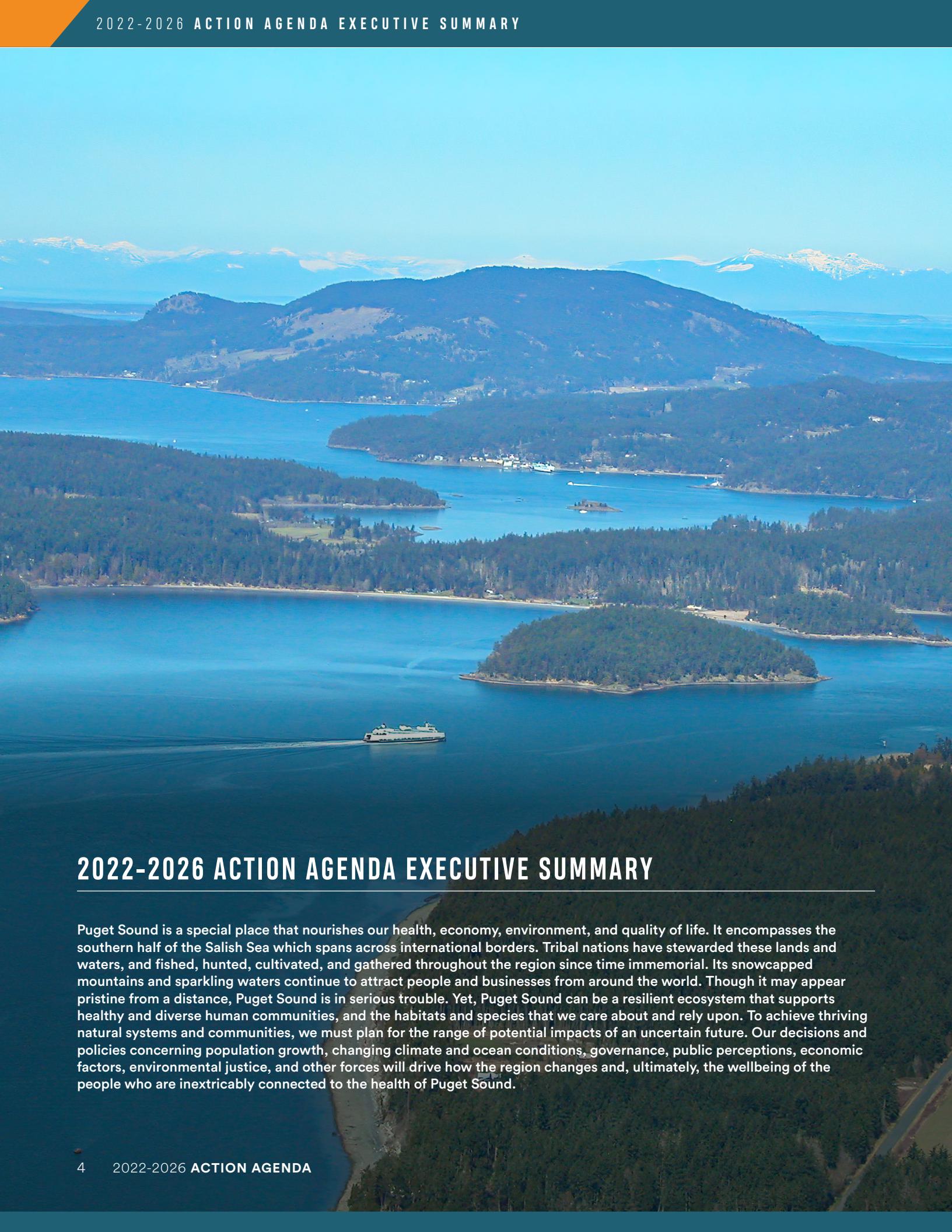
**Puget Sound is not doing well. Very few of our indicators met their 2020 targets. The Southern Resident orca population hovers at 74 animals, and Chinook salmon populations show no signs of recovery. Marine water quality continues to decline, and we continue to destroy habitat faster than we can restore it.**

Despite these challenges, I am hopeful. For the first time ever, we are poised to make investments in our Puget Sound recovery efforts at a scale that starts to truly match the need. The Puget Sound Partnership is working with our partners to determine how to invest hundreds of millions of dollars that should be made available to the state over the next five years through the Bipartisan Infrastructure Law, including investments in nature-based infrastructure, climate resilience, and equity. State partners are rolling out new investments, too, including funding for climate resilience through the Washington Climate Commitment Act.

The 2022-2026 Action Agenda is the plan that will help us meet this opportunity. This Action Agenda will sharpen our focus on actions with multiple benefits, draw more resources to important shared efforts, enhance accountability, and enable results on the ground. It will guide investments in communities to ensure human wellbeing and help us avoid the worst effects of climate change.

These investments are not just about dollars. They're about decades of collaboration to make the case for why Puget Sound recovery is essential to our communities and our future. These investments are about years of communities demonstrating the need for and promise of recovery through successfully completed projects and new project ideas. They're about leadership at all levels and from all partners of our region.

We know that it will take all of us – all who live in and care about this special place – working together to restore Puget Sound to resilience. We know what we need to do. Let's get to work.



## 2022-2026 ACTION AGENDA EXECUTIVE SUMMARY

---

Puget Sound is a special place that nourishes our health, economy, environment, and quality of life. It encompasses the southern half of the Salish Sea which spans across international borders. Tribal nations have stewarded these lands and waters, and fished, hunted, cultivated, and gathered throughout the region since time immemorial. Its snowcapped mountains and sparkling waters continue to attract people and businesses from around the world. Though it may appear pristine from a distance, Puget Sound is in serious trouble. Yet, Puget Sound can be a resilient ecosystem that supports healthy and diverse human communities, and the habitats and species that we care about and rely upon. To achieve thriving natural systems and communities, we must plan for the range of potential impacts of an uncertain future. Our decisions and policies concerning population growth, changing climate and ocean conditions, governance, public perceptions, economic factors, environmental justice, and other forces will drive how the region changes and, ultimately, the wellbeing of the people who are inextricably connected to the health of Puget Sound.



*Figure 1. Puget Sound National Estuary Program area and Salish Sea bioregion.*

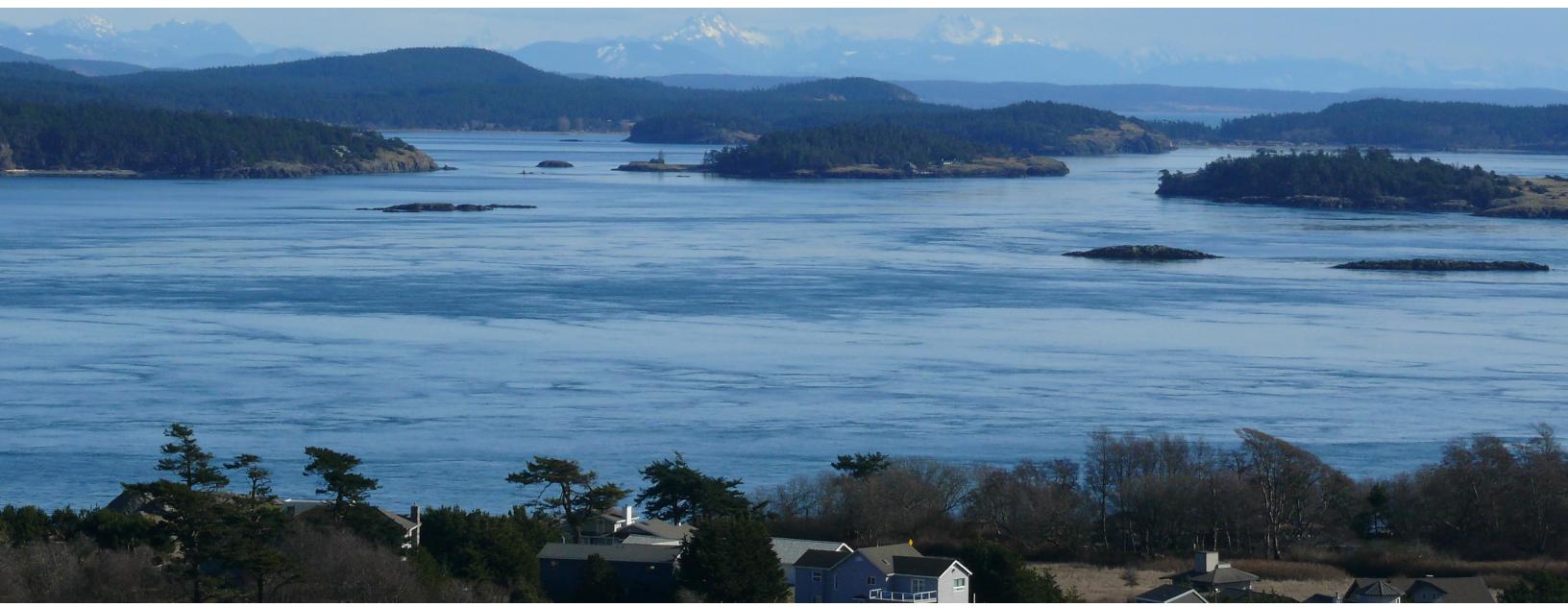
The 2022-2026 Action Agenda charts the course for Puget Sound recovery. It presents the most effective and beneficial outcomes, strategies, and actions for Puget Sound recovery and resilience, supported by science and robust partner engagement. The Action Agenda addresses the magnitude of the challenges present in Puget Sound from the pressures of human activities including climate change and population growth. It calls for bold leadership to direct and support recovery by maximizing expertise, experience, and networks. It begins to incorporate human wellbeing, tribal nations' treaty and sovereign rights, and environmental justice. It provides clear guidance for funding and policy proposals to protect Puget Sound. Finally, it fulfills the Puget Sound Partnership's (Partnership) statutory mandate and purpose of the Clean Water Act's [National Estuary Program \(NEP\)](#).

In 2018, the Partnership's Leadership Council adopted the following vision for recovery:

*"We are people who care about Puget Sound. We span borders and boundaries, sectors, and strata. We envision a future in which generations can hear the calls of whales, witness the spawning of salmon, taste locally harvested shellfish, swim in clean water, and experience the unique cultural fabric that ties our region together. Our vision includes a resilient ecosystem—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. Our vision includes a thriving economy, sustainable farms and forests, and human communities with high quality of life and the businesses that support them. And most importantly, our vision includes a broad community of engaged citizens who commit to save Puget Sound."*

Hundreds of partners have committed to making this vision a reality and the 2022-2026 Action Agenda provides the roadmap for the next four years.

Three components illustrate the longer-term vision for Puget Sound recovery for 2022-2026: Vital Signs, desired outcomes, and targets and commitments for implementing the Action Agenda.



## Puget Sound Vital Signs Articulate Our Goals for Puget Sound Recovery

The Puget Sound Vital Signs and their indicators are measures of ecosystem health. Vital Signs also articulate the statutory goals for Puget Sound recovery and describe how we will know whether statutory goals are achieved. The 2022-2026 Action Agenda sets targets for six Vital Sign Indicators. These targets are ambitious and bold, represent iconic and valued components of the Puget Sound ecosystem, and are strongly linked to the work proposed in this Action Agenda.

- ▶ [Number of Southern Resident killer whales](#) – By 2030, increase the Southern Resident killer whale population from 74 individual whales in 2021 to 86 individuals. By 2050, increase the population to 110 individuals.
- ▶ [Chinook salmon abundance](#) – By 2050, two or more populations of natural origin Chinook salmon in each biogeographic area meet their abundance recovery goals to achieve self-sustaining, harvestable salmon runs and we see sustained, measurable increases in natural-origin Chinook salmon abundance in all populations.
- ▶ [Toxics in aquatic life](#) – By 2030, 95 percent of the samples gathered across Puget Sound habitats exhibit a declining trend of contaminant levels, or are below thresholds of concern for species or human health. By 2050, 95 percent of the samples gathered across Puget Sound habitats exhibit monitored contaminant levels below thresholds of concern for species or human health and show no increasing trends.
- ▶ [Eelgrass site status](#) – By 2030, see no significant difference between the number of sites with increases and declines in eelgrass area in each of three sub-regions of Puget Sound (no net loss). By 2050, sites with long-term increases in eelgrass area significantly outnumber sites with declines in each of three sub-regions of Puget Sound.
- ▶ [Shellfish beds](#) – Beginning in 2022, achieve an annual net improvement of at least 500 classified commercial shellfish acres in Puget Sound, based on a three-year rolling average.
- ▶ [Swimming beaches](#) – Beginning in 2022, 95 percent of core beaches meet safe swimming standards annually.

### EXAMPLE OF VITAL SIGNS STRUCTURE



Figure 2: Example of the structure of the Vital Signs.

## The Action Agenda Sets Us on the Pathway to Achieve Our Vision

To achieve the Vital Sign goals and Puget Sound recovery, the Action Agenda identified desired outcomes as well as the strategies and action we must take to achieve them in the near term. The Action Agenda also emphasizes a multi-benefit approach – to meet the urgency and magnitude of the challenge we face – that will help the recovery community effectively make progress towards multiple goals.

**Desired outcomes describe the reductions in adverse effects on the ecosystem (for example, reducing toxic pollution in stormwater runoff) and the changes in human activities that create them (for example, reducing impervious surfaces from development) and are necessary to make progress toward the Vital Signs and statutory goals.**

The Partnership analyzed the strength of the relationship between the full list of desired outcomes and Vital Sign Indicators. Eleven of 23 desired outcomes appear to generate substantial multi-benefit results. Progress toward any one of these eleven multi-benefit desired outcomes could result in improvements to 25 percent or more of the Vital Sign Indicators. As the recovery community implements this Action Agenda, we should consider how to incorporate multi-benefit approaches into recovery actions. These outcomes are:

- ▶ Protect habitat and habitat-forming processes from conversion and fragmentation
- ▶ Protect agricultural lands and working forests from conversion
- ▶ Restore natural flows, fish passage, flooding, and tidal inundation to freshwater and marine systems by removing structural barriers or altering their management (including from major infrastructure)
- ▶ Restore habitat and habitat-forming processes to support biological communities
- ▶ Reduce toxic chemicals entering Puget Sound and connected waters, including from roads, contaminated sediments, and industrial lands
- ▶ Reduce nutrients entering Puget Sound and connected waters to improve the dissolved oxygen marine water quality indicator
- ▶ Prevent spills of oil and hazardous substances
- ▶ Ensure sustainable harvest of native wild fish and shellfish populations and support treaty-reserved fishing rights.
- ▶ Increase the resilience of the Puget Sound ecosystem (including habitats, water resources, species, and humans) and recovery efforts by adapting to changing climate and ocean conditions when conducting protection and restoration activities
- ▶ Increase engagement in and trust of Puget Sound environmental and natural resource governance
- ▶ Ensure that the health of the human population of Puget Sound is improved by changes in ecosystem conditions and vulnerable populations and underserved communities do not experience inequitable health outcomes



## Recovery Partners are Setting Targets and Commitments for Implementing the Action Agenda

We achieve these targets and desired outcomes by implementing the strategies. We will be leading an ongoing process of setting targets for Puget Sound recovery-related programs and Action Agenda Progress Indicators to assess the success of implementing the Action Agenda.

Eight of the strategies are affiliated with one or more [program targets](#). Program targets are commitments for results that a Puget Sound recovery-related program will aim to achieve in the next four years. They are measurable, bold, yet achievable program accomplishments. The targets are a definition of success for accelerating progress toward one or more of the desired outcomes in the Action Agenda. The program targets will be monitored and evaluated to provide the recovery community with a transparent way to assess and address program needs, remove barriers, and promote increased support for programs to help achieve targets.

### Implementation is guided by:

- **31 collaboratively developed, science-informed strategies**
- **137 actions with key opportunities that advance each strategy**
- **11 program targets that define how to accelerate progress toward one or more desired outcomes**

## Program Targets for 2022-2026 include:

STRATEGY	PROGRAM NAME	TARGET
<b>Strategy 2 – Working Lands</b>	Ecology Floodplains by Design	4,140 acres of working lands protected or improved
<b>Strategy 3 – Healthy Shorelines</b>	Puget Sound Partnership Nearshore Credits	930 tons of creosote removed
	Washington Department of Fish and Wildlife Shore Friendly	Conduct 914 technical site visits with interested shoreline landowners and follow up with over 330 technical site visits with site-specific recommendations
<b>Strategy 4 – Riparian Areas</b>	Washington State Conservation Commission Conservation Reserve Enhancement Program	675 acres of riparian buffer installed in Puget Sound agricultural areas
<b>Strategy 5 – Floodplains and Estuaries</b>	Puget Sound Partnership Puget Sound Acquisition and Restoration Program	Fund 6,000 acres of salmon habitat protection or restoration projects
	Washington Department of Fish and Wildlife Puget Sound Nearshore Ecosystem Restoration Project	Secure funds to start the process-based restoration of 2,414 acres of Puget Sound Nearshore Ecosystem Program identified nearshore habitat projects
	Ecology Floodplains by Design	Fund 4,554 acres of floodplain or estuary habitat restoration or reconnection
<b>Strategy 8 – Toxic Chemical Pollution</b>	Ecology Toxics Reduction Program	Reduce the amount of toxic chemicals used or generated hazardous waste an additional 8,000 pounds above their existing goal of 160,000 pounds and realize an additional cost savings for participating businesses of \$20,000 above their existing cost-savings goal of \$400,000
<b>Strategy 12 – Working Lands Runoff</b>	Washington State Conservation Commission Shellfish Program	Fund the installation of best management practices in agricultural areas in Puget Sound with a cumulative effectiveness index of over 680 acres, 99,512 linear feet, and 2,748 units
<b>Strategy 17 – Responsible Boating</b>	Department of Natural Resources Derelict Vessel Removal Program	Remove or prevent 180 or more derelict vessels from entering Washington's waterways
<b>Strategy 20 – Climate Adaptation and Resilience</b>	Ecology Floodplains by Design	Support 1,340 homes or structures with reduced flood or climate risk

The 2022-2026 Action Agenda is our plan to achieve the vision for Puget Sound recovery, including all the Vital Signs, their indicators, and the desired outcomes. The Action Agenda is comprised of two sections: the Comprehensive Plan and the Implementation Plan. The Comprehensive Plan charts the longer-term vision for recovery and explains the recovery framework. The Implementation Plan provides the shared focus and implementation guidance for recovery over the next four years.

Recovery partners, including state agencies, federal agencies, tribal nations, local jurisdictions, Local Integrating Organizations (LIOs), Lead Entities and other salmon recovery group, nongovernmental organizations, and the business community, worked with the Partnership to develop the Action Agenda. These partners are committed to implementing the specific projects, programs, and actions that will advance recovery progress. This is our roadmap of progress toward a thriving, resilient Puget Sound for the next four years.

# TABLE OF CONTENTS

---

<a href="#"><u>Leadership Council Letter</u></a> .....	<b>2</b>
<a href="#"><u>Letter from the Director</u></a> .....	<b>3</b>
<a href="#"><u>2022-2026 Action Agenda Executive Summary</u></a> .....	<b>4</b>
<a href="#"><u>2022-2026 Action Agenda Comprehensive Plan</u></a> .....	<b>12</b>
<a href="#"><u>Introduction</u></a> .....	12
<a href="#"><u>The Challenge before Us</u></a> .....	13
<a href="#"><u>The Goals and Vision for a Healthy and Resilient Puget Sound</u></a> .....	15
<a href="#"><u>The Framework to Achieve Success and Measure Progress</u></a> .....	16
<a href="#"><u>Integrating the Framework into a Theory of Change</u></a> .....	23
<a href="#"><u>Partnership Boards and Partners</u></a> .....	24
<a href="#"><u>Funding Puget Sound Recovery</u></a> .....	25
<a href="#"><u>2022-2026 Action Agenda Implementation Plan</u></a> .....	<b>26</b>
<a href="#"><u>Chapter 1   Strategies for Advancing Progress toward Desired Outcomes and Vital Signs</u></a> .....	32
<a href="#"><u>Strategy 1 – Smart Growth</u></a> .....	32
<a href="#"><u>Strategy 2 – Working Lands</u></a> .....	37
<a href="#"><u>Strategy 3 – Healthy Shorelines</u></a> .....	40
<a href="#"><u>Strategy 4 – Riparian Areas</u></a> .....	44
<a href="#"><u>Strategy 5 – Floodplains and Estuaries</u></a> .....	47
<a href="#"><u>Strategy 6 – Fish Passage Barriers</u></a> .....	52
<a href="#"><u>Strategy 7 – Freshwater Availability</u></a> .....	55
<a href="#"><u>Strategy 8 – Toxic Chemical Pollution</u></a> .....	58
<a href="#"><u>Strategy 9 – Water Pollution Source Identification and Correction</u></a> .....	61
<a href="#"><u>Strategy 10 – Stormwater Runoff and Legacy Contamination</u></a> .....	64
<a href="#"><u>Strategy 11 – Wastewater Systems</u></a> .....	68

<a href="#"><u>Strategy 12 – Working Lands Runoff</u></a> .....	72
<a href="#"><u>Strategy 13 – Oil Spills</u></a> .....	75
<a href="#"><u>Strategy 14 – Invasive Species</u></a> .....	79
<a href="#"><u>Strategy 15 – Harvest, Hatchery, and Adaptive Management of Salmon Recovery</u></a> .....	82
<a href="#"><u>Strategy 16 – Submerged Aquatic Vegetation</u></a> .....	85
<a href="#"><u>Strategy 17 – Responsible Boating</u></a> .....	88
<a href="#"><u>Strategy 18 – Awareness of Effects of Climate Change</u></a> .....	91
<a href="#"><u>Strategy 19 – Greenhouse Gas Emissions and Carbon Sequestration</u></a> .....	94
<a href="#"><u>Strategy 20 – Climate Adaptation and Resilience</u></a> .....	97
<a href="#"><u>Strategy 21 – Place Attachment</u></a> .....	101
<a href="#"><u>Strategy 22 – Outdoor Recreation and Stewardship</u></a> .....	104
<a href="#"><u>Strategy 23 – Good Governance</u></a> .....	106
<a href="#"><u>Strategy 24 – Cultural Practices and Local Foods</u></a> .....	109
<a href="#"><u>Strategy 25 – Economic Benefits</u></a> .....	111
<a href="#"><u>Strategy 26 – Human Health</u></a> .....	113
<a href="#"><u>Chapter 2   Institutional Strategies</u></a> .....	116
<a href="#"><u>Strategy A – Funding</u></a> .....	117
<a href="#"><u>Strategy B – Strategic Leadership and Collaboration</u></a> .....	121
<a href="#"><u>Strategy C – Research and Monitoring</u></a> .....	125
<a href="#"><u>Strategy D – Education Partnerships</u></a> .....	130
<a href="#"><u>Strategy E – Stewardship and Motivating Action</u></a> .....	134
<a href="#"><u>Appendix I: Adaptive Management</u></a> .....	136
<a href="#"><u>Appendix II: Partners in Recovery</u></a> .....	151
<a href="#"><u>Appendix III: Funding Recovery</u></a> .....	162
<a href="#"><u>Appendix IV: Glossary</u></a> .....	168

# 2022-2026 ACTION AGENDA COMPREHENSIVE PLAN

## Introduction

The 2022-2026 Action Agenda charts the course for Puget Sound recovery. It presents desired outcomes, strategies, and actions for Puget Sound protection and resilience. The Action Agenda is built upon scientific evidence and partner contributions, all incorporated into an adaptive management framework that is responsive to ongoing scientific discovery and partner collaboration. This recovery strategy addresses the magnitude of challenges from the pressures of human activities including changing climate and ocean conditions and population growth. It calls for bold leadership to direct and support recovery, maximizing expertise, experience, and networks. It begins to incorporate human wellbeing, tribal nations' treaty and sovereign rights, and environmental justice. It provides clear guidance for funding and policy proposals to protect Puget Sound. Finally, it fulfills the Partnership's statutory mandate and purpose of the Clean Water Act's National Estuary Program (NEP).

The Action Agenda is comprised of two sections: the Comprehensive Plan and the Implementation Plan. The Comprehensive Plan charts the longer-term vision for recovery and explains the recovery framework. The Implementation Plan provides the shared focus and implementation guidance for recovery over the next four years.

## NATIONAL ESTUARY PROGRAM

The [National Estuary Program](#) (NEP) is an EPA place-based program to protect and restore the water quality and ecological integrity of estuaries of national significance. Currently, 28 estuaries located along the Atlantic, Gulf, and Pacific coasts and in Puerto Rico are designated as estuaries of national significance. In overseeing and managing the national program, EPA provides funding, national guidance, and technical assistance to the coordinators for each estuary included in the NEP.

This program provides a foundation for close planning and strategic collaboration between federal, tribal, private, and nongovernmental stakeholders. Each estuary of national significance develops and implements a long-term plan, known as a Comprehensive Conservation and Management Plan (CCMP), which contains actions to address water quality and living resource challenges and priorities. Each estuary in the NEP has a Management Conference that consists of diverse stakeholders and uses a collaborative, consensus-building approach to implement CCMPs that are uniquely tailored to the local environmental conditions to support local priorities.

A non-regulatory program, the NEP was established by Congress and authorized by section 320 of the Clean Water Act in 1987.

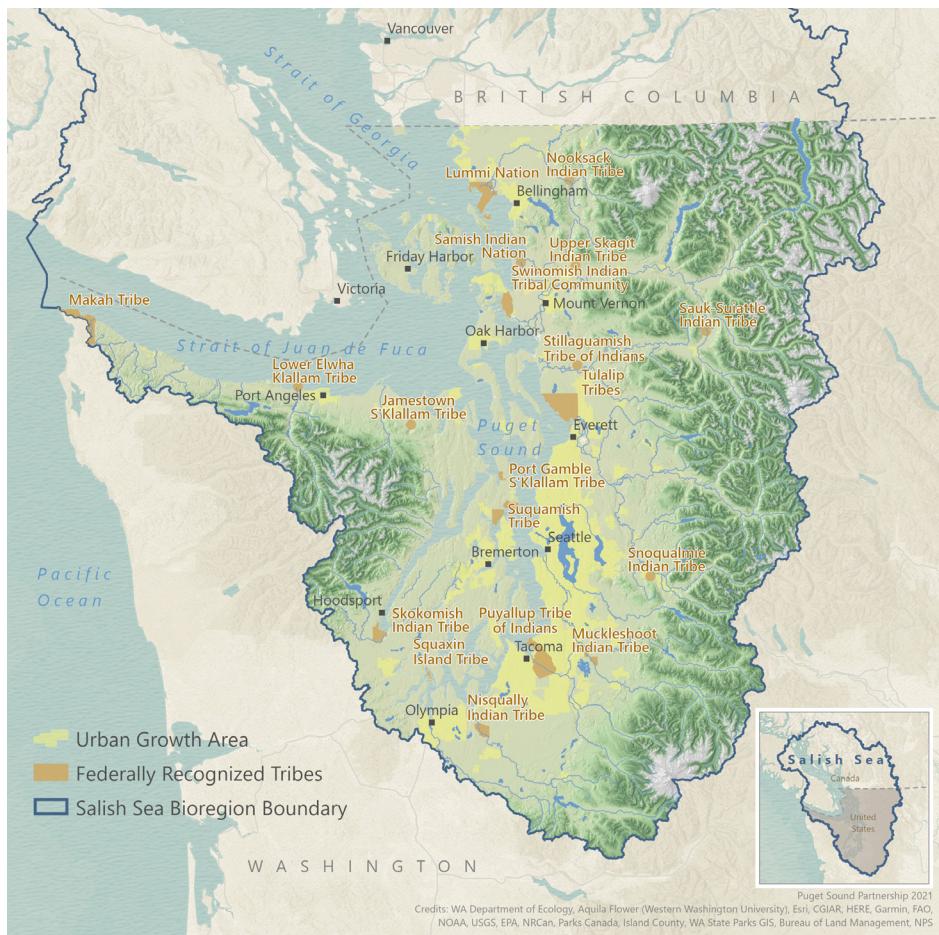


Figure 3. Puget Sound National Estuary Program area and Salish Sea bioregion.

## The Challenge before Us

Puget Sound is a special place that nourishes our health, economy, environment, and quality of life. It encompasses the southern half of the Salish Sea which spans across international borders. Tribal nations have stewarded these lands and waters, and fished, hunted, cultivated, and gathered throughout the region since time immemorial. Its snowcapped mountains and sparkling waters continue to attract people and businesses from around the world. A healthy Puget Sound is essential to sustaining a vibrant economy, meeting our obligations to tribal nations' treaties and sovereign rights, and supporting our need for connection to the natural world. And because it is part of the greater, contiguous Salish Sea ecosystem, protection and recovery of Puget Sound also requires cross-border communication and collaboration.



Though it may appear pristine from a distance, Puget Sound is in serious trouble. Over the past 150 years settler colonialism has damaged Puget Sound causing the degradation of water quality, water quantity, and habitats. Too often the impacts are felt by people who do not create the pressures, including Black, Indigenous, and other communities of color, as well as tribal nations. Iconic and important species, including Southern Resident Orca and Chinook salmon, are at risk. Contamination jeopardizes cherished cultural, ceremonial, traditional, subsistence, recreational, and commercial fishing opportunities. Even so, Puget Sound is an important place for residents to connect with and enjoy nature, evident in the region's response to the Covid-19 pandemic.

Today, 5.3 million people live in the Puget Sound region. If we continue our current rate of economic growth, by 2050 we may increase our population to 7 million, the equivalent of adding approximately 2.25 cities the size of Seattle to our watershed. If this rapid population growth occurs without adequate planning and mitigation, it will bring more land conversion, development, and pollution. Anticipated port expansion projects will increase vessel traffic and the threats of oil spills in our waterways. Challenges are further complicated by the effects of climate change, including warming ocean and air temperatures, changes in precipitation patterns and reduced snowpack, and ocean acidification. Puget Sound recovery and protection efforts are falling short against these pressures caused by our growth and development.

In 2021, the Partnership, with the support and engagement of many partners, produced the [State of the Sound](#) report. The State of the Sound is a summary of the status of the Puget Sound recovery effort. Although we see some success in areas where decision-makers and land managers have direct influence on habitat—outcomes for example, restoring estuaries and floodplains or preventing conversion of ecologically sensitive lands—the State of the Sound report concluded that ecosystem conditions are not good enough to say the system is either resilient or recovered. The ecosystem indicators with the least progress, such as salmon and orca abundance, show alarming lack of improvement. While we are responsible for and have local control over many factors, we have less control over large-scale forces, such as changing climate and ocean conditions. Our success depends, in part, on decisions made nationally, transnationally, or even globally to create and support positive change.

In 2007, in response to the imperiled status of Puget Sound, the Washington State Legislature passed legislation with large bipartisan majorities to create the Puget Sound Partnership (Partnership). The legislation mandated a comprehensive ecosystem recovery framework to replace what was seen as fragmented attempts at Puget Sound restoration. Specifically, the legislation mandated that the Partnership coordinate and lead the effort to recover Puget Sound through a strategic, prioritized, science-based Action Agenda “that addresses all of the complex connections among the land, water, web of species, and human needs.” ([RCW 90.71.200](#)) Through

an adaptive management approach, the Partnership evolves each subsequent Action Agenda. The 2018-2022 Action Agenda emphasized local recovery projects, called Near Term Actions (NTAs), that did not advance recovery at a pace or scale sufficient to meet Vital Sign targets. The current Action Agenda reflects a more strategic approach to recovery that leverages and amplifies the work of ongoing programs, advocates multi-benefit outcomes that influence multiple Vital Signs, integrates biophysical strategies with climate change and human wellbeing, and includes new Vital Sign targets to improve monitoring and accountability of recovery efforts.

Puget Sound will never be as it was prior to settler colonialism and industrialization. Yet, Puget Sound can be a resilient ecosystem that supports healthy and diverse human communities, and the habitats and species that we care about and rely upon. We can grow our cities and towns more carefully, protect areas and systems that are relatively intact, restore floodplains and shorelines we previously degraded, and improve water quality and quantity for all. To achieve thriving natural systems and communities, we must plan for the range of potential impacts of an uncertain future. Our decisions and policies concerning population growth, climate change, governance, public perceptions, economic factors, environmental justice, and other forces will drive how the region changes and, ultimately, the wellbeing of the people who are inextricably connected to the health of Puget Sound.

## The Goals and Vision for a Healthy and Resilient Puget Sound

In 2007, the Washington State Legislature adopted the following statutory goals for a restored and protected Puget Sound ([RCW 90.71.300](#)):

- ▶ **Healthy human population.** A healthy population supported by a healthy Puget Sound that is not threatened by changes in the ecosystem.
- ▶ **Vibrant quality of life.** A quality of human life that is sustained by a functioning Puget Sound ecosystem.
- ▶ **Thriving species and food web.** Healthy and sustaining populations of native species in Puget Sound, including a robust food web.
- ▶ **Functioning habitat.** A healthy Puget Sound where freshwater, estuary, nearshore, marine, and upland habitats are protected, restored, and sustained and an ecosystem that is supported by groundwater levels, as well as by river and streamflows sufficient to sustain people, fish, and wildlife, and the natural functions of the environment.
- ▶ **Healthy water quality.** Fresh and marine waters and sediments of a sufficient quality to support water that is safe for drinking, swimming, and other human uses and enjoyment, and are not harmful to the native marine mammals, fish, birds, and shellfish in the region.





In 2018, the Puget Sound Partnership's Leadership Council adopted the following vision for recovery:

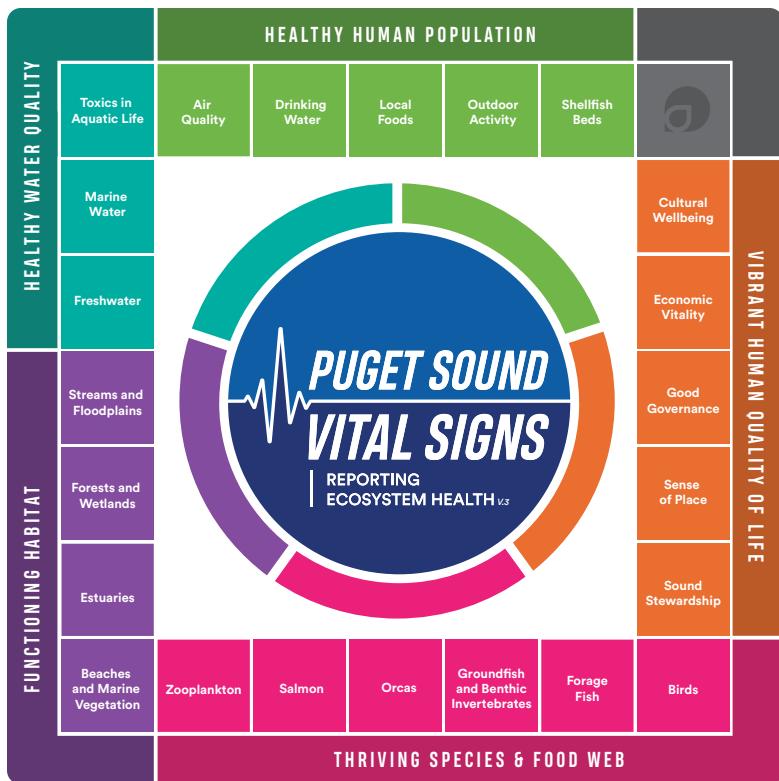
**“**We are people who care about Puget Sound. We span borders and boundaries, sectors, and strata. We envision a future in which generations can hear the calls of whales, witness the spawning of salmon, taste locally harvested shellfish, swim in clean water, and experience the unique cultural fabric that ties our region together. Our vision includes a resilient ecosystem—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. Our vision includes a thriving economy, sustainable farms and forests, and human communities with high quality of life and the businesses that support them. And most importantly, our vision includes a broad community of engaged citizens who commit to save Puget Sound.”

The recovery community consists of hundreds of partners including scientists, tribal nation representatives, resource managers, community and business leaders, policy makers, educators, and youth. The Partnership, along with these partners, are working to make this vision a reality by pursuing ambitious action, securing needed funding, seeking supporting legislation, applying resources and legal tools, and holding ourselves accountable for implementing all actions needed to make Puget Sound resilient. Because we are all connected to Puget Sound, we ask everyone to make the same commitment. We ask you to join us in protecting habitat, recovering iconic species, and ensuring that the lands and waters sustain generations to come.

## The Framework to Achieve Success and Measure Progress

Puget Sound is a complex ecosystem of rivers and streams, forests and prairies, farmlands, estuaries, beaches, marine waters, cities, towns, ports, and roads. The ecosystem is under pressure from harmful human actions including climate change and is constantly responding to investments in protection and restoration. The Action Agenda uses a planning framework that articulates what we must achieve, how we will achieve it, and how we will hold ourselves accountable to ensure that progress is made. Targets are a key component of this framework and can be set for different timeframes depending on their purpose. When targets are developed collectively and with justification, they serve as a tool to hold ourselves accountable and deliver results. This is a dynamic framework based on the principles of adaptive management (see Appendix I for a full description of adaptive management). This planning framework includes these six elements, each described in the following sections:

- ▶ Vital Signs
- ▶ Puget Sound Indicators
- ▶ Vital Sign Indicator targets
- ▶ Desired outcomes
- ▶ Strategies
- ▶ Actions



**Vital Signs** – The [Puget Sound Vital Signs](#) are measures of ecosystem health that guide the assessment of progress toward Puget Sound recovery goals. Each of the Puget Sound recovery goals are expressed with one or more Vital Signs that represent important components of the ecosystem (for example, marine water, economic vitality). The Puget Sound Vital Signs are important ecosystem signs that the Puget Sound recovery community values and wants to protect and restore.

**Puget Sound Indicators** – The Partnership uses a set of indicators to monitor our progress, evaluate success of strategies and actions, and learn and inform planning and implementation. [The Puget Sound Indicators](#) are a suite of measures comprised of Puget Sound [Vital Sign Indicators](#) and [Action Agenda Progress Indicators](#). Vital Sign Indicators, monitored and reported on by a diversity of partners, are the specific measures to help us evaluate the status and trends for each Vital Sign.

**Targets** – Targets for six Vital Sign Indicators help articulate our long-term goals for Puget Sound. These ambitious and bold targets, outlined below, are part of our vision for the future. They represent iconic and valued components of the Puget Sound ecosystem and are strongly linked to the work proposed in this Action Agenda. These six Vital Sign Indicators were selected for targets based primarily on two criteria. First, they are influenceable by the work suggested in the Action Agenda. Second, they are feasible for measurement given known or envisioned metrics and datasets. An additional consideration in selecting indicators was whether they represent priorities for the Governor or Legislature.

#### **Vital Sign Indicator targets**

- ▶ [Number of Southern Resident killer whales](#) – By 2030, increase the Southern Resident killer whale population from 74 individual whales in 2021 to 86 individuals. By 2050, increase the population to 110 individuals.
- ▶ [Chinook salmon abundance](#) – By 2050, two or more populations of natural origin Chinook salmon in each biogeographic area meet their abundance recovery goals to achieve self-sustaining, harvestable salmon runs and we see sustained, measurable increases in natural-origin Chinook salmon abundance in all populations.
- ▶ [Toxics in aquatic life](#) – By 2030, 95 percent of the samples gathered across Puget Sound habitats exhibit a declining trend of contaminant levels, or are below thresholds of concern for species or human health. By 2050, 95 percent of the samples gathered across Puget Sound habitats exhibit monitored contaminant levels below thresholds of concern for species or human health and show no increasing trends.
- ▶ [Eelgrass site status](#) – By 2030, see no significant difference between the number of sites with increases and declines in eelgrass area in each of three sub-regions of Puget Sound (no net loss). By 2050, sites with long-term increases in eelgrass area significantly outnumber sites with declines in each of three sub-regions of Puget Sound.
- ▶ [Shellfish beds](#) – Beginning in 2022, achieve a net gain of at least 500 acres approved for shellfish harvesting every year.
- ▶ [Swimming beaches](#) – Beginning in 2022, 95 percent of core beaches meet safe swimming standards annually.

We achieve these targets by implementing the strategies, which are detailed in the Implementation Plan. Action Agenda Progress Indicators are designed to track our implementation of the strategies. The Action Agenda Progress Indicators and their targets will be developed in the coming years. These indicators describe what we need to achieve to improve Puget Sound health and the Vital Signs. The development, monitoring, and assessment of Action Agenda Progress Indicators will give the recovery community a routine way to assess barriers to progress, focus planning efforts, and adaptively manage our plans. Action Agenda Progress Indicators serve as the bridge between our shorter-term planning documents and the longer-term goals that we are trying to achieve.

**Desired outcomes** – [Desired outcomes](#) show us how we get from Vital Signs to strategies and actions on the ground. They describe the reductions in adverse effects on the ecosystem (example, reducing toxic pollution in stormwater runoff) and the changes in human activities that create them (example: reducing impervious surfaces from development) that are necessary to make progress toward the Vital Signs and statutory goals. The desired outcomes are listed below and detailed in Appendix I. The five overarching categories of desired outcomes are:

- ▶ Protect and restore habitat and habitat-forming processes
- ▶ Protect and improve water quality
- ▶ Protect the food web and imperiled species
- ▶ Prevent the worst effects of climate change
- ▶ Ensure human wellbeing

TIER 1	TIER 2 OUTCOME	FULLY DETAILED OUTCOME
<b>1. Protect and restore habitat and habitat-forming processes</b>	1.1 Protect habitat and habitat-forming processes from conversion and fragmentation	1.1.1 Ecologically important lands (including beaches, estuaries, forests and wetlands, streams and floodplains) protected from development
		1.1.2 Natural marine, estuarine, and freshwater shorelines (those not armored) protected to prevent future armoring and development
		1.1.3 Future fragmentation of rivers, floodplains, and estuaries by structural barriers prevented
	1.2 Protect agricultural lands and working forests from conversion	1.2.1 Conversion of agricultural lands and working forests to more intensive land uses (residential and commercial development) prevented
		1.3.1 Levees, floodgates, tidegates, roads, existing development, and other barriers in floodplains and estuaries removed or their management altered
		1.3.2 Armor on estuaries, lakes, and marine shorelines removed or softened
	1.3 Restore natural flows, fish passage, flooding, and tidal inundation to freshwater and marine systems by removing structural barriers or altering their management (including from major infrastructure)	1.3.3 Culverts, dams, and other infrastructure removed, retrofitted, or managed to ensure fish passage and functional downstream habitat
		1.4.1 In-stream and riparian areas of rivers and streams restored
	1.4 Restore habitat and habitat-forming processes to support biological communities	1.4.2 Floodplains, tidal wetlands, and estuaries restored
		1.5.1 Surface water diversions and groundwater withdrawals reduced or mitigated to meet instream flow targets
	1.5 Restore natural hydrology and sustain water resources for people, fish, and wildlife by reducing peak flood flows and maintaining or increasing low flows caused by land conversion and development	1.5.2 Infiltration and water holding capacity of upland areas (developed lands, agricultural lands and working forests, and natural lands) increased

TIER 1	TIER 2 OUTCOME	FULLY DETAILED OUTCOME	
<b>2. Protect and improve water quality</b>	2.1 Reduce toxic chemicals entering Puget Sound and connected waters, including from roads, contaminated sediments and industrial sites	2.1.1 Toxic hotspots where stormwater runoff or wastewater contain significant concentrations of numerous toxic chemicals reduced through improved source control and/or treatment	
		2.1.2 Presence of chemicals of emerging concern in consumer goods reduced	
		2.1.3 Proper disposal of goods containing chemicals of emerging concern increased	
		2.1.4 Toxics in infrastructure and building materials removed through source control and/or management/remediation	
		2.1.5 In-water and near-water sites that exceed state standards for contamination prioritized and cleaned up	
2.2 Reduce nutrients entering Puget Sound and connected waters to improve the dissolved oxygen content of marine waters	2.2.1 Municipal wastewater discharges of nutrients to Puget Sound met water-quality based effluent limits and other requirements of the nutrients general permit		
	2.2.2 Nutrient loading in stormwater runoff from residential and commercial lands reduced		
	2.2.3 Nutrient loading in runoff from agricultural lands and working forests reduced		
	2.2.4 Significant anthropogenic sources of nutrients identified (using watershed monitoring and modeling tools) and reduced		
			2.2.5 Sites that support natural nutrient attenuation restored, enhanced, or created
2.3 Reduce disease-causing (pathogenic) bacteria and viruses from human and animal waste entering Puget Sound and connected waters to reopen and maintain shellfish beds in Puget Sound	2.3.1 Municipal wastewater discharges of disease-causing (pathogenic) bacteria and viruses to Puget Sound meet water quality-based effluent limits		
	2.3.2 On-site septic system (OSS) are inventoried, inspected, maintained and operational		
	2.3.3 Wastewater discharged to Puget Sound from boats eliminated		
	2.3.4 Disease-causing (pathogenic) bacteria and viruses in stormwater runoff from residential and commercial lands reduced		
			2.3.5 Disease-causing (pathogenic) bacteria and viruses in stormwater runoff from agricultural lands reduced
			2.3.6 Disease-causing (pathogenic) bacteria and viruses from recreational and outdoor activities reduced
2.4 Prevent spills of oil and hazardous substances	2.4.1 Risk and potential harm of spills of oil and hazardous substances to waterways reduced		
	2.4.2 Derelict vessels removed		

TIER 1	TIER 2 OUTCOME	FULLY DETAILED OUTCOME
<b>3. Protect the food web and imperiled species</b>	3.1 Reduce interference with Southern Resident Orca behavior (feeding, breeding, resting)	3.1.1 Ambient noise and disturbance of Southern Resident Orca (from vessels, jets, etc.) reduced
	3.2 Reduce displacement, competition, and predation of imperiled native species caused by native or invasive species	3.2.1 Programmatic ability to respond to emerging outbreaks and ongoing impacts of invasive species increased 3.2.2 Number of adult and juvenile salmon lost to predation by pinnipeds and predatory fish reduced
	3.3 Protect native wild salmon genetic diversity and reduce competition, while ensuring salmon for harvest, treaty rights, and orca prey availability	3.3.1 Hatchery management optimized and adaptively managed by the state and tribal co-managers to meet treaty rights, harvest needs, and conservation objectives
	3.4 Ensure sustainable harvest of native wild fish and shellfish populations and support treaty-reserved fishing rights	3.4.1 Recreational and commercial fisheries meet harvest rate guidelines 3.4.2 Illegal fishing activities eliminated 3.4.3 Amount of derelict fishing gear reduced
	3.5 Reduce disturbance of submerged aquatic vegetation	3.5.1 Physical disturbance of eelgrass, kelp, and other vegetation from boats, vessels, anchors, and mooring infrastructure reduced 3.5.2 Shading of shallow water habitat by in- and over-water structures reduced
<b>4. Prevent the worst effects of climate change</b>	4.1 Better understand and communicate the effects of climate change on Puget Sound	4.1 Better understand and communicate the effects of climate change on Puget Sound
	4.2 Achieve net zero emissions (carbon neutrality) in Washington State by 2050	4.2.1 Human-caused greenhouse gas emissions in Washington State reduced 95 percent below 2005 levels by 2050 4.2.2 Carbon sequestered in Puget Sound forests, kelp, soils, and other significant means increased
	4.3 Increase the resilience of the Puget Sound ecosystem (including habitats, water resources, species, and humans) and recovery efforts by adapting to changing climate and ocean conditions when conducting protection and restoration activities	4.3 Increase the resilience of the Puget Sound ecosystem (including habitats, water resources, species, and humans) and recovery efforts by adapting to changing climate and ocean conditions when conducting protection and restoration activities

TIER 1	TIER 2 OUTCOME	FULLY DETAILED OUTCOME
<b>5. Ensure human wellbeing</b>	5.1 Enhance and respect senses of place of Puget Sound residents	<p>5.1.1 Opportunities for stress reduction and motivation from natural environments for diverse human communities are enhanced</p> <p>5.1.2 Attachments among all residents to Puget Sound's environments (including natural, biocultural, and anthropogenic places) are acknowledged and respected and recognized as opportunities to achieve the Action Agenda</p>
	5.2 Increase engagement in and trust of Puget Sound environmental and natural resource governance	<p>5.2.1 Decision making is made more inclusive by participation of a broader set of committed stakeholders and diverse forms of knowledge early in ecosystem recovery processes</p> <p>5.2.2 Capacity for overburdened communities to engage in environmental decision making is increased</p> <p>5.2.3 Transparency in environmental and natural resource management decision making and the use of science is improved</p> <p>5.2.4 Trust is increased by including and communicating directly and effectively with new and diverse audiences</p>
	5.3 Enhance participation in environmentally related cultural practices and opportunities for harvesting of quality local foods	<p>5.3.1 Opportunities for cultural practices, such as native and spiritual practices and environmentally related social activities, are increased</p> <p>5.3.2 Access to safe and more abundant local food harvests, such as fish, shellfish, and game, for human populations is increased</p>
	5.4 Increase resilience of employment and production in natural resource sectors such as fisheries, aquaculture, agriculture, timber, ecosystem restoration, and tourism	<p>5.4.1 Natural resource sector jobs and production opportunities are supported</p> <p>5.4.2 Innovative techniques that promote a healthy natural environment and achieve growth in natural resource industries are encouraged</p> <p>5.4.3 Restoration actions consider economic benefits and impacts, monitor tradeoffs, and choose multi-benefit solutions where possible</p>
	5.5 Enhance participation in outdoor recreational and stewardship activities	<p>5.5.1 Opportunities for multiple uses of open space, waterways, and other natural environments are recognized and increased</p> <p>5.5.2 Barriers that have resulted in exclusion of people from participating in outdoor recreation and stewardship activities are identified and removed</p> <p>5.5.3 Meaningful and community-based stewardship behaviors are supported</p>
	5.6 Eliminate threats to the health of the human population of Puget Sound from changes in ecosystem conditions and eliminate inequitable health outcomes among sensitive populations	<p>5.6.1 Levels and patterns of air pollution do not threaten Puget Sound communities or sensitive populations with adverse health outcomes</p> <p>5.6.2 Levels and patterns of contaminants in drinking water do not threaten Puget Sound communities or vulnerable populations with adverse health outcomes</p> <p>5.6.3 Levels and patterns of contamination in fish and shellfish harvested from Puget Sound waters do not threaten Puget Sound communities or vulnerable populations</p> <p>5.6.4 Levels and patterns of pollutants and biotoxins in surface waters do not threaten the health of Puget Sound communities or vulnerable populations</p>

To meet the urgency and magnitude of the challenge we face, the Action Agenda emphasizes a multi-benefit approach with outcomes and strategies that will help the recovery community effectively make progress towards multiple goals. The Partnership measures progress towards Puget Sound recovery goals using Vital Sign Indicators; hence any outcome that we expect will benefit multiple Vital Sign Indicators can be considered multi-benefit. The Partnership assessed the strength of the relationship between desired outcomes and Vital Sign Indicators. Appendix I provides an illustration of this relationship. This assessment identified 11 of 23 desired outcomes that appear to generate substantial benefits to multiple Vital Signs, or multi-benefit results. Progress toward any one of these eleven multi-benefit desired outcomes could result in improvements to 25 percent or more of the Vital Sign Indicators. Implementation of this Action Agenda provides an important opportunity to consider the multi-benefit desired outcomes with partners and evaluate how to use them, in concert with the other desired outcomes, to achieve recovery. The multi-benefit desired outcomes are:

- ▶ Protect habitat and habitat-forming processes from conversion and fragmentation
- ▶ Protect agricultural lands and working forests from conversion
- ▶ Restore natural flows, fish passage, flooding, and tidal inundation to freshwater and marine systems by removing structural barriers or altering their management (including from major infrastructure)
- ▶ Restore habitat and habitat-forming processes to support biological communities
- ▶ Reduce toxic chemicals entering Puget Sound and connected waters, including from roads, contaminated sediments, and industrial lands
- ▶ Reduce nutrients entering Puget Sound and connected waters to improve the dissolved oxygen marine water quality indicator
- ▶ Prevent spills of oil and hazardous substances
- ▶ Ensure sustainable harvest of native wild fish and shellfish populations and support treaty-reserved fishing rights
- ▶ Increase the resilience of the Puget Sound ecosystem (including habitats, water resources, species, and humans) and recovery efforts by adapting to changing climate and ocean conditions when conducting protection and restoration activities
- ▶ Increase engagement in and trust of Puget Sound environmental and natural resource governance
- ▶ Ensure that the health of the human population of Puget Sound is improved by changes in ecosystem conditions and vulnerable populations and underserved communities do not experience inequitable health outcomes

**Strategies** – Strategies describe effective approaches for advancing progress toward desired outcomes, Vital Signs, and overall recovery. Each strategy is expected to advance one or more desired outcome by addressing the underlying conditions that give rise to sources of stress on the ecosystem or enhance capacity to address a stressor. Strategies address a five- to thirty-year time horizon and describe the kinds of policies, actions, or approaches that could be applied by many groups in many different areas. Strategies are described in more detail in the Implementation Plan.

**Actions and Commitments** – An action describes the activities that are a shared focus for implementing each strategy from 2022-2026. This could include restoration and acquisition; program development, improvement, or implementation; education; outreach; research; legislative or policy improvements; or other types of activities. Actions are intended to guide partner implementation and innovation and inform the focus of public and private funding and implementation support by the boards and regional partners. Actions are described in more detail in the Implementation Plan.

Eight of the strategies also have one or more [program targets](#) affiliated with it. Program targets are commitments toward results that a Puget Sound recovery-related program will aim to achieve in the next four years.

Puget Sound Info (referred to as PS Info) is the online hub for data collected for restoration, protection, and recovery projects across Puget Sound. It includes data on the Vital Signs and associated targets, the National Estuary Program Atlas, the Puget Sound Acquisition and Restoration (PSAR) dashboard, Ongoing Programs portal, Geospatial tools to help guide recovery planning and decisions, and the Action Agenda Tracker.

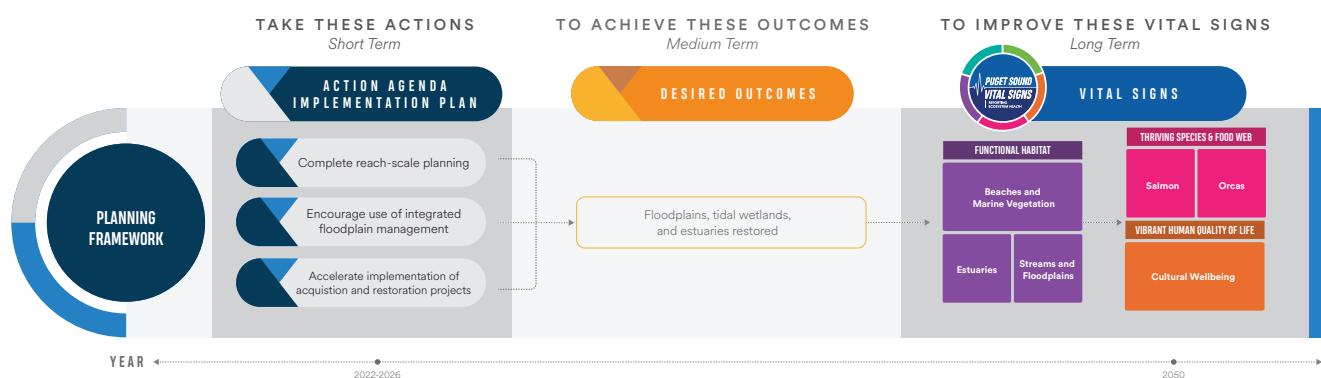
They are measurable, bold, yet achievable program accomplishments. The targets are a definition of success for accelerating progress toward one or more of the desired recovery outcomes. They will be monitored and evaluated to provide the recovery community a transparent way to assess and address program needs, remove barriers, and promote increased support for programs that help achieve targets.

## Integrating the Framework into a Theory of Change

The elements of this framework to achieve success and monitor progress integrate into a theory of change. Strategies and actions identify what we need to work on for the coming four years. Program targets articulate some of the contributions state agency recovery programs hope to make. Desired outcomes and Progress Indicators assess which strategies are making meaningful progress and which are not. And the Vital Sign Indicators should be responsive to the cumulative impacts of our work. This framework allows us to assess and improve recovery work on an ongoing basis. This learning and decision-making process is known as adaptive management, which improves effectiveness and ensures that the ongoing efforts to implement current and improve future Action Agendas are informed by the best evidence available. See Appendix I for a full description of the Partnership's approach to adaptive management. The figure below illustrates an example of selected elements of the planning framework for Strategy 5.

### A HOW DOES AN ACTION AGENDA STRATEGY ACCELERATE RECOVERY?

Example: Strategy 5 - Protect and restore floodplains and estuaries



### B HOW DO WE MEASURE OUR PROGRESS FOR A STRATEGY?

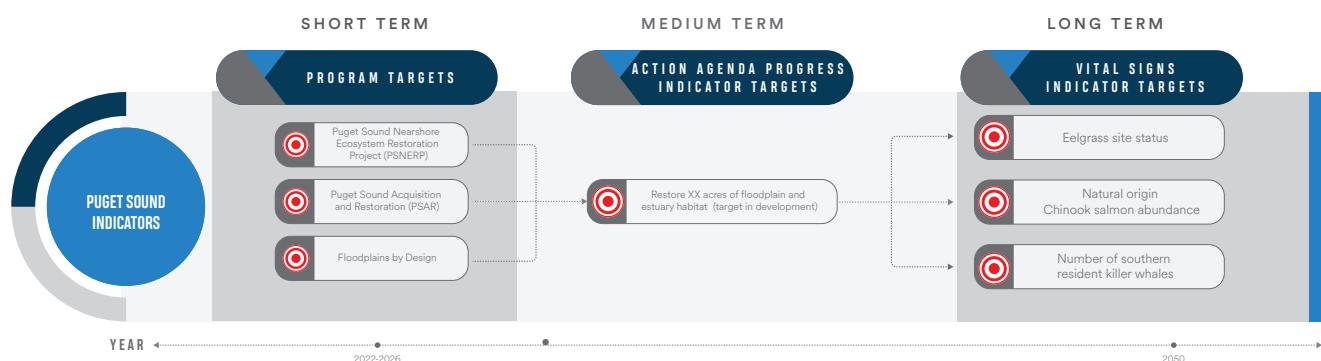


Figure 4. Elements of the theory of change planning framework that illustrate how to achieve success and monitor progress.



## Partnership Boards and Partners

Puget Sound Partnership (the Partnership) leads the development of the framework and Action Agenda that supports Puget Sound recovery. The Partnership is a Washington State agency, serving as a backbone organization to the extensive recovery community. The work of the Partnership is directed by three boards named in our statute: the Leadership Council, Ecosystem Coordination Board, and Science Panel, and two advisory councils: the Salmon Recovery Council and the Puget Sound Ecosystem Monitoring Program.

- ▶ The Leadership Council members work on high-priority legislative and policy issues to accelerate recovery and mobilize funding.
- ▶ The Ecosystem Coordination Board represents a diverse set of partners and is responsible for seeking funding and other resources, assisting with public education activities, and encouraging communication and collaboration among all the partners involved in Puget Sound recovery.
- ▶ The Science Panel provides scientific advice to the Leadership Council and guidance for preparing the Action Agenda and the State of the Sound.
- ▶ The Salmon Recovery Council advises the Leadership Council on decisions relating to salmon recovery and the implementation of the Puget Sound Salmon Recovery Plan.
- ▶ The Puget Sound Ecosystem Monitoring Program (PSEMP) is a collaborative network of subject matter experts who generate, organize, synthesize, and communicate scientific information to track ecosystem conditions that directly address management and science questions critical to Puget Sound recovery.

Together, these boards and advisory councils direct and support partners in our charge of mobilizing and accelerating the science-informed effort to recover Puget Sound. Board decision-making processes incorporate inputs from the physical and social sciences, evaluation and monitoring efforts, and policy considerations.

One of the ways that partners around Puget Sound elevate recovery priorities is by bringing them to the Ecosystem Coordination Board and Leadership Council through rotating meetings. Local Integrating Organizations (LIOs) and Lead Entities co-develop agenda items and participate in these rotating meetings. LIOs are forums focused on developing, coordinating, and implementing strategies and actions to protect and recover local ecosystems around Puget Sound. Lead Entities are community-based organizations that coordinate salmon recovery efforts in their local watersheds ([RCW 77.85](#)). Both LIOs and Lead Entities identify and elevate projects, challenges, and opportunities for Puget Sound recovery at the local level.

The Partnership engages the work of a broad set of partners, encouraging full participation, and is actively working to more fully represent the diverse communities within our region's growing population. Hundreds of organizations are committed to the long-term protection, restoration, and conservation of Puget Sound, including government agencies, tribal nations, private-sector institutions, academia, nongovernmental organizations, community-based organizations, and the broader public. More information about the partners engaged in Puget Sound recovery is included in Appendix II.

## Funding Puget Sound Recovery

Achieving our collective vision of protecting and restoring Puget Sound requires increasing the efficient and effective use of existing funds, identifying, and securing additional dedicated funding sources, and building a portfolio of private funding and financing programs—including innovative and market-based programs—which invest in Puget Sound recovery. Partners must have the capacity to quickly scale their recovery work with increased investment, while doing so in a way that ensures communities are benefiting equitably. To that end, we need to build supporting infrastructure capable of moving important recovery projects quickly from concept to implementation and to facilitate streamlined matchmaking between fund sources and protection and restoration efforts. We must implement funding approaches that mitigate—and eliminate the disproportionate impacts on vulnerable populations and underserved communities, that increase capacity to integrate cross-cutting principles, and that honor tribal nations' treaty and sovereign rights, equity, and environmental justice. An example of this type of cross-cutting, multi-benefit funding will be available through the Climate Commitment Act, described in Strategy 19 and detailed as a source of new state funding in Appendix III.

The Partnership has developed and is implementing the funding strategy which aims to define the full range of funding needs for Puget Sound recovery, to maintain and efficiently use existing funding, and to secure additional funding to fully implement Action Agenda strategies and actions. The funding strategy includes five key components:

- ▶ Establish a clear picture of the size and nature of the funding need for Puget Sound recovery
- ▶ Maintain and increase funding from existing Puget Sound recovery sources
- ▶ Increase the effectiveness of investment decisions for existing sources of funding
- ▶ Build a portfolio of new private funding sources
- ▶ Enhance capacity for rapid funding response

Protecting Puget Sound will become increasingly expensive over time if human population, changing climate and ocean conditions, and other ecosystem pressures increase as currently projected. Accelerating funding for our large capital programs and fully funding the Action Agenda will be essential to meeting our Puget Sound statutory goals. More information about the key components of the funding strategy is included in Appendix III.



# 2022-2026 ACTION AGENDA IMPLEMENTATION PLAN

## Introduction

The Implementation Plan describes the work we must do over the next four years to make progress toward the goals and desired outcomes for Puget Sound recovery. It is the action component of the Action Agenda. To meet the magnitude of the challenge we face, the Implementation Plan lays out bold strategies to make measurable improvements on the natural environment (also referred to as biophysical conditions) of Puget Sound, the wellbeing of the people who inhabit the region, and the strength of our governing and community institutions tasked with recovering Puget Sound.

The Implementation Plan is organized around 31 collaboratively-developed and science-informed strategies that identify the specific lines of work (for example, growth management, pollution prevention, invasive species) and key cross-cutting efforts (for example, climate change adaptation and resilience, cultural practices for local foods, salmon recovery, funding, or education) that are critical to recovery of Puget Sound. Within each strategy, actions provide specific guidance to leaders, recovery partners, and funders about the types of projects, programs, and other work important to undertake in the next four years. Profiles for each strategy and associated actions provide additional context including key opportunities, ongoing work, monitoring and evaluation indicators, and geographic focus to bring each strategy to life. The Anatomy of a Strategy shown in Figure 5 illustrates the components and organization of a strategy profile.



This Implementation Plan builds on more than a decade of collaborative, science-driven planning by drawing content from Implementation Strategies, LIO Ecosystem Recovery Plans, Orca Task Force recommendations, collaboration among transboundary recovery partners, the [Tribal Habitat Strategy](#), *gʷədᶻadᶻ*, and other plans. It also adapts and improves upon previous Action Agendas by defining success with multi-benefit outcomes and targets and capturing more comprehensive representation of ongoing partner and stakeholder work. Previous Action Agendas have used Vital Sign indicators and Vital Sign indicator targets as measures of long-term success but have lacked more near-term definitions of what success looks like for different aspects of our Puget Sound recovery effort. The 2022-2026 Action Agenda addresses this gap by introducing new progress indicators and program targets. Prior Implementation Plans were also comprised of a set of projects called Near Term Actions (NTAs). These projects represented valuable on-the-ground actions (see [Puget Sound Info](#) for project details) but were often opportunistic, disconnected, and did not advance recovery at a pace or scale sufficient to meet Vital Sign targets.

This Implementation Plan shifts away from the NTA project list by instead articulating strategies and actions that more comprehensively capture effective ongoing programs and the important near-term work of the Management Conference. This shift will invite a broader suite of partners and resources to align around the recovery strategies in the Action Agenda and [Implementation Strategies](#) while also enabling continued work by [Strategic Initiative Leads](#) to deploy NEP funding. In addition, each strategy within this Implementation Plan includes new details articulating implementation considerations for achieving human wellbeing and avoiding the worst effects of climate change. The result is an Implementation Plan that improves partners' focus on actions with multiple benefits, draws more resources to important shared efforts, enhances accountability, and enables results on the ground.

#### **The 2022-2026 Implementation Plan calls on us to do five things:**

- ▶ Act on the understanding that people are part of nature and that the wellbeing of one depends on the wellbeing of the other
- ▶ Factor our response to climate change into everything we do
- ▶ Understand our role
- ▶ Hold ourselves accountable
- ▶ Act boldly and move forward together

#### **1. Act on the understanding that people are part of nature and that the wellbeing of one depends on the wellbeing of the other**

Human wellbeing is all about how people thrive. It includes physical and psychological health of individuals, as well as governance and the social, cultural, and economic wellbeing of society. Human wellbeing has a strong foundation in the Puget Sound recovery framework, including representation in the statutory goals and Vital Signs. The human wellbeing components of the recovery framework informs and brings focus to issues of diversity, equity, and inclusion (DEI) and environmental justice (EJ). The 2022-2026 Implementation Plan calls on us to incorporate human wellbeing and lays the foundation of DEI and EJ in our recovery efforts because:

- ▶ The integration of human wellbeing considerations has been found to accelerate ecosystem recovery;
- ▶ The costs and consequences of inaction will only continue to grow, and will continue to disproportionately impact vulnerable populations and underserved communities;
- ▶ Scientific evidence calls for the need to prioritize human wellbeing as a strategic means of achieving ecosystem goals;
- ▶ Improving our understanding of human wellbeing can ensure a more holistic and successful approach to achieving Puget Sound recovery; and
- ▶ Integrating human wellbeing into our recovery efforts gives us additional tools for engaging communities and harnessing broad support in concrete ways.

**This plan identifies six specific strategies for improving human wellbeing in the context of Puget Sound recovery. The six strategies intend to accomplish the following:**

- ▶ Address actions to recognize residents' place attachment to Puget Sound
- ▶ Improve the ability for all residents to engage in outdoor recreation and stewardship and recognize tribal nations' treaty and sovereign rights
- ▶ Provide inclusive and transparent governance practices to improve engagement
- ▶ Engage with communities to enhance access to cultural practices and local foods
- ▶ Implement policies and programs that improve economic conditions in Puget Sound
- ▶ Implement programs to protect human health

Maintaining healthy and equitable communities that provide local jobs and access to the benefits of living in the region is central to protecting and recovering Puget Sound. This plan provides guidance for achieving human wellbeing and biophysical outcomes at the same time by integrating human wellbeing opportunities and advancing DEI and EJ through foundational assessments and engagement of vulnerable populations and underserved communities into all aspects of our recovery work. These implementation considerations identify opportunities to, for example, improve human health while also reducing stormwater runoff; or enhance equitable access to decision-making and governance processes while also improving the health of shorelines.

## **2. Factor our response to climate change into everything we do**

Changing climate and ocean conditions is not a distant issue that will affect Puget Sound in the future—it is impacting our work now. The changing climate poses serious risks to human health and safety, water quality and quantity, and species of concern. The costs and consequences of inaction will only continue to grow and will continue to disproportionately impact vulnerable communities. This plan recognizes that the effectiveness of our protection and recovery actions today will be compromised if we do not integrate greenhouse gas emissions reduction, carbon sequestration responses, and adaptation responses into everything we do. It also recognizes that our response to climate change must better reflect the diverse communities that constitute the Puget Sound region to address and eliminate disproportionate impacts. While changing climate and ocean conditions pose an immense challenge to achieving our statutory goals, it also comes at a time with a significant opportunity to respond with bold and ambitious actions and to hold ourselves accountable within this Action Agenda.

The plan both identifies specific strategies to address greenhouse gas emissions and respond to climate change impacts and lays out a set of climate change considerations as part of the guidance for all other strategies. The plan also describes multiple benefits for each strategy by providing human wellbeing and climate change considerations for project implementers. These were developed with guidance from the recovery community and are intended to highlight effective ways to achieve multiple benefits for strategies and desired outcomes. While more progress is needed to fully integrate human wellbeing and climate change considerations into strategy implementation, these are key factors for the recovery community to consider when prioritizing, designing, and adapting their projects. Implementation considerations for climate change for each strategy help guide the recovery community toward multi-benefit projects and programs that will stand up to a changing climate and ocean conditions over time. The three strategies (Strategies 18, 19, and 20) that speak directly to climate change call out specific actions that the recovery community can take now. These include strategies to increase the overall awareness of climate change effects in Puget Sound, identify activities that enhance greenhouse gas emissions reductions and increase carbon sequestration, and advance climate adaptation and resilience across Puget Sound.

## **3. Understand our role**

Everyone who lives, works in, and enjoys this region has a role in restoring and protecting Puget Sound. Whether one is directly engaged with specific lines of work like growth management, pollution prevention, or invasive species, or has the opportunity to take action on key cross-cutting efforts such as climate change adaptation, cultural practices, funding, or education, this Plan calls on each of us to understand our role and commit to it. This Plan provides highly focused strategies and actions to guide our collective work and achieve transformational results for Puget Sound.

## **4. Hold ourselves accountable**

The 2022-2026 Implementation Plan provides an improved approach for defining our success, tracking our progress, and holding ourselves accountable. Each strategy profile has a section on what success looks like that describes the desired outcomes for each strategy and lists indicators to monitor and evaluate progress. In addition, several strategies highlight program targets, which are specific goals set by state or federal programs to achieve measurable results by a specific date.

## 5. Act boldly and move forward together

The Implementation Plan emphasizes the interconnectedness of recovery work and embraces the roles of recovery partners as leaders and experts in each of their work areas and jurisdictions. The Implementation Plan is intended as guidance and direction for all recovery institutions and leaders, including:

- ▶ Partnership boards and regional partners;
- ▶ Partners working towards innovative and collaborative solutions to complex challenges;
- ▶ Local entities developing funding strategies for actions that advance recovery;
- ▶ State agency budget development for new initiatives and ongoing support for critical programs;
- ▶ State legislative action on policy and funding;
- ▶ National Estuary Program (NEP) funding decisions and EPA Puget Sound funding; and
- ▶ Policy priorities and the Partnership's biennial state agency budget ranking process.

Recovery partners including state agencies, federal agencies, numerous tribal nations, local jurisdictions, Local Integrating Organizations (LIOs), salmon recovery and Lead Entity professionals, nongovernmental groups, and the business community worked with the Partnership to develop the strategies and actions in the Implementation Plan. These partners are committed to implementing the specific projects, programs, and actions that will advance recovery progress. This is our roadmap to the next four years of progress towards a thriving Puget Sound.



# THE ANATOMY OF A STRATEGY

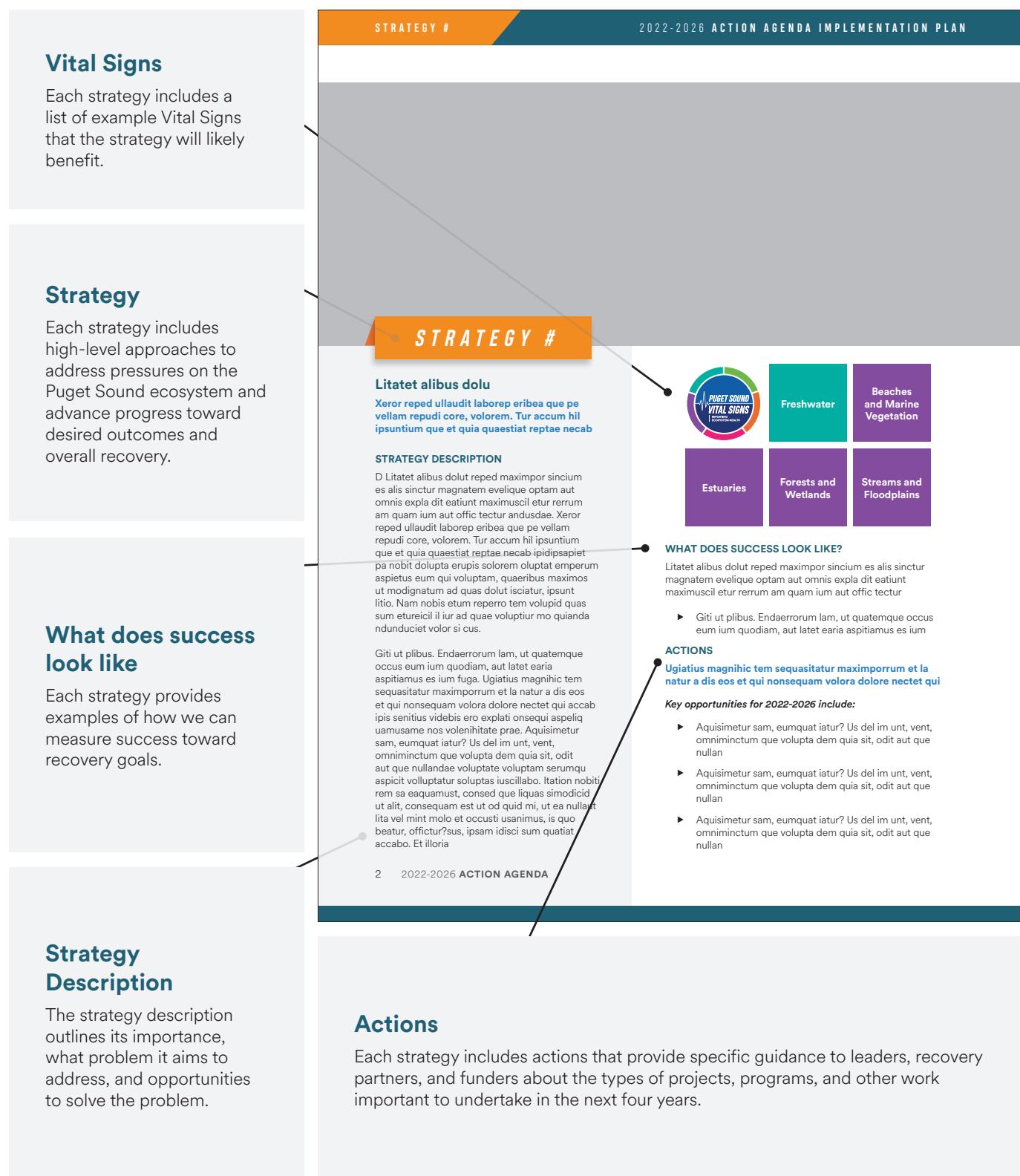
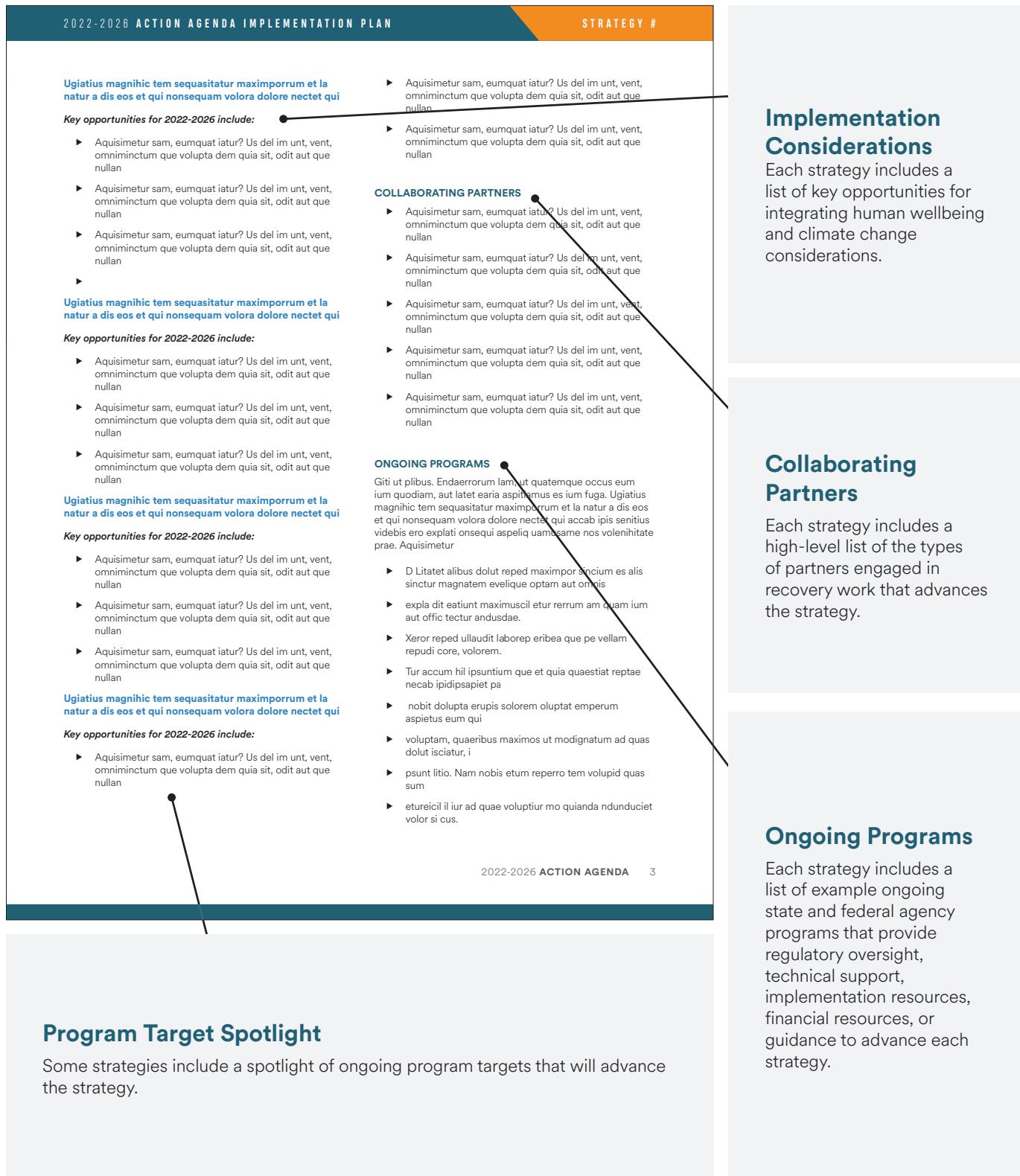


Figure 5a. The Anatomy of an Action Agenda Strategy describes the components of an Action Agenda strategy profile.

# THE ANATOMY OF A STRATEGY



# CHAPTER 1: STRATEGIES FOR ADVANCING PROGRESS TOWARD DESIRED OUTCOMES AND VITAL SIGNS



## STRATEGY 1

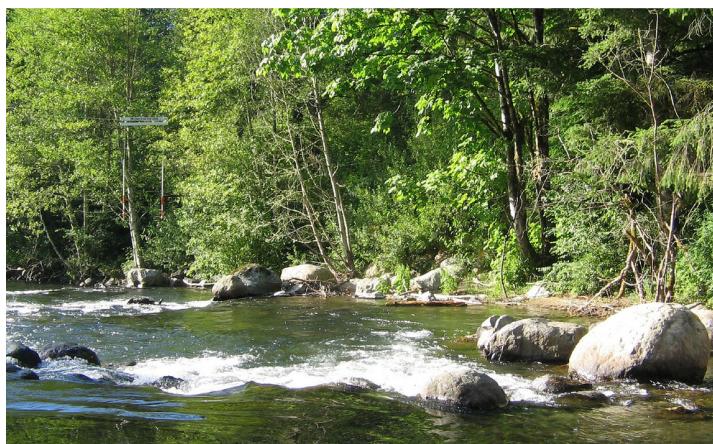
### Smart Growth

**Ensure smart development and protect intact habitats and processes by channeling population growth into attractive, transit-oriented urban growth areas (UGAs) with easy access to natural spaces.**

#### STRATEGY DESCRIPTION

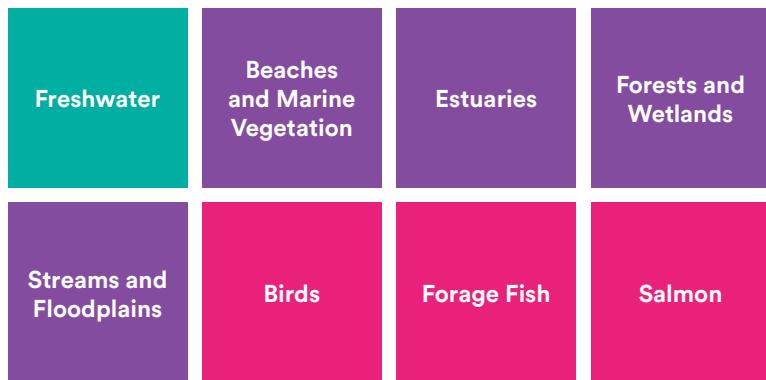
Forested lands, open spaces, agricultural fields, and wetlands absorb water and are the home for an integrated and biodiverse web of life. These same systems are at the heart of a vibrant economy of working lands for forestry and agriculture. They also serve multiple uses as the backdrop for cities, the location of roads and utility lines, and desired places to recreate and explore nature.

Development of natural areas throughout Puget Sound has disrupted natural hydrologic processes and habitat functions. If we continue along our path towards adding 1.7 million additional residents, or the equivalent of an additional two and a half Seattles, expected in the Puget Sound area by 2050, we must balance affordable infill development and infrastructure improvements with protection of the important functions provided by forested and riparian areas as well as agricultural lands.



This strategy focuses on protecting ecologically important lands by channeling population growth into affordable and vibrant urban growth areas and reducing conversion of forests, farms, and natural areas into developed uses. To foster smart development and protect habitats, the recovery community will need to work alongside transportation authorities; affordable housing agencies, nongovernmental and community-based organizations; state and local decision-makers, natural resource and land use planners, investors and developers, and vulnerable populations and underserved communities and representatives to improve implementation of regulations and incentives that channel development into preferred growth areas. To prevent conversion of ecologically important lands, we must improve implementation of, and make modifications to, the Growth Management Act (GMA) to foster the protection of these natural areas and working lands. These protections should be incorporated into regional infrastructure planning and supported by creating incentives for new market demands for growth in city centers.

Implementing the Land Development and Cover and other Implementation Strategies supports the success of this strategy.



## WHAT DOES SUCCESS LOOK LIKE?

We are achieving our recovery goals of increasing functioning habitat through restoration and improving water quality in the Puget Sound region by protecting ecologically important lands, including beaches, estuaries, forests and wetlands, streams, and floodplains, from conversion. Preferred high growth areas are becoming increasingly dense, while urban tree canopy is increased and as development is channeled away from ecologically important lands. Residents of UGAs are thriving with equitable access to natural spaces. Working lands are intact and thriving, and water infiltration and holding capacity of upland areas are maintained. Indicators of success include:

- ▶ Decreasing the acres of undeveloped (ecologically important) lands converted to developed uses in priority areas, sound-wide
- ▶ Increasing the percentage green space or decreasing impervious surface by watershed, sound-wide
- ▶ Decreasing acres of private agricultural lands and forest lands converted to other uses, sound-wide
- ▶ Increasing the extent of forest cover in the upper, middle, and lower areas of watersheds
- ▶ Improving the extent and condition of wetlands

## ACTIONS

### **Build Puget Sound-wide support to prevent conversion of forests, farms, and natural areas and increase funding for conservation incentives. (ID #1)**

#### **Key opportunities for 2022-2026 include:**

- ▶ Improve the education and incentives for public and decision-makers on opportunities to direct growth away from ecologically important areas;
- ▶ Significantly improve the implementation of the GMA within local jurisdictions land use planning and decisions, and across jurisdictions, to include the protection of natural areas and working lands;
- ▶ Incorporate protections into regional infrastructure planning;

- ▶ Support permanent protection of high value nearshore habitat;
- ▶ Support protections through incentivizing new market demands for growth in city centers with emphasis on public transportation to accommodate growth.

### **Reduce barriers to infill and redevelopment in high-growth areas. (ID #2)**

#### **Key opportunities for 2022-2026 include:**

- ▶ Improve planning and zoning within UGAs that includes protection of existing habitat;
- ▶ Improve the wellbeing of people living in high-growth areas by clearly defining needs for and increasing access to amenities, services, green space, and affordable housing;
- ▶ Ensure transparent, effective, clear, and consistent implementation of regulations to provide consistency and improved conditions for developers and investors within preferred high-growth areas.

### **Improve the Growth Management Act and local land use planning to effectively channel growth and prevent conversion of ecologically important lands. (ID #178)**

#### **Key opportunities for 2022-2026 include:**

- ▶ Integrate climate change mitigation and resilience and salmon restoration goals and strategies into the GMA and local land use plans;
- ▶ Incorporate a measurable net ecological gain standard into the GMA and local land use plans and establish methods and tools to ensure accountability for achieving this standard;
- ▶ Improve incentives and reduce barriers for channeling growth and development into preferred high-growth areas;
- ▶ Ensure tribal sovereignty is recognized in local land use planning and decisions and that tribal nations are adequately consulted and engaged;

- ▶ Consider opportunities where multiple-benefit aspects of recovery projects may increase affordable housing options for communities including supporting efforts that move low-income housing stock outside climate-vulnerable areas or reducing the cost of developing green infrastructure that serves vulnerable populations and underserved communities.

## IMPLEMENTATION CONSIDERATIONS

***Key opportunities for 2022-2026 to integrate human wellbeing considerations into smart growth efforts include:***

- ▶ Consider the public health, recreation, and local food benefits of maintaining and increasing trees, green space, and habitats in and around urban areas.
- ▶ Engage communities, specifically vulnerable populations and underserved communities, community-based organizations, and youth in urban areas, in equitable and smart growth planning process design, decision-making, and implementation. Co-develop anti-displacement principles in collaboration with these communities to support equitable and environmentally protective development.
- ▶ Incorporate consideration of culturally significant spaces (for example, community gardens) into the design of new development.
- ▶ Increase understanding of effects and cost-benefits of development, particularly on the wellbeing of human populations including vulnerable populations and underserved communities.
- ▶ Implement practices that demonstrate effective ways to maximize benefits and minimize adverse impacts of growth and development when undertaking new projects that intentionally support natural resource industries.

***Key opportunities for 2022-2026 to integrate climate change responses into smart growth efforts include:***

- ▶ Develop and right-size stormwater infrastructure using projections for future precipitation regimes.
- ▶ Consider sea level rise and flooding projections to emphasize the need for smart development, discourage new building in or near existing floodplains or existing shorelines, and consider sea level rise retreat.
- ▶ Transit-oriented development should reduce vehicle miles traveled by single-occupancy vehicles, as well as the need for large parking lot and other impervious surfaces in urban areas, which contribute to urban heat island effect, and stormwater runoff and pollution.

- ▶ New development should prioritize renewable energy and low-carbon design elements during construction and building use (materials, LEED-type design), including equitable distribution of broadband to incentivize working at home.

## COLLABORATING PARTNERS

- ▶ Tribal governments, representatives, and consortia
- ▶ State agencies (for example, Department of Commerce, Department of Fish and Wildlife, Department of Ecology, Department of Transportation, Washington State Conservation Commission, Emergency Management Division, Department of Natural Resources, Governor's Salmon Recovery Office, and Recreation and Conservation Office)
- ▶ Federal agencies (for example, Federal Highway Administration, Federal Transit Administration, U.S. Environmental Protection Agency, and Department of Housing and Urban Development)
- ▶ Local governments (for example, city- and county-level land use planners and decision-makers)
- ▶ Local Integrating Organizations
- ▶ Salmon recovery and watershed groups
- ▶ Businesses and private sector (for example, developers and investors)
- ▶ Vulnerable populations and underserved communities
- ▶ Community-based organizations

## ONGOING PROGRAMS

Ongoing programs provide regulatory oversight, technical support, implementation resources, funding, or guidance and serve as the critical foundation for Puget Sound recovery. The following is a list of example state and federal ongoing programs that help to implement this strategy. Many more local, tribal nations, and nongovernmental programs exist that support this strategy. See [Puget Sound Info](#) for a broader list of relevant programs.

- ▶ [Growth Management Services](#) (COM)
- ▶ [Ecosystems Support](#) (WDFW)
- ▶ [Natural Areas](#) (DNR)
- ▶ [Natural Heritage Program](#) (DNR)
- ▶ [Planning, environmental review and funding programs](#) (Federal Transit Administration)
- ▶ [Voluntary Stewardship Program](#) (WSCC)

## Special Focus Area: Infrastructure

Transportation and utility infrastructure like highways, roads, bridges, dams, and railroads benefit humans. They allow us to store and transport resources and enable us to easily visit different parts of our region. Yet infrastructure can have adverse effects as well, by fragmenting habitats and blocking the movement of water, sediment, and animals, and impacting the mental and physical wellbeing of human populations, specifically vulnerable populations and underserved communities. Avoiding, removing, minimizing, or mitigating these adverse effects of infrastructure on the ecosystem is essential for Puget Sound recovery.

### RELEVANT STRATEGIES

Many of the 2022-2026 strategies include aspects related to designing infrastructure so that it contributes positively to restoration or minimizes adverse effects on the ecosystem:

- ▶ Strategy 1: Smart Growth
- ▶ Strategy 3: Healthy Shorelines
- ▶ Strategy 5: Floodplains and Estuaries
- ▶ Strategy 6: Fish Passage
- ▶ Strategy 9: Water Pollution Source Identification and Correction
- ▶ Strategy 10: Stormwater Runoff and Legacy Contamination
- ▶ Strategy 11: Wastewater Systems
- ▶ Strategy 19: Greenhouse Gas Emissions and Carbon Sequestration
- ▶ Strategy 20: Climate Adaptation and Resilience
- ▶ Strategy 21: Place Attachment
- ▶ Strategy 22: Outdoor Recreation and Stewardship
- ▶ Strategy 23: Good Governance
- ▶ Strategy 24: Cultural Practices and Local Foods
- ▶ Strategy 26: Human Health

We can restore critical ecological function and make substantial progress towards recovery of specific watersheds across the region by removing or modifying large infrastructure. Example projects include:

- ▶ **Hood Canal Bridge.** The bridge pontoons span more than 80 percent of the width of Hood Canal and extend to a depth of 15 feet creating a barrier that contributes to high salmon and steelhead predation and migration impediments.
- ▶ **Dams and culverts.** Dams, including Electron Hydro, Howard Hanson, and Mud Mountain, and culverts affect the flow of freshwater, block fish from accessing habitat, and degrade rivers and streams.
- ▶ **Interstate-5 through the Nisqually Delta.** This section of I-5 acts as a dam across the Nisqually Delta that constricts the flow of water into and out of the mouth of the Nisqually River contributes to flood risk through erosion and sediment accretion and impacts the salinity of the estuary. Similar issues also exist with roads and highways along other rivers such as the Snohomish and Stillaguamish.
- ▶ **Highway 101 at the Duckabush Estuary.** This estuary is impacted by fill, dikes, and road infrastructure, which blocks water channels and limits critical habitat for fish and wildlife, including endangered salmon species.
- ▶ **Burlington Northern Santa Fe (BNSF) Railroad.** Railroad infrastructure impairs and impedes essential nearshore habitat and natural shoreline processes along 52 miles of the shoreline (with another 21 miles of railroad within 200 feet of the shoreline) from the Nisqually Delta to the Canadian border. Railroad infrastructure also has impacts on floodplain processes.
- ▶ **Lake Washington Ship Canal and Ballard Locks (Hiram M. Chittenden Locks).** The Lake Washington Ship Canal poses challenges for salmon migration including predation, high water temperatures, and susceptibility to disease.
- ▶ **Numerous floodplain dikes and levees.** Dikes and levees disconnect streams and rivers from floodplain habitat and disrupt ecosystem functions.



## WHAT'S NEEDED

- ▶ Results of the Puget Sound Partnership's environmental justice assessment that can be leveraged to identify and engage representatives, advocacy groups, and members of vulnerable populations and underserved communities in the planning and allocation of infrastructure investments.
- ▶ Full funding from the state legislature of capital funding programs—including Puget Sound Acquisition and Restoration (PSAR), Floodplains by Design, Puget Sound Nearshore Ecosystem Restoration Project (PSNERP) matching, and Estuary and Salmon Restoration Program (ESRP).
- ▶ Effective and efficient spending, aligned with Action Agenda priorities, of Bipartisan Infrastructure Law (BIL) funds. The funds provided by this law will provide a broad opportunity to invest not just in roads, bridges and rails, but to also advance green infrastructure and projects that expand access to clean drinking water, tackle the climate crisis, and advance environmental justice.
- ▶ Targeted attention and appropriations from the state and federal government for the largest projects—such as Nisqually I-5, the Hood Canal Bridge, Lake Washington Ship Canal, Hiram M. Chittenden Locks, and Howard Hanson Dam.
- ▶ Funding and coordinated partner engagement with BNSF to reduce impacts to nearshore habitat from railroad infrastructure.
- ▶ Support for local jurisdictions to plan for and implement infrastructure retrofits and re-alignments.

## STRATEGY 2

### Working Lands

**Reduce pressure for land conversion by supporting the long-term viability and sustainability of agricultural lands, including large and small parcel, hobby and working farms, and working forests through resilience and integrated management planning, improved incentives, and improved land use regulations.**

#### STRATEGY DESCRIPTION

Agricultural lands and working forests provide habitat that supports animals like deer, elk, birds, and salmon and can support water filtration and storage. Maintaining working lands in their current state is beneficial in preventing the degradation of habitat and downstream environmental conditions as well as beneficial for the natural resource economy, jobs, and production of local foods. While forestry and agricultural activity can have their impacts on the surrounding environment, the effect is often lower than after conversion to residential or commercial land uses.

By keeping working lands working, we can maintain vibrant agricultural and forestry industries, and we can reduce the pressure to convert those lands to more developed uses that can lead to greater pollution, expansion of urban heat islands, and loss of habitat.

This strategy aims to support the long-term viability of agricultural lands and working forests. It focuses on increasing agricultural resilience along with improving local jurisdictions' adoption and implementation of plans, regulations, and policies that support healthy working lands. There is also an opportunity to expand the use of and support for incentives and technical assistance available for owners of agricultural lands and working forests.

Implementing the Land Development and Cover, Floodplains and Estuaries, and other, Implementation Strategies supports the success of this strategy.



Forests and Wetlands

Birds

Outdoor Activity

Economic Vitality

Freshwater

Streams and Floodplains

## WHAT DOES SUCCESS LOOK LIKE?

We are achieving our recovery goals of increasing functioning habitat and improving water quality in the Puget Sound region by preventing conversion of working lands to residential or commercial development (for example, improving the rate of loss), increasing water infiltration and holding capacity of upland areas, and advancing innovative techniques in natural resource industries that promote a healthy environment along with industry growth. Working lands are intact and thriving, and access and enrollment to protection mechanisms are increasing. Indicators of success include:

- ▶ Slowing or stopping conversion of private agricultural lands and working forests to other uses, sound-wide
- ▶ Increasing percentage of working lands enrolled in protection programs

## ACTIONS

### **Support the long-term viability and sustainability of agricultural lands and working forests to reduce pressure for conversion from the current use to a more developed use. (ID #4)**

#### ***Key opportunities for 2022-2026 include:***

- ▶ Increase and improve the creation and use of agricultural resilience planning for working lands;
- ▶ Expand incentives and technical assistance for agricultural lands and owners of working forests;
- ▶ Streamline and increase funds disbursement to support Best Management Practices (BMPs);
- ▶ Improve regulations, policies, and plans that maintain a working lands base, particularly for those areas that are vulnerable to the effects of climate change.

### **Support the expansion of market mechanisms to increase long-term viability and reduce conversion pressure for working lands. (ID #194)**

#### ***Key opportunities for 2022-2026 include:***

- ▶ Leverage carbon markets and carbon payment programs;
- ▶ Expand transfer of development rights and easements;
- ▶ Enhance tax benefits, particularly for those areas that have the potential to increase carbon sequestration.

## IMPLEMENTATION CONSIDERATIONS

### ***Key opportunities for 2022-2026 to integrate human wellbeing considerations into efforts to protect working lands include:***

- ▶ Engage and better understand diverse community values around agricultural and working lands to develop multi-benefit programs.

- ▶ Support value-added tourism opportunities on working lands as a way of generating revenue for agricultural, forestry, and shellfish businesses and enhancing the quality of life in the region.
- ▶ Develop engagement strategies that educate and provide technical and financial assistance to support working lands and local food production.
- ▶ Develop markets and incentives for safe and abundant local foods.
- ▶ Integrate human wellbeing and health data with ecological data to inform decision-making around protecting agricultural lands and working forests.

### ***Key opportunities for 2022-2026 to integrate climate change responses into efforts to protect working lands include:***

- ▶ Tailor specific climate change education for different producer audiences within agriculture, forestry, shellfish industries, and other communities of practice.
- ▶ Incorporate climate projections and projected impacts into the planning and implementation of land use decisions and working lands protection and restoration.
- ▶ Support accurate and effective carbon accounting for working lands and leverage carbon markets and other incentives, where appropriate.
- ▶ Promote working lands BMPs that also sequester carbon and increase resilience.

## COLLABORATING PARTNERS

- ▶ Tribal governments, representatives, and consortia
- ▶ Federal Agencies (for example, National Ocean and Atmospheric Administration, Environmental Protection Agency, U.S. Forest Service, Natural Resources Conservation Service, and U.S. Department of Agriculture)
- ▶ State agencies (for example, Washington Department of Natural Resources, Washington Department of Fish and Wildlife, Washington Department of Ecology, Washington Department of Commerce, Washington State Department of Agriculture, Governor's Salmon Recovery Office, Recreation and Conservation Office, and Conservation Commission)
- ▶ Local Governments (for example, city- and county-level local land use planners and permitting offices)
- ▶ Academic and research institutions (for example, Washington State University and extension programs)
- ▶ Local Integrating Organizations
- ▶ Conservation districts
- ▶ Salmon recovery and watershed groups



- ▶ Community members and residents (for example, agricultural landowners, forest landowners, and membership organizations for agriculture and forest owners)
- ▶ Nongovernmental organizations (NGOs) (for example, Skagitians and Washington Farmland Trust and American Farmlands Trust)
- ▶ Vulnerable populations and underserved communities
- ▶ Community-based organizations

### ONGOING PROGRAMS

Ongoing programs provide regulatory oversight, technical support, implementation resources, funding, or guidance and serve as the critical foundation for Puget Sound recovery. The following is a list of example state and federal ongoing programs that help to implement this strategy. Many more local, tribal nations, and nongovernmental programs exist that support this strategy. See [Puget Sound Info](#) for a broader list of relevant programs. Programs that have set four-year targets to accelerate their contributions to Puget Sound recovery are indicated in bold (\*).

- ▶ [Growth Management Services](#) (COM)
- ▶ [DNR Forest Practices Program including the Habitat Conservation Plan](#) (DNR)
- ▶ [Washington Wildlife and Recreation Program](#) (RCO)

- ▶ [Ecosystems Support](#) (WDFW)
- ▶ [Urban and Community Forestry](#) (DNR)
- ▶ [Washington Community Forest Trust Program](#) (DNR)
- ▶ [Community Forests Program](#) (RCO)
- ▶ [Readiness and Environmental Protection Integration Program](#) (U.S. Navy)
- ▶ [Agricultural Conservation Easement Program](#) (U.S. NRCS)
- ▶ [Forest Legacy Program](#) (U.S. FS)
- ▶ **[Shorelands - Floodplains by Design\\*](#)** (ECY)
- ▶ [Farmland Preservation](#) (WSCC)

### PROGRAM TARGET SPOTLIGHT

The Ecology Floodplains by Design program is a public-private partnership working to reduce flood risk and restore habitat along Washington's major rivers. The program's multi-benefit objective is to transform how floodplains are managed on a landscape level to support thriving communities and a healthy environment. Between 2022 -2025, Ecology aspires to accelerate the multi-benefit outcomes of Floodplains by Design by supporting 4,140 acres of working lands protected or improved.

## STRATEGY 3

### Healthy Shorelines

**Protect and restore marine shorelines by improving compliance, incentives, and strategic planning rooted in an understanding of coastal processes, with a focus on bluff-backed beaches.**

#### STRATEGY DESCRIPTION

The marine shorelines of Puget Sound are an integral part of life in the region. Puget Sound shores provide important habitat for marine life and food webs and have been integral to Coast Salish peoples' lives and cultural practices for millennia. They are also the location of early industry and development, the backdrop for major cities, the intersection of many transportation corridors, and where people live, recreate, and explore nature.

Across Puget Sound, 715 miles, or nearly 30 percent, of shorelines are armored, and over half of those are on private property. Shoreline armor, including seawalls and bulkheads, is intended to prevent erosion and protect homes and infrastructure. However, armor makes a dynamic shoreline static, disrupting many of the natural processes that replenish sand and gravel to the beaches of Puget Sound. With armored shorelines, beach material can wash away more quickly, threatening infrastructure and nearshore habitat. Armor can also leach toxics into the water supply and harm aquatic organisms. Impacts from armored shorelines include a loss of spawning habitat for forage fish and loss of food sources, rearing locations, and resting zones for juvenile salmon.

In some places, armor must be maintained to protect public safety and existing infrastructure. However, there also are many opportunities to preserve natural shorelines along Puget Sound where armor is not necessary, or to restore previously modified shoreline by removing armor or replacing it with more natural protective options called "soft shore protection."<sup>1</sup> For this strategy to be effective, regulatory programs, incentive programs for armor removal or replacement, and funding and technical support for project planning and implementation must work collectively to improve the effectiveness of protection policies, reduce demand for new hard armor and advance the pace and scale of shoreline restoration.

Implementing the Shoreline Armoring and other Implementation Strategies, supports the success of this strategy.



<sup>1</sup>Read more about effective armor removal projects at <https://www.psp.wa.gov/evaluating-effective-action.php>

## WHAT DOES SUCCESS LOOK LIKE?

We are achieving our recovery goals of increasing functioning habitat and maintaining thriving species and food webs in the Puget Sound region by increasing the amount of protected natural marine and estuarine, shorelines (those not armored), and by removing or softening armor where it currently exists on estuaries and marine shorelines. Indicators of success include:

- ▶ Minimizing miles of new shoreline armor (including from setbacks) and maximizing the miles of shoreline armor removed, sound-wide
- ▶ Reducing the total extent of shoreline armor sound-wide
- ▶ Increasing the percent of feeder bluffs in functional condition

## ACTIONS

### Increase and improve shoreline regulation implementation, compliance, enforcement, and communication. (ID #14)

*Key opportunities for 2022-2026 include:*

- ▶ Evaluate and improve implementation of existing shoreline regulations and policies (which could include single-family residences as well as emergency construction permits);
- ▶ Conduct effective and active compliance monitoring and enforcement to support and reinforce permitting decisions by state and local regulatory agencies;
- ▶ Identify nearshore restoration opportunities in industrial and municipal areas;
- ▶ Prevent conversion of nearshore habitats through voluntary acquisition and conservation easements;
- ▶ Review and improve shoreline regulations including the incorporation of potential future changes to shorelines from climate change (including sea level rise);
- ▶ Cultivate political support for regulatory staff to implement existing regulations and conduct compliance, monitoring, and enforcement.

### Expand and improve incentives and education for residential property owners to motivate voluntary actions for healthy shorelines. (ID #15)

*Key opportunities for 2022-2026 include:*

- ▶ Educate, communicate with, and assist marine and shoreline property owners and the community to best pursue voluntary ecologically-friendly shoreline management alternatives;

- ▶ Combine communication with financial, social, and technical incentives (for example, tax benefits, market-based solutions, or restoration permit streamlining) to accelerate shoreline management on residential properties such as shoreline armor prevention and removal;
- ▶ Increase coordination among regional and local partners to ensure that existing knowledge and resources are leveraged, and that related programs are funded appropriately for the long-term.

### Improve long-term strategic planning to reduce development (for example, armor) impacts in the future across all land-use types. (ID #16)

*Key opportunities for 2022-2026 include:*

- ▶ Develop and complete a standardized framework for parcel-scale mapping of Puget Sound shoreline attributes and prioritization of protection, followed by a comprehensive parcel-by-parcel prioritized analyses of all marine shorelines, by drift cell, that includes habitat value, ecosystem services, risk of development, vulnerability to sea level rise, and the frequency and intensity of storms;
- ▶ Make this information and other regional information and criteria easily accessible to inform strategic decision-making and land use planning;
- ▶ Improve education, coordination, and communication between agencies, partners, and community members to leverage and catalyze beneficial projects for restoration and habitat improvement;
- ▶ Implement restoration and protection to improve beach processes and function identified through strategic planning at multiple geographic scales.

### Increase and improve coastal process-based design and technical training. (ID #17)

*Key opportunities for 2022-2026 include:*

- ▶ Educate private sector entities, landowners, engineers, consultants, and permitting agencies on increasing regional capacity to guide shoreline design processes and codevelop BMPs;
- ▶ Implement a regional monitoring strategy to assess cumulative effects and improve process design;
- ▶ Compile and analyze existing monitoring information on implemented armor removal and soft shore projects to improve project design;
- ▶ Develop a programmatic framework for technical training.

## IMPLEMENTATION CONSIDERATIONS

**Key opportunities for 2022-2026 to integrate human wellbeing consideration in efforts to protect and restore marine shorelines include:**

- ▶ Protect and restore shorelines in places and in such a way as to reduce human health risks, enhance place attachment, protect opportunities for cultural practices, and expand equitable access to responsible recreation and stewardship.
- ▶ Expand inclusion of vulnerable populations and underserved communities in governance and decisions about how and where we protect and restore marine shorelines.
- ▶ Prioritize opportunities to realize multiple benefits for habitat, livelihoods, and human wellbeing in protecting and restoring marine shorelines.

**Key opportunities for 2022-2026 to integrate climate change responses in efforts to protect and restore marine shorelines include:**

- ▶ Expand research on the effects of sea level rise and ocean acidification on marine shorelines.
- ▶ Prioritize shoreline restoration in areas with long-term carbon storage potential that enhances resilience to sea level rise, larger storm surges, and other aspects of climate change.
- ▶ Incorporate sea level rise, coastal squeeze, and storm surges into long-term strategic planning and shoreline regulations and management decisions. Utilize the Coastal Storm Modeling System (CoSMoS) and other related sea level rise tools in planning.
- ▶ Build climate change information into existing educational programs for residential property owners about healthy shorelines.

## COLLABORATING PARTNERS

- ▶ Tribal governments, representatives, and consortia
- ▶ Federal Agencies
- ▶ State agencies (for example, Department of Fish and Wildlife, Washington Department of Transportation, and Department of Ecology)
- ▶ Local governments (for example, Public Works Department and city and county local land use planners and permitting offices)
- ▶ Conservation Districts
- ▶ Marine Resource Committees

- ▶ Nongovernmental organizations and other project sponsors (for example, implementers of Shore Friendly programs and restoration projects, including engineers, contractors, and consultants)
- ▶ Community members and residents (for example, shoreline property owners)
- ▶ Local Integrating Organizations
- ▶ Salmon recovery and watershed groups
- ▶ Washington Sea Grant
- ▶ Vulnerable populations and underserved communities
- ▶ Community-based organizations

## ONGOING PROGRAMS

Ongoing programs provide regulatory oversight, technical support, implementation resources, funding, or guidance and serve as the critical foundation for Puget Sound recovery. The following is a list of example state and federal ongoing programs that help to implement this strategy. Many more local, tribal nations, and nongovernmental programs exist that support this strategy. See [Puget Sound Info](#) for a broader list of relevant programs. Programs that have set four-year targets to accelerate their contributions to Puget Sound recovery are indicated in bold (\*).

- ▶ [Shorelands - Shoreline Master Programs \(ECY\)](#)
- ▶ [\*\*Estuary and Salmon Restoration Program: Shore Friendly\\*\*\* \(WDFW\)](#)
- ▶ [Hydraulic Project Approval Program](#) (WDFW)
- ▶ [Regulatory Program](#) (U.S. ACE)
- ▶ [Office of Protected Resources](#) (NOAA)
- ▶ [\*\*Partnership Nearshore Credits Program\\*\*\* \(PSP\)](#)

## PROGRAM TARGET SPOTLIGHT

The [Puget Sound Partnership Nearshore Conservation Credits](#) program's objectives are to mobilize new funding for Puget Sound recovery, accelerate the implementation of restoration projects that improve nearshore habitat for salmon and forage fish, and streamline permitting processes for projects that support recreational and cultural benefits. Between 2022-2026, the Partnership aspires to accelerate the Nearshore Conservation Credit's program performance by removing 930 tons of creosote from Puget Sound.

The [Washington Department of Fish and Wildlife \(WDFW\) Shore Friendly program](#) is a group of local programs that work with private shoreline landowners to incentivize appropriate management and restoration of Puget Sound's shorelines to support fish, wildlife, and communities. Between 2022-2026, WDFW and their local partners aspire to accelerate the Shore Friendly program performance by conducting 914 initial site visits with interested shoreline landowners and following up with over 330 technical site visits during which site-specific management recommendations will be provided, reducing demand for new hard armor and increasing shoreline restoration.



Figure 6. Location of shoreline armor in Puget Sound. The map reflects available data obtained through 2019. Data source: WDFW Estuary and Salmon Restoration Program, Beach Strategy Geodatabase and Habitat Strategic Initiative Lead (WDFW/DNR) through WDFW Grant 19-12727 based upon NTA 2018-0828 Friends of the San Juans, San Juan County Shoreline Armor Change Analysis 2009-2019.

## WHERE DOES SHORELINE ARMOR EXIST IN PUGET SOUND?

Shoreline armoring exists all around Puget Sound but is more prevalent in some areas than others. Approaches vary by location as armor is associated with small residential parcels in some areas and large public or private infrastructure (ports, railroad) in others. The locations of shoreline armoring are shown in figure 6. Armor prevention and removal should prioritize areas where there is the greatest potential to protect or restore nearshore processes that sustain beach structure. Management strategies should focus on the protection of intact habitat and feeder bluffs which supply sediment to beaches and help shape shoreline ecosystems.



## STRATEGY 4

### Riparian Areas

**Protect and restore riparian areas by improving regulatory frameworks and incentives and increasing funding.**

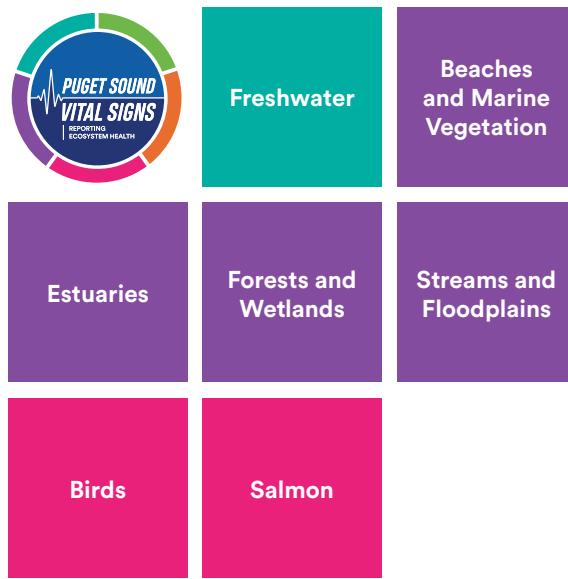
#### STRATEGY DESCRIPTION

Decades of land use and development have significantly degraded riparian vegetation corridors along Puget Sound rivers and streams. Intact riparian corridors are critical for keeping fresh and marine waters clean and cool, controlling erosion, moderating variability in water volume and timing of flow (flood storage), and offering key habitat for numerous terrestrial, freshwater, and interface species, such as salmon. Healthy riparian habitat ensures the integrity of the river- or streambank, thereby reducing erosion and flooding; provides a source of woody debris that create habitat features and slow flows; shades the water and reduces temperatures; delivers nutrients necessary to support the base of the food web; and filters out pollutants before they enter the water.

Growing and protecting trees along the lengths of our rivers and streams safeguards our water, provides vital habitat for our threatened salmon species, and improves resilience to climate change. To realize those functions, time is of the essence: trees take years—or even decades—to grow tall enough to provide significant shade, habitat, and carbon sequestration benefits. Meanwhile, land conversion pressures from expanding development threaten to lock in riparian impairment.

Intact forested riparian corridors can better preserve and restore habitat function than land converted to residential or commercial development. A comprehensive suite of tools, including improved regulatory frameworks and funding for incentives, must be deployed to deliver the scale and pace of riparian protection and restoration needed to achieve resilience in Puget Sound.

Implementing the Benthic Index of Biotic Integration and other Implementation Strategies supports the success of this strategy.



## WHAT DOES SUCCESS LOOK LIKE?

We are achieving our recovery goals of increasing functioning habitat, improving water quality, and maintaining thriving species and food webs in the Puget Sound region by protecting ecologically important lands from development and restoring instream and riparian areas of rivers and streams based on a statewide forested riparian area standard. Riparian landowners are implementing BMPs to protect and restore riparian habitat, and local jurisdictions are effectively implementing and enforcing the statewide standard.

Indicators of success include:

- ▶ Increasing acres of riparian habitat protected or restored (including on agricultural land and within UGAs), sound-wide
- ▶ Increasing acres of private land treated with riparian planting
- ▶ Stabilizing water temperature in streams and rivers
- ▶ Increasing the extent of forest cover in freshwater riparian zones

## ACTIONS

### **Establish and implement science-based riparian protection, restoration, and management policies that result in a minimum ‘1 Site Potential Tree Height’ forested riparian area standard. (ID #11)**

#### ***Key opportunities for 2022-2026 include:***

- ▶ Establish and implement a statewide riparian standard and ensure it is included in local land use planning and regulation;
- ▶ Establish a riparian plant propagation program at public and private nurseries to meet future riparian restoration needs;
- ▶ Gather and evaluate riparian management, guidance, and implementation data;
- ▶ Enhance funding for and capacity of riparian area landowners, tribal governments, local governments, and nongovernmental organizations (for example, Conservation Corps) to acquire, restore, and manage riparian properties;
- ▶ Develop a monitoring program to track implementation and effectiveness of a variety of tools and incentives.

### **Provide incentives, financial and technical support to local jurisdictions that have prioritized riparian restoration. (ID #201)**

#### ***Key opportunities for 2022-2026 include:***

- ▶ Fund and implement technical assistance and outreach programs with riparian landowners to assist in the implementation of BMPs that will protect, restore, and enhance riparian habitat;
- ▶ Establish a riparian reserve program that provides financial incentives for all landowners to set aside and restore riparian areas important for salmon recovery;
- ▶ Provide technical support and enforcement capacity to local jurisdictions;
- ▶ Support policies that improve effectiveness and advance the intent of the GMA and SMP.

## IMPLEMENTATION CONSIDERATIONS

### ***Key opportunities for 2022-2026 to integrate human wellbeing considerations in efforts to protect and restore riparian areas include:***

- ▶ Improve residents' knowledge of and access to riparian areas to foster a sense of place and increase political will for protecting and restoring these areas.
- ▶ Connect riparian area protection and restoration to benefits for both landowners and communities.
- ▶ Offer incentives in expedited procedural frameworks to make restorative practices easier and faster for landowners.
- ▶ Increase resources and capacities of local agencies to protect and restore riparian areas.

### ***Key opportunities for 2022-2026 to integrate climate change responses in efforts to protect and restore riparian areas include:***

- ▶ Factor future climate conditions into integrated planning processes for riparian protection and restoration projects.
- ▶ Promote riparian protection and restoration actions that also increase carbon sequestration.
- ▶ Incorporate targeted climate change education into technical and financial assistance programs for landowners.



## COLLABORATING PARTNERS

- ▶ Tribal governments, representatives, and consortia
- ▶ Federal agencies (for example, National Oceanic and Atmospheric Administration, Environmental Protection Agency, U.S. Fish and Wildlife Service, and Natural Resources Conservation Service)
- ▶ State agencies (for example, Department of Fish and Wildlife, Recreation Conservation Office, Washington Conservation Commission, Department of Ecology, Department of Natural Resources, Department of Agriculture, Governor's Salmon Recovery Office, Recreation and Conservation Office, and Department of Transportation)
- ▶ Salmon recovery and watershed groups
- ▶ Conservation Districts
- ▶ Local Integrating Organizations
- ▶ Local governments (for example, city and county)
- ▶ Forest landowner organizations (for example, Washington Farm Forestry Association, Washington Forest Protection Association)
- ▶ Academic and research institutions (for example, University of Washington Precision Forestry Cooperative)
- ▶ Washington Department of Fish and Wildlife Hydraulics Program
- ▶ Vulnerable populations and underserved communities
- ▶ Community-based organizations

## ONGOING PROGRAMS

Ongoing programs provide regulatory oversight, technical support, implementation resources, funding, or guidance and serve as the critical foundation for Puget Sound recovery. The following is a list of example state and federal ongoing programs that help to implement this strategy. Many more

local, tribal nations, and nongovernmental programs exist that support this strategy. See [Puget Sound Info](#) for a broader list of relevant programs. Programs that have set four-year targets to accelerate their contributions to Puget Sound recovery are indicated in bold (\*).

- ▶ [Forest Practices Program including the Habitat Conservation Plan](#) (DNR)
- ▶ [Shorelands - Shoreline Master Programs](#) (ECY)
- ▶ [Governor's Salmon Recovery Office](#) (RCO)
- ▶ [Puget Sound Acquisition and Restoration](#) (PSP)
- ▶ [Salmon Recovery Funding Board](#) (RCO)
- ▶ [Washington Wildlife and Recreation Program](#) (RCO)
- ▶ [Ecosystems Support](#) (WDFW)
- ▶ [Hydraulic Project Approval Program](#) (WDFW)
- ▶ [\*\*Conservation Reserve Enhancement Program\\*\*\*](#) (**WSCC**)
- ▶ [Agricultural Conservation Easement Program](#) (U.S. NRCS)
- ▶ [Forest Riparian Easement Program](#) (DNR)
- ▶ [Clean Water Act Section 303\(d\): Impaired Waters and Total Maximum Daily Loads program](#) (EPA)
- ▶ [Voluntary Stewardship Program](#) (WSCC)

## PROGRAM TARGET SPOTLIGHT

The [WSCC Conservation Reserve Enhancement Program](#) (CREP) provides funding to private agricultural landowners to incentivize the installation of riparian buffers or protection of existing riparian buffers on their land to support salmon recovery. Between 2022-2026, the Conservation Commission aspires to accelerate CREP's performance by funding the installation of over 675 acres of riparian buffer in Puget Sound agricultural areas.



## STRATEGY 5

### Floodplains and Estuaries

**Protect and restore floodplains and estuaries (including associated riparian habitats) by advancing integrated river basin management planning policies and regulations and accelerating funding and implementation of reach-scale plans and projects.**

#### STRATEGY DESCRIPTION

Floodplains and estuaries are critical habitats linking the land and sea—creating and supporting a more diverse landscape that provides critical habitat for the health, growth, and survival of Pacific salmon and steelhead, flood damage, sea level rise, and storm surge mitigation, improved water quality, vital habitat for a suite of flora and fauna, recreational opportunities, and economically valuable farmlands.

Estuaries, a unique environment where freshwater mixes with salt water and sediments collect, provide important feeding and resting habitat for young salmon, migratory birds, and many other species that cannot find these unique benefits in any other place in our landscape. Tidal wetland habitat also contributes to the Puget Sound ecosystem through the production of plant material, which fuels a rich food web as it decays.

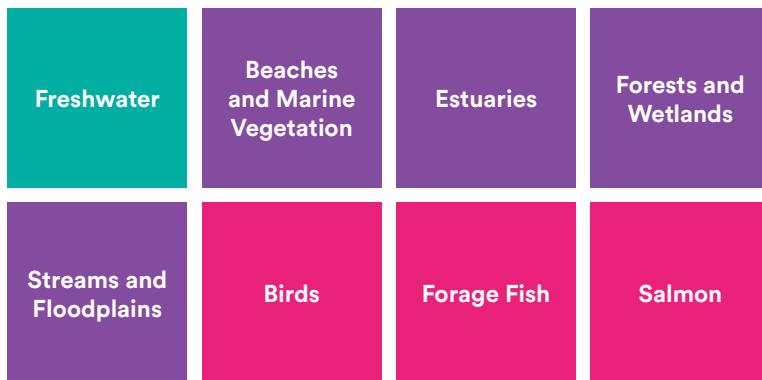
These highly valuable areas also benefit people: from supporting the lives and cultural practices of tribal nations since time immemorial to providing some of the most fertile agricultural lands in the region. Seventy-five percent of river delta tidal wetlands have been lost or degraded in Puget Sound. The 17 major rivers of Puget Sound have lost or experienced a reduction in over 60 percent of their floodplain function in the last 100 years, predominantly in response to increased population growth and development.

Communities across Puget Sound are envisioning and implementing new ways of managing floodplains. Integrated floodplain management is a form of planning, action, and management where partners agree on a set of shared visions, strategies, and actions to improve floodplain health. Instead of competing against one another for limited resources, partners work together to pursue diverse funding opportunities and develop a suite of integrated projects that collectively move stakeholders across the watershed closer to achieving their goals.

River-basin planning is a collaborative approach where residents and stakeholders impacted by an issue help create solutions for their community. This participation results in a strategy that proposes coordinated actions and projects that benefit local agricultural operations, fish habitat, and flood risk reduction.

In [gʷədᶻadᶻ](#) (pronounced gwa-zah-did), “Teaching of Our Ancestors”, tribal nations identified floodplains as one of five key targets in their Tribal Habitat Strategy, focusing efforts on protecting, restoring, and enhancing hydrological and geomorphic connectivity between rivers and their floodplains and deltas for a recovered future. Please see the [Tribal Habitat Strategy story map](#) for more information.

Implementing the Floodplains and Estuaries, Chinook, and other Implementation Strategies supports the success of this strategy.



### WHAT DOES SUCCESS LOOK LIKE?

We are achieving our recovery goal of increasing functioning habitat in the Puget Sound region by preventing fragmentation of rivers, floodplains, and estuaries, removing or changing the management of levees, floodgates, tidegates, roads, existing development, and other barriers in floodplains and estuaries; and restoring floodplains, tidal wetlands, and estuaries through multi-benefit approaches (i.e., integrated floodplain management). Indicators of success include:

- ▶ Increasing the acres of floodplain and estuary habitat protected or restored
- ▶ Slowing or stopping conversion or disconnection of floodplain and estuary habitat due to new development or infrastructure
- ▶ Increasing floodplain function (connectivity) in large and small river systems
- ▶ Increasing the percent of estuarine habitat area in functional condition
- ▶ Increasing the number of accessible pocket estuaries and embayments
- ▶ Increasing habitat through reconnection of floodplain side channels and riverine wetlands

### ACTIONS

#### Increase the number and accelerate implementation of habitat acquisition and restoration projects as prioritized in salmon and watershed recovery plans. (ID #12)

##### *Key opportunities for 2022-2026 include:*

- ▶ Enhance funding for and capacity of landowners, tribal governments, local governments, and nongovernmental organizations to acquire, restore, and manage floodplain and estuarine properties;
- ▶ Remove or set back barriers to pocket estuary function;
- ▶ Work with landowners to allow estuarine connectivity during key timeframes for salmon;

- ▶ Purchase key properties (i.e., acquisition) that allow for permanent restoration and protection of habitat and connectivity;
- ▶ Improve the function of tide gates, or remove them altogether, where appropriate, to improve water quality and increase habitat complexity;
- ▶ Remove culverts and other barriers to connectivity to improve and maintain streamflow functions within floodplains and their associated estuaries;
- ▶ Develop approaches to more rapidly access funding when properties become available;
- ▶ Develop a framework to identify highest priority salmon habitats to protect in Puget Sound.

#### **Incorporate the economic risks and costs of development into land use planning in floodplain and estuary habitats. (ID #18)**

##### *Key opportunities for 2022-2026 include:*

- ▶ Incorporate current and predicted climate changes and sea level rise into hazard risk tolerance and cost subsidy data and results to improve planning and permitting decisions in an integrated management context;
- ▶ Build the capacity of land use planners to enable the use of risk tolerance and cost subsidy data and results to inform adaptive management of incentive programs and regulatory and permitting decisions;
- ▶ Develop and implement outreach plans to developers, landowners, decision-makers, and other key partners to communicate risk and improve prioritization of land uses and emergency preparedness in flood-prone areas;
- ▶ Ensure statewide mapping information is available and accessible to local partners;
- ▶ Improve river-basin scale planning using risk tolerance and cost subsidy analyses to align habitat protection and restoration with hazard mitigation planning.

**Develop and maintain a Puget Sound-wide framework to build public support and political will, develop partnerships, mobilize funding resources, streamline permitting, and support monitoring for integrated floodplain management approaches to enhance outcomes for fish populations, flood risk, and agricultural viability (farm, fish, flood). (ID #19)**

**Key opportunities for 2022-2026 include:**

- ▶ Develop a framework for local plans; communicate benefits of integrated management to build public support and political will;
- ▶ Develop a Sound-wide integrated management vision that mobilizes financial resources that incentivize a watershed approach and building of local capacity;
- ▶ Provide capacity and support for a learning network of regional and local practitioners to build opportunities for coordination and shared learning;
- ▶ Develop Sound-wide integrated management goals and metrics to track and communicate progress across watersheds;
- ▶ Integrate federal-level infrastructure planning;
- ▶ Address regulatory and permitting process barriers through Sound-wide forums and the permit streamlining pilot program authorized under ESSHB 1382.

**Prioritize, design, and implement reach-scale restoration and protection projects within a river basin or watershed. (ID #20)**

**Key opportunities for 2022-2026 include:**

- ▶ Enhance understanding of floodplain and estuarine processes, include future projections, to inform reach-scale project prioritization and design;
- ▶ Develop and implement outreach and education plans to highlight the locally-relevant benefits and challenges of integrated floodplain management;
- ▶ Enable diverse communities to engage in integrated management forums;
- ▶ Consider and address diverse community needs when integrated management forums are identifying restoration and protection priorities;
- ▶ Expand capacity for local partner implementation.

**Implement habitat protection and restoration projects that restore or maintain natural nutrient attenuation functions and sediment processes in watersheds, estuaries, and tidal wetlands. (ID #24)**

**Key opportunities for 2022-2026 include:**

- ▶ Encourage projects that include natural nitrogen attenuation restoration in sensitive areas;
- ▶ Identify areas for wetland restoration with value for natural nitrogen attenuation;
- ▶ Inform local wetlands protection programs and critical areas ordinances about opportunities for nutrient attenuation;
- ▶ Expand knowledge of nutrient attenuation project design;
- ▶ Incorporate nitrogen attenuation into Floodplains by Design;
- ▶ Develop and implement regional sediment management plans.

**Increase and improve floodplain and estuary regulation implementation, compliance, enforcement, incentives, and communication. (ID #195)**

**Key opportunities for 2022-2026 include:**

- ▶ Improve single-family resident sections and improve incentives in the Growth Management Act and Shoreline Management Act;
- ▶ Evaluate and improve implementation of existing regulations;
- ▶ Evaluate the need for statutory and policy changes;
- ▶ Implement compliance monitoring and enforcement programs in place;
- ▶ Cultivate political support for regulatory implementation, compliance, and enforcement.

## IMPLEMENTATION CONSIDERATIONS

**Key opportunities for 2022-2026 to integrate human wellbeing consideration in efforts to protect and restore floodplains and estuaries include:**

- ▶ Consider opportunities to bring jobs and economic benefits to communities through floodplain and estuaries restoration work.
- ▶ Improve accessibility of decision-making processes about floodplains and estuaries by asking communities how they want to be involved and developing guidance for accessible meetings.
- ▶ Meaningfully engage communities, specifically those most impacted by climate change and development, in floodplain and estuaries restoration project planning, design, and implementation.
- ▶ Consider real estate reforms such as flood disclosure forms to protect floodplains and increase resident knowledge of surrounding floodplains.
- ▶ Consider impacts of housing inequities on residents living in or near floodplains and support habitat restoration projects that move low-income housing stock outside climate vulnerable areas in ways that enable families to thrive economically and for communities to maintain social cohesion.
- ▶ Integrate outdoor recreation and stewardship opportunities into floodplain and estuarine projects and plans.
- ▶ Meaningfully engage with tribal nations in floodplain and river basin restoration and protection planning.
- ▶ Use data such as health disparities to prioritize communities for restoration and protection projects.
- ▶ Increase economic potential and integrate valuation of ecosystem services of agricultural lands and working forests to protect from conversion.

**Key opportunities for 2022-2026 to integrate climate change responses in efforts to protect and restore floodplains and estuaries include:**

- ▶ Incorporate climate projections and projected impacts into land use planning, integrated river basin planning and reach-scale plans, hazard mitigation planning, regulations, and project design in floodplain and estuary habitats.
- ▶ Leverage existing programs and trusted partners to build awareness of changing climate and ocean conditions.
- ▶ Integrate carbon sequestration considerations in watershed restoration and protection projects.

## COLLABORATING PARTNERS

- ▶ Tribal governments, representatives, and consortia
- ▶ Federal agencies (for example, Environmental Protection Agency Region 10 Puget Sound Team and Puget Sound Federal Task Force, U.S. Army Corps of Engineers, Federal Emergency Management Agency)
- ▶ State agencies (for example, Department of Fish and Wildlife, Puget Sound Partnership, Department of Ecology, Department of Natural Resources, Governor's Salmon Recovery Office, Recreation and Conservation Office, and Emergency Management Division)
- ▶ Puget Sound Partnership boards
- ▶ Local Integrating Organizations
- ▶ Salmon recovery and watershed groups
- ▶ Local governments (for example, city and county)
- ▶ Academic and research institutions (for example, Puget Sound Institute, University of Washington Climate Impacts Group, Puget Sound Ecosystem Monitoring Program work groups)
- ▶ Businesses and private sector
- ▶ Nongovernmental organizations (for example, The Nature Conservancy, landowner, farmer, and agricultural producer associations)
- ▶ Vulnerable populations and underserved communities
- ▶ Community-based organizations



Flickr credit: Cocoabiscuit



## ONGOING PROGRAMS

Ongoing programs provide regulatory oversight, technical support, implementation resources, funding, or guidance and serve as the critical foundation for Puget Sound recovery. The following is a list of example state and federal ongoing programs that help to implement this strategy. Many more local, tribal nations, and nongovernmental programs exist that support this strategy. See [Puget Sound Info](#) for a broader list of relevant programs. Programs that have set four-year targets to accelerate their contributions to Puget Sound recovery are indicated in bold (\*).

- ▶ [\*\*Shorelands - Floodplains by Design\\*\*\* \(ECY\)](#)
- ▶ [\*\*Puget Sound Acquisition and Restoration\\*\*\* \(PSR\)](#)
- ▶ [Office of Habitat Conservation](#) (NOAA)
- ▶ [Salmon Recovery Funding Board](#) (RCO)
- ▶ [Estuary and Salmon Restoration Program](#) (WDFW)
- ▶ [\*\*Puget Sound Nearshore Ecosystem Restoration Program\\*\*\* \(WDFW\)](#)
- ▶ [National Flood Insurance Program and Biological Opinion](#) (FEMA)
- ▶ [Continuing Authorities Program](#) (U.S. ACE)
- ▶ [National Coastal Wetlands Conservation Grant Program](#) (U.S. FWS)

## PROGRAM TARGET SPOTLIGHT

The [Puget Sound Partnership Puget Sound Acquisition and Restoration](#) (PSAR) program implements priority salmon habitat protection and restoration projects in Puget Sound. Between 2022-2026, the Puget Sound Partnership aspires to accelerate PSAR's program performance by funding 6,000 acres of salmon habitat protection or restoration projects. The [WDFW Puget Sound Nearshore Ecosystem Restoration Project](#) (PSNERP) objective is to complete process-based nearshore habitat restoration with three science-based planning objectives of restoring 1) the connectivity and size of large river delta estuaries, 2) the number and quality of coastal embayments, and 3) the size and quality of beaches. Between 2022-2026, WDFW aspires to accelerate the PSNERP program performance by securing the funds needed to start the process-based restoration of 2,414 acres of PSNERP-identified nearshore habitat projects.

The Ecology Floodplains by Design program is a public-private partnership working to reduce flood risk and restore habitat along Washington's major rivers. The program's multi-benefit objective is to transform how floodplains are managed on a landscape level to support thriving communities and a healthy environment. Between 2022-2026, Ecology aspires to accelerate the multi-benefit outcomes of Floodplains by Design by funding 4,554 acres of floodplain or estuary habitat restored or reconnected.



## STRATEGY 6

### Fish Passage Barriers

**Address fish passage barriers and reopen salmon habitat by accelerating strategic planning and sequenced implementation of projects.**

#### STRATEGY DESCRIPTION

The ability of salmon and steelhead to swim upstream to their freshwater spawning grounds is vital to their recovery across Washington. Deteriorating culverts, outdated bridges and dams, and other barriers block fish passage and undermine the state's recovery efforts. When these barriers are fixed or removed, the fish often return and use those previously inaccessible habitats. Over recent decades, numerous fish passage barriers have been fixed, but many remain.

Fish passage barriers are found on lands owned and managed by government or private entities. As a result, public agencies, private landowners, local, state, tribal, and federal governments, and non-profit community groups must work together to locate fish passage barriers and identify the highest priority projects to ensure that limited funds are well-spent. A variety of types of funds support fish passage barrier and habitat restoration work, but more is needed.

Implementing the Chinook and other Implementation Strategies supports the success of this strategy.



Salmon

#### WHAT DOES SUCCESS LOOK LIKE?

We achieve our recovery goal of thriving species and foodwebs in the Puget Sound region by removing or managing culverts, dams, and other infrastructure to ensure fish passage and functioning downstream habitat. The indicator of success is increasing the miles of streams opened to fish as a result of fish passage barrier removal.

#### ACTIONS

**Prepare and implement strategies to reestablish runs above existing dams and optimize management of dams for salmon. (ID #23)**

*Key opportunities for 2022-2026 include:*

- ▶ Reach an agreement with United States Army Corps of Engineers (USACE) and Tacoma Public Utilities on timely construction and adaptive management of the Howard Hanson Dam juvenile fish passage, and ensure that recent federal funding commitments fully fund this project;
- ▶ Implement adaptive management of the new adult trap at the Buckley diversion dam;
- ▶ Coordinate planning, design, and adaptive management for Capitol Lake and Deschutes Estuary to improve salmon habitat, migration, and spawning;

- ▶ Convene partners to identify barriers and discuss dam removal benefits for fish and ecosystem functions, adaptive management provisions in dam management and operating plans (including those identified in local salmon recovery plans) to meet instream flow goals, and actions that support fish passage, survival, and reintroduction (including restoring downstream channel processes and moderating water temperature) at the Snake River Dams for the benefit of Southern Resident Orca, and support efforts considering removal of the lower Snake River dams and the planning necessary to replace or mitigate for lost benefits of the dams;
- ▶ Consider dam management or removal benefits in coordination with other upstream or downstream habitat restoration benefits and opportunities.

**Inventory and assess all fish passage barriers (culverts, dams, etc.). Prioritize, sequence, and implement fish passage barrier correction or removal in watersheds. (ID #152)**

**Key opportunities for 2022-2026 include:**

- ▶ Identify opportunities to remove outdated dams or dams that have consistently failed to comply with environmental regulations;
- ▶ Consider strategic and varied approaches for private and public culvert removal;
- ▶ Streamline funding opportunities for private culverts and barrier removal;
- ▶ Support utilization of adaptive management of existing guidelines, coding, and laws in place;
- ▶ Integrate stormwater data to support salmon health;
- ▶ Include stormwater and climate change priorities in transportation plans;
- ▶ Support landowners to address railroad barriers (for example, BNSF and neighboring landowners);
- ▶ Address flood safety regulation and permit obstacles;
- ▶ Improve migration pathways around dams;
- ▶ Fulfill the state's obligation to replace fish passage culverts;
- ▶ Support Washington State Department of Fish and Wildlife (WDFW) compilation and development of statewide strategies, in collaboration with tribal nations, other agencies, and local partners, including prioritization and sequencing of barriers;
- ▶ Implement the restoration permit streamlining pilot program authorized under ESSHB 1382;
- ▶ Monitor and evaluate responses to fish passage barrier actions and improve data and research to support ongoing monitoring and evaluation;

- ▶ Include fish passage, stormwater and climate change priorities in transportation plans.

## IMPLEMENTATION CONSIDERATIONS

***Key opportunities for 2022-2026 to integrate human wellbeing considerations in efforts to address fish passage barriers and reopen salmon habitat include:***

- ▶ Consider opportunities to bring jobs and economic benefits to communities through culvert, bridge, dam removal improvements, and subsequent habitat restoration work.
- ▶ Expand inclusion of vulnerable populations and underserved communities in governance and decision-making about how and where we protect and restore fish passages and stream access.
- ▶ Use information relevant to culturally significant areas when setting priorities for acquisition, protection, and restoration, where recommended by tribal nations.
- ▶ Include information about the benefits of fish passage barrier removal in salmon and salmon habitat preK-16 education.
- ▶ Seek opportunities to address fish passage as a part of other important infrastructure upgrades such as flood prevention, road improvements, and recreational access improvements.

***Key opportunities for 2022-2026 to integrate climate change responses in efforts to address fish passage barriers and reopen salmon habitat include:***

- ▶ Incorporate climate impacts and future flow potentials into culvert and bridge improvement planning, sequencing, and design.
- ▶ Factor climate information into strategies designed to re-establish salmon runs above existing dams.

## COLLABORATING PARTNERS

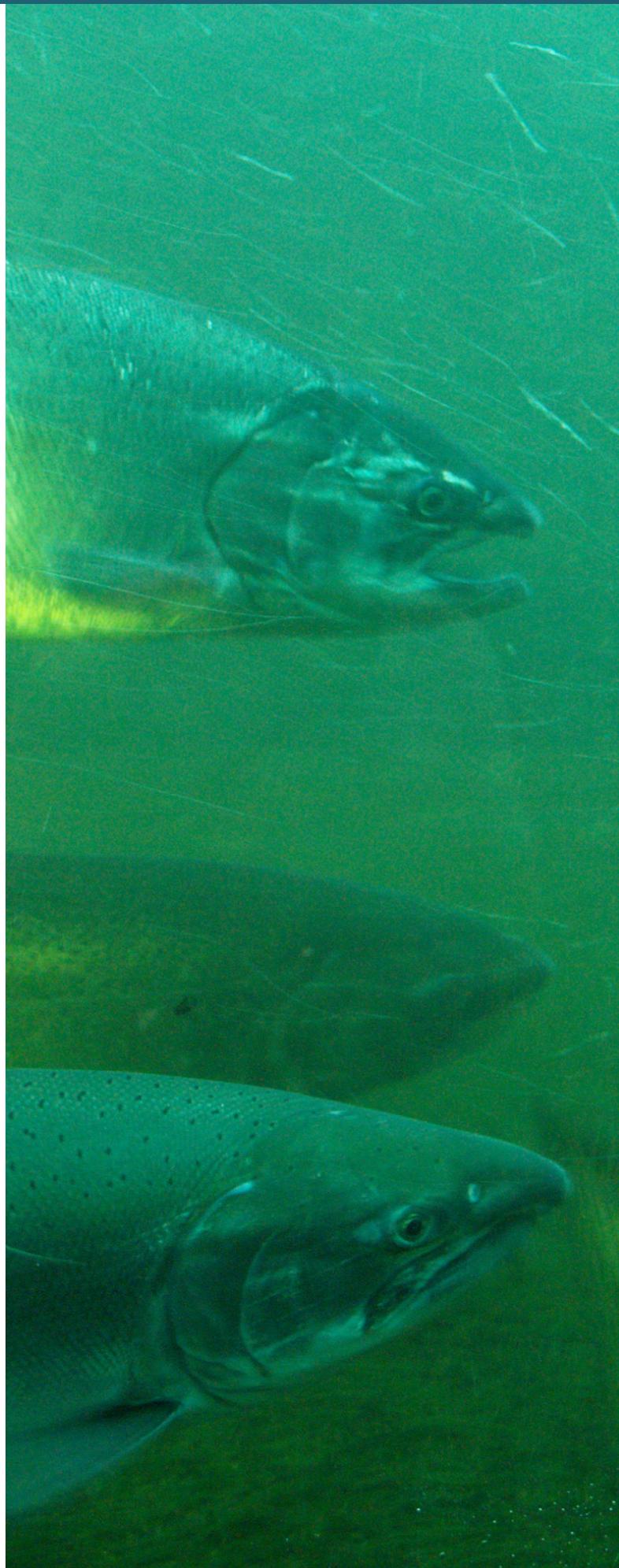
- ▶ Tribal governments, representatives, and consortia
- ▶ Federal agencies (for example, U.S. Forest Service, National Oceanic and Atmospheric Administration, U.S. Army Corps of Engineers (and other dam operators), Federal Highway Administration)
- ▶ Department of Transportation
- ▶ State agencies (for example, Department of Fish and Wildlife, Department of Natural Resources, Department of Transportation, Governor's Salmon Recovery Office, and Recreation and Conservation Office)
- ▶ Local governments (for example, city and county local land use planners and permitting offices)
- ▶ Local Integrating Organizations

- ▶ Salmon recovery and watershed groups
- ▶ Conservation Districts
- ▶ Nongovernmental organizations and other project sponsors (implementers of restoration projects)
- ▶ Community members and residents (for example, private property owners)
- ▶ Local park districts
- ▶ Vulnerable populations and underserved communities
- ▶ Community-based organizations

### ONGOING PROGRAMS

Ongoing programs provide regulatory oversight, technical support, implementation resources, funding, or guidance and serve as the critical foundation for Puget Sound recovery. The following is a list of example state and federal ongoing programs that help to implement this strategy. Many more local, tribal nations, and nongovernmental programs exist that support this strategy. See [Puget Sound Info](#) for a broader list of relevant programs. Programs that have set four-year targets to accelerate their contributions to Puget Sound recovery are indicated in bold (\*).

- ▶ [Family Forest Fish Passage Program](#) (DNR)
- ▶ [Puget Sound Acquisition and Restoration](#) (PSP)
- ▶ [Salmon Recovery Funding Board \(RCO\)](#)
- ▶ [Fish Passage \(WDFW\)](#)
- ▶ [Fish Barrier Correction \(WSDOT\)](#)
- ▶ [Brian Abbott Fish Barrier Removal Board grant program](#) (RCO)
- ▶ [National Culvert Removal, Replacement and Restoration Grant Program](#) (U.S. DOT)
- ▶ [National Fish Passage Program](#) (USFWS)



## STRATEGY 7

### Freshwater Availability

**Understand and plan for future freshwater availability and implement regulations, projects, and voluntary approaches to reduce water demand and encourage conservation, as well as reclaimed wastewater.**

#### STRATEGY DESCRIPTION

Rivers and streams in the watersheds of Puget Sound provide ecological corridors and transport water, wood, sediment, organic matter, and nutrients downstream where they influence freshwater and estuarine ecosystems. Freshwater is vital to human life and wellbeing. It is also vital to salmon and species throughout our ecosystem. Washington's rivers and streams are stressed by changing climate conditions and by the demands of a growing human population. Managing demand and promoting freshwater conservation will be critical as the human population increases in the Puget Sound region, especially in light of current and predicted decrease in snowpack and increased frequency of droughts brought about by climate change.

In January 2018, the Legislature passed the Streamflow Restoration law ([RCW 90.94](#)) that helps restore streamflows to levels necessary to support robust, healthy, and sustainable salmon populations while providing water for homes in rural Washington. The law directs local planning groups to develop watershed plans that offset impacts from new domestic permit-exempt wells and achieve a net ecological benefit within the watershed. The Legislature appropriated \$300 million over the course of 15 years to help with the implementation of projects that improve streamflow. The funds are available statewide and administered through a competitive grant program.

This strategy builds on this direction from the Legislature, as well as other policies and initiatives, by supporting planning for how Washington will manage and protect instream habitat and water levels, that will enable human communities and instream biota to thrive over the long term. The near-term objectives for water demand and water conservation address four key sectors: municipalities, agriculture, industry, and rural domestic water users. Demand and conservation goals will be met through a combination of implementation and enforcement of rules, voluntary participation in conservation programs (and efforts to utilize reclaimed water), market-based approaches to adjust water usage, integrated river basin planning with residents and stakeholders, and deployment of current and emerging water conservation technologies.

Implementing the Benthic Index of Biotic Integration and other Implementation Strategies supports the success of this strategy.



#### WHAT DOES SUCCESS LOOK LIKE?

We are achieving our recovery goal of increasing functioning habitat and ensuring adequate abundant water quantity in the Puget Sound region by reducing or mitigating surface water diversions and groundwater withdrawals to meet instream flow targets, increasing the amount of infiltration and water holding capacity of upland areas, increasing awareness of local geology driving groundwater systems, protecting from actions that degrade storage potential, and identifying opportunities for enhanced storage. The indicator of success is maintaining flows in summer.

## ACTIONS

**Implement and improve technologies, voluntary programs, financial and technical assistance programs, and market-based approaches to reduce water demand and encourage conservation. (ID #27)**

**Key opportunities for 2022-2026 include:**

- ▶ Implement voluntary programs and financial programs identified in Watershed Restoration and Enhancement Plans or Watershed Plan amendments;
- ▶ Address population stress and effects of public water systems on water supply and streamflows given decreased snowpack and increased droughts and achieve near-term objectives for water demand and conservation across municipalities, agriculture, industry, and rural domestic water users;
- ▶ Expand and accelerate incentives for voluntary action;
- ▶ Coordinate regulatory activities;
- ▶ Provide ongoing support and monitor for voluntary programs to inform corrective action;
- ▶ Address the policy and legislative issues related to water laws;
- ▶ Provide easy to understand information on feasible and effective practices to landowners, residents, and visitors;
- ▶ Understand water needs, use, quantity, and quality on tribal lands throughout the watershed;
- ▶ Support watershed scale instream temperature monitoring in rearing, spawning, and critical habitats for the most vulnerable fish species;
- ▶ Focus to improve water quality and quantity in key salmon migration and rearing corridors throughout Puget Sound.

**Implement watershed plans that offset impacts from new domestic permit-exempt wells and achieve a net ecological benefit within the watershed. (ID #28)**

**Key opportunities for 2022-2026 include:**

- ▶ Implement watershed plans that offset impacts from new domestic permit-exempt wells;
- ▶ Update watershed plans;
- ▶ Provide watershed planning guidance at the state-level;
- ▶ Develop and enforce methods to ensure watershed plan implementation and maintenance;
- ▶ Allocate funding to implement projects that improve streamflow, particularly in basins where that has not been conducted;

- ▶ Assess projected impacts on flows of anthropogenic warming beyond 2038, and design strategies to offset expected impacts;
- ▶ Monitor and define baseline demand and flow conditions;
- ▶ Conduct effectiveness and impact monitoring in the context of climate change;
- ▶ Update watershed assessments to understand susceptibility and resilience to development;
- ▶ Update water law and policies to address existing and future water shortages;
- ▶ Update plans that focus on critical aquifer recharge areas with draw-down data;
- ▶ Engage LIOs to develop watershed-scale plans that address local recovery needs;
- ▶ Leverage mitigation certification programs for landowners;
- ▶ Utilize forestry management research and BMPs for watershed health recovery;
- ▶ Evaluate habitat and fish trends at the watershed scale.

**Understand and plan for future water needs and changing climate and ecosystem conditions by engaging all water users in a watershed to identify specific actions around water science, technology, management, and conservation. (ID #29)**

**Key opportunities for 2022-2026 include:**

- ▶ Ensure watershed-scale planning addresses water quantity, water quality, fish habitat, and instream flows;
- ▶ Implement and adaptively manage Watershed Restoration and Enhancement Plans and Watershed Plan Amendments;
- ▶ Support water use data collection (metering and reporting) to improve watershed level knowledge about watershed carrying capacity, consumptive uses and effects on stream hydrology and habitat;
- ▶ Improve knowledge of water users and how their uses affect stream hydrology;
- ▶ Support proactive planning for how Washington will manage and protect instream habitat and water levels given stress from changing climate conditions (for example, seawater intrusion) and demands on water use priorities of growing human populations;
- ▶ Develop tools, data sharing systems, and models for Puget Sound instream flow monitoring and conservation;
- ▶ Coordinate outreach between watersheds and agencies on water quality and quantity enforcement;

- ▶ Support technical assistance that is attuned to climate change impacts;
- ▶ Increase funding and support to guide enforcement of water quantity and quality standards to protect water resources for salmon.

## IMPLEMENTATION CONSIDERATIONS

***Key opportunities for 2022-2026 to integrate human wellbeing considerations in efforts to reduce water demand and encourage conservation include:***

- ▶ Use modeling systems to establish a baseline understanding of drinking water quality across wells.
- ▶ Engage communities, particularly those most impacted by inequitable water pricing and inaccessibility and unavailability, in water resources conservation planning, design, and implementation.
- ▶ Tailor outreach campaigns to reduce water demand without disenfranchising vulnerable populations and underserved communities.
- ▶ Allocate funding and provide incentives to transition small communities from septic systems to small-scale water treatment and reuse programs.
- ▶ Ensure water pricing and availability systems prioritize basic human needs as a core first step in making development decisions.

***Key opportunities for 2022-2026 to integrate climate change responses in efforts to reduce water demand and encourage conservation include:***

- ▶ Incorporate climate change education into programs to reduce water demand.
- ▶ Factor future climate conditions into planning for future water needs.
- ▶ For the subbasins that have high usage, work with landowners and water trusts to incentivize protection. Consider including other types of users (industrial and ag) in addition to landowners.
- ▶ Emphasize existing laws and requirements for new development and look to incentivize actions that reduce water demand.
- ▶ Work closely with watershed improvement districts that have irrigation efficiency programs to identify and implement effective programmatic approaches to water efficiency.
- ▶ Track and analyze emerging conditions (climate changes) and technologies and strategies.
- ▶ Understand variable climate change impact on future water availability and use climate change modeling to inform management decisions across watersheds.

- ▶ For example, tools and resources from University of Washington Climate Impacts Group, Northwest Climate Adaptation Science Center, and the USFS Northwest Climate Hub.

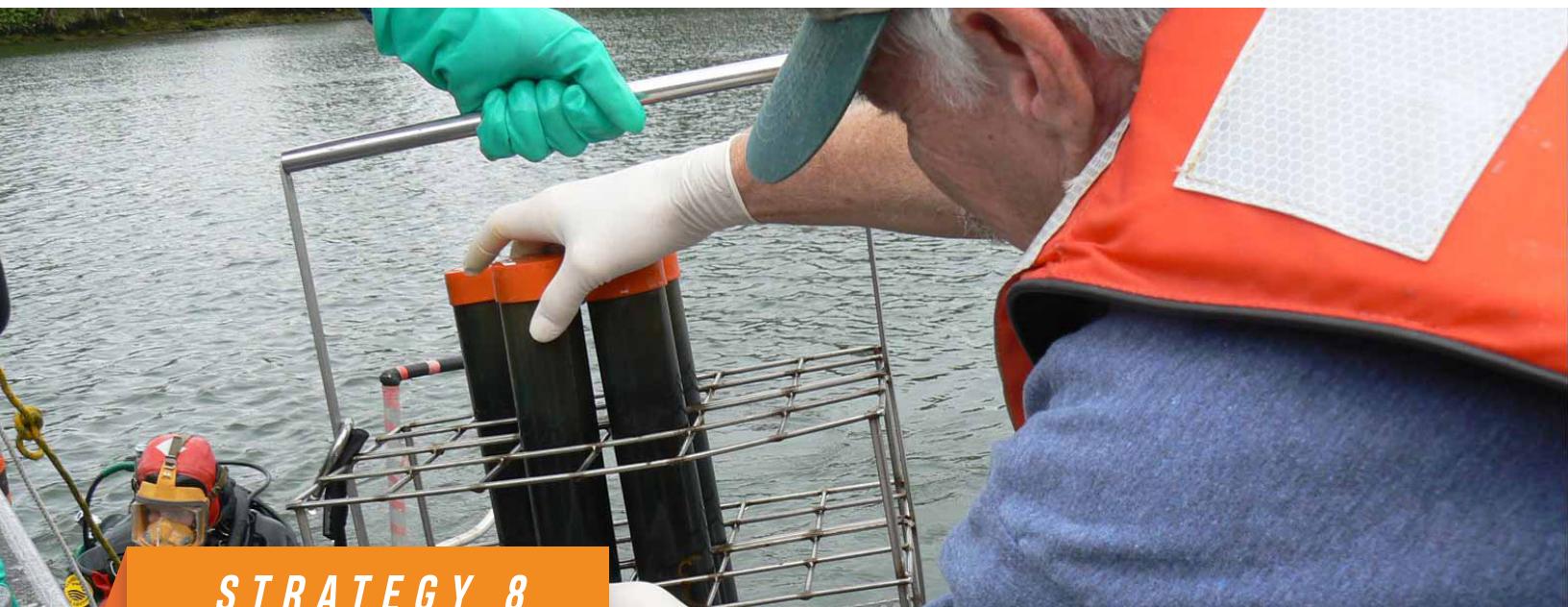
## COLLABORATING PARTNERS

- ▶ Tribal governments, representatives, and consortia
- ▶ Federal agencies (for example, U.S. Geological Survey)
- ▶ State agencies (for example, Recreation and Conservation Office, Salmon Recovery Funding Board, Department of Fish and Wildlife, Department of Ecology)
- ▶ Local governments (for example, city and county)
- ▶ Local Integrating Organizations
- ▶ Salmon recovery and watershed groups (for example, Watershed Restoration and Enhancement Committees convened by Department of Ecology)
- ▶ Businesses and private sector
- ▶ Nongovernmental organizations
- ▶ Community members and residents
- ▶ Vulnerable populations and underserved communities
- ▶ Community-based organizations

## ONGOING PROGRAMS

Ongoing programs are contributing efforts that provide regulatory oversight, technical support, implementation resources, funding, or guidance and serve as the critical foundation for Puget Sound recovery. The following is a list of example state and federal ongoing programs that help to implement this strategy. Many more local, tribal nations, and nongovernmental programs exist that support this strategy. See [Puget Sound Info](#) for a broader list of relevant programs. Programs that have set four-year targets to accelerate their contributions to Puget Sound recovery are indicated in bold (\*).

- ▶ [Water Resources – Streamflow Restoration program](#) (ECY)
- ▶ [Instream Flows](#) (WDFW)
- ▶ [Clean Water State Revolving Fund](#) (EPA)
- ▶ [Legacy Roads and Trails Program](#) (U.S. FS)
- ▶ [Water Resources – Water Resources Management Program](#) (ECY)
- ▶ [Water Resources – Water Use Metering Program](#) (ECY)
- ▶ [Watershed Plan Implementation and Flow Achievement Capital Grant Program](#) (ECY)



## STRATEGY 8

### Toxic Chemical Pollution

**Prevent pollution by promoting the development and use of safer alternatives to toxic chemicals and improving regulatory frameworks and incentives.**

#### STRATEGY DESCRIPTION

Aquatic life and people in the Puget Sound Basin are exposed to thousands of chemicals every day from a wide variety of human activities, both past and present. From common household goods like furniture and electronics to industrial mainstays like paint, electrical wiring and caulking to pesticides, automotive chemicals, pharmaceuticals, and personal care products like shampoo, our world is awash in toxics.

These toxics make their way across jurisdictional boundaries and into the ecosystem and have detrimental effects on both humans, particularly people of color, and wildlife. The impacts of some of these chemicals are well known while for others, such as Chemicals of Emerging Concern (CECs), the impacts are less well known.

This strategy will alleviate the levels and effects of toxic contaminants in Puget Sound aquatic life and people and promote the development and use of safer alternatives. This strategy centers on creating incentives, programs, and regulations for the removal of the primary legacy sources of Polychlorinated Biphenyls (PCBs) (for example, old building materials), Polycyclic Aromatic Hydrocarbons (PAHs) (for example, creosote pilings), and Polybrominated Diphenyl Ethers (PBDEs) (for example, flame retardants),

and would promote the use of safer alternatives. The incentives for removal focus on locations where these efforts are likely to have the greatest reduction of toxic impacts to marine species and protect disproportionately impacted vulnerable populations and underserved communities. Implementing the Toxics in Fish, Shellfish and other Implementation Strategies supports the success of this strategy.



Shellfish  
Beds

Marine  
Water

Toxics in  
Aquatic Life

#### WHAT DOES SUCCESS LOOK LIKE?

We are achieving our recovery goals of healthy human populations, healthy water quality, and thriving species and food webs by reducing the presence of priority toxic chemicals and chemicals of emerging concern in upstream sources, including consumer goods; using source control, management, and remediation tools to remove toxics in infrastructure and building materials; and ensuring that levels and patterns of pollutants in surface waters do not threaten the health of Puget Sound communities or vulnerable populations. Indicators of success include:

- ▶ Reducing levels of chemical contaminants in indicator species that represent four major Puget Sound ecosystem habitats: juvenile and adult salmon (Chinook and Coho), English sole, and Pacific Herring
- ▶ Increasing the number of pollution prevention visits to small businesses conducted by local jurisdictions
- ▶ Increasing the percentage/pounds of creosote removed from overwater structure and creosote piling removal, sound-wide

## ACTIONS

### Promote the development and use of safer alternatives to toxic chemicals. (ID #42)

#### *Key opportunities for 2022-2026 include:*

- ▶ Educate decision-makers, suppliers, and consumers on gaps and limitations of existing state and federal regulations;
- ▶ Increase the identification, use, and demand for safer alternatives;
- ▶ Incorporate material health in building construction and renovations (LEED-type design);
- ▶ Pass state, regional, or federal legislative reform to prevent toxics and protect vulnerable populations and underserved communities.

### Prioritize, prevent, and manage (regulations, permits, and incentives) chemicals of emerging concern. (ID #43)

#### *Key opportunities for 2022-2026 include:*

- ▶ Identify, prioritize, and monitor chemicals of emerging concern (CECs) (including integration of human health risk and thresholds);
- ▶ Expand agency capacity to accelerate planning and regulatory actions;
- ▶ Increase capacity for technical assistance to the regulated community;
- ▶ Develop voluntary programs to prevent, remove or treat CECs (including 6PPD-Q, pharmaceuticals, micro-plastics, and other emerging toxic contaminants) and avoid regrettable substitutions;
- ▶ Improve our understanding of the potential co-benefits of wastewater treatment approaches to remove toxic contaminants, including pharmaceuticals personal care products, and other CECs.

### Increase product testing for compliance with consumer and environmental safety rules. (ID #44)

#### *Key opportunities for 2022-2026 include:*

- ▶ Increase capacity and funding for product testing;
- ▶ Identify human health risks and exposures, including cumulative impacts
- ▶ Expand capacity through collaborative partnerships;
- ▶ Increase efficiency of screening tools to identify priority areas for toxic clean-up.

### Develop and implement programs that incentivize, remove, or replace toxic laden products with safer alternatives, and ensure proper disposal of toxic products. (ID #45)

#### *Key opportunities for 2022-2026 include:*

- ▶ Expand partnerships with businesses and explore market-based programs;
- ▶ Identify funding for and initiate product replacement programs;
- ▶ Support green chemistry programs;
- ▶ Initiate product stewardship and producer responsibility programs.

## IMPLEMENTATION CONSIDERATIONS

### *Key opportunities for 2022-2026 to integrate human wellbeing considerations in efforts to prevent pollution include:*

- ▶ Build support for a precautionary approach to toxic chemical regulation, socialize protective regulatory approaches, and improve residents' understanding of connections between toxic chemicals and impacts.
- ▶ Engage communities, specifically tribal nations, vulnerable, and underserved, to identify and address disproportionate chemical exposures through consumption of local foods (for example, fish, shellfish, and game) and other pathways.
- ▶ Develop pollution prevention outreach campaigns in multiple languages with existing groups and residents to promote safer products and reduce the use of products with toxic chemicals.
- ▶ Fund and promote the use of community-based processes that meaningfully engage tribal nations, Indigenous communities, and vulnerable populations and underserved communities to identify priorities for place-based pollution prevention and ecosystem recovery.

- ▶ Ensure engagement with tribal nations and vulnerable populations and underserved communities during chemical action planning (governance).
- ▶ Account for information on vulnerable populations and underserved communities in chemical action planning and toxic chemical regulation.
- ▶ Support local municipalities and counties with the implementation of preferred purchasing programs and communicate the benefit and value for regional outcomes.

**Key opportunities for 2022-2026 to integrate climate change responses in efforts to prevent pollution include:**

- ▶ Center climate change equity and justice considerations in parallel with pollution prevention efforts. Consider and address disproportionate impacts on vulnerable populations and underserved communities.
- ▶ Strategies should emphasize goals for equitable outcomes and look to close the racial and social equity gaps regarding the impacts of toxics on vulnerable populations and underserved communities.
- ▶ Consider the potential to promote both the toxic chemical reduction and greenhouse gas emissions reductions benefits of reducing vehicle miles traveled in single occupancy vehicles.
- ▶ Identify and remediate upland sites that may be a source of contaminants to adjacent water bodies if flooded by extreme high-water events.

**COLLABORATING PARTNERS**

- ▶ Tribal governments, representatives, and consortia
- ▶ Federal agencies (for example, U.S. Geographic Survey's Washington Water Science Center, NOAA's Mussel Watch, and U.S. Fish and Wildlife Service)
- ▶ State agencies (for example, Department of Ecology, [Safer Products for Washington](#) and [Puget Sound Toxics Info](#))
- ▶ [Southern Resident Orca Task Force](#)
- ▶ Local governments (for example, city and county)
- ▶ Local Integrating Organizations
- ▶ Salmon recovery and watershed groups
- ▶ Private sector and businesses (for example, suppliers)
- ▶ Community members and residents (for example, consumers)
- ▶ Environmental Protection Agency Clean Water Act Program
- ▶ Nongovernmental organizations
- ▶ Vulnerable populations and underserved communities

- ▶ Community-based organizations

**ONGOING PROGRAMS**

Ongoing programs provide regulatory oversight, technical support, implementation resources, funding, or guidance and serve as the critical foundation for Puget Sound recovery. The following is a list of example state and federal ongoing programs that help to implement this strategy. Many more local, tribal nations, and nongovernmental programs exist that support this strategy. See [Puget Sound Info](#) for a broader list of relevant programs. Programs that have set four-year targets to accelerate their contributions to Puget Sound recovery are indicated in bold (\*).

- ▶ [Hazardous Waste and Toxics Reduction – Pollution Prevention Assistance Partnership in Puget Sound](#) (ECY)
- ▶ [Hazardous Waste and Toxics Reduction - Toxics Reduction Technical Assistance Program, Products Swap Out Program\\*](#) (**ECY**)
- ▶ [Hazardous Waste and Toxics Reduction – Dangerous Waste Compliance Inspections](#) (ECY)
- ▶ [Hazardous Waste and Toxics Reduction – Corrective Action project management and education and outreach](#) (ECY)
- ▶ [National Pollution Discharge Elimination System permit program](#) (EPA)
- ▶ [Healthy, Resilient, and Sustainable Communities grant program](#) (EPA)
- ▶ [Salmonid Life Histories and Survival Research](#) (WDFW)
- ▶ [Toxics Release Inventory Program](#) (EPA)
- ▶ [Hazardous Waste and Toxics Reduction - Reducing Toxic Threats, Safer Products WA, Chemicals in Products Compliance](#)

**PROGRAM TARGET SPOTLIGHT**

The [Ecology Toxics Reduction program](#) provides pollution prevention technical assistance to willing businesses. Technical assistance provided by the program is focused on identifying and implementing opportunities to reduce toxic chemical use or the generation of hazardous waste and promoting waste best management practices to protect Washington's environment, residents, and workers from toxic threats. Between 2022-2026, Ecology aspires to work with Washington businesses to accelerate the Toxics Reduction program performance by reducing the amount of toxic chemicals used or generated hazardous waste by an additional 8,000 pounds, a 5 percent increase above their existing target reduction of 160,000 pounds. The Toxics Reduction program also aspires to generate additional cost savings for participating businesses of \$20,000 above their existing cost-savings target of \$400,000.



## STRATEGY 9

### Water Pollution Source Identification and Correction

**Address fecal pollution and other cumulative water pollution impacts on Puget Sound through pollution identification and correction (PIC) programs and total maximum daily load (TMDL) plans.**

#### STRATEGY DESCRIPTION

Fecal coliform bacteria are a widely used indicator of the presence of other microorganisms that can cause disease. Contact with water or consumption of shellfish polluted with bacteria and viruses from fecal pollution can cause illness. In the Salish Sea ecosystem, fecal pollution comes from both point-source origins such as combined sewer overflows as well as non-point source origins such as surface water runoff or failing septic systems and from livestock, pets, and wildlife.

Pollution identification and correction (PIC) programs in Puget Sound are a key element in a strategy to help identify and correct sources of fecal pollution; however, these programs are frequently underfunded. Total maximum daily load (TMDL) plans set limits on the allowable levels of fecal coliform concentrations and specify how much pollution must be reduced or eliminated to achieve clean water.

Successful strategies will include both regulatory and voluntary efforts to identify and correct fecal pollution in Puget Sound. Ensuring compliance with existing regulations and providing incentives to motivate efforts to reduce fecal pollution and support local monitoring programs will be essential for strategy success.

Implementing the Shellfish and Marine Water Quality Implementation Strategies supports the success of this strategy.



## WHAT DOES SUCCESS LOOK LIKE?

We are achieving our recovery goals of healthy human populations, healthy water quality, increasing functioning habitat, and thriving species and food web by ensuring that all onsite septic systems (OSS) are inventoried, inspected, maintained, and operational; reducing disease-causing (pathogenic) bacteria and viruses in stormwater runoff from residential and commercial lands, agricultural land, and recreational and outdoor activities; ensuring that levels and patterns of contamination in fish and shellfish harvested from Puget Sound waters and levels and patterns of pollutants and biotoxins in surface waters do not threaten the health of Puget Sound communities or vulnerable populations. Indicators of success include:

- ▶ Increasing the percentage of fecal coliform issues corrected by PIC programs
- ▶ Increasing acres treated by and/or number of BMPs on private agricultural lands

## ACTIONS

### Fund, develop, and implement effective local and tribal nations pollution identification and correction (PIC) programs. (ID #9)

#### *Key opportunities for 2022-2026 include:*

- ▶ Generate adequate and sustainable funding to support long-term PIC programs;
- ▶ Support focused community outreach and engagement;
- ▶ Improve and provide regional support to build program capacity and effectiveness, and cross-program collaboration;
- ▶ Promote onsite inspections incentives and installation of non-point source BMPs to reduce fecal runoff.

### Support watershed cleanup implementation and the development of cleanup plans such as Total Maximum Daily Loads (TMDLs) and other strategies to limit fecal pollution. (ID #10)

#### *Key opportunities for 2022-2026 include:*

- ▶ Ensure cleanup plans identify pollution sources and outline strategies to protect and restore water bodies from the cumulative impacts of point and non-point sources;
- ▶ Fund and support the implementation of TMDLs and cleanup plans;
- ▶ Support focused community outreach and engagement;
- ▶ Analyze the effectiveness of TMDLs;
- ▶ Expand source measures and indicators needed.

### Fund, develop, and implement programs to address fecal pollution from people experiencing homelessness or with inadequate access to sanitary services. (ID #156)

#### *Key opportunities for 2022-2026 include:*

- ▶ Develop a strategy to stop fecal pollution from encampments and residents living without adequate waste management;
- ▶ Assess the near-term needs;
- ▶ Provide adequate resources and facilities;
- ▶ Prioritize locations that are in direct proximity to surface waters.

### Support fishers, hikers, and other recreational users through outreach and education to understand and reduce the effects of human and pet waste on water quality. (ID #63)

#### *Key opportunities for 2022-2026 include:*

- ▶ Identify barriers to increasing access to facilities and resources (for example, waste receptacle);
- ▶ Promote a regional focus to collaborations and find better channels for outreach and education;
- ▶ Support community outreach and engagement programs;
- ▶ Provide adequate facilities and resources.

## IMPLEMENTATION CONSIDERATIONS

### *Key opportunities for 2022-2026 to integrate human wellbeing considerations in efforts to address fecal pollution and other cumulative water pollution impacts include:*

- ▶ Promote broad engagement among stakeholders and provide stable funding to develop PIC programs, integrate TMDLs, and reduce the financial and capacity burdens on smaller jurisdictions.
- ▶ Develop environmental health disparities maps for communities and tribal nations to understand cumulative water pollution impacts throughout Puget Sound.
- ▶ Assess regional inequities associated with toxics and water pollution to gauge inequitable distribution and prioritize areas of action.
- ▶ Improve integration between regulatory agencies and landowners around pollution prevention programs.
- ▶ Develop community resources through green infrastructure to support water quality and expand beyond PIC programs.

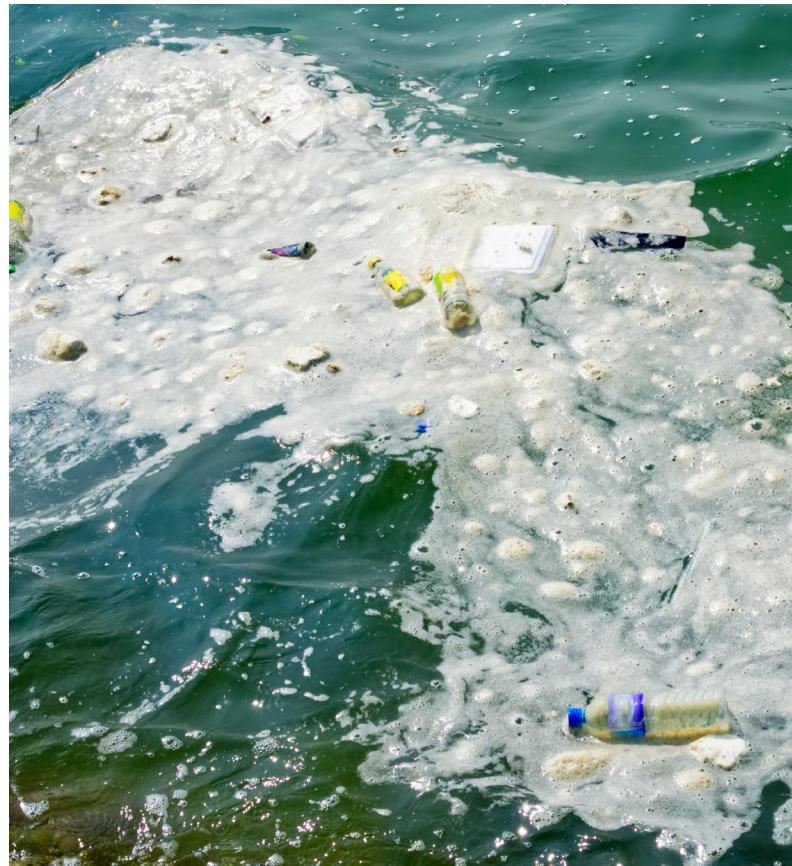
- ▶ Integrate outdoor recreation and stewardship performance measurements into TMDL and PIC programs.
- ▶ Reduce administrative burden of and develop more inclusive guidelines for pollution identification and prevention incentive programs.
- ▶ Consult with tribal nations early and prioritize their interests in developing approaches to pollution prevention that align with tribal nations' treaty and sovereign rights.
- ▶ Integrate and share data publicly from agencies and tribal nations to inform cumulative water pollution prevention programs.
- ▶ Expand tools and resources to improve state and local water quality policy and regulation.
- ▶ Share best practices and focus on implementing practices proven to effectively address water pollution.
- ▶ Identify opportunities where solutions to housing insecurity can also address fecal pollution from people experiencing homelessness or with inadequate access to sanitary services.

**Key opportunities for 2022-2026 to integrate climate change responses in efforts to address fecal pollution and other cumulative water pollution impacts include:**

- ▶ Incorporate climate impacts into TMDL studies and plans.
- ▶ Recognize the value of long-term data collection, including inspection data, for incorporating climate effects into water quality studies.

## COLLABORATING PARTNERS

- ▶ Tribal governments, representatives, and consortia
- ▶ Federal agencies (for example, Environmental Protection Agency)
- ▶ State agencies (for example, the Department of Ecology [Water Quality Atlas](#) and Department of Health)
- ▶ Local governments (for example, city and county)
- ▶ Local Integrating Organizations
- ▶ Salmon recovery and watershed groups
- ▶ Conservation Districts
- ▶ Vulnerable populations and underserved communities
- ▶ Community-based organizations



## ONGOING PROGRAMS

Ongoing programs provide regulatory oversight, technical support, implementation resources, funding, or guidance and serve as the critical foundation for Puget Sound recovery. The following is a list of example state and federal ongoing programs that help to implement this strategy. Many more local, tribal nations, and nongovernmental programs exist that support this strategy. See [Puget Sound Info](#) for a broader list of relevant programs.

- ▶ [Shellfish Growing Area Classification and Water Quality Restoration Program](#) (DOH)
- ▶ [Shellfish Funding](#) (WSCC)
- ▶ [Water Quality – Clean Up Polluted Waters - standards and water quality improvement plans](#) (ECY)
- ▶ [Water Quality – Reduce Nonpoint Source Water Pollution](#) (ECY)
- ▶ [Water Quality – Provide Financial Assistance](#) (ECY)
- ▶ [Clean Water Act Section 303\(d\): Impaired Waters and Total Maximum Daily Loads program](#) (EPA)
- ▶ [Puget Sound Conservation Districts](#) (WSCC)



## STRATEGY 10

### Stormwater Runoff and Legacy Contamination

**Manage stormwater runoff and legacy contamination by improving regulatory frameworks and incentives, including using a comprehensive approach at the site and landscape scales.**

#### STRATEGY DESCRIPTION

Urban stormwater is the leading contributor to water quality pollution in urban creeks, streams, and rivers in the state. Urban stormwater is also a significant contributor of toxics to marine sediment, including contaminated sites undergoing cleanup. Increasing volume of stormwater runoff due to development can also lead to flooding, property damage, degraded instream habitat, and adverse health impacts to communities. This strategy aims to support planning and implementation efforts that incentivize growth in areas that do not harm stream health and work to minimize toxic chemical concentrations in stormwater.

To achieve this strategy, stormwater permitting requirements or other local government programs must reduce nutrients and toxic chemicals in stormwater from residential and commercial lands. We must also increase local stormwater management capacity, and increase funding for actions, incentives, and local capacity to reduce nutrient loads. It will also be critical to continue to identify and fix toxic hotspots and increase the pace of cleanup of priority contaminated sites, while eliminating disproportionate impacts to vulnerable populations and underserved communities.

Implementing the Toxics in Fish, Benthic Index of Biotic Integration, Marine Water Quality, and other Implementation Strategies supports the success of this strategy.



## VITAL SIGNS WHAT DOES SUCCESS LOOK LIKE?

We achieve our recovery goals of healthy water quality and vibrant quality of life by protecting ecologically important lands from development (including beaches, estuaries, forests and wetlands, streams and floodplains); restoring instream and riparian areas of rivers and streams, increasing infiltration and water holding capacity of upland areas; reducing toxic hotspots through improved source control and treatment where stormwater runoff or wastewater contain significant concentrations of numerous toxic chemicals; prioritizing and cleaning up in-water and near-water sites that exceed state standards for contamination; reducing nutrient loading in stormwater runoff from residential and commercial lands and from agricultural lands and working forests; reducing disease-causing (pathogenic) bacteria and viruses in stormwater runoff from residential and commercial lands; ensuring that levels and patterns of pollutants and biotoxins in surface waters do not threaten the health of Puget Sound communities; and eliminating the disproportionate impacts to vulnerable populations and underserved communities. Indicators of success include:

- ▶ Increasing the percentage of legacy sites redeveloped or under development, sound-wide
- ▶ Increasing the number and distribution of stormwater retrofit projects

## ACTIONS

### Conduct watershed-scale planning and land use planning to protect and restore water quality. (ID #3)

#### *Key opportunities for 2022-2026 include:*

- ▶ Create sufficient motivators to incentivize cross-jurisdictional and cross-departmental planning for growth and water resources;
- ▶ Undertake watershed planning processes;
- ▶ Promote the distribution of funds across jurisdictional boundaries to better facilitate the restoration of water quality;
- ▶ Integrate existing plans across watersheds;
- ▶ Identify and pass land use regulations and ordinances that are adequate to protect stream function, salmon populations, and other water resources.

### Encourage retrofits and restoration through education and incentives. (ID #31)

#### *Key opportunities for 2022-2026 include:*

- ▶ Adequately fund available for retrofit programs;
- ▶ Identify high priority areas for implementing restoration that benefits water quality and quantity.

### Increase local stormwater management capacity (including funding, staffing resources, and management tools and information). (ID #32)

#### *Key opportunities for 2022-2026 include:*

- ▶ Create priority maps with parcel-level detail on the retrofit potential to reduce stormwater pollution runoff; share and incentivize through grant programs to fund key retrofits with local governments and other partners;
- ▶ Engage decision-makers to increase support for additional stormwater funding;
- ▶ Convey the need for watershed-based planning, stormwater approaches, and implementation;
- ▶ Enable adaptive management of programs to respond to newly available science.

### Incentivize redevelopment in areas associated with high loads of toxic chemicals. (ID #33)

#### *Key opportunities for 2022-2026 include:*

- ▶ Reduce impacts and increase resources for community members residing in areas associated with high loads of toxic chemicals;
- ▶ Identify priority locations for pilot projects based on loading and environmental justice;
- ▶ Design effective programs and identify a funding source to pilot efforts.

### Increase and stabilize funding that supports actions, incentives, and local capacity to reduce nutrient loads. (ID #34)

#### *Key opportunities for 2022-2026 include:*

- ▶ Identify priority areas for stormwater nutrient reduction;
- ▶ Incorporate nutrient reduction BMPs into stormwater management manuals and plans.

### Develop and implement education and outreach and behavior change campaigns and fund projects to reduce nutrient impacts from residential, stormwater, and agricultural runoff. (ID #35)

#### *Key opportunities for 2022-2026 include:*

- ▶ Assess existing programs for relevancy;
- ▶ Identify state and local partners to work to develop and disseminate information.

**Adjust stormwater permitting requirements or other local government programs to address nutrients in stormwater from residential and commercial lands. (ID #36)**

**Key opportunities for 2022-2026 include:**

- ▶ Conduct research on nutrient removal in stormwater BMPs;
- ▶ Incorporate nutrient BMPs into stormwater management manuals.

**Find and fix toxic hotspots (information, planning, education, funding, and implementation). (ID #41)**

**Key opportunities for 2022-2026 include:**

- ▶ Identify priority hotspots—such as high loading land-uses and transportation corridors;
- ▶ Incorporate human health and environmental justice into prioritization;
- ▶ Secure funding for incentives and pilots to invest in targeted interventions including source control and treatment.

**Increase the streamlining of legal processes and the pace of clean-up of priority contaminated sites (information, planning, funding, implementation, and monitoring). (ID #61)**

**Key opportunities for 2022-2026 include:**

- ▶ Increase funding and capacity for the State's clean-up program to undertake agency-initiated toxic cleanups and prioritize cleanups for Puget Sound recovery objectives.

## IMPLEMENTATION CONSIDERATIONS

**Key opportunities for 2022-2026 to integrate human wellbeing considerations in efforts to manage stormwater runoff and legacy contamination include:**

- ▶ Consider opportunities to bring jobs and economic benefits to communities through stormwater management and legacy contamination work.
- ▶ Allocate resources, education, and outreach efforts to vulnerable populations and underserved communities (for example, The ECOSS Stormwater program) and ensure diverse participation in decision-making and design processes around stormwater management, legacy contaminant regulatory frameworks, and incentive programs.
- ▶ Include equitable approaches to implementing green infrastructure that considers disproportionate impacts of flooding and community engagement while ensuring adequate and accessible housing.

- ▶ Leverage existing preK-16 education programs (for example, StormFest, Green Streets, etc.) to improve understanding of stormwater and its impact on Puget Sound large-scale green infrastructure—is considered—in both rural and urban settings—that provides human amenities and benefits.
- ▶ Improve understanding of the impacts of legacy contaminants on local foods.
- ▶ Expand training and employment in green stormwater infrastructure jobs.
- ▶ Center health equity in designing for urban growth and increasing density.
- ▶ Target infrastructure funding to equally consider human health, smart development, and stormwater management.

**Key opportunities for 2022-2026 to integrate climate change responses in efforts to manage stormwater runoff and legacy contamination include:**

- ▶ New development and retrofits should prioritize low impact and biophilic design elements (carbon-sequestering vegetation, green roofs, etc.) and developers should have incentives to protect existing mature trees, or disincentives for removing them.
- ▶ Prioritize creation and restoration of urban green spaces that are resilient to floods (if near rivers), contain trees to help filter and reduce stormwater run-off, or are areas that could be de-paved and replaced with natural landscaping.
- ▶ Promote green and nature-based infrastructure as a stormwater, climate adaptation, carbon sequestration, and human wellbeing solution.
- ▶ Consider future changes in climate and ocean conditions when finding and fixing toxic hotspots.
- ▶ Consider areas resilient to future changes in climate and ocean conditions when incentivizing redevelopment in areas associated with high loads of toxic chemicals.
- ▶ Incorporate targeted climate change information when developing and distributing relevant outreach resources about nutrient impacts from stormwater and agricultural runoff.

## COLLABORATING PARTNERS

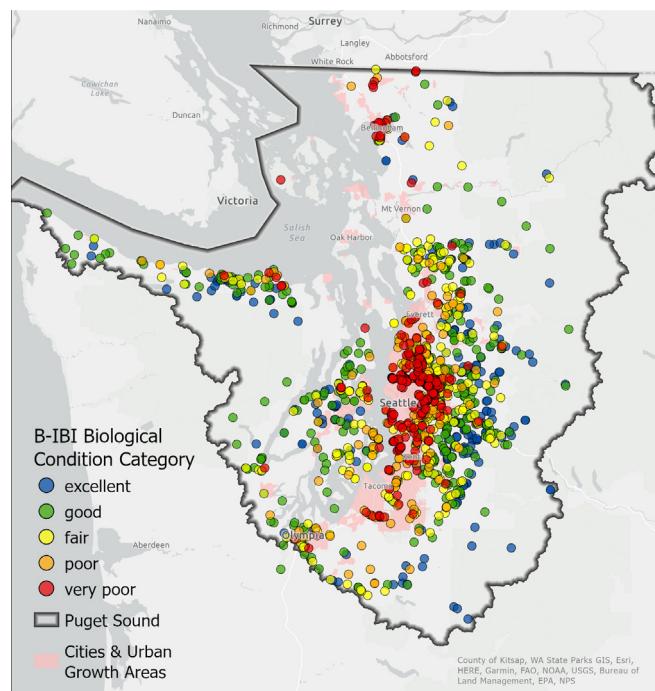
- ▶ Tribal governments, representatives, and consortia
- ▶ State Agencies (for example, Department of Ecology, Department of Natural Resources, Department of Commerce, Department of Fish and Wildlife, Recreation and Conservation Office, Department of Agriculture, Governor's Salmon Recovery Office, Puget Sound Partnership, Washington Stormwater Center, and Department of Transportation)

- ▶ Academic and research institutions (for example, Washington Stormwater Center, Puget Sound Institute)
- ▶ Puget Sound Ecosystem Monitoring Program (PSEMP))
- ▶ Federal agencies (for example, Environmental Protection Agency, National Oceanic and Atmospheric Administration, Department of Transportation, Federal Highway Administration, and U.S. Fish and Wildlife Service)
- ▶ Local governments (for example, city and county)
- ▶ Local Integrating Organizations
- ▶ Salmon recovery and watershed groups
- ▶ Conservation Districts
- ▶ Nongovernmental organizations (for example, The Nature Conservancy and Washington Environmental Council)
- ▶ Community members and residents (for example, Stewardship Partners)
- ▶ Vulnerable populations and underserved communities
- ▶ Community-based organizations

## ONGOING PROGRAMS

Ongoing programs provide regulatory oversight, technical support, implementation resources, funding, or guidance and serve as the critical foundation for Puget Sound recovery. The following is a list of example state and federal ongoing programs that help to implement this strategy. Many more local, tribal nations, and nongovernmental programs exist that support this strategy. See [Puget Sound Info](#) for a broader list of relevant programs. Programs that have set four-year targets to accelerate their contributions to Puget Sound recovery are indicated in bold (\*).

- ▶ [Creosote and Marine Debris Removal Program](#) (DNR)
- ▶ [Puget Sound Watershed Characterization Assessment](#) (ECY)
- ▶ [Toxic Cleanup Program – Remedial Action Grant Program](#) (ECY)
- ▶ [Water Quality – Control Stormwater and Wastewater Pollution](#) (ECY)
- ▶ [Water Quality – Provide Financial Assistance](#) (ECY)
- ▶ [\*\*Partnership Nearshore Credits Program\\*\*\* \(PSP\)](#)
- ▶ [National Pollutant Discharge Elimination System permit program](#) (EPA)
- ▶ [Superfund Program and National Priority List](#) (EPA)

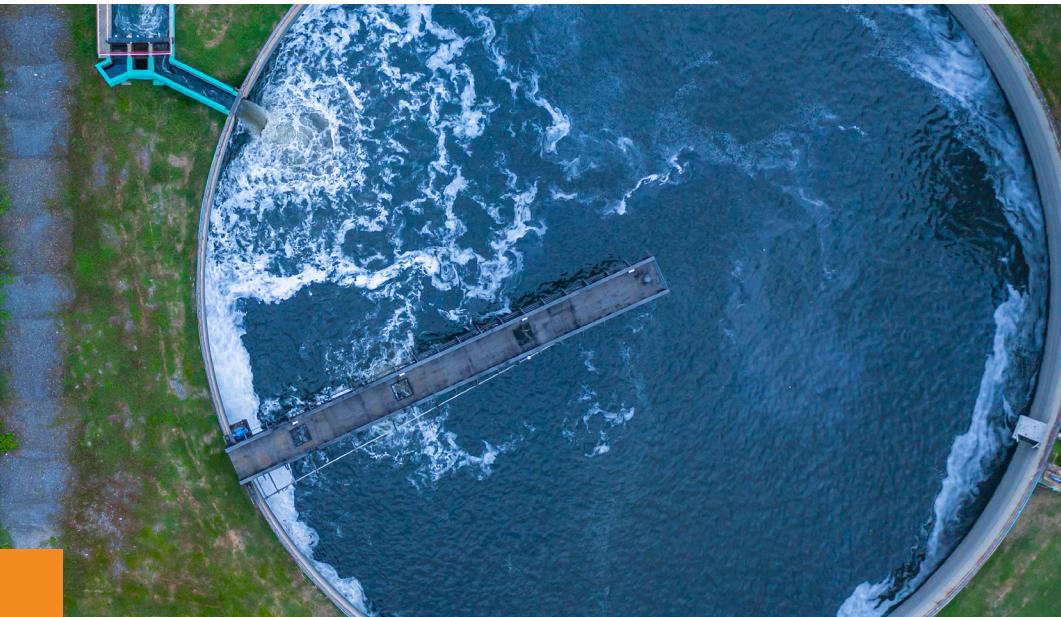


*Figure 7. Biological condition of stream sites throughout Puget Sound as measured by the B-IBI. B-IBI is a measure of stream health based on the abundance and type of stream macroinvertebrates present at a site. The map reflects data from the most recent sample collected at each stream site since 2006. Data source: Puget Sound Stream Benthos. For more information, visit the B-IBI page on Puget Sound Info at [Vital Signs / Freshwater Benthic Index of Biotic Integrity](#).*

## USING THE BENTHIC INDEX OF BIOTIC INTEGRITY TO TRACK CONTAMINANTS IN PUGET SOUND

The condition of stream sites throughout Puget Sound is fairly evenly distributed over the five [Benthic Index of Biotic Integrity](#) (B-IBI) biological condition categories based on the most recent samples collected since 2006. Most sites were in good (28 percent) or fair (23 percent) condition and an additional 17 percent of sites were in excellent condition. Unfortunately, the remaining one-third of sites were in either poor (16 percent) or very poor (17 percent) condition. The B-IBI is correlated with land use conversion and urbanization and scores tend to be lower in areas with greater urban development.

**Marine water quality:** Human sources of nutrients from wastewater treatment plants and stormwater runoff have a significant impact on dissolved oxygen in Puget Sound. Maximum dissolved oxygen depletions are predicted to occur in inlets where flushing is relatively poor compared to the main channel



## STRATEGY 11

### Wastewater Systems

**Reduce and prevent pollutants from wastewater systems (for example, treatment plants and large- and small-scale onsite septic) by improving regulatory controls and incentives and investing in new technology.**

#### STRATEGY DESCRIPTION

Discharges of excess nutrients—particularly nitrogen and carbon—from human sources including domestic wastewater treatment plants (WWTPs) are negatively impacting water quality and contributing to the low oxygen levels in Puget Sound waterways. Low dissolved oxygen impacts the health of aquatic life. Fecal pollution from wastewater systems also impacts water quality and contact with water or consumption of shellfish polluted with bacteria and viruses from fecal pollution can cause illness. In Puget Sound, fecal pollution comes from both point-source origins such as combined sewer overflows as well as non-point source origins such as failing septic systems.

A regulatory strategy includes the recent issuance of a National Pollutant Discharge Elimination System (NPDES) general permit for municipal wastewater nutrient loads for waste water treatment plants, which were found to contribute to existing water quality impairments in Puget Sound. Implementing advanced treatment technology to fulfill this permit will require developing a funding pathway for waste water treatment plants to overcome financial barriers associated with major capital upgrades. Existing state and federal funding, including low-interest

loans to assist and reduce costs to wastewater utility ratepayers is one element of this strategy, but new funding sources or expanded levels of funding will be needed to support local implementation efforts.

Implementing the Marine Water Quality, Shellfish, and other Implementation Strategies supports the success of this strategy.



## WHAT DOES SUCCESS LOOK LIKE?

We achieve our recovery goals of healthy human populations, healthy water quality, and increasing functioning habitat, thriving species, and food webs by ensuring municipal wastewater discharges of nutrients to Puget Sound meet water quality-based effluent limits and other requirements of the nutrients general permit; ensuring municipal wastewater discharges of disease-causing (pathogenic) bacteria and viruses to Puget Sound meet water quality-based effluent limits; reducing spills of untreated sewage; ensuring onsite septic systems (OSS) are inventoried, inspected, maintained, and operational; ensuring levels and patterns of contamination in fish and shellfish harvested from Puget Sound waters and levels and patterns of pollutants and biotoxins in surface waters do not threaten the health of Puget Sound communities or vulnerable populations. Indicators of success include:

- ▶ Increasing the percentage/number of Onsite Sewage Systems in compliance
- ▶ Achieving nutrient balance in marine water

## ACTIONS

**Develop a permit framework for advanced wastewater treatment to reduce nutrient discharge and other pollutants and provide technical and financial support for implementation. (ID #37)**

**Key opportunities for 2022-2026 include:**

- ▶ Implement the Nutrient General Permit;
- ▶ Plan for and implementation of treatment enhancement;
- ▶ Understand opportunities for trading programs.

**Increase compliance monitoring, technical assistance, and enforcement to improve wastewater treatment plants' compliance with discharge limits for disease-causing bacteria and viruses. (ID #38)**

**Key opportunities for 2022-2026 include:**

- ▶ Ensure enough staff capacity and training, monitoring, enforcement, and resources for wastewater treatment plant operations.

**Implement priority upgrades of municipal and industrial wastewater facilities in urban and urbanizing areas to reduce disease-causing bacteria and viruses and their effect on Puget Sound. (ID #39)**

**Key opportunities for 2022-2026 include:**

- ▶ Identify and prioritize impacts from outfalls to shellfish beds;
- ▶ Analyze options for reducing flow, better placement, or removal of outfalls;
- ▶ Support upgrades identified for prioritized facilities while considering potential damage to existing habitat (for example, kelp beds) and shoreline areas important to vulnerable populations and underserved communities.

**Effectively manage and control fecal pollution and disease-causing bacteria and viruses from small onsite sewage systems (OSS) and larger onsite sewage systems (LOSS). (ID #40)**

**Key opportunities for 2022-2026 include:**

- ▶ Generate adequate funding for sustained local OSS management, program development, implementation, monitoring and enforcement, and to strengthen and standardize local OSS and LOSS management programs;
- ▶ Ensure landowners have access to and are eligible for incentives, loans and other funding sources for OSS maintenance and upgrades.

**Prevent and reduce combined sewer overflows. (ID #154)**

**Key opportunities for 2022-2026 include:**

- ▶ Design and upgrade systems to stop combined sewer overflow (CSO) events;
- ▶ Prioritize vulnerable populations and underserved communities;
- ▶ Research and support alternatives to separate combined sewer systems;
- ▶ Reduce water use to avoid the need for upgrades;
- ▶ Promote actions by homeowners and commercial developers that reduce runoff during rain events (for example, rain gardens, retention ponds, street trees, and other green stormwater infrastructure).

**Extend centralized sewer systems in areas where conditions are not suitable for onsite sewage systems (OSS). (ID #155)**

**Key opportunities for 2022-2026 include:**

- ▶ Identify sustainable funding sources and prioritize areas where conditions are not suitable for OSS;
- ▶ Support the installation or expansion of centralized sewer systems in areas where conditions are not suitable;
- ▶ Remove barriers for property owners to connect to centralized sewer systems in areas where it is accessible;
- ▶ Ensure alignment with the Growth Management Act.

**Promote appropriate reclaimed water projects to reduce pollutant loading to Puget Sound. (ID #211)**

**Key opportunities for 2022-2026 include:**

- ▶ Identify, support, and incentivize efforts to recycle, reuse, or reclaim water (including tertiary treatments) that meets quality performance standards through engineered treatment or through natural infiltration that results in wetland enhancement, groundwater recharge, or increased flows in rivers and streams;
- ▶ Increase funding and technical capacity in this subject area;
- ▶ Promote the use of reclaimed water for irrigation, landscaping, toilet flushing, dust control, and construction-related activities.

## IMPLEMENTATION CONSIDERATIONS

**Key opportunities for 2022-2026 to integrate human wellbeing considerations in efforts to reduce and prevent pollutants from wastewater systems include:**

- ▶ Connect impacts from pollutants to local issues to foster community engagement, particularly with communities reliant on the natural environment or ecosystem services for recreational, subsistence, or economic purposes, including tourism, hospitality, aquaculture, or agriculture.
- ▶ Increase educational efforts and access to information for communities and address barriers to engagement in vulnerable populations and underserved communities, particularly the region's Indigenous and immigrant communities who participate in fishing, shellfish harvesting, and consume more seafood than the wider population.

- ▶ Understand that MWQ issues are both partly caused by and experienced by coastal communities when engaging these communities in planning and implementation actions. For example, residents' inadequate onsite septic system maintenance can cause nutrient pollution, which can lead to beach closures. Beach closures can limit shellfish harvesting, fishing, or other forms of coastal recreation, which can negatively impact residents' traditional ways of life and even identity, notably among the region's Indigenous communities.

**Key opportunities for 2022-2026 to integrate climate change responses in efforts to reduce and prevent pollutants from wastewater systems include:**

- ▶ Factor future climate conditions into incentives and regulatory frameworks for wastewater systems.
- ▶ Incorporate climate change education into technical and financial assistance for landowners about onsite septic systems.
- ▶ Consider climate adaptation when extending centralized sewer systems and making other wastewater infrastructure investments.
- ▶ Acknowledge how the multi-dimensional consequences and experiences referenced in the human wellbeing considerations for this strategy are likely to be exacerbated by climate change further necessitating individual, community, and governance solutions.

## COLLABORATING PARTNERS

- ▶ Tribal governments, representatives, and consortia
- ▶ Federal agencies (for example, Environmental Protection Agency and Department of U.S. Housing and Urban Development)
- ▶ State agencies (for example, Department of Ecology and Department of Health)
- ▶ Academic and research institutions (for example, University of Washington Salish Sea Modeling Center)
- ▶ Local governments (for example, city and county)
- ▶ Local Integrating Organizations
- ▶ Salmon recovery and watershed groups
- ▶ Community members and residents (for example, onsite sewage system owners)
- ▶ Vulnerable populations and underserved communities
- ▶ Community-based organizations

## ONGOING PROGRAMS

Ongoing programs provide regulatory oversight, technical support, implementation resources, funding, or guidance and serve as the critical foundation for Puget Sound recovery. The following is a list of example state and federal ongoing programs that help to implement this strategy. Many more local, tribal nations, and nongovernmental programs exist that support this strategy. See [Puget Sound Info](#) for a broader list of relevant programs.

- ▶ [Shellfish Growing Area Classification and Water Quality Restoration Program](#) (DOH)
- ▶ [Wastewater Management Program \(Large and Small Onsite Sewage Systems\)](#) (DOH)
- ▶ [Water Quality – Control Stormwater and Wastewater Pollution](#) (ECY)
- ▶ [Water Quality – Provide Financial Assistance](#) (ECY)
- ▶ [Clean Water State Revolving Fund](#) (EPA)

## WASTEWATER TREATMENT PLANTS (WWTPS) IN PUGET SOUND

The 2022 Puget Sound Nutrient General Permit applies to 58 domestic WWTPs discharging to marine and estuarine waters of Washington waters of the Salish Sea. The permit applies to 58 facilities that discharge to Puget Sound. Seven of those facilities are dominant loaders contributing over 80 percent of the nutrients.

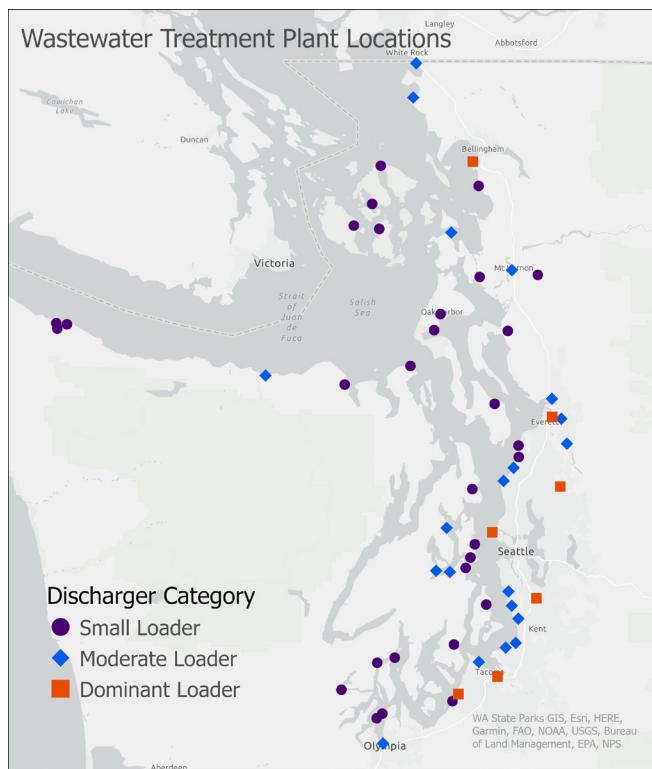
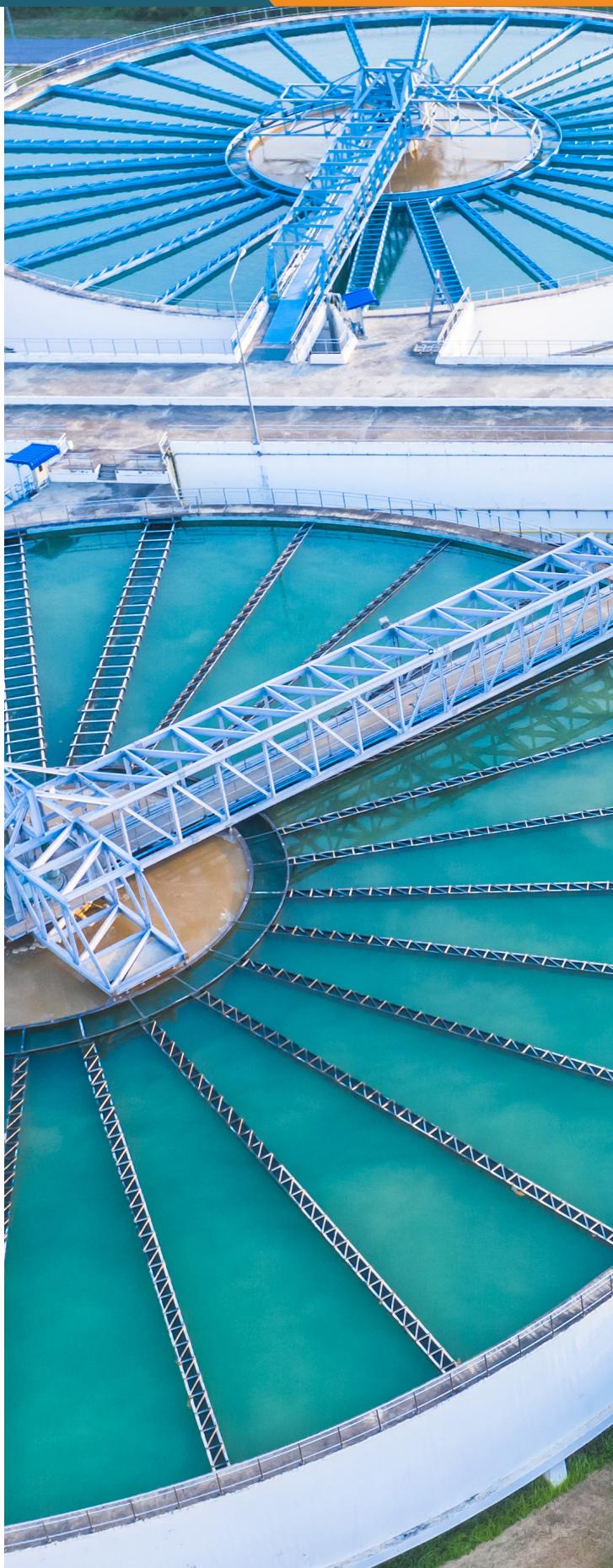


Figure 8. Locations of wastewater treatment plants in Puget Sound. For more information, visit [Wastewater Treatment Plant Locations \(arcgis.com\)](#).





## STRATEGY 12

### Working Lands Runoff

**Reduce and prevent non-point source pollutants from agricultural and forest lands by improving outreach and incentive programs and ensuring compliance with policies.**

#### STRATEGY DESCRIPTION

Improperly managed surface water runoff from agricultural and forest lands can transport a variety of pollutants, depositing them into the groundwater, surface water, and Puget Sound, and adversely impacting human populations. Implementation of this strategy should be targeted geographically to address low dissolved oxygen caused by excess nutrients and closed shellfish beds caused by fecal pollution. Poor freshwater quality caused by altered hydrology, changing inputs and temperature, and degraded instream and riparian habitat, should also be addressed.

Better management of runoff from agricultural and forest lands is best achieved through helping and incentivizing landowners to use Best Management Practices that reduce volume and improve the quality of surface water runoff. Numerous programs, guidelines, and technical assistance opportunities already exist to help landowners identify potential pollution impacts and implement Best Management Practices to reduce, control, or eliminate pollution. Delivery of these services, however, is frequently based on landowner interest and capacity and may not be targeted to specific locations to address resource concerns. Better targeting and coordination

of these programs to address priority resource concerns and alignment with regulatory efforts will make them more effective. In addition, incentive-based approaches and improved compliance with water quality protection policies are necessary and should include both permitted sources (for example, Confined Animal Feeding Operations and dairies) and non-point sources (for example, pasture-based, hobby, and small livestock operations). Actions should prioritize eliminating disproportionate impacts on vulnerable populations and underserved communities.

Implementing the Benthic Index of Biotic Integration, Land Development and Cover, Shellfish, Marine Water Quality, and other Implementation Strategies support the success of this strategy.



## WHAT DOES SUCCESS LOOK LIKE?

We achieve our recovery goals of healthy water quality by increasing infiltration and water holding capacity of upland areas; reducing nutrient loading in runoff from agricultural lands and working forests; reducing disease-causing (pathogenic) bacteria and viruses in runoff from agricultural lands; and ensuring levels and patterns of pollutants and biotoxins in surface waters do not threaten the health of Puget Sound communities; and eliminating the disproportionate impacts to vulnerable populations and underserved communities. Indicators of success include:

- ▶ Reducing the total volume and pollutant loading of agriculture runoff
- ▶ Increasing acres treated by and/or number of BMPs on private agricultural lands
- ▶ Reducing nutrient concentration in streams and rivers

## ACTIONS

**Facilitate the increased use or performance of best management practices to reduce pollutants and the volume of runoff from agricultural lands and working forests. (ID #5)**

*Key opportunities for 2022-2026 include:*

- ▶ Prioritize areas for BMPs (for example, restrictive use of herbicides and pesticides);
- ▶ Analyze costs and benefits of different BMPs and approaches;
- ▶ Ensure regulatory compliance;
- ▶ Ensure adequate funding and support for voluntary incentive-based programs.

**Implement agricultural management practices proven to reduce nutrient loads. (ID #6)**

*Key opportunities for 2022-2026 include:*

- ▶ Research BMP effectiveness (including BMPs to reduce barriers and increase opportunities to improve riparian buffers);
- ▶ Identify opportunities and priorities for technical assistance, implementing BMPs, and funding.

**Expand and improve incentives and education for agricultural land users to motivate voluntary actions for reducing fecal pollution. (ID #7)**

*Key opportunities for 2022-2026 include:*

- ▶ Adequately fund the work of voluntary and incentive-based programs;
- ▶ Develop targeted outreach and engagement approaches to encourage land users to implement BMPs;
- ▶ Support the implementation and monitoring of BMPs.

**Strengthen and implement authorities and programs that prevent fecal pollution from agricultural lands. (ID #8)**

*Key opportunities for 2022-2026 include:*

- ▶ Use regulatory programs with incentives for BMP implementation to encourage compliance;
- ▶ Reduce pollutant discharges to water through effective and funded regulatory requirements;
- ▶ Enforce regulatory backstops for noncompliance in a timely manner to stop pollution sources.

**Facilitate the increased use or performance of best management practices, including increasing riparian restoration, to reduce stream temperatures. (ID #196)**

*Key opportunities for 2022-2026 include:*

- ▶ Identify the co-benefits of implementing actions within this strategy where reduction in stream temperatures may be achieved;
- ▶ Increase shade and amount of vegetation;
- ▶ Remove invasive species;
- ▶ Align regulatory requirements with state incentive programs.

## IMPLEMENTATION CONSIDERATIONS

**Key opportunities for 2022-2026 to integrate human wellbeing considerations in efforts to reduce and prevent non-point source pollutants from agricultural and forest lands include:**

- ▶ Engage communities, specifically vulnerable populations and underserved communities, to identify best approaches to reduce and prevent non-point source pollutants.
- ▶ Integrate databases and open knowledge networks to share information and increase transparency in decision-making about water pollution activities across watersheds.
- ▶ Create new funding mechanisms, beyond reimbursement-based mechanisms, to support projects in vulnerable populations and underserved communities.

**Key opportunities for 2022-2026 to integrate climate change responses in efforts to reduce and prevent non-point source pollutants from agricultural and forest lands include:**

- ▶ Promote working lands BMPs that also sequester carbon and increase resilience.
- ▶ Incorporate climate information into education and technical assistance for agricultural land users.
- ▶ Incorporate climate information into authorities and programs for preventing fecal pollution from agricultural lands.

## COLLABORATING PARTNERS

- ▶ Tribal governments, representatives, and consortia
- ▶ Federal agencies (for example, U.S. Department of Agriculture, U.S. Environmental Protection Agency, Natural Resources Conservation Service)
- ▶ State agencies (for example, Department of Ecology, Department of Health, Washington State Department of Agriculture, Governor's Salmon Recovery Office, Recreation and Conservation Office, and Washington State Conservation Commission Voluntary Stewardship Program)
- ▶ Conservation Districts
- ▶ Businesses and private sector
- ▶ Local Integrating Organizations
- ▶ Salmon recovery and watershed groups

- ▶ Community members and residents (for example, Agricultural and working forest landowners and land users)
- ▶ Vulnerable populations and underserved communities
- ▶ Community-based organizations

## ONGOING PROGRAMS

Ongoing programs are contributing efforts that provide regulatory oversight, technical support, implementation resources, funding, or guidance and serve as the critical foundation for Puget Sound recovery. The following is a list of example state and federal ongoing programs that help to implement this strategy. Many more local, tribal nations, and nongovernmental programs exist that support this strategy. See [Puget Sound Info](#) for a broader list of relevant programs. Programs that have set four-year targets to accelerate their contributions to Puget Sound recovery are indicated in bold (\*).

- ▶ [Forest Practices Program including the Habitat Conservation Plan](#) (DNR)
- ▶ [Shellfish Growing Area Classification and Water Quality Restoration Program](#) (DOH)
- ▶ [Water Quality – Reduce Nonpoint Source Water Pollution](#) (ECY)
- ▶ [\*\*Shellfish Funding\\*\*\* \(WSCC\)](#)
- ▶ [Environmental Quality Incentives Program](#) (U.S. NRCS)
- ▶ [Puget Sound Conservation Districts](#) (WSCC)
- ▶ [Nutrient Management Plans, technical assistance](#) (WSCC)
- ▶ [Conservation Reserve Enhancement](#) (WSCC)

## Program Target Spotlight

The [WSCC Shellfish Program](#) supports healthy shellfish beds and improved shellfish harvest opportunities by funding and implementing a variety of BMPs on private lands that protect and restore riparian acres, reduce nutrient and fecal inputs into waterways, and support beach restoration in shellfish growing areas. Each BMP has a relative effectiveness index calculated by multiplying the units of measurement installed (acres, linear feet, and number) by the NRCS Conservation Practice Physical Effects rating (scale of 1-4). Between 2022-2026, the Conservation Commission aspires to accelerate the Shellfish Program's performance by funding the installation of BMPs in agricultural areas in Puget Sound with a cumulative effectiveness index of over 680 acres, 99,512 linear feet, and 2,748 units.



## STRATEGY 13

### **Oil Spills**

**Implement targeted and adaptive maritime oil spill prevention and safety measures and improve spill response readiness and capacity.**

#### **STRATEGY DESCRIPTION**

Although Puget Sound has experienced relatively few major oil spills over the past several decades, a major oil spill is inherently a low-probability, high-impact risk to Puget Sound's valuable natural, cultural, and economic resources. We cannot wait for a catastrophic incident to make improvements to our spill prevention, preparedness, and response efforts. With vessel traffic projected to increase, the properties of the crude oil being conveyed (Canadian bitumen crude oil may weather and sink or submerge in water if spilled), and the precarious status of the Southern Resident Orca population underscores the importance of these measures. Current and future success depends on all of us having a shared vision and a commitment to continuous improvement.

The actions described below will ensure that prevention efforts are robust and targeted; preparedness efforts are comprehensive and well-coordinated, and response efforts are vigilant, nimble, and grounded in transparent, independent science. Preventing spills from happening in the first place is by far the most cost-effective and ecologically-sound approach.



Marine  
Water

Toxics in  
Aquatic Life

Orcas

#### **WHAT DOES SUCCESS LOOK LIKE?**

We achieve our recovery goals of healthy human populations, healthy water quality, increasing functioning habitat and thriving species and food webs, and vibrant quality of life by reducing the risk and potential harm of spills of oil and hazardous substances to waterways. The indicator of success is reducing the number of oil spills/volume of oil spills to surface waters from all sources.

## ACTIONS

**Analyze the cumulative risk and consequences of oil spills, assess the effectiveness and feasibility of mitigation measures, and target additional spill prevention efforts. (ID #64)**

**Key opportunities for 2022-2026 include:**

- ▶ Increase funding to complete assessments (for example, National Resource Damage) and baseline valuations to inform risk consequences assessments;
- ▶ Improve consideration of non-monetizable values in risk assessments such as cultural, subsistence, spiritual, and other place-based values;
- ▶ Improve Washington State Environmental Policy Act (SEPA), transboundary coordination, and associated reviews of projects;
- ▶ Assess and address any substantive contemporary changes in maritime shipping and recreational vessel dynamics that could markedly increase or concentrate marine traffic;
- ▶ Ensure past regional risk modeling efforts and vetted guidance inform current and future assessments;
- ▶ Explore implementation of advanced tracking of vessels carrying petroleum products that transit Puget Sound;
- ▶ Increase public awareness of vessel traffic density and risk of oil spills to marine and estuarine resources;
- ▶ Maintain and adapt our transboundary marine safety forums for advancement and coordination of proactive measures.

**Strengthen and integrate spill response readiness of all partners, including federal, state, tribal nations, local government, oil spill response organizations, and transboundary partners\*. (ID #65)**

**Key opportunities for 2022-2026 include:**

- ▶ Coordinate the newly administered United States Coast Guard (USCG) response strategies and the Northwest Area Contingency Plan (NWACP) such that consistent policies and tools are deployed to meet foundational and aspirational marine preparedness needs in Puget Sound;
- ▶ Ensure that Washington's spill response standards and tribal nations' interests are incorporated into new federally recognized contingency plans for Sector Puget Sound;
- ▶ Provide ongoing coordination with federal, tribal nations, state and local contingency planning

partners, and the regulated community for these new plans, while enhancing opportunities for local, tribal nations, academic, nongovernmental, and interested communities to engage;

- ▶ Add capacity for Southern Resident Killer Whale (SRKW) deterrence including expanded deployment of vessels of opportunity and training;
- ▶ Address the need for additional Emergency Response Towing Vessels for accident and oil spill prevention;
- ▶ Provide funding to development and implement (for example, tools and strategies) to respond to non-floating oil products.

**Increase capacity for early local response to spills and seek restoration using the best available science and technology. (ID #66)**

**Key opportunities for 2022-2026 include:**

- ▶ Enhance the capacity, communications, technology, and equipment to support effective responses in challenging, yet plausible environmental conditions;
- ▶ Improve the long-term funding for—and integration of—local entities and tribal nations to participate in training, drills, planning, and volunteer development and deployment, and where appropriate, encourage respective transboundary authorities and First Nations to similarly support the capacity of their local entities;
- ▶ Ensure that Geographic Response Plans (GRPs) are grounded in up-to-date habitat assessments that guide Natural Resource Damage Assessment (NRDA) restoration objectives and include input to that effect from relevant tribal nations and local partners;
- ▶ Assess the effectiveness of spill response technology to address non-floating oil.

## IMPLEMENTATION CONSIDERATIONS

**Key opportunities for 2022-2026 to integrate human wellbeing considerations in efforts to implement targeted and adaptive maritime oil spill prevention and safety measures and improve spill response readiness and capacity include:**

- ▶ Better articulate connections between oil spills (of all scales) and their impacts on the Puget Sound ecosystem, including human health and communities.
- ▶ Effectively and widely distribute locally relevant preparedness, planning, and response information and best management practices on individual, small- and large-scale oil spills to residents of Puget Sound.

\*Refer to Appendix II for more information on transboundary partnerships, please refer to Appendix II



- ▶ Translate information on oil spills into locally relevant languages and a spectrum of media (for example, video, social media campaigns, preK-16 curricula, and phone) is leveraged to effectively reach communities.
- ▶ Leverage community-based organizations to partner with for outreach and engagement to communities (for example, Sustainability Ambassadors, and Duwamish Alive).
- ▶ Expand trainings (for example, community-based Hazardous Waste Operations and Emergency Response (HAZWOPER), voluntary Vessel Turn-In Program (VTIP) opportunities, and more widely engage communities (for example, tribal nations, and local responders) in oil spill responses and clean up (for example, oilspills101.wa.gov).
- ▶ Conduct training programs for recreational boaters (through Vessels of Opportunity) to participate in oil spill preparedness, planning, and response are created and enhanced.
- ▶ Develop guidance that provides specific examples for how to hold accessible meetings (time, locations, incentives, compensation, etc.). This includes asking communities how they want to be involved.
- ▶ Identify funding that can embed outreach expertise with technical staff on the ground to increase access and equity in communication and education coupled with oil spill prevention.
- ▶ Outreach to and engagement with communities, especially those most likely to be impacted by current or future spills, to determine optimal pathways for residents to engage in local and regional spill preparedness, planning, response, and decision-making. Understand connections between how culturally significant terrestrial and aquatic foods sources are impacted or at risk of oil spills and how to expand protection sources.
- ▶ Include information on oil spill preparedness, planning, and response in navigational maps.
- ▶ Training programs for natural resource industry companies and local government staff to participate in oil spill preparedness, planning, and response are created and enhanced.
- ▶ Leverage existing city and county public meetings to synergize oil spill preparedness, planning, and response across jurisdiction and sector.
- ▶ Create a coordinating body or hub to provide education, training, communication, and technical support to local groups around oil spills, invasive species, and boater best practices.
- ▶ Identify vulnerable populations and underserved communities to the impacts of oil spills (of all scales) across Puget Sound.
- ▶ State and federal resources to address the health impacts of oil spills are increased.
- ▶ Effectively share timely, direct, clear, and locally relevant communication to impacted communities with information regarding health risks and mitigation measures.

***Key opportunities for 2022-2026 to integrate climate change responses in efforts to implement targeted and adaptive maritime oil spill prevention and safety measures and improve spill response readiness and capacity include:***

- ▶ Factor changing climate and ocean conditions including sea level rise and extreme weather events into oil spill risk analysis, prevention, and response efforts.



## COLLABORATING PARTNERS

- ▶ Tribal governments, representatives, and consortia
- ▶ First Nations
- ▶ Transboundary partners (for example, Transport Canada, Canadian Coast Guard, BC Environmental Assessment Office)
- ▶ Federal agencies (for example, United States Coast Guard, U.S. Fish and Wildlife Service, and National Oceanic and Atmospheric Administration)
- ▶ State agencies (for example, Washington Department of Ecology, Washington Department of Fish and Wildlife, Governor's Salmon Recovery Office, and Recreation and Conservation Office)
- ▶ Marine Resources Committees (for example, San Juan County, Clallam County)
- ▶ Local governments (for example, city and county)
- ▶ Local Integrating Organizations
- ▶ Salmon recovery and watershed groups
- ▶ Nongovernmental organizations (for example, Friends of the San Juans, Coastal Observation and Seabird Survey Team, Seattle Audubon, Northwest Straits Foundation)
- ▶ Vulnerable populations and underserved communities
- ▶ Community-based organizations

## ONGOING PROGRAMS

Ongoing programs provide regulatory oversight, technical support, implementation resources, funding, or guidance and serve as the critical foundation for Puget Sound recovery. The following is a list of example state and federal ongoing programs that help to implement this strategy. Many more local, tribal nations, and nongovernmental programs exist that support this strategy. See [Puget Sound Info](#) for a broader list of relevant programs. Programs that have set four-year targets to accelerate their contributions to Puget Sound recovery are indicated in bold (\*).

- ▶ [\*\*Derelict Vessel Removal Program\\*\*\* \(DNR\)](#)
- ▶ [Regional Oil Spill Planning](#) (ECY)
- ▶ [Spill Prevention](#) (ECY)
- ▶ [Spill Preparedness](#) (ECY)
- ▶ [Spill response](#) (ECY)
- ▶ [Puget Sound Area Contingency Plan](#) (U.S. CG)



## STRATEGY 14

### Invasive Species

**Monitor and rapidly respond to the introduction and spread of terrestrial and aquatic invasive species.**

#### STRATEGY DESCRIPTION

Invasive species have the potential to negatively impact biodiversity in various terrestrial and aquatic habitats and food webs. Many nonnative predatory fish species outcompete native fish species which can lead to the decimation of native fish communities such as steelhead and salmon species, including Chinook. Over the past several decades, intentional and illegal introductions of nonnative fish have been observed.

This strategy focuses on the need to protect and restore the native diversity and abundance of Puget Sound species and prevent and respond to the introduction of terrestrial and aquatic invasive species. To be effective at protecting and enhancing biodiversity in the ecosystem, species recovery plans must be implemented in an integrated and coordinated way, across geographies and jurisdictions. This includes supporting ongoing programs and efforts across state agencies to monitor, assess and rapidly respond to the introduction and spread of terrestrial and aquatic invasive species. Monitoring invasive species will allow agencies to establish targeted approaches to ultimately reduce invasive populations and limit their spread to other locations.



#### WHAT DOES SUCCESS LOOK LIKE?

We achieve our recovery goal of thriving species and food webs by increasing the ability to respond to emerging outbreaks and ongoing impacts of invasive species.

## ACTIONS

**Prevent and rapidly respond to the introduction and spread of terrestrial and aquatic invasive species, including green crab, predatory fish, and invasive plants. (ID #46)**

**Key opportunities for 2022-2026 include:**

- ▶ Use surveillance to detect invasive species and better understand pathways of introduction;
- ▶ Establish response networks for coordinated rapid response to invasive species;
- ▶ Support and encourage voluntary groups working to reduce and control invasive species.

**Develop, fund, and implement coordinated outreach and incentive programs that educate and raise awareness and motivate action for Puget Sound residents (including boaters) to reduce the spread of invasive species. (ID #202)**

**Key opportunities for 2022-2026 include:**

- ▶ Use surveillance to detect invasive species and better understand pathways of introduction;
- ▶ Educate communities including residents and visitors including boaters and preK-16 students;
- ▶ Increase education and signage at all public boat launches, large and, perhaps small (cleaning, disinfection, enforcement) for both marine and freshwater bodies;
- ▶ Include education (flyers) when registering boat licenses and purchasing fish and shellfish harvest licensing;
- ▶ Increase more boat inspection stations along highways (like Zebra mussels), like along trucker way stations.

**Create an integrated planning approach to protect and enhance biodiversity in the Puget Sound ecosystem by mitigating the threat of invasive species. (ID #203)**

**Key opportunities for 2022-2026 include:**

- ▶ Address key invasive species research questions;
- ▶ Collaborate on monitoring and mitigation across state and local agencies and tribal co-managers;
- ▶ Support pilot studies to test invasive removal and management approaches;
- ▶ Establish regulations for inter and intrastate boat inspections.

## IMPLEMENTATION CONSIDERATIONS

***Key opportunities for 2022-2026 to integrate human well-being considerations in efforts to Monitor and rapidly respond to the introduction and spread of terrestrial and aquatic invasive species include:***

- ▶ Better articulate connections between invasive species and their impacts on the Puget Sound ecosystem, including human health and communities.
- ▶ Expand local programs (for example, Green Cities) that offer volunteer stewardship opportunities and learning to promote native plant care, planting, invasive species removal, and eradication.
- ▶ Expand training and financial support for community science to monitor invasive species.
- ▶ Leverage existing preK-16 curricula to include invasive species identification and prevention created and awareness of invasive species.
- ▶ Develop guidance that provides specific examples for how to hold accessible meetings (time, locations, incentives, compensation, etc.). This includes asking communities how they want to be involved.
- ▶ Collaborate with communities to determine engagement and outreach opportunities as well as the best opportunities to take action (for example, incentives, community-based events, and prek-16 curricula), identify, remove, eradicate, and prevent invasive species at the local level.
- ▶ Engage residents in frequented community spaces (for example, garden stores, social media, grocery stores, and restaurants).
- ▶ Develop (or leverage existing) guidance on plain language material development and how to create accessible materials in multiple languages and formats for meetings.
- ▶ Ensure field staff from all jurisdictions are trained in recognizing and preventing invasive species.
- ▶ Collaborate with nurseries, native plant and gardening groups, and schools in education on native plant benefits and impacts of non-native plants.
- ▶ Include information on invasive species identification, removal, and prevention in navigational maps.
- ▶ Develop communication materials articulating connections between the natural resource industry and Puget Sound recovery; enhance messaging around sustainable and non-sustainable products (for example, sustainable fish consumption).
- ▶ Create a coordinating body or hub to provide education, training, communication, and technical support to local groups around oil spills, invasive species, and boater best practices.



- ▶ Identify vulnerable populations and underserved communities to the impacts of invasive species across Puget Sound.

***Key opportunities for 2022-2026 to integrate climate change responses in efforts to monitor and rapidly respond to the introduction and spread of terrestrial and aquatic invasive species include:***

- ▶ Incorporate climate change information into integrated planning for protecting and enhancing biodiversity.
- ▶ Include climate change in research and monitoring of invasive species.
- ▶ Use volunteer invasive removal and tree planting events to educate the public about climate.

#### **COLLABORATING PARTNERS**

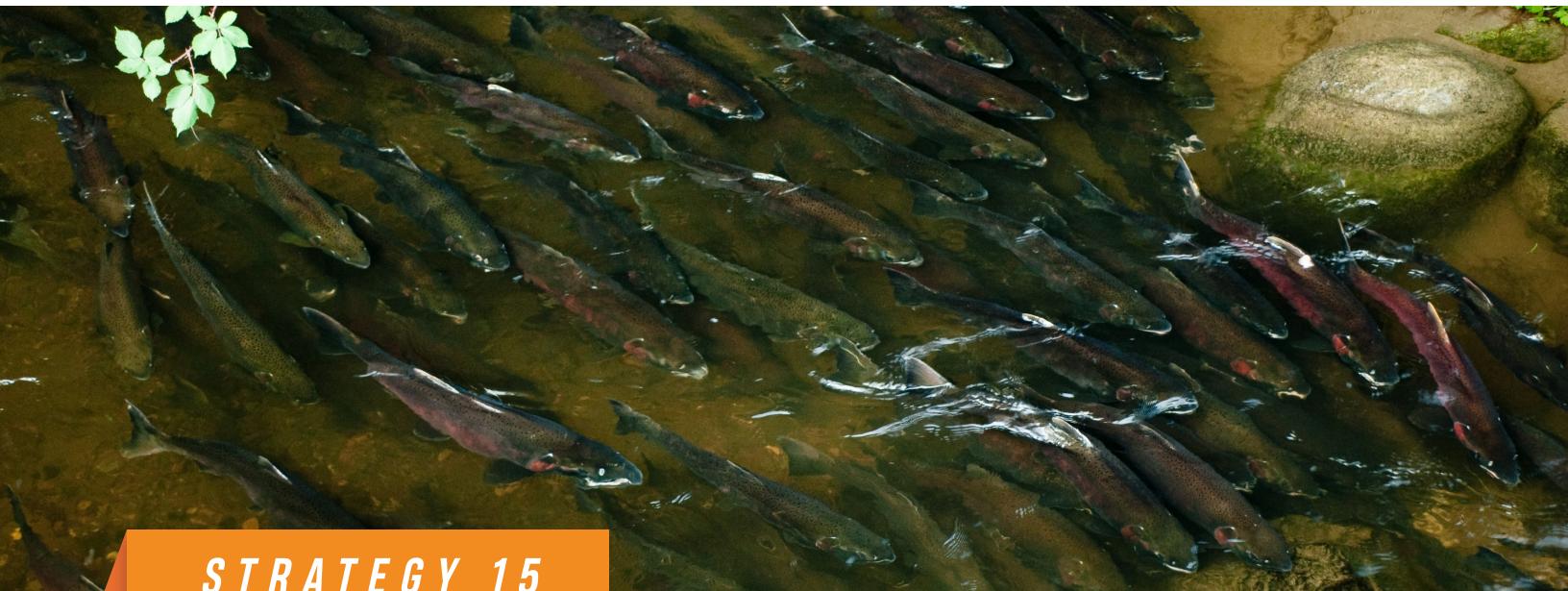
- ▶ Federal agencies (for example, National Oceanic and Atmospheric Administration, U.S. Fish and Wildlife Service, U.S. Geological Survey, and U.S. Environmental Protection Agency)
- ▶ Tribal governments, representatives, and consortia
- ▶ State agencies (for example, Washington Department of Fish & Wildlife, Washington Department of Transportation, Governor's Salmon Recovery Office, and Recreation and Conservation Office)
- ▶ Nongovernmental organizations (for example, PreK-12 education programs, Pacific Northwest Invasive Species Council)

- ▶ Businesses and private sector
- ▶ Local governments (for example, city and county)
- ▶ Local Integrating Organizations
- ▶ Salmon recovery and watershed groups
- ▶ Academic and research institutions (for example, University of Washington Sea Grant)
- ▶ Vulnerable populations and underserved communities
- ▶ Community-based organizations

#### **ONGOING PROGRAMS**

Ongoing programs provide regulatory oversight, technical support, implementation resources, funding, or guidance and serve as the critical foundation for Puget Sound recovery. The following is a list of example state and federal ongoing programs that help to implement this strategy. Many more local, tribal nations, and nongovernmental programs exist that support this strategy. See [Puget Sound Info](#) for a broader list of relevant programs.

- ▶ [2015 Washington Invasive Species Council Strategic Plan](#) (RCO)
- ▶ [Aquatic Invasive Species Prevention and Enforcement](#) (WDFW)
- ▶ [Invasive Species Management](#) (DNR)
- ▶ [Puget Sound Corps](#) (DNR)
- ▶ [USGS Science and Research Programs](#) (U.S. GS)



## STRATEGY 15

### Harvest, Hatchery, and Adaptive Management of Salmon Recovery

Implement harvest, hatchery, and adaptive management elements of salmon recovery.

#### STRATEGY DESCRIPTION

The Treaty Tribes and the Washington Department of Fish and Wildlife (WDFW) co-manage hatchery production and salmon harvest allocations in Washington State. For hatchery and harvest strategies to be effective recovering Puget Sound salmonids and support tribal nations' treaty and sovereign rights, they must also consider and address the status of habitat protection and recovery, the potential risks to wild salmon populations from hatchery production, and the food web dynamics including prey availability and predation pressure. All salmon, whether hatchery- or natural-origin, need healthy habitats and sufficient prey resources to support growth and migration through every stage of their life history. Hatcheries are used selectively in Puget Sound to prevent extinction, rebuild populations, and augment natural salmon runs for harvest in areas where populations have been depleted due to habitat loss and predation. Many management sectors make decisions that affect these habitats. Ensuring that these decisions also provide for habitat protection and recovery consistent with harvest and hatchery strategies (commonly known as "H-integration") is essential for hatchery and harvest strategies to succeed while supporting the recovery of wild salmon. Improved monitoring and sharing of information about salmon habitats, the factors limiting

survival of salmon at different life-stages, and hatchery and harvest strategies are needed to learn what strategies are working and how to improve them.

For more information on this topic, see the 2021 [Governor's Salmon Strategy Update](#), the [Chinook Implementation Strategy](#), and the [State of Salmon in Watersheds 2020](#) report.



## WHAT DOES SUCCESS LOOK LIKE?

We achieve our goal of thriving species and food webs by reducing predation on adult and juvenile salmon by pinnipeds and fishes; honoring tribal nations' treaty and sovereign rights; constantly improving the ability of hatcheries to provide fish to meet, harvest needs, and conservation objectives in the face of climate change and expanding human populations; meeting harvest guidelines for recreational and commercial fisheries; and eliminating illegal fishing activities.

## ACTIONS

### **Reduce displacement, competition, and predation of imperiled native species caused by native or invasive species. (ID #204)**

**Key opportunities for 2022-2026 include:**

- ▶ Continue and secure sustainable funding for pinniped population assessments and diet studies;
- ▶ Advance discussions with co-managers and the Washington State Academy of Sciences about science-supported, Marine Mammal Protection Act-grounded options for reducing pinniped predation;
- ▶ Implement, assess, and learn from pinniped deterrence pilot studies in Puget Sound and removals in the Columbia River;
- ▶ Adaptively manage piscivorous warm water game fish to ensure compatibility with salmon recovery.

### **Increase salmon abundance while protecting genetic diversity by implementing hatchery and harvest management strategies and expanding available habitat while ensuring abundant salmon for harvest, treaty rights, and other species such as Southern Resident Orca. (ID #205)**

**Key opportunities for 2022-2026 include:**

- ▶ Continue to implement best practices for hatchery management, including developing a joint co-manager hatchery policy;
- ▶ Implement and adaptively manage hatchery genetic management plans (HGMPs) which are developed by co-managers and approved by NOAA to ensure that the operation does not impede recovery;
- ▶ Work to reduce risk to wild populations by balancing the potential risks and benefits of hatchery production, and by conducting research on hatchery infrastructure and management to reduce the fitness differential between hatchery and wild populations;
- ▶ Continue to implement increased state and tribal hatchery production to support prey availability for Southern Resident Orca;

- ▶ Implement habitat restoration efforts that expand available habitat and reduce competition (see the various other habitat recovery strategies for more detail—habitat recovery is referenced here to accentuate its relevance to this strategy, i.e., H-integration);
- ▶ Improve coordination between fishery co-managers, orca researchers, and the salmon recovery community to prioritize and improve habitat conditions for constraining stocks in fisheries and to recover stocks documented to be critical prey for orca.

### **Ensure sustainable harvest of hatchery and natural salmon and support treaty-reserved fishing rights. (ID #206)**

**Key opportunities for 2022-2026 include:**

- ▶ Complete and secure approval of the 10-year harvest management plan with NOAA;
- ▶ Promote and improve accurate and timely data reporting and availability;
- ▶ Improve monitoring for in-season management;
- ▶ Improve public education and outreach; increasing funding for enforcement;
- ▶ Reduce illegal fishing.

## IMPLEMENTATION CONSIDERATIONS

**Key opportunities for 2022-2026 to integrate human wellbeing considerations in efforts to implement harvest, hatchery, and adaptive management elements of salmon recovery include:**

- ▶ Document and promote the value and ecosystem services of salmon and salmon hatcheries (for example, provisioning, human health, culture, and spirituality, etc.) and address the environmental justice impacts to these human needs and values, when making management decisions regarding salmon recovery.
- ▶ Deepen awareness and understanding of tribal nations' treaty and sovereign rights and the co-manager relationship among the recovery community and the public, building support, commitment, and action to uphold treaty obligations.



**Key opportunities for 2022-2026 to integrate climate change responses in efforts to implement harvest, hatchery, and adaptive management elements of salmon recovery include:**

- ▶ Integrate lessons learned from the Salish Sea Marine Survival Project about factors controlling salmon mortality into hatchery, harvest, and habitat management practices.
- ▶ Assess the readiness of Puget Sound hatcheries to provide and adapt their services in the face of climate change.
- ▶ Secure sustainable funding so that hatcheries are able to test approaches to improve practices and make the necessary changes, including large infrastructure changes, so that hatchery programs are successful.
- ▶ Consider “H-integration” strategies that account for habitat viability in harvest and hatchery management decisions.
- ▶ Ensure sustainable support for monitoring efforts, for example, adult and juvenile migrant monitoring, intensively monitored watersheds, effectiveness of recovery actions, and population assessments accounting for different sources of mortality at different life-stages (freshwater to ocean conditions, etc.) that enable management decisions to be grounded in accurate assessments of current and projected future conditions. This includes continuing zooplankton monitoring, research and monitoring to ensure healthy forage fish populations, including herring, and advancing food web models (for example, the Atlantis Model).

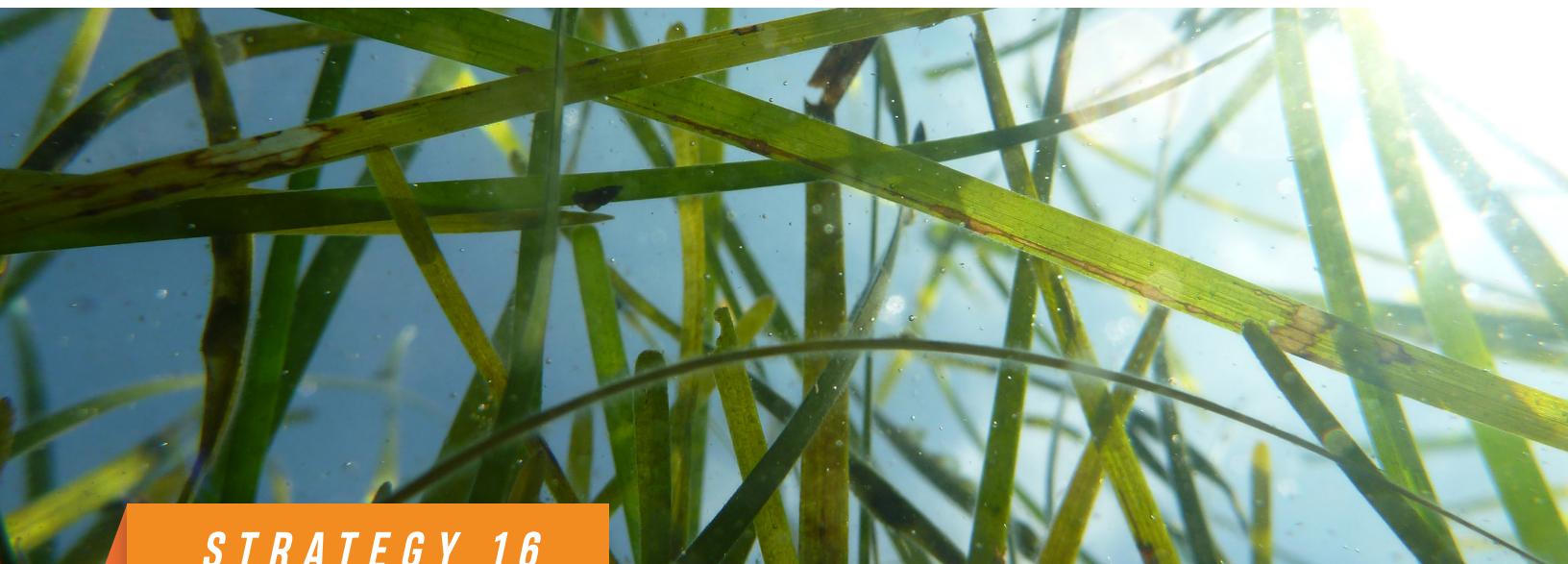
#### COLLABORATING PARTNERS

- ▶ Federal agencies (for example, National Oceanic and Atmospheric Administration)
- ▶ Tribal governments, representatives, and consortia
- ▶ State agencies (for example, Department of Fish and Wildlife, Governor’s Salmon Recovery Office, and Recreation and Conservation Office)
- ▶ Northwest Indian Fisheries Commission
- ▶ Nongovernmental organizations (for example, Long Live the Kings)
- ▶ Salmon recovery and watershed groups
- ▶ Local Integrating Organizations
- ▶ Vulnerable populations and underserved communities
- ▶ Community-based organizations

#### ONGOING PROGRAMS

Ongoing programs provide regulatory oversight, technical support, implementation resources, funding, or guidance and serve as the critical foundation for Puget Sound recovery. The following is a list of example state and federal ongoing programs that help to implement this strategy. Many more local, tribal nations, and nongovernmental programs exist that support this strategy. See [Puget Sound Info](#) for a broader list of relevant programs.

- ▶ [Office of Sustainable Fisheries](#) (NOAA)
- ▶ [Office of Protected Resources](#) (NOAA)
- ▶ [Fishery and Hatchery Science and Management](#) (WDFW)



## STRATEGY 16

### Submerged Aquatic Vegetation

**Protect and restore submerged aquatic vegetation (SAV) by expanding public outreach, education, and voluntary programs, ensuring regulatory protection, and implementing restoration projects.**

#### STRATEGY DESCRIPTION

Submerged aquatic vegetation, including kelp forests, surfgrass, and seagrass meadows is vital to the health of Puget Sound and the Salish Sea. It provides critical refuge, feeding, and nursery grounds for forage fish, rockfish, and salmon, and fuels food webs that support healthy bird and marine mammal populations—including Southern Resident Orca. Submerged aquatic vegetation also helps prevent erosion and maintain shoreline stability by anchoring seafloor sediment with its spreading roots and rhizomes.

Generally, kelp species in Puget Sound require hard substrates for attachment while eelgrass grows in sandy environments. Kelp requires clear, cold water with enough nutrients to support growth, while eelgrass can thrive in warmer water temperatures. Eelgrass and kelp are vulnerable to excessive nutrient inputs which lead to algae blooms or nuisance macroalgae which shade native species and inhibit growth.

Successful strategies will include coordinated research and management actions that can inform outreach and education about the need to protect and restore submerged aquatic vegetation.



Beaches  
and Marine  
Vegetation

Forage  
Fish

Marine  
Water

Implementing the Shoreline Armoring and other Implementation Strategies supports the success of this strategy.

#### WHAT DOES SUCCESS LOOK LIKE?

We achieve our recovery goals for healthy human populations and increasing functioning habitat by reducing the physical disturbance of eelgrass, kelp, and other vegetation from boats, vessels, anchors, and mooring infrastructure; reducing the shading of shallow water habitat by in- and over-water structures; and improving water quality (decreasing eutrophication and turbidity). Indicators of success include:

- ▶ Decreasing the amount of overwater structures and/or increasing the amount of overwater structures retrofitted to reduce shading of shallow water habitat
- ▶ Increasing floating kelp canopy area
- ▶ Increasing eelgrass area

## ACTIONS

**Fully implement and enforce available protections for submerged aquatic vegetation through existing regulations, programs, and policies. (ID #26)**

**Key opportunities for 2022-2026 include:**

- ▶ Utilize marine vegetation data to identify distribution trends and establish priority areas for conservation and recovery;
- ▶ Integrate marine vegetation, climate change, and sediment loading considerations into existing policies, programs, and permitting processes, such as Shoreline Master Programs (SMPs);
- ▶ Design new or retrofits of existing in-water and over-water structures to avoid impacts to existing and historic eelgrass and kelp habitat;
- ▶ Expand anchor-out zones at suitable sites through a multi-layered approach that includes boater education, incentives, monitoring, and regulation.

**Accelerate recolonization and expansion of eelgrass and kelp bed at sites shown to possess suitable ecological conditions using transplants, propagation, outplanting, and other effective methods. (ID #58)**

**Key opportunities for 2022-2026 include:**

- ▶ Coordinate research and monitoring efforts with restoration partners to identify areas ecologically suitable for restoration efforts;
- ▶ Develop adaptive management strategies; ensure inclusion of protection efforts;
- ▶ Increase long-term monitoring and evaluation;
- ▶ Increase incentives for key partners (for example, shellfish farmers and hatcheries) to participate in research and growth efforts.

**Target public outreach and education to foster community stewardship, individual responsibility, and collective action to benefit eelgrass and kelp conservation and recovery. (ID #59)**

**Key opportunities for 2022-2026 include:**

- ▶ Leverage existing work groups, coalitions, and partnerships to share information more broadly on the importance of marine vegetation to Puget Sound;
- ▶ Develop targeted outreach strategies to groups such as the shellfish and kelp harvest communities.

**Implement targeted research initiatives to understand the short-and long-term factors driving localized changes in eelgrass and kelp. (ID #60)**

**Key opportunities for 2022-2026 include:**

- ▶ Increase funding for and conduct research on the influence of stressors (for example, temperature, turbidity, algae blooms, sedimentation, impacts by boaters, and biological and disease threats) to better understand conditions for successful conservation and restoration;
- ▶ Utilize existing research and monitoring groups to coordinate data collection and analysis; and integrate marine vegetation surveys into community science programs.

## IMPLEMENTATION CONSIDERATIONS

**Key opportunities for 2022-2026 to integrate human wellbeing considerations in efforts to protect and restore submerged aquatic vegetation include:**

- ▶ Expand accessible outreach and include information in recreation and commercial permits around the importance of submerged aquatic vegetation.
- ▶ Integrate understanding of impacts on communities from submerged aquatic vegetation protection regulations, programs, and policies.
- ▶ Establish partnerships between educational institutions, restoration practitioners, and community stewards to foster collective action for submerged aquatic vegetation protection and restoration.

**Key opportunities for 2022-2026 to integrate climate change responses in efforts to protect and restore submerged aquatic vegetation include:**

- ▶ Incorporate information on climate impacts into efforts to accelerate the recolonization of kelp and eelgrass.
- ▶ Promote increased carbon sequestration in efforts to accelerate the recolonization of kelp and eelgrass.
- ▶ Coordinate submerged aquatic vegetation restoration with projects that restore sediment processes to support carbon storage and sequestration.

## COLLABORATING PARTNERS

List of partners identified in the Puget Sound Kelp Conservation and Recovery Plan:

- ▶ Washington State Department of Natural Resources
- ▶ Washington State Department of Ecology Water Quality Program
- ▶ Feiro Marine Life Center
- ▶ Governor's Salmon Recovery Office
- ▶ Kwiáht
- ▶ Marine Agronomics LLC
- ▶ Marine Resources Committees
- ▶ National Marine Fisheries Service
- ▶ Northwest Straits Commission
- ▶ Northwest Straits Foundation
- ▶ The Pew Charitable Trusts
- ▶ Port Gamble S'Klallam Tribe
- ▶ Puget Sound Partnership
- ▶ Puget Sound Restoration Fund
- ▶ Recreation and Conservation Office
- ▶ REEFCheck
- ▶ Salish Seaweeds
- ▶ Samish Indian Nation
- ▶ SeaDoc Society
- ▶ Tulalip Tribes
- ▶ University of Washington
- ▶ U.S. Geological Survey
- ▶ Washington State Department of Fish and Wildlife
- ▶ Washington State University
- ▶ Western Washington University
- ▶ Vulnerable populations and underserved communities
- ▶ Community-based organizations

## ONGOING PROGRAMS

Ongoing programs provide regulatory oversight, technical support, implementation resources, funding, or guidance and serve as the critical foundation for Puget Sound recovery. The following is a list of example state and federal ongoing programs that help to implement this strategy. Many more local, tribal nations, and nongovernmental programs exist that support this strategy. See [Puget Sound Info](#) for a broader list of relevant programs.

- ▶ [Ecosystems Support](#) (WDFW)
- ▶ [Leasing program for State Owned Aquatic Lands](#) (DNR)
- ▶ [Nearshore monitoring and aquatic assessment](#) (DNR)

## WHERE IS EELGRASS MONITORED IN PUGET SOUND?

Washington Department of Natural Resources (WDNR) maintains Puget Sound Eelgrass Monitoring Data Viewer – An interactive map that provides access to 16 years of annual eelgrass monitoring data collected between 2000 and 2019 at selected sites in greater Puget Sound.

These data have been collected annually by WDNR since 2000 to track the status of eelgrass in greater Puget Sound as an ecosystem indicator. Underwater video is collected along transects to estimate the abundance of eelgrass at selected sites.

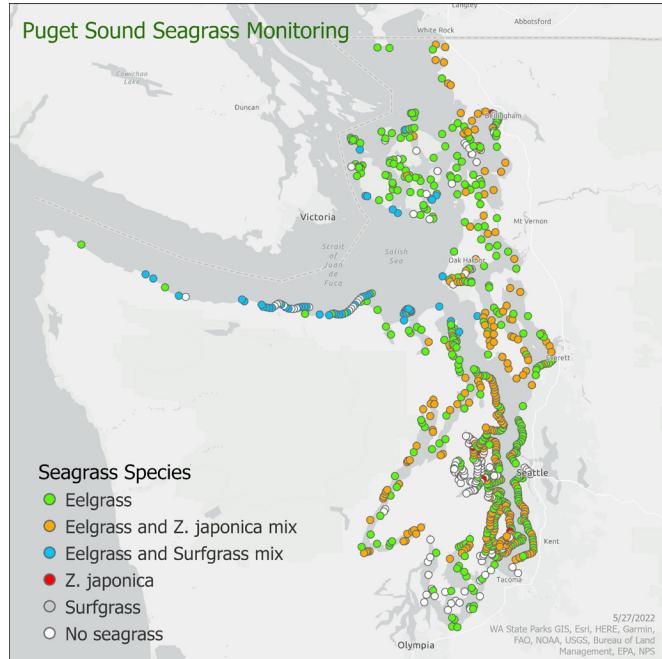


Figure 9. WDNR's [Nearshore Eelgrass Monitoring program](#) locations. For more information, visit the [Marine Vegetation Atlas](#).



## STRATEGY 17

### Responsible Boating

Promote best practices by boaters to protect water quality and life in Puget Sound.

#### STRATEGY DESCRIPTION

Boating in Puget Sound provides unparalleled access to some of Washington State's most beautiful places and views. Boating and fishing are encouraged in Puget Sound but must be done responsibly to minimize impacts on the Puget Sound and broader transboundary Salish Sea ecosystem.

Responsible boating best practices include:

- ▶ complying with speed and distance regulations to protect South Resident Orca and other marine mammals;
- ▶ disposing of sewage and gray water at dedicated pump out stations to prevent the contaminants from entering the ecosystem;
- ▶ proper maintaining vessels to prevent contamination from derelict vessels;
- ▶ properly disposing of unwanted vessels to prevent contamination from abandoned and sunken materials;
- ▶ preventing the loss of fishing equipment, properly disposing of broken equipment; and
- ▶ reporting any loss of fishing equipment to prevent bycatch and the introduction of non-native materials into Puget Sound.

Activity types to promote responsible boating include outreach, education, incentives, and enforcement of the best practices described above. Implementing the Shellfish Implementation Strategy supports the success of this strategy.



#### WHAT DOES SUCCESS LOOK LIKE?

We achieve our recovery goals of healthy human populations, healthy water quality, increasing functioning habitat and thriving species and food webs, and vibrant quality of life by removing derelict vessels; reducing ambient noise and disturbance of Southern Resident Orca (from vessels, jets, etc.); reducing the amount of derelict fishing gear; and ensuring that levels and patterns of pollutants and biotoxins in surface waters do not threaten the health of Puget Sound communities or vulnerable populations. Indicators of success include:

- ▶ Increasing the number of derelict vessels removed
- ▶ Reducing noise in marine water

## ACTIONS

**Prevent and remove lost fishing gear through outreach to boaters and fishers and lost gear retrieval programs. (ID #56)**

**Key opportunities for 2022-2026 include:**

- ▶ Increase incentive-based and regulatory prevention and gear-retrieval programs;
- ▶ Enhance reporting of lost equipment on catch reports to Washington Department of Fish and Wildlife;
- ▶ Assess primary factors contributing to lost equipment to provide more targeted education;
- ▶ Track hotspots for derelict equipment to provide more targeted enforcement and clean-up;
- ▶ Consider financial incentives, such as deposits on fishing and crabbing equipment, to promote responsible behavior and fund clean-up efforts.

**Educate boaters about dumping organic matter and the No Discharge Zone, ensure sufficient and convenient pump out capacity, and enforce the No Discharge rule. (ID #62)**

**Key opportunities for 2022-2026 include:**

- ▶ Ensure that Puget Sound ports and marinas prioritize supporting the No Discharge Zone in their environmental plans, by providing appropriately scaled pump out resources, verifying holding tank capacity for vessels using port facilities, and supporting mobile pump out programs;
- ▶ Develop and distribute educational materials to boaters on the effects of dumping organic matter and the No Discharge Zone regulations and available pump out facilities;
- ▶ Expand enforcement authority to relevant state and federal agencies to conduct inspections and respond to illegal discharges;
- ▶ Increase enforcement of marinas to ensure slip owners are properly pumping out their sewage tanks;
- ▶ Consider new funding mechanisms to support No Discharge Zone education and compliance, such as a fee at vessel registration or on commercial vessels visiting port facilities;
- ▶ Consider permanent pump out stations at popular recreational destinations.

**Reduce the abandonment of vessels and expand and accelerate derelict vessel removal programs. (ID #67)**

**Key opportunities for 2022-2026 include:**

- ▶ Seek federal funding for derelict vessel removal programs through new and existing mechanisms;
- ▶ Expand the Washington Vessel Turn-In Program by allocating more resources.

**Promote implementation of and compliance with laws and guidelines for boaters and vessels to protect Southern Resident Orcas. (ID #68)**

**Key opportunities for 2022-2026 include:**

- ▶ Research, develop, and implement quieter propulsion alternatives for boats and other vessels;
- ▶ Expand the pool of observers and technologies that provide real-time orca sightings to the Whale Report Alert System through Quiet Sound and key partners;
- ▶ Develop, enhance, and support the efficacy of innovative and existing social marketing campaigns (for example, Be Whale Wise) to complement and enhance the effectiveness of existing outreach organizations in promoting safer boating behavior around orca;
- ▶ Expand the use of mixed media and signage to highlight opportunities to view orca from land;
- ▶ Enforce and adaptively manage rules for boating around orca considering best available science and the results of marine spatial planning efforts; monitor and provide additional protection for vulnerable orca;
- ▶ Educate boaters on the required protections and importance of distance and speed regulation, including visiting boaters in partnership with charter companies.

## IMPLEMENTATION CONSIDERATIONS

**Key opportunities for 2022-2026 to integrate human wellbeing considerations in efforts to promote best practices by boaters and mariners include:**

- ▶ Research, develop, and implement community based social marketing to better understand and create positive behavior change within the recreational boating audience. Boating and fishing communities' connections to Puget Sound and usage patterns are better understood through their preferred outreach and engagement. Through effective outreach and engagement to boating and fishing communities, better understand local knowledge of existing best management practices and opportunities for behavior change.

- ▶ Education and training at boat launches, especially at new boat launch facilities, yacht clubs, and marinas, and other water access points to describe the need for protection, cleaning, and inspection requirements, and BMPs are enhanced.
- ▶ Increase public beach access, especially in vulnerable populations and underserved communities, and ensure that water is tested to ensure it is safe for swimming, expand Beach Environmental Assessment, Communication, and Health (BEACH) program.
- ▶ Develop guidance that provides specific examples for how to hold accessible meetings (time, locations, and incentives, compensation, etc.). This includes asking communities how they want to be involved.
- ▶ Identify funding that can embed outreach expertise with technical staff on the ground to increase access and equity in communication and education coupled with boater education.
- ▶ Develop (or leverage existing) guidance on plain language material development and how to create accessible materials in multiple languages and formats for meetings.
- ▶ Include information on pump out stations in navigational maps.
- ▶ Coordinating body and hub is created to provide education, training, communication, and technical support to local groups around oil spills, invasive species, and boater best practices.
- ▶ Provide informational resources to promote best boating practices like pump out stations and fueling bibs that are readily available in or near tribal nations' marinas and vulnerable populations.
- ▶ Incorporate connections between water quality and human health into resources.

**Key opportunities for 2022-2026 to integrate climate change responses in efforts to promote best practices by boaters and mariners include:**

- ▶ Incorporate targeted information about current and future changes in climate and ocean conditions into boater education.
- ▶ Promote electrification for boats and vessels.
- ▶ Promote reduced speeds as an opportunity to reduce greenhouse gas emissions while also reducing underwater noise and ship strike risk to marine mammals.

## COLLABORATING PARTNERS

- ▶ Tribal governments, representatives, and consortia
- ▶ First Nations

- ▶ Transboundary partners (for example, Canadian Coast Guard)
- ▶ Federal agencies or federally authorized entities (for example, U.S. Coast Guard, Northwest Straits Commission)
- ▶ State agencies (for example, Department of Ecology, Department of Fish and Wildlife, Washington Parks and Recreation, Natural Resources, Governor's Salmon Recovery Office, and Recreation and Conservation Office)
- ▶ Local governments (for example, city and county)
- ▶ Local Integrating Organizations
- ▶ Salmon recovery and watershed groups
- ▶ Academic and research institutions (for example, Washington Sea Grant)
- ▶ Community members and residents (for example, marina and boat launch owners, Recreational and commercial boaters)
- ▶ Nongovernmental organizations (for example, Puget Soundkeeper Alliance, Northwest Straits Foundation)
- ▶ Vulnerable populations and underserved communities
- ▶ Community-based organizations

## ONGOING PROGRAMS

Ongoing programs provide regulatory oversight, technical support, implementation resources, funding, or guidance and serve as the critical foundation for Puget Sound recovery. The following is a list of example state and federal ongoing programs that help to implement this strategy. Many more local, tribal nations, and nongovernmental programs exist that support this strategy. See [Puget Sound Info](#) for a broader list of relevant programs. Programs that have set four-year targets to accelerate their contributions to Puget Sound recovery are indicated in bold (\*).

- ▶ [\*\*Derelict Vessel Removal Program\\*\*\* \(DNR\)](#)
- ▶ [\*\*Clean Vessel Program\*\* \(WA State Parks\)](#)
- ▶ [\*\*Leasing program for State Owned Aquatic Lands\*\* \(DNR\)](#)

## PROGRAM TARGET SPOTLIGHT

The [Washington State Department of Natural Resources \(WDNR\) Derelict Vessel Removal Program](#) (DVRP) works to prevent and, when necessary, remove and dispose of derelict or abandoned vessels up to 200 feet in length from Washington state waters. Between 2022-2026, the WDNR aspires to accelerate the DVRP performance by removing or preventing 180 or more derelict vessels from Washington's waterways.



## STRATEGY 18

### Awareness of Effects of Climate Change

**Understand and build awareness of the effects of changing climate and ocean conditions on Puget Sound.**

#### STRATEGY DESCRIPTION

The effects of a changing climate on Puget Sound can be seen through increasing air temperatures, longer frost-free seasons, sea level rise, a potential increase in heavy rainfall events, climate migration of individuals relocating to the region from elsewhere in the United States or abroad, and more. To build our collective resilience to current and future changes, we must foster a greater scientific understanding and build awareness of not only these effects, but also what we can do in response. Strategic education and empowerment campaigns, climate change research to better understand risks, and climate policy advocacy and implementation, are a necessary and foundational step in taking climate action.

Efforts to foster scientific understanding and build awareness and action are aimed at creating large-scale and long-term behavior change to increase the resilience of the Puget Sound ecosystem which includes residents, visitors, climate migrants, and youth and the economy. Actions must address frontline communities most impacted by climate change. This strategy focuses on research and monitoring climate change impacts on the socio-ecological system (including human holistic health and wellbeing); developing targeted engagement and behavior change campaigns; supporting public and private initiatives; and supporting and implementing recommendations as detailed by the [Washington Climate Assembly](#).



## WHAT DOES SUCCESS LOOK LIKE?

We achieve our recovery goals of healthy human populations, healthy water quality, abundant water quantity, increasing functioning habitat, thriving species and food webs, and vibrant quality of life by better understanding and communicating the effects of climate change on Puget Sound.

## ACTIONS

### **Expand monitoring, research, and assessment of the individual and cumulative impacts and risks of climate change on Puget Sound. (ID #131)**

**Key opportunities for 2022-2026 include:**

- ▶ Increase monitoring, research, and systematic assessment of climate stressors such as ocean acidification, sea surface and stream temperature and their compounding impacts;
- ▶ Adopt frameworks connecting human wellbeing to ecosystem health to evaluate the impacts of climate change on holistic health including mental, emotional, and physical health of Puget Sound residents, particularly vulnerable populations and underserved communities;
- ▶ Adopt data-driven criteria or framework that provides evidence-based climate actions and supports prioritization of multi-benefit investments;
- ▶ Conduct cost-benefit analyses of climate actions including increasing monitoring, research, and assessment of economic consequences of climate change and the opportunities associated with building climate resilience;
- ▶ Develop, analyze, and apply the Puget Sound Partnership alternative future scenarios to explore and express desired futures and evaluate trade-offs among possible approaches.

### **Empower residents, visitors, climate migrants, and youth to be advocates for climate action. (ID #132)**

**Key opportunities for 2022-2026 include:**

- ▶ Improve awareness of resources and accessibility of relevant information (for example, through language translation and use of open-source resources) to empower residents to protect communities from climate-sensitive harms and advocate for climate action;
- ▶ Increase climate migrant awareness that Puget Sound has already been affected by climate change and what they can do to reduce greenhouse gas emissions, sequester carbon, adapt, and improve resilience within their new communities;

- ▶ Develop targeted engagement campaigns to educate and empower residents, visitors, climate migrants, and youth on the effects, risks, and opportunities to reduce emissions and vulnerability and increase resilience;
- ▶ Increase trainings for non-tribal nation entities, engagement opportunities, and other forms of ongoing support to increase recognition of tribal nations' treaty and sovereign rights and strengthen meaningful collaboration between tribal nations and non-tribal nations entities;
- ▶ Increase education about carbon emissions and increase carbon emission transparency in manufacturing and other related industries.

### **Educate and train decision makers and professionals about climate impacts and risks on Puget Sound. (ID #133)**

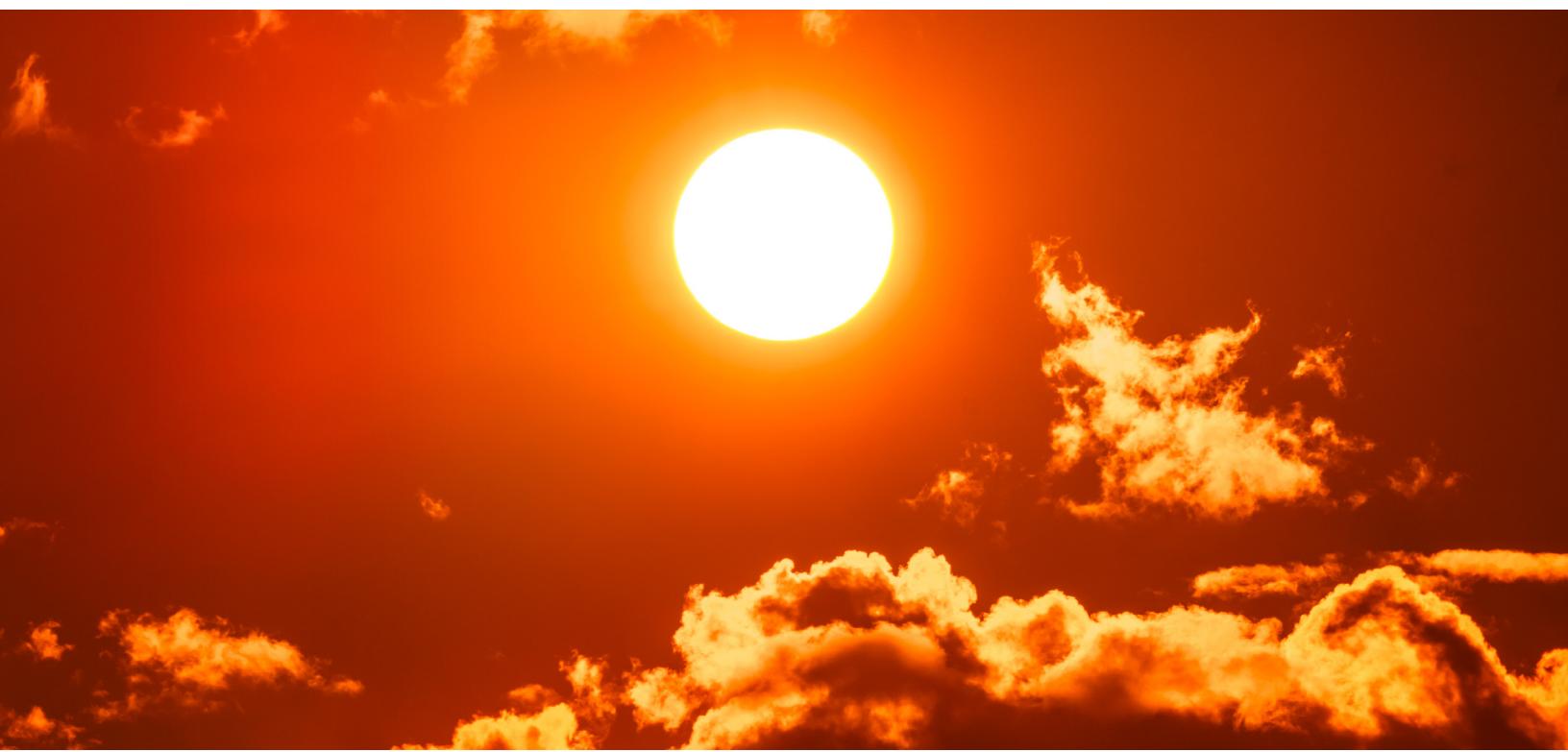
**Key opportunities for 2022-2026 include:**

- ▶ Fund and implement trainings to build a collective and shared understanding of the climate impacts and risks on Puget Sound and prioritize action needed to adapt and build resilience;
- ▶ Increase trainings to teach decision-makers and relevant professionals how to discuss climate change with communities, including youth, disproportionately impacted communities, and business owners, business groups, and unions;
- ▶ Support effective communication of climate risks and opportunities by leaders and decision-makers to promote legislative action;
- ▶ Identify opportunities for businesses, business groups, unions, and communities to address climate change impacts;
- ▶ Collaborate with climate change communication experts to support development and implementation of outreach and engagement campaigns.

### **Improve networks for sharing information across public (transboundary, federal, tribal nations, state, and local) and private sectors. (ID #135)**

**Key opportunities for 2022-2026 include:**

- ▶ Increase understanding and opportunities for cross-sector collaboration and coordination;
- ▶ Collaborate across local, regional, and state-wide organizations to create a comprehensive, widely accessible network of climate data, information, resources, best practices, and shared strategies;
- ▶ Increase research and share information about innovative technologies that decrease emissions, increase sequestration, and advance climate adaptation;
- ▶ Advance science, integrate Indigenous knowledge, and improve BMPs to increase effective climate adaptation.



**Develop and implement social marketing (behavior change) strategies to influence climate-related behaviors. (ID #172)**

**Key opportunities for 2022-2026 include:**

- ▶ Develop and implement effective social marketing (behavior change) campaigns on solutions to reduce climate change impacts on the environment, wildlife, and human health, including mental health;
- ▶ And develop and implement programs to encourage residents, visitors, and climate migrants to utilize public transportation, as well as incentivizing employers in Puget Sound to implement employee commute reduction programs in areas where they are not currently mandated.

**COLLABORATING PARTNERS**

- ▶ Tribal governments, representatives, and consortia
- ▶ First Nations
- ▶ Transboundary partners
- ▶ Federal agencies (for example, National Ocean and Atmospheric Administration, Federal Emergency Management Agency, and Washington Sea Grant)
- ▶ State agencies (for example, Department of Commerce, Department of Ecology)
- ▶ Local governments (for example, city, county, ports, public utility, and conservation districts)

- ▶ Local Integrating Organizations
- ▶ Salmon recovery and watershed groups
- ▶ Businesses and private sector
- ▶ Nongovernmental organizations (for example, public-private partnership Floodplains by Design)
- ▶ Academic and research institutions (for example, Washington State University Extension and Washington Sea Grant)
- ▶ Community members and residents
- ▶ Vulnerable populations and underserved communities
- ▶ Community-based organizations

**ONGOING PROGRAMS**

Ongoing programs provide regulatory oversight, technical support, implementation resources, funding, or guidance and serve as the critical foundation for Puget Sound recovery. The following is a list of example state and federal ongoing programs that help to implement this strategy. Many more local, tribal nations, and nongovernmental programs exist that support this strategy. See [Puget Sound Info](#) for a broader list of relevant programs.

- ▶ [Nearshore monitoring and aquatic assessment](#) (DNR)
- ▶ [Ocean Acidification Monitoring](#) (NOAA)

## STRATEGY 19

### Greenhouse Gas Emissions and Carbon Sequestration

**Advance and support efforts to reduce greenhouse gas emissions and increase carbon sequestration.**

#### STRATEGY DESCRIPTION

Climate change threatens the health and wellbeing of Puget Sound and its inhabitants, as well as our ability to achieve recovery targets and goals. This strategy aims to decrease the vulnerability of Puget Sound to climate change by decreasing the magnitude of climate change.

Specifically, this strategy focuses on decreasing greenhouse gas emissions and increasing the potential for carbon sequestration in ways that are equitable and synergistically advance Puget Sound's statutory goals. This work also includes prioritizing the restoration of habitats and ecosystems that have the potential to sequester carbon as well as benefit key species, like salmon, shellfish, forage fish, groundfish and benthic invertebrates, and zooplankton. In addition, this work includes using our positions of power and management levers to advance legislation, policies, and initiatives that aim to decrease greenhouse gas emissions and sequester carbon in a socially just and inclusive manner.



#### WASHINGTON STATE LEADERSHIP ON GREENHOUSE GAS EMISSIONS REDUCTION

In 2019, the Clean Energy Transformation Act (CETA) was signed into law, committing Washington to an electricity supply free of climate change-causing greenhouse gas emissions by 2045.

In 2021, two complementary pieces of legislation were signed into law: the Climate Commitment Act (CCA) and the Clean Fuel Standard (CFS). The CCA requires emitters generating more than 25,000 tons of emissions per year to purchase and receive carbon emission allowances. The CCA aims to achieve the greenhouse gas emissions limits set in state law:

- ▶ By 2030, reduce to 45 percent below 1990 levels
- ▶ By 2040, reduce to 70 percent below 1990 levels
- ▶ By 2050, reduce to 95 percent below 1990 levels and achieve net zero emissions

The CFS also targets the largest sources of emissions in Washington by requiring fuel suppliers to gradually reduce the carbon intensity of transportation fuels to 20 percent below 2017 levels by 2038.

The work described in this strategy align with these landmark laws and will advance state-wide emissions reduction efforts in ways that synergistically advance one or more of the six statutory Puget Sound recovery goals.



## WHAT DOES SUCCESS LOOK LIKE?

We achieve our recovery goals of healthy human populations, healthy water quality, and increasing functioning habitat by reducing human-caused greenhouse gas emissions in Washington State by 95 percent below 1990 levels by 2050, and increasing the amount of carbon sequestered in Puget Sound forests, kelp, soils, and other significant means. The indicator of success is reducing the amount of greenhouse gas emissions produced statewide or regionwide.

## ACTIONS

**Develop and implement plans, regulations, and incentives to reduce greenhouse gas emissions from all sources, especially primary emitting sources (those that account for more than 16 percent of emissions) including land use and transportation; electricity; residential, commercial, and industrial building; and heating. (ID #136)**

### *Key opportunities for 2022-2026 include:*

- ▶ Fully implement the Clean Fuel Standards Act, Clean Energy Transformation Act, and Climate Commitment Act; maintain continued engagement and accountability practices to ensure policies have long-term impact;
- ▶ Strengthen commercial building efficiency in partnerships with cities, businesses, chambers of commerce, and other appropriate organizations;
- ▶ Incentivize the transition commercial and residential buildings from use of fossil fuels to electricity (for example, heat pump retrofit programs);
- ▶ Support the electrification of public fleets, including Washington State Ferries; increase use of renewables, decrease use of fossil fuels, and promote the creation of circular economies;
- ▶ Decarbonize the energy grid, integrating it with other states' grids and increasing its efficiency so it serves communities across the region equitably;
- ▶ Reinforce and fund the renewable energy storage and distribution infrastructure and systems to increase the capacity of renewables;

- ▶ Expand support for farmers and encourage regenerative agriculture practices and employing best practices for increasing carbon sequestration (Sustainable Farms and Fields);
- ▶ Mandate zero waste initiatives and funding new avenues to reduce waste and create a circular economy.

**Monitor, evaluate, and assess the effectiveness of greenhouse gas emission reduction programs and projects. (ID #138)**

### *Key opportunities for 2022-2026 include:*

- ▶ Increase research and monitoring of regional emissions, and opportunities and strategies to decrease emissions and increase sequestration;
- ▶ Ensure monitoring, evaluation, and assessment of the effectiveness of greenhouse gas emissions reduction programs and projects are comprehensive, current, and independently conducted, evaluated, and reported and funded for the long term.

**Develop and implement land use and transportation planning to reduce energy use and greenhouse gas emissions and adapt to the effects of climate change. (ID #139)**

### *Key opportunities for 2022-2026 include:*

- ▶ Increase the electrification of the transportation sector (including passenger vehicles, trucks, boats, and freight) and increase the funding, availability, and access to support transition;
- ▶ Distinguish rural from urban needs and solutions, when developing and implementing land use and transportation policies and plans;
- ▶ Decrease barriers and increase incentives for development within small rural cities (including Urban Growth Areas and Local Areas of More Intense Rural Development (LAMIRDs));
- ▶ Support reductions in greenhouse gas emissions from the transportation system while ensuring that rural transit services are maintained.

**Develop, expand, and improve financial and technical incentive programs that protect, promote, and support carbon sequestration and emissions reduction. (ID #140)**

**Key opportunities for 2022-2026 include:**

- ▶ Catalyze new markets in both rural and urban settings that incentivize mitigation of greenhouse gas emissions and carbon sequestration, including markets for blue carbon ecosystems and carbon stored in harvested wood products;
- ▶ Incentivize the use of renewable energy in commercial and residential buildings; educate residents of Puget Sound on programs, incentives, financial options, and energy-saving technologies;
- ▶ Incentivize car companies to transition production to electric vehicles and suspend production of gas and diesel vehicles;
- ▶ Consider the full carbon budget of the forest ecosystems, including particularly carbon storage in forests, soils, forest products, kelp forests, and blue carbon as well as the full suite of ecosystem services;
- ▶ Consider the opportunity and value for enhanced carbon sequestration of state-managed forest lands to generate income that supports funding enhanced employment in our forests, schools, fire districts, governments, and other taxing district;
- ▶ Increase coordination for carbon sequestration and other ecosystem values developed jointly by tribal nations and state agencies and guided by best available science.

**Increase and ensure institutional infrastructure and funding for research and monitoring to explore, track, and evaluate the efficacy and feasibility of carbon sequestration and emissions reduction. (ID #141)**

**Key opportunities for 2022-2026 include:**

- ▶ Research, fund, and utilize low carbon technologies, including battery technology, energy storage, and distribution, as well as carbon sequestration in forests, soils, and as blue carbon;
- ▶ Ensure that research and monitoring efforts are comprehensive, current, independently conducted, evaluated, and reported.

**Quantify and maximize carbon sequestration benefits of habitat protection and restoration projects. (ID #142)**

**Key opportunities for 2022-2026 include:**

- ▶ Support, advance, and conduct research and monitoring on carbon sequestration in Puget Sound ecosystems to prioritize restoration of habitats (including tree canopy and soil) and ecosystems with the greatest potential to sequester carbon;

- ▶ Estimate carbon sequestration potential of various habitats, determine suitable locations, evaluate effectiveness, and determine program feasibility;
- ▶ Select restoration-focused pilot projects to measure effectiveness and efficacy.

**Implement and improve emissions accounting tools and inventories at the local, regional, state, and tribal nations levels. (ID #144)**

**Key opportunities for 2022-2026 include:**

Guide and fund the development and implementation of local and tribal nations' action plans that include emission accounting tools and inventories that are scientifically sound.

**COLLABORATING PARTNERS**

- ▶ Tribal governments, representatives, and consortia
- ▶ First Nations
- ▶ Transboundary partners
- ▶ Academic and research institutions (for example, Washington State University Extension, Washington Sea Grant)
- ▶ Businesses and private sector
- ▶ Community members and residents
- ▶ Conservation districts
- ▶ Federal agencies
- ▶ Local governments (for example, city, county, ports, public utility, and conservation districts)
- ▶ Local Integrating Organizations
- ▶ Nongovernmental organizations
- ▶ Puget Sound Regional Council
- ▶ Salmon recovery and watershed groups
- ▶ State agencies (for example, Departments of Ecology, Natural Resources, Commerce, Agriculture, and Transportation, Governor's Salmon Recovery Office, Recreation and Conservation Office, and the Emergency Management Division)
- ▶ Utilities and Transportation Commission
- ▶ Vulnerable populations and underserved communities
- ▶ Community-based organizations



## STRATEGY 20

### Climate Adaptation and Resilience

**Integrate climate adaptation and resilience into all strategies to protect and restore ecosystems and human wellbeing.**

#### STRATEGY DESCRIPTION

Changing climate and ocean conditions will affect much of what we value in Puget Sound—they pose serious risks to human health and safety, water quality and quantity, and species of concern. While climate change poses an immense challenge to achieving our protection and recovery goals, it also comes at a time with a significant opportunity to respond with bold and ambitious actions.

This strategy is designed to integrate climate adaptation and resilience into our work on all our strategies, to better protect and restore ecosystems and improve human wellbeing in ways that are equitable and synergistically advance Puget Sound statutory goals. The focus of this strategy is on advancing the multiple benefits of our recovery work and on identifying and reducing the vulnerabilities of the Puget Sound ecosystem to climate change stressors.



## WHAT DOES SUCCESS LOOK LIKE?

We achieve our recovery goals of healthy human populations, healthy water quality, abundant water quantity, increasing functioning habitat and thriving species and food webs, and vibrant quality of life into the future. We do this by increasing the resilience of the Puget Sound ecosystem (including habitats, water resources, species, and humans) and recovery efforts by adapting to changing climate and ocean conditions when conducting protection and restoration activities.

## ACTIONS

**Implement multi-benefit projects and programs that synergistically advance Puget Sound recovery goals and reduce greenhouse gas emissions, increase carbon sequestration in Puget Sound ecosystems, increase climate adaptation, and promote climate resilience. (ID #137)**

**Key opportunities for 2022-2026 include:**

- ▶ Identify and address climate change risks to ensure resilience and reliability of infrastructure necessary for transportation (including roads, culverts, and bridges), communication, wastewater treatment, stormwater management, and power;
- ▶ Consider coastal management approaches (for example, managed retreat and realignment) that promote resilience of habitat and human populations to climate impacts;
- ▶ Develop strategies to protect and restore aquatic habitats that provide refuge for sensitive species and support resilience from climate-related impacts;
- ▶ Develop climate-resilient forest management practices (including commercial forestry) and reforestation approaches to reduce risks of drought and wildfire, as well as increase snowpack and low summer streamflow;
- ▶ Restore and acquire areas that provide flood conveyance, slow water, and deposit sediment during frequent, “ordinary” flood events by reconnecting the floodplain;
- ▶ Update the Growth Management Act (GMA) to better consider climate change impacts, adaptation, and resilience;
- ▶ Expand local capacity to educate, assist, and incentivize public and private landowners to work proactively to address future effects of climate change on water quantity and quality;
- ▶ Create more equitable and resilient communities, economies, and businesses that reduce greenhouse gas emissions, sequester carbon, and adapt to changing conditions;

- ▶ Develop and share rural, suburban, and urban forestry management and shoreline practices that use revised model laws and incentives;
- ▶ Expand broadband access to develop a smart energy grid and increase opportunities for remote work; create programs to build green buildings and equitably house people in affordable green buildings;
- ▶ Encourage protection of existing tree canopy to ensure regionally sequestered carbon is preserved; pursue equitable economic policy levers to increase access to renewable energy (for example, community solar projects);
- ▶ Ensure a just transition for workers entering green jobs;
- ▶ Increase community resilience and access to nature in all places (urban, suburban, rural, and wild places);
- ▶ Encourage community land use;
- ▶ Prioritize equitable financial investments in community-driven and community-based climate solutions and opportunities.

**Increase legislative support to accelerate funding and implementation of projects, programs, and initiatives that reduce emissions and decrease the vulnerability of Puget Sound to changing climate and ocean conditions. (ID #147)**

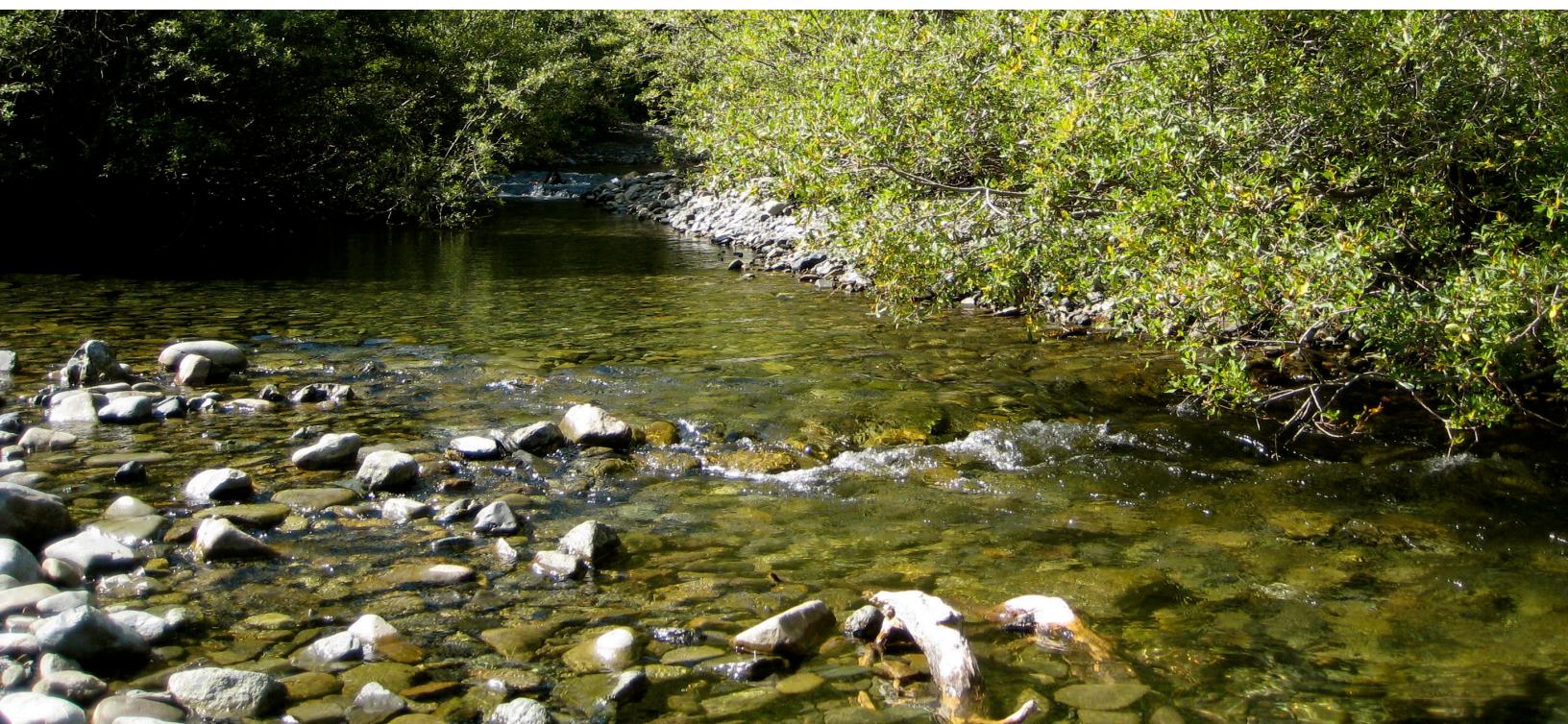
**Key opportunities for 2022-2026 include:**

- ▶ Establish mechanisms for funding and financing climate resiliency responses;
- ▶ Fund local collaborative efforts to gain a basic technical understanding of resilience and identify information needed to fill data gaps;
- ▶ Create policies that address the disproportionate impacts of climate change on health and hazards faced by vulnerable populations and underserved communities.

**Develop and enhance guidance on best practices to reduce emissions and risks and adapt to the most impactful climate stressors. (ID #148)**

**Key opportunities for 2022-2026 include:**

- ▶ Update local, regional, state, and tribal nations’ guidance and planning documents to require the integration of adequate and timely responses to changing climate and ocean conditions.



**Increase availability of data, tools, and training, and increase the technical capacity of partners in the recovery community, to reduce the magnitude of and vulnerability to climate change, and advance adaptation of the Puget Sound socio-ecological system. (ID #149)**

**Key opportunities for 2022-2026 include:**

- ▶ Establish and formalize a state-wide, systems-level leadership structure (for example, Interagency Climate Adaptation Network (ICAN));
- ▶ Expand research on the effects of sea level rise and ocean acidification.

**Ensure that vulnerable populations and underserved communities are welcomed and engaged as full partners and support the priorities identified by communities when working to decrease the magnitude of climate change, advance climate change adaptation, and increase resilience to climate change. (ID #150)**

**Key opportunities for 2022-2026 include:**

- ▶ Build capacity (for example, leadership, community awareness, and education) for resilience within vulnerable populations and underserved communities to support climate actions and advocacy;
- ▶ Advance community leadership by investing in long-term partnerships, capacity building, and community-driven policy and decision-making processes;

- ▶ Create opportunities and elevate community voices, including youth voices, by engaging community and youth leaders around decision-making, climate action, and advocacy.

**Regreen urban spaces. (ID #151)**

**Key opportunities for 2022-2026 include:**

- ▶ Provide assistance in municipalities to support urban forest management and green infrastructure that is climate-informed and includes fire-adapted community strategies, updates to the Evergreen Communities Act, and expands urban and community forestry.

**Ensure that tribal nations' treaty and sovereign rights are honored when working to decrease the magnitude of climate change, advance climate change adaptation, and increase resilience to climate change. (ID #171)**

**Key opportunities for 2022-2026 include:**

- ▶ Prioritize protection and resilience of tribal nations' resources including ecosystems producing food and material resources and cultural sites;
- ▶ Ensure that tribal nations' treaty and sovereign rights and their role as co-managers of natural resources within Washington State are explicitly recognized;
- ▶ Ensure that "free, prior and informed consent" from tribal nations when developing climate change legislation and policy.

## COLLABORATING PARTNERS

- ▶ Tribal governments, representatives, and consortia
- ▶ First Nations
- ▶ Transboundary partners
- ▶ Federal agencies
- ▶ State legislature
- ▶ State agencies
- ▶ Local governments (for example, city, county, ports, public utility, and conservation districts)
- ▶ Local Integrating Organizations
- ▶ Salmon recovery and watershed groups
- ▶ Businesses and private sector
- ▶ Nongovernmental organizations
- ▶ Community members and residents
- ▶ Academic and research institutions (for example, Washington State University Extension, Washington Sea Grant)
- ▶ Vulnerable populations and underserved communities
- ▶ Community-based organizations

## ONGOING PROGRAMS

Ongoing programs provide regulatory oversight, technical support, implementation resources, funding, or guidance and serve as the critical foundation for Puget Sound recovery. The following is a list of example state and federal ongoing programs that help to implement this strategy. Many more local, tribal nations, and nongovernmental programs exist that support this strategy. See [Puget Sound Info](#) for a broader list of relevant programs. Programs that have set four-year targets to accelerate their contributions to Puget Sound recovery are indicated in bold (\*).

- ▶ [Shorelands – Coastal Hazards resilience network](#) (ECY)
- ▶ [Fish Passage](#) (WDFW)
- ▶ [Nearshore monitoring and aquatic assessment](#) (DNR)
- ▶ [Shorelands –w Floodplains by Design](#) (ECY)

## PROGRAM TARGET SPOTLIGHT

The Ecology Floodplains by Design program is a public-private partnership working to reduce flood risk and restore habitat along Washington's major rivers. The program's multi-benefit objective is to transform how floodplains are managed on a landscape level to support thriving communities and a healthy environment. Between 2022-2025, Ecology aspires to accelerate the multi-benefit outcomes of Floodplains by Design by supporting 1,340 homes or structures with reduced flood or climate risk.





## STRATEGY 21

### Place Attachment

**Ensure that the wellbeing derived from place attachments among all residents of Puget Sound is recognized, understood, and respected.**

#### STRATEGY DESCRIPTION

Ecosystem decline and human-driven pressures can negatively impact place attachment, which can be defined as the extent to which people identify with and feel positively attached to a specific place. For example, research has shown that climate change effects can negatively impact residents' place attachment, and consequently, their mental health. Research has also shown that place attachment can be fostered and enhanced, including through ecosystem recovery, place-based activities (for example, shellfish harvesting), and the improvement of functional ecosystems.

This strategy aims to address potential loss and negative impacts associated with a lack of recognition, understanding, and respect for diverse communities' place attachments. Lacking these can cause harm, conflict, and opposition to place-based activities (such as restoration efforts, planning efforts or even place-based policies). This is because when we do not act on an understanding of place attachment, there can be inequitable impacts that include ecosystem decline, sea and landscape change, climate change, regional growth, and development.

Opportunities to address place attachment

include better identifying and prioritizing residents' place attachments, including residents currently not fully represented in the Human Wellbeing Vital Sign Survey findings and other studies. Opportunities also include ensuring place attachment is integrated into recovery, including those efforts linked to education, stewardship, recreation, and community outreach and engagement. By intentionally integrating place attachment, whether, through place-based content, activities, or assessment tools, the greater Puget Sound community can help ensure place attachment is emphasized and enhanced.





### WHAT DOES SUCCESS LOOK LIKE?

We achieve our recovery goal of vibrant quality of life by enhancing opportunities for stress reduction and motivation from natural environments for diverse human communities; acknowledging, respecting, and recognizing that attachments among all residents to Puget Sound's environments (including natural, biocultural, and anthropogenic places) are opportunities to achieve the goals of the Action Agenda. The indicator of success is improving the rating of the Sense of Place Index, the Psychological Wellbeing Index, and the overall life satisfaction of Puget Sound residents across demographics and diverse communities.

### ACTIONS

#### **Ensure place attachments among all residents of Puget Sound are recognized, understood, and respected (ID #157).**

##### ***Key opportunities for 2022-2026 include:***

- ▶ Ensure diverse geographic sites are protected or restored for place attachment purposes, when or if culturally appropriate;
- ▶ Increase knowledge in the Puget Sound recovery community around residents' senses of place and the role that place attachment may have or could play in recovery, including the connection to environmental stewardship (for example, use data and analysis from the Puget Sound Human Wellbeing Survey);
- ▶ Increase access to and knowledge of publicly owned Puget Sound shorelines and the marine ecosystem;
- ▶ Engage social scientists, in partnership with tribal nations, local governments, and local nongovernmental organizations, to work with Puget Sound communities to better understand social relationships, connectedness, and senses of belonging in Puget Sound;

- ▶ Enable tribal nations and other place-based communities to develop strategies that best reflect their long-term place attachment;
- ▶ Continue human wellbeing Vital Sign survey implementation and integration of results into planning, management, and communications;
- ▶ Implement community-tailored place attachment surveys and other studies in order to more fully capture a more accurate understanding of diverse residents' place attachments;
- ▶ Integrate place attachment as a key goal or outcome for planning and restoration activities;
- ▶ Integrate place attachment as a key goal or outcome in education, outreach, communications, and engagement efforts;
- ▶ Integrate place attachment as a key goal or outcome for both protection and restoration activities;
- ▶ Integrate place attachment as an assessment measure for protection and restoration activities, stewardship, recreation, education, outreach, and engagement efforts;
- ▶ Include place attachment as a potential factor in ecosystem recovery conflict;
- ▶ Support and increase place attachment research opportunities in the region, including those focused on vulnerable populations and underserved communities;
- ▶ Encourage and support the integration and application of place attachment tools, frameworks, methods (for example, community science), or resources in regional recovery efforts.

## Increase access to and visibility of mental health connections to a healthy natural environment (ID #158).

### Key opportunities for 2022-2026 include:

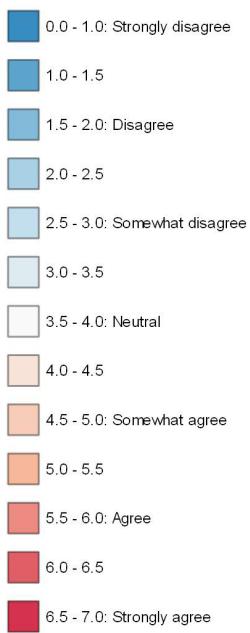
- ▶ Manage and preserve natural areas for stress reduction, motivation, and long-term place attachments;
- ▶ Collaborate with public health and land and shoreline use organizations to determine best practices (for example, Healthy Parks, Healthy People);
- ▶ Increase park and open space access, especially for marine shorelines, for all people and communities.

### COLLABORATING PARTNERS

- ▶ Tribal governments, representatives, and consortia
- ▶ Federal agencies (for example, National Institute of Health)
- ▶ State agencies (for example, Department of Fish and Wildlife, Department of Ecology, Department of Health, Department of Natural Resources, Governor's Salmon Recovery Office, Recreation Conservation Office, and Washington State Patrol)
- ▶ Professional associations or organizations associated with natural resource industries or place-based work

- ▶ Local governments (for example, local stewardship, recreation, and recovery practitioners or planners)
- ▶ Conservation Districts
- ▶ Local Integrating Organizations
- ▶ Marine Resource Committees
- ▶ Salmon recovery and watershed groups
- ▶ Nongovernmental Organizations
- ▶ Academic and research institutions (for example, museums, zoos, interactive science centers, and aquaria)
- ▶ Businesses and private sector (for example, private industries focused on place or place-based products such as shellfish aquaculture, tourism, and recreation; sustainable business organizations such as Maritime Blue)
- ▶ Community members and residents (for example, state and local community engagement initiatives focused on education, recreation, development, and stewardship)
- ▶ Vulnerable populations and underserved communities
- ▶ Community-based organizations

### Sense of Place (Avg)



### UNDERSTANDING “SENSE OF PLACE” ACROSS PUGET SOUND COMMUNITIES

Place attachment and sense of place more broadly are integral to residents' health and wellbeing throughout the Puget Sound region. According to the 2020 Human Wellbeing Survey results, 76 percent of Puget Sound residents "agree" or "strongly agree" that Puget Sound plays a role in their place attachment. Such findings were similar to those recorded in the 2018 Human Wellbeing Survey results. This strong attachment and overall sense of place is reflected in Figure 10.

Figure 10. The mean Sense of Place Index by county in the Puget Sound region in 2020. Data source: Oregon State University Human Dimensions Lab. For more information, visit the Sense of Place Index page on Puget Sound Info at [Vital Signs / Sense of Place Index \(wa.gov\)](#).



## STRATEGY 22

### Outdoor Recreation and Stewardship

**Expand and promote equitable access to information and opportunities for engagement for outdoor recreation and stewardship actions and recognition of tribal nations' treaty and sovereign rights.**

#### STRATEGY DESCRIPTION

Participation in nature-based outdoor activities is beneficial to residents' human wellbeing in multiple ways; physical movement, breathing fresher air, absorbing vitamin D, place attachment, and clearing one's thoughts all contribute to improved human wellbeing. Similarly, engaging in activities that benefit the environment can create a sense of meaning and identity for some individuals, thereby benefiting both the human and biophysical components of our ecosystem. We must also recognize the increase of outdoor recreation has an adverse impact on wildlife populations and inhibits the tribal nations from exercising their usual and accustomed hunting and gathering practices.

The goal of this strategy is to develop and promote culturally relevant projects and programs that encourage and incentivize behavior changes to protect, restore, and responsibly enjoy Puget Sound. Sound stewardship refers to the fact that although the 5.3 million residents of Puget Sound pose the greatest threats to the natural environment, engaging residents and institutions in protection, restoration, and individual behavior change offers the greatest opportunity

for recovering Puget Sound. This strategy seeks to identify and remove barriers resulting in the exclusion of people from participating in recreation and stewardship activities. Additionally, this strategy seeks to engage communities to increase knowledge of responsible use, tribal nations' treaty and sovereign rights, and define opportunities for responsible recreation within natural environments.



#### WHAT DOES SUCCESS LOOK LIKE?

We achieve our recovery goal of vibrant quality of life by recognizing and increasing opportunities for multiple uses of open space, waterways, and other natural environments; identifying and removing barriers that have resulted in the exclusion of people from participating in outdoor recreation and stewardship activities; supporting meaningful and community-based stewardship behaviors. Indicators of success include:

- ▶ Increasing engagement in stewardship activities
- ▶ Improving the rating of the Sound Behavior Index
- ▶ Increasing the frequency of nature-based recreation by all Puget Sound residents

## ACTIONS

**Engage communities to increase knowledge of responsible use, tribal nations' treaty and sovereign rights, and define responsible recreation opportunities within natural environments. (ID #72)**

**Key opportunities for 2022-2026 include:**

- ▶ Increase the number of protection, restoration, and stormwater management and retrofit projects that include multi-use elements;
- ▶ Promote communal gardening spaces and food forests on publicly owned lands;
- ▶ Encourage private developments to integrate access to open spaces and waterways.

**Develop, fund, and promote culturally relevant projects and programs to encourage and incentivize behavior changes that will protect, restore, and enable responsible enjoyment and stewardship of Puget Sound. (ID #159)**

**Key opportunities for 2022-2026 include:**

- ▶ Increase understanding of the connections between outdoor recreation and stewardship activities;
- ▶ Increase monitoring and evaluation of behavior change projects and programs, and increase understanding of effectiveness;
- ▶ Develop and distribute culturally-relevant information, public signage, and other forms of education throughout public spaces about specific actions to protect and restore Puget Sound;
- ▶ Increase funding and support for culturally relevant behavior change projects and programs.

**Identify and fund removal of barriers resulting in the exclusion of people from participating in recreation and stewardship activities. (ID #160)**

**Key opportunities for 2022-2026 include:**

- ▶ Increase funding and support for community-based and local advocacy groups, in both urban and rural settings, that work directly with vulnerable populations and underserved communities;
- ▶ Assess equitable distribution of recreational opportunities;
- ▶ Engage with vulnerable populations and underserved communities, including those with disabilities, those affected by homelessness, and rural youth, to assess and remove barriers to accessing natural environments in Puget Sound.

## COLLABORATING PARTNERS

- ▶ Tribal governments, representatives, and consortia
- ▶ State agencies
- ▶ Local governments (for example, city and county)
- ▶ Local Integrating Organizations
- ▶ Salmon recovery and watershed groups
- ▶ Businesses and private sector
- ▶ Nongovernmental organizations and community organizations (including environmental education organizations)
- ▶ PreK-16 public and private school
- ▶ Community members and residents
- ▶ Tourism bureaus
- ▶ Lodging Tax Advisory Committees
- ▶ Regional Sportsmans Organizations
- ▶ Academic and research institutions (in Washington State, British Columbia, and elsewhere)
- ▶ Puget Sound Ecosystem Monitoring Program (including steering committee, subcommittees, and workgroups)
- ▶ Stormwater Outreach for Regional Municipalities member organizations
- ▶ Puget Sound Starts Here steering committee and organizations implementing programs connected to Puget Sound Starts Here
- ▶ Vulnerable populations and underserved communities
- ▶ Community-based organizations

## ONGOING PROGRAMS

Ongoing programs provide regulatory oversight, technical support, implementation resources, funding, or guidance and serve as the critical foundation for Puget Sound recovery. The following is a list of example state and federal ongoing programs that help to implement this strategy. Many more local, tribal nations, and nongovernmental programs exist that support this strategy. See [Puget Sound Info](#) for a broader list of relevant programs.

- ▶ [Creosote And Marine Debris Removal Program](#) (DNR)
- ▶ [Washington Wildlife and Recreation Program](#) (RCO)
- ▶ [Puget Sound Corps](#) (DNR)
- ▶ [Shellfish Growing Area Classification and Water Quality Restoration Program](#) (DOH)

## STRATEGY 23

### Good Governance

Promote transparent and inclusive governance that engages all peoples equitably, with a focus on expanding trust and inclusion of vulnerable populations and underserved communities.

#### STRATEGY DESCRIPTION

A good governance strategy for Puget Sound recovery seeks to ensure that ecosystem recovery decision-making and processes are inclusive of a broader set of committed stakeholders and diverse forms of knowledge. Good governance should include considerations for increasing the capacity for vulnerable populations and underserved communities to engage in environmental and natural resource management decision-making. Good governance best practices should directly engage community groups, educational institutions, and communication specialists to develop and share relevant and accessible information on civic engagement and decision-making opportunities.

The overall intent of this strategy is to increase trust and transparency in management decisions by including and communicating directly and effectively with new and diverse audiences. Good governance best practices should be incorporated into the thinking and planning for all natural resource management strategies.

Natural resource programs and policies should seek to enhance transparency and inclusion in decision-making processes to increase positive perceptions of good governance and increase trust in and compliance with environmental decision-making.



Good  
Governance

#### WHAT DOES SUCCESS LOOK LIKE?

We achieve our recovery goal of vibrant quality of life by making the decision-making process more inclusive, increasing participation of a broader set of committed stakeholders, and expanding diverse forms of knowledge early in ecosystem recovery processes; increasing the capacity for vulnerable populations and underserved communities to engage in environmental decision-making; improving transparency in environmental and natural resource management decision-making and the use of science; and increasing trust with new and diverse audiences through inclusion and communicating directly and effectively. The indicator of success is improving our overall decision-making processes, strengthening communication strategies, and strengthening the engagement of our partners and citizenry as measured by the Good Governance Index.

## ACTIONS

**Engage with community groups, educational institutions, and communication specialists to develop and share relevant, transcreated, and accessible information on civic engagement and decision-making opportunities. (ID #78)**

**Key opportunities for 2022-2026 include:**

- ▶ Translate all public-facing documents and materials into languages other than English spoken by resident populations;
- ▶ Build new relationships and offer communication that speaks to a myriad of human values related to environmental goals (for example, human health outcomes).

**Ecosystem recovery processes and decision making are inclusive of a broader set of committed stakeholders, including vulnerable populations and underserved communities, and diverse forms of knowledge. (ID #161)**

**Key opportunities for 2022-2026 include:**

- ▶ Amplify and integrate feedback and information provided by communities into decision making;
- ▶ Implement best practices for modifying decision-making processes to be just and inclusive;
- ▶ Increase practitioner and decision-maker understanding of vulnerable populations and underserved communities;
- ▶ Foster the use of new deliberative democracy tools (for example, peoples' assemblies).

**Increase capacity for vulnerable populations and underserved communities to engage in environmental decision-making. (ID #162)**

**Key opportunities for 2022-2026 include:**

- ▶ Explore needs, barriers, and best practices for building capacity for vulnerable populations and underserved communities to engage in environmental decision-making by engaging directly with stakeholders and local advocacy groups (for example, see Washington Environmental Justice Task Force recommendation, State of California guidelines for government-created documents);
- ▶ Increase funding and technical assistance to coalitions and community representatives who collaborate with or speak on behalf of vulnerable populations and underserved communities and youth, so that they may meaningfully participate in environmental decision-making;

- ▶ Implement the HEAL Act;
- ▶ Ensure all virtual board meetings comply with Americans with Disabilities Act.

**Increase trust by including and communicating directly and effectively with new and diverse audiences. (ID #163)**

**Key opportunities for 2022-2026 include:**

- ▶ Explore the best pathways for listening to the concerns, interests, context, and needs, as well as the current strengths, activities, and ongoing programs of communities that have not historically been well-represented in Puget Sound recovery efforts;
- ▶ Increase participation of vulnerable populations and underserved communities in Puget Sound recovery governing and advisory boards;
- ▶ Amplify tribal nations' efforts to increase opportunities for Puget Sound residents, communities, and visitors to learn about tribal nations' treaty and sovereign rights.

**Honor tribal nations' treaty and sovereign rights, obligations and inherent sovereign interests when considering implementation of Puget Sound recovery projects and programs, and actively engage with tribal nations to align and incorporate shared goals. (ID #197)**

**Key opportunities for 2022-2026 include:**

- ▶ Increase the participation of tribal nation communities in Puget Sound recovery governing and advisory boards.

**Communications materials should be locally-relevant and clear and concise, avoiding jargon or overly technical language. Incorporate resources in various languages other than English for communications materials. (ID #198)**

**Key opportunities for 2022-2026 include:**

- ▶ Amplify efforts to increase opportunities to communicate with Puget Sound residents, communities, and visitors in their respective languages (other than English) about tribal nations' treaty and sovereign rights;
- ▶ Develop guidance that provides specific examples for how to hold accessible meetings (time, locations, incentives, compensation, etc.) including guidance for asking communities how they want to be involved.



## COLLABORATING PARTNERS

- ▶ Tribal governments, representatives, and consortia
- ▶ Federal agencies (for example, Environmental Protection Agency)
- ▶ State agencies (for example, Department of Ecology, Department of Fish and Wildlife, Department of Health, Puget Sound Partnership)
- ▶ local governmental agencies (for example, city and county)
- ▶ Nongovernmental and community organizations (for example, Front and Centered, Washington Climate Assembly)
- ▶ Local Integrating Organizations
- ▶ Salmon recovery and watershed groups
- ▶ Academic and research institutions (for example, The William D. Ruckelshaus Center)
- ▶ Community members and residents
- ▶ Vulnerable populations and underserved communities
- ▶ Community-based organizations

## ONGOING PROGRAMS

Ongoing programs provide regulatory oversight, technical support, implementation resources, funding, or guidance and serve as the critical foundation for Puget Sound recovery. The following is a list of example state and federal ongoing programs that help to implement this strategy. Many more local, tribal nations, and nongovernmental programs exist that support this strategy. See [Puget Sound Info](#) for a broader list of relevant programs.

- ▶ [Urban Waters Partnership – Green-Duwamish Watershed \(EPA\)](#)
- ▶ [Agency Community Engagement Plans required by the HEAL Act Implementation \(PSP\)](#)



## STRATEGY 24

### Cultural Practices and Local Foods

**Engage with communities to identify, protect, and enhance opportunities for cultural practices and access to safe and abundant local foods.**

#### STRATEGY DESCRIPTION

The people of Puget Sound come from all walks of life and diverse backgrounds. Some residents have long-held connections to the land, water, and creatures. New residents often move here because of specific attributes that make our region unique, including activities that may be connected to cultural practices and local foods. Cultural practices and knowledge systems are shaped by ecosystems and are critical to human wellbeing because they provide a sense of belonging, create the foundation for moral development, and define rules for social interaction.

Many of the cultural traditions held by Puget Sound residents are dependent on the health of Puget Sound ecosystems. These cultural practices and knowledge systems are centered around local foods, in addition to many other traditional, subsistence, and recreational uses and practices. The quality, safety, availability, and abundance of Puget Sound food resources provide a suite of human wellbeing benefits. High-quality local foods often contain fewer or no chemical fertilizers and pesticides and tend to be higher in nutrition, thus contributing to physical health. The act of collecting, preparing,

and sharing such foods maintains cultural knowledge and practices and often builds social relationships. Some communities rely on local foods more than others for their wellbeing and are likely to be impacted disproportionately by declines or risks associated with local foods. There are opportunities to educate agencies and support incentive programs to meaningfully engage with communities and integrate cultural significance into resource assessments, food systems, critical area ordinances, hazard mitigation plans, recreational plans, and other local planning activities.



Local Foods

Cultural Wellbeing

Sense of Place

#### WHAT DOES SUCCESS LOOK LIKE?

We achieve our recovery goals for a healthy human population and vibrant quality of life by increasing opportunities for cultural practices, such as native and spiritual practices, environmentally related social activities, and increasing access to safe and more abundant local food harvests, such as fish, shellfish, and game, for human populations. The indicator of success is increasing Puget Sound residents' satisfaction with regard to their participation in cultural practices, particularly among communities with disproportionately low access to resources.

## ACTIONS

**Increase number, accessibility, and protections for multi-use and multi-cultural natural spaces (for example, fish and shellfish harvesting, camping, boating, and gardening, etc.), including green spaces and waterways. (ID #86)**

**Key opportunities for 2022-2026 include:**

- ▶ Offer specialized two-way training to increase awareness of cultural and spiritual practices among land, shoreline, and transportation managers and planners;
- ▶ Use information relevant to culturally significant areas when setting priorities for acquisition, protection, and restoration, where recommended by tribal nations;
- ▶ Provide multi-cultural information on navigational maps;
- ▶ Train the boating community on oil spill response and invasive species recognition.

**Restore and enhance native fish, shellfish, game, and plant populations consistent with existing species recovery efforts. (ID #89)**

**Key opportunities for 2022-2026 include:**

- ▶ Enhance the number of investigations and more widely share findings to improve understanding of marine biotoxins and harmful algal blooms;
- ▶ Increase education and communication on the importance of shorelines;
- ▶ Consider complexities and conflicts in managing multiple recovery goals and species;
- ▶ Use local and technical information to inform protection and recovery efforts.

**Improve appropriate access opportunities for harvesting local foods and other culturally significant materials on public lands and shorelines. (ID #91)**

**Key opportunities for 2022-2026 include:**

- ▶ Support the delivery of local food harvests to accessible locations;
- ▶ Collect and disseminate existing local guides for best practices to access and harvest safe local foods;
- ▶ Listen to and provide resources to diverse communities with tailored approaches (for example, including local representatives, educational resources, technical assistance, and funding, etc.);

- ▶ Improve land affordability, and support smaller farms for local food production;
- ▶ Enable equitable harvest of marine resources on private tidelands by tribal members, through co-manager agreements;
- ▶ Encourage access for recreational purposes by providing incentives to private shoreline landowners.

## COLLABORATING PARTNERS

- ▶ Tribal governments, representatives, and consortia
- ▶ Federal agencies (for example, Bureau of Indian Affairs, U.S. Forest Service, U.S. National Parks, and National Oceanic and Atmospheric Administration)
- ▶ State agencies (for example, Department of Fish and Wildlife, Department of Ecology, Department of Natural Resources, Governor's Salmon Recovery Office, Recreation and Conservation Office, and Department of Health)
- ▶ Local governments (for example, city and county local land use planners and permitting offices)
- ▶ Conservation Districts
- ▶ Marine Resource Committees
- ▶ Local Integrating Organizations
- ▶ Nongovernmental organizations
- ▶ Salmon recovery and watershed groups
- ▶ Businesses and private sector (for example, shellfish and aquaculture producers)
- ▶ Academic and research institutions (for example, University of Washington, Simon Fraser, Northwest Indian College, Western Washington, University of Victoria, and Washington Sea Grant)
- ▶ Community members and residents (for example, hunting, fishing, shellfishing, foraging, mushroom hunting, and gardening clubs)
- ▶ Vulnerable populations and underserved communities
- ▶ Community-based organizations



## STRATEGY 25

### Economic Benefits

**Implement policies and programs that maximize benefits and minimize adverse impacts to both ecosystems and natural resource industries and livelihoods.**

#### STRATEGY DESCRIPTION

Economic vitality is an element of human quality of life. Natural resource-based industries have a long-standing history in the region and their existence is important to residents of the area as they provide jobs, income, a sense of identity, and cultural heritage. Since many communities in Puget Sound have historically been dependent on aquaculture, agriculture, fishing, forestry, recreation, and tourism, a healthy, sustainable, and resource-based industry contributes to job stability and satisfaction, sustainability, and attachment to place. This strategy identifies opportunities for supporting natural resource sector jobs and production opportunities in both rural and urban areas, advancing research and best practices to balance the needs of ecosystems and natural resource industries, and utilizing information on economic benefits to inform ecosystem restoration decisions.



Outdoor Activity

Economic Vitality

Good Governance

#### WHAT DOES SUCCESS LOOK LIKE?

We achieve our recovery goal of a vibrant quality of life by supporting natural resource sector jobs and production opportunities; encouraging innovative techniques that promote a healthy natural environment and achieve growth in natural resource industries; and encouraging, where possible, the consideration of economic benefits and impacts, monitor tradeoffs, and choosing multi-benefit solutions. Indicators of success include:

- ▶ Maintaining or increasing employment in natural resource industries, including restoration
- ▶ Maintaining or increasing natural resource industry output
- ▶ Maintaining or increasing percent of employment in natural resource industries, including restoration

## ACTIONS

**Conduct and coordinate research to improve the understanding of ecosystem-industry interactions, opportunities, and benefits. (ID #96)**

**Key opportunities for 2022-2026 include:**

- ▶ Promote best practices that maximize benefits and minimize adverse impacts to both ecosystems and natural resource industries;
- ▶ Ensure that research is comprehensive, current, and transparent.

**Increase funding for and promote multi-benefit solutions in restoration and protection project development to include considerations for job creation. (ID #98)**

**Key opportunities for 2022-2026 include:**

- ▶ Increase funding for restoration and protection projects that equitably advance economic benefits and job creation in rural and urban areas;
- ▶ Increase understanding of the benefits and opportunities of investing in local economies, especially rural communities;
- ▶ Promote the economic and job creation benefits of restoration and protection projects;
- ▶ Increase assessments and reporting of tradeoffs in protection and restoration actions and the extent to which multi-benefit solutions are implemented and achieve their expected results;
- ▶ Increase consideration of multi-benefits and tradeoffs to develop actionable information and tools for program managers and project sponsors to increase the number and impact of multi-benefit solutions in protection and restoration projects.

**Support natural resource sector jobs and production opportunities. (ID #164)**

**Key opportunities for 2022-2026 include:**

- ▶ Cultivate and support businesses seeking to produce local foods and natural resources focused services, activities, and products;
- ▶ Develop and share locally-relevant information on the economic and employment benefits and impacts of natural resource sectors on natural resource decision-makers, consumers, and individuals seeking employment in said industries;
- ▶ Provide trainings on opportunities to increase support for the natural resource sector and local food production.

## COLLABORATING PARTNERS

- ▶ Tribal governments, representatives, and consortia
- ▶ Federal agencies
- ▶ State agencies
- ▶ Local governments (for example, city and county)
- ▶ Local Integrating Organizations
- ▶ Salmon recovery and watershed groups
- ▶ Businesses and private sector
- ▶ Nongovernmental organizations
- ▶ Community members and residents
- ▶ Job training organizations and programs (for example, Department of Ecology's WA Conservation Corps)
- ▶ Regional or county-based chambers of commerce and Economic Alliances
- ▶ Vulnerable populations and underserved communities (in urban and rural areas)
- ▶ Community-based organizations

## ONGOING PROGRAMS

Ongoing programs provide regulatory oversight, technical support, implementation resources, funding, or guidance and serve as the critical foundation for Puget Sound recovery. The following is a list of example state and federal ongoing programs that help to implement this strategy. Many more local, tribal nations, and nongovernmental programs exist that support this strategy. See [Puget Sound Info](#) for a broader list of relevant programs.

- ▶ [Shellfish Growing Area Classification and Water Quality Restoration Program](#) (DOH)



## STRATEGY 26

### Human Health

**Protect human health, considering disproportionate impacts on vulnerable populations, through programs that educate communities and limit harmful exposures from air and water contaminants.**

#### STRATEGY DESCRIPTION

Spending time in nature can have significant health benefits for people. However, contamination of Puget Sound air and water makes people sick and affects their ability to live long and high-quality lives. In Puget Sound, sources of air quality degradation include vehicle emissions, industrial emissions, and burning wood and debris. Contamination of drinking water affects certain Puget Sound residents, particularly rural communities where public water systems and wells can be threatened by ground and surface water infiltration and the use of pesticides, herbicides, and fertilizers. Puget Sound residents may also face health threats from exposure to contaminated beaches and consumption of fish and shellfish that contain toxics.

Exposure to pollution is not distributed evenly across the geography of Puget Sound—some communities face disproportionate human health threats from their interaction with Puget Sound air, water, and natural resources. Vulnerability to contaminant-related health threats varies according to a number of factors, such as race, age, and socio-economic status. This strategy focuses on reducing people's exposures to air and water contaminants, with attention to inequities experienced by vulnerable populations and underserved communities and the risks to especially vulnerable populations. This strategy is consistent with and goes above and beyond the requirements of the Healthy Environment for All Act.



## WHAT DOES SUCCESS LOOK LIKE?

We achieve our recovery goals for a healthy human population and healthy water quality by ensuring levels and patterns of air pollution, contaminants in drinking water, contamination in fish and shellfish, and pollutants and biotoxins in surface waters do not threaten Puget Sound communities or vulnerable populations and underserved communities with adverse health outcomes. Indicators of success include:

- ▶ Reducing exposure to impaired air quality
- ▶ Reducing exposure to elevated nitrates in groundwater
- ▶ Reducing disproportionate impacts on vulnerable populations and underserved communities
- ▶ Reducing toxics in aquatic life

## ACTIONS

**Direct beneficial environmental activities, investments, and community research towards better understanding and improving areas with environmental health disparities and where the environmental health improvements will be greatest. (ID #112)**

***Key opportunities for 2022-2026 include:***

- ▶ Create economies of scale;
- ▶ Plan and begin to implement approaches for engaging vulnerable populations and underserved communities in two-way conversations;
- ▶ Conduct environmental justice assessments for significant actions;
- ▶ Identify and implement processes for considering environmental justice in budgeting, expenditures, and granting or withholding environmental benefits;
- ▶ Develop consultation frameworks with tribal nations and consortia to communicate and collaborate on environmental justice actions;
- ▶ Consider appropriate applications of the [Washington State Environmental Health Disparities Map](#) for Puget Sound;
- ▶ Pursue additional community-based research to ground truth and clarify environmental health disparities in the context of Puget Sound recovery.

**Adequately resource community-led efforts to promote education and awareness about environmental health risks associated with air pollution, drinking water contamination, surface water pollution, and toxics in fish and shellfish. (ID #114)**

***Key opportunities for 2022-2026 include:***

- ▶ Foster partnerships among tribal nations, state agencies, local health jurisdictions, community-based organizations, and the research community;
- ▶ Leverage and fund watershed councils to promote actions to reduce pollution and protect watersheds through accountability and reporting;
- ▶ Support community education and organizing related to toxics in products (PFAS) and other potential sources of exposure to toxics.

**Limit people's exposures to harmful air pollution. (ID #199)**

***Key opportunities for 2022-2026 include:***

- ▶ Increase air quality studies of emissions of jet planes impacting communities;
- ▶ Develop and implement approaches to sharing real-time air quality information and short-term forecasts to provide warnings about potentially harmful conditions (for example, expand air quality messaging in smartphone weather apps; develop complementary approaches to reach vulnerable populations and underserved communities and vulnerable populations);
- ▶ Expand programs to reduce particulate air pollution (for example, from wood stoves, diesel engines, etc.);
- ▶ Focus these programs on reducing exposures to vulnerable populations and underserved communities; expand programs to reduce the formation of ground-level ozone, including reducing vehicle miles powered by internal combustion;
- ▶ Expand the coverage of emission checks and standards, etc.;
- ▶ Increase investments in nature-based solutions to improve air quality (for example, increased tree canopy, etc.).

## Limit people's exposures to harmful water pollution. (ID #200)

**Key opportunities for 2022-2026 include:**

- ▶ Focus investments to improve drinking water systems to ensure standards are met across Puget Sound communities, with attention to drinking water supplies and systems serving vulnerable populations and underserved communities;
- ▶ Identify and address sources of pollution that impair water quality in areas where people swim and recreate, and other in-water recreation and local foods harvesting areas;
- ▶ Prevent people's exposure to poor water quality at fresh and marine swimming and recreational areas by maintaining and expanding beach monitoring and signage.

### COLLABORATING PARTNERS

- ▶ Federal agencies (for example, U.S. Environmental Protection Agency)
- ▶ Tribal governments, representatives, and consortia
- ▶ State agencies (for example, Department of Ecology)
- ▶ Academia and research institutions (for example, University of Washington School of Public Health)
- ▶ Local health jurisdictions (for example, Department of Health)
- ▶ Local governments (for example, city and county)
- ▶ Local Integrating Organizations
- ▶ Salmon recovery and watershed groups
- ▶ Community members and residents
- ▶ Vulnerable populations and underserved communities
- ▶ Community-based organizations

### ONGOING PROGRAMS

Ongoing programs provide regulatory oversight, technical support, implementation resources, funding, or guidance and serve as the critical foundation for Puget Sound recovery. The following is a list of example state and federal ongoing programs that help to implement this strategy. Many more local, tribal nations, and nongovernmental programs exist that support this strategy. See [Puget Sound Info](#) for a broader list of relevant programs.

- ▶ [Air – Reducing Toxic Woodstove Emissions](#) (ECY)
- ▶ [Environmental Assessment Program – Beach Environmental Assessment, Communication, and Health](#) (ECY)
- ▶ [Shellfish Safety](#) (WDFW)

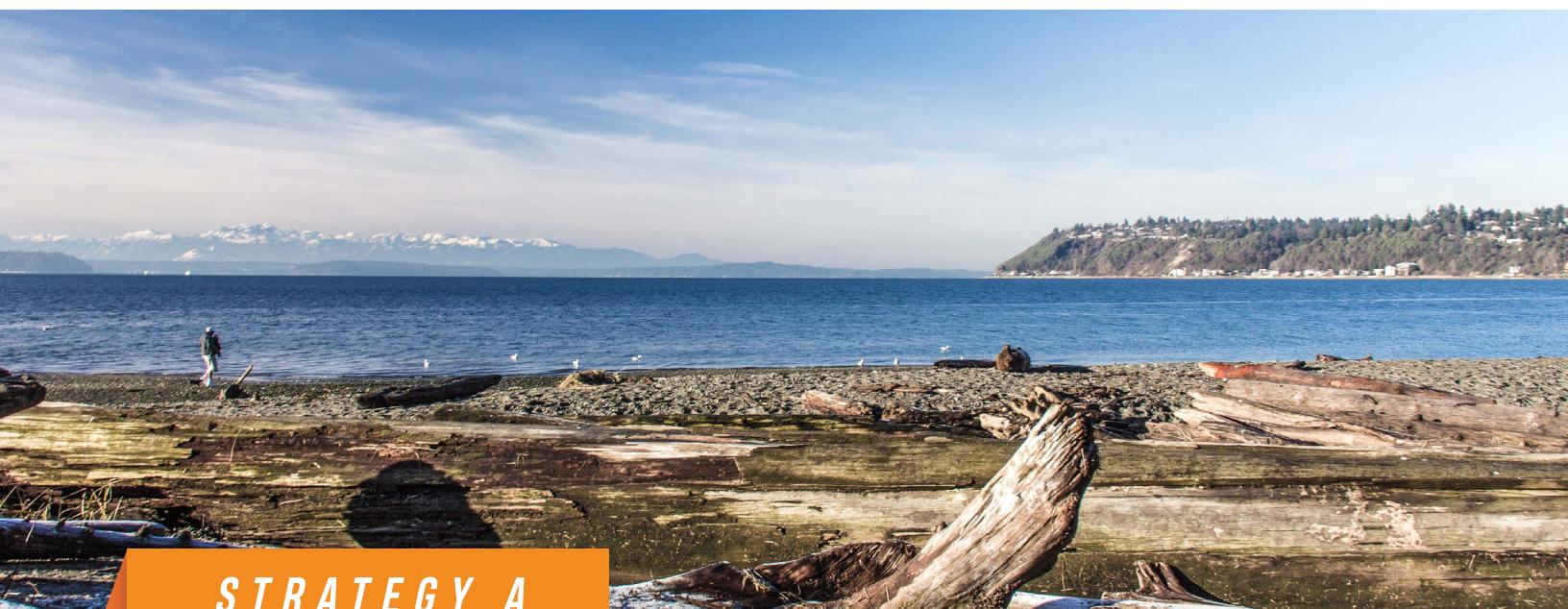


## CHAPTER 2: INSTITUTIONAL STRATEGIES

---

Institutional strategies address the foundational aspects of Puget Sound recovery. They complement the 26 strategies that advance biophysical, climate change, and human wellbeing outcomes already described. They advance most, if not all, our desired outcomes by calling for improvements in mobilizing funding, strategic leadership and collaboration, research and monitoring, education partnerships, and stewardship and motivating action.

These strategies are led by partners across the region including critical coordinating efforts led by the Puget Sound Partnership. All partners need and benefit from institutional strategies and, for them to be successful, institutional strategies require commitment, creativity, and collaboration from recovery partners throughout Puget Sound.



## STRATEGY A

### Funding

**Explore and utilize new sources of funding, enhance, and increase the effectiveness of existing sources of funding, and increase overall funding for Puget Sound recovery.**

#### STRATEGY DESCRIPTION

A lack of adequate funding has been a fundamental barrier to progress in Puget Sound recovery efforts. From the 2013-2015 biennium to the 2021-2023 biennium, the Washington State Legislature has funded Puget Sound restoration and protection programs at an average of only 53 percent of what was requested, a \$763 million gap that has left many high priority projects languishing unfunded. The gap for salmon recovery is even more pronounced: the statewide capital cost of implementing the habitat-related elements identified in regional salmon recovery plans over the past decade was \$4.7 billion. However, only \$1 billion was actually invested—just under 22 percent of the need.

Underfunding leads to delayed projects; inefficient, piecemeal implementation; lost ecological benefits; lost local job and economic development opportunities; and ultimately, a failure to achieve resilience in Puget Sound. Only five of the 28 Puget Sound Vital Sign Indicators are at or near their 2020 targets. Twenty-two of the indicators are either not making any progress towards targets or are getting worse. While we wait, the human and ecological burdens associated with a degraded Puget

Sound increase, and the financial cost of protecting Puget Sound continues to rise. We must mobilize and accelerate funding for large capital programs and fully fund the Action Agenda for Puget Sound if we are to make progress towards recovery.

Fully funding Puget Sound recovery demands that we also must diversify funding sources and maximize the effectiveness of existing funds. Funding for Puget Sound recovery can—and must—come from a number of different sources: private and public; state and federal; traditional and innovative. New market mechanisms can be leveraged to achieve funding goals outlined in this strategy and help create new revenue streams (for example, carbon credits, water quality trading, and transfer of development rights). We must ensure that honoring tribal nations' treaty and sovereign rights, equity, and environmental justice are centered within these funding approaches. Those seeking to advance Puget Sound recovery are committed to exploring and securing a diverse collection of funding sources sufficient to meet the needs of Puget Sound recovery as articulated in the Action Agenda and watershed and species recovery plans.

Actions within this strategy encompass work to document funding needs across Puget Sound, secure sustainable and equitable funding from existing sources, establish new sources of state funds, leverage innovative private financing opportunities, and improve coordination of funding streams. This strategy also includes actions to build the infrastructure needed for partners to respond to rapid funding availability so that projects can be scaled up quickly and successfully. As part of its role as a backbone organization for Puget Sound recovery, the Partnership continues to work to mobilize funding through the development and implementation of the actions described in this section.

## HEALTHY ENVIRONMENT FOR ALL (HEAL) ACT

Funding approaches must also support increased capacity to integrate cross-cutting principles and practices of honoring tribal nations' treaty and sovereign rights, equity, and environmental justice to begin dismantling the disproportionate impacts felt by some communities.

A legacy of systemic racism and inequities in the distribution of wealth and power has led to disproportionate outcomes for Black, Indigenous, people of color communities, tribal nations, and other vulnerable populations (for example, low-income, elderly peoples, limited English proficiency). Within the context of environmental harms, burdens, and benefits broadly, and across the Puget Sound specifically, past and present decisions (or sometimes lack thereof) made by local, state, and federal governments have contributed to the current state of environmental injustice. With new Washington state legislation, the Healthy Environments for All (HEAL) Act ([RCW 70A.02](#)), the Partnership has a fresh opportunity to join in the movement to work toward environmental justice (EJ), which HEAL defines as "the fair treatment and meaningful involvement of people regardless of race, color, national origin or income with respect to the development, implementation, and enforcement of environmental laws, regulations and policies."

Additionally, the HEAL Act reinforces the mandate for state agencies to have a tribal consultation plan, developed in coordination with tribal governments that includes best practices, protocols for communication, and collaboration with federally recognized tribal nations (RCWs [43.376.020](#) and [70A.02.100](#)). As an agency of the government of the state of Washington, the Partnership has been a party to the Centennial Accord of 1989 which commits to implementing a government-to-government relationship with sovereign tribal nations.

This strategy aligns with other government priorities that have become recently established. Governor Inslee signed Executive Order 22-04 that requires each agency to implement and report on their Pro-Equity and Anti-Racist (PEAR) strategic plan. The federal government has also played a key role in establishing norms and commitments to equity and environmental justice, as evidenced by the new Environmental Protection Agency principle to "advance justice and equity." Each of these priorities recognizes honoring tribal nations' treaty and sovereign rights, equity, and environmental justice as cross-cutting principles and practices to be integrated and embedded across programs, policies, and activities of their institution.

The Partnership is committed to leveraging these new state policies and plans to identify ways in which recovery partners can integrate tribal nations' treaty and sovereign rights, equity, and environmental justice into funding decisions and processes moving forward.

## WHAT DOES SUCCESS LOOK LIKE?

Increased, consistent, and dedicated funding to support the implementation of large capital projects, the Action Agenda, and the ongoing programs led by organizations across Puget Sound working to advance protection, restoration, and the resilience of vibrant, enduring natural systems and communities. An indicator of success is increasing the average percentage of Puget Sound recovery funds requested by state agencies funded by the legislature each biennium.

## COLLABORATING PARTNERS

- ▶ Tribal governments, representatives, and consortia
- ▶ Environmental Protection Agency (EPA) and other members of the Puget Sound Federal Task Force (for example, U.S. Geological Survey, National Resources Conservation Service, National Oceanic and Atmospheric Administration, etc.)
- ▶ Governor's Office
- ▶ State legislature
- ▶ State agencies
- ▶ The Nature Conservancy and other nongovernmental organizations
- ▶ Puget Sound Partnership boards
- ▶ Local Integrating Organizations
- ▶ Philanthropic organizations
- ▶ Private capital investors and nongovernmental organizations for community development

## ACTIONS

**Secure sustainable, equitable, and dedicated federal, state, local, and tribal nations funding sources to fully fund Puget Sound and salmon recovery. (ID #173)**

**Key opportunities for 2022-2026 include:**

- ▶ Educate the public and decision-makers on the scale and urgency of the funding need across Puget Sound;
- ▶ Ensure accountability and effectiveness in how investments meant to fund Puget Sound recovery are implemented;
- ▶ Advocate for strategic prioritization and alignment of federal and state infrastructure funding (including the Bipartisan Infrastructure Law and the State Revolving Fund) based on restoration priorities, economies of scale, science advancement, equity and environmental justice, agriculture and resource land protection, and workforce development;
- ▶ Support ongoing funding for the three high-priority state capital budget requests, including the Puget Sound Acquisition and Restoration (PSAR) Program, the Estuary and Salmon Restoration Program (ESRP),



the Puget Sound Nearshore Restoration Project (PSNERP), the Floodplains by Design Program, and the Stormwater Financial Assistance Program;

- ▶ Establish stable funding sources to fully implement local salmon recovery plans;
- ▶ Connect and apply new mobilized and diverse funding to well-vetted and prioritized local projects and programs sources.

#### **Establish and implement a major new source of state funding. (ID #180)**

**Key opportunities for 2022-2026 include:**

- ▶ Assess possible revenue sources for the best match to successfully deliver Puget Sound recovery funding at the necessary scale and pace;
- ▶ Build a coalition to support the passage of the new source of revenue before and during the state legislative session.

#### **Mobilize new and diverse private funding sources to advance Puget Sound and salmon recovery (for example, private foundations, businesses, individuals, and market-based mechanisms). (ID #174)**

**Key opportunities for 2022-2026 include:**

- ▶ Implement pilot projects in the [Water 100 Project](#) that rank highly with SILs;
- ▶ Connect or apply new mobilized and diverse funding to well-vetted and prioritized local projects and programs sources;
- ▶ Explore the feasibility of a Puget Sound regional Transfer of Development Rights program;
- ▶ Steward and expand the Partnership Nearshore Credit marketplace, including through upfront capital investments;

- ▶ Explore and establish Puget Sound recovery as a vehicle for blue carbon investments;
- ▶ Expand the use of revolving loan funds to leverage private capital and finance projects on private property;
- ▶ Develop a private sector engagement plan – including communications and investment-grade performance measures – necessary to recruit private investment capital and target philanthropic funders.

#### **Identify and expand funding for subject-specific topics with unique funding requirements (for example, onsite sewer systems and salmon recovery). (ID #175)**

**Key opportunities for 2022-2026 include:**

- ▶ Conduct a detailed and thorough economic study and cost-benefit analysis and subsequent legislative request to determine an appropriate yearly charge for onsite sewer system (OSS) owners;
- ▶ Create an OSS utility fee;
- ▶ Create robust local programs that are well funded to provide oversight, inspection reminders, training, and enforcement notices;
- ▶ Establish stable funding sources to fully implement local ongoing OSS programs with shellfish resources by, for example, ensuring that property fees fully cover the cost of OSS management in rural areas;
- ▶ Identify and develop programs to assist low-income OSS repair and replacement and provide gap funding or no match options for those in need;
- ▶ Secure dedicated funding for large-scale salmon recovery “legacy projects” to remove barriers to salmon recovery and secure full funding for high-priority state capital budget requests, including the Puget Sound Acquisition and Restoration (PSAR) Program, the Estuary and Salmon Restoration Program (ESRP), the Puget Sound Nearshore Restoration Project (PSNERP), the Floodplains by Design Program, and the Brian Abbott Fish Barrier Removal Board (FBRB).



**Engage partners in developing the list of Puget Sound-wide resource needs. (ID #179)**

**Key opportunities for 2022-2026 include:**

- ▶ Characterize the resources needed to implement salmon recovery habitat restoration and acquisition projects, including near-term costs (four-year project list) and the full costs to restore and revegetate riparian buffers;
- ▶ Understand the collection of existing funding sources used to support Puget Sound recovery;
- ▶ Increase coordination on state budget requests with LIO partners.

**Build infrastructure for and implement a rapid funding response capacity for Puget Sound. (ID #181)**

**Key opportunities for 2022-2026 include:**

- ▶ Ensure local partners have the capacity to quickly scale their recovery work with increased investment;
- ▶ Facilitate streamlined bundling and matchmaking between funding sources and protection and restoration projects;

- ▶ Explore opportunities to increase local project sponsor capacity on a regional scale, such as hiring through state agencies to increase capacity for key issues when and where local jurisdictions are unable to hire appropriate staff directly.

**Increase coordination, efficiency, and effectiveness of current funding programs to extend impact of current funding (ID #207)**

**Key opportunities for 2022-2026 include:**

- ▶ Support efforts to coordinate funding (for example, the Align group and the Federal Task Force to coordinate funding);
- ▶ Support the PSSRC Funding Subcommittee's efforts to better align existing funding programs and authorities with salmon recovery and Puget Sound restoration priorities, including the effort by the subcommittee to work with counties to integrate salmon recovery into existing Conservation Futures programs;
- ▶ Explore opportunities to reduce administrative burden on project sponsors by reducing or eliminating match requirements, streamlining grant reporting and tracking, extending grant funding timelines, and moving long-term programs from grants to secured long-term funding sources.



## STRATEGY B

### Strategic Leadership and Collaboration

Promote strategic leadership and collaboration to support Puget Sound recovery.

#### STRATEGY DESCRIPTION

Recovery of Puget Sound is a collective, long-term endeavor that requires focused and dedicated leadership and collaboration. Many elements enable this leadership and collaboration. Hundreds of partners convene throughout the year through boards and networks such as the Leadership Council, Ecosystem Coordination Board, Puget Sound Salmon Recovery Council, Science Panel, Puget Sound Ecosystem Monitoring Program, Strategic Initiative Advisory Team, and Local Integrating Organization committees. Organizations across sectors and governments, like the Northwest Indian Fisheries Commission, Canadian government and provincial agencies and organizations, Governor's Salmon Recovery Office, Maritime Blue, environmental organizations, and natural resource businesses identify and advocate for recovery priorities. Strategic Leadership and collaboration across partners require a unique approach with

the Partnership, the Governor's Salmon Recovery Office, National Estuary Program, and Canadian partners providing leadership and collaboration within the Salish Sea region, as well as with Local Integrating Organization conducting similar activities at the local level to generate simultaneous, coordinated, and integrated planning and action to advance ecosystem recovery.

The achievements in Puget Sound recovery to date are a function of the strategic leadership and collaboration that partners have brought to address recovery challenges (for example, the [2021 Governor's salmon strategy update](#)). Yet key gaps remain. Puget Sound has not been a sustained top priority for leaders and decision-makers that have resulted in needed policy change. The coalition of organizations demanding a healthy Puget Sound falls short of the breadth and depth needed to affect transformational change. Diversity, equity, inclusion, and environmental justice are just beginning to be addressed through the steps outlined in recent legislation such as the Healthy Environment for All (HEAL) Act. Key opportunities for this strategy around exchanging information with partners align with the goals for Strategy C that focus on interdisciplinary research to promote diverse ways of knowing and coordinating the knowledge network across Puget Sound. This strategy also aligns with the funding priorities described under Strategy A, since both focus on developing strategic plans for funding allocation. The actions and key opportunities below begin to address these gaps and needs.

The 1989 Centennial Accord between the federally recognized Indian Tribes in Washington State (Tribes) and the State of Washington commits the parties to a government-to-government approach to address issues of mutual concern. The Accord provides that “each agency... may establish more detailed implementation procedures in subsequent agreements between tribes and the particular agency.”

The unique legal status of tribal nations (Tribes) and presence of tribally reserved rights and cultural interests throughout the state creates a special relationship between Tribes and the state agencies responsible for managing and protecting the natural resources of the state. Tribes possess property and self-government rights that predate the formation of the United States and the creation of the State of Washington and are guaranteed under treaties and federal law.

The foundation of the tribal co-management, government-to-government practice has substantial precedence and is the outcome from implementation of treaties, the U.S. v. Washington court decisions, and numerous subsequent decisions. The 1989 Centennial Accord recognized these facts and provides a framework directive for the Partnership and the Tribes to follow a cooperative management course.

Tribal homelands include the rivers and shorelines of this state and so Tribes have an inextricable link with its water resources. Effective coordination of state and tribal expertise clearly helps develop programs that are far more appropriate and efficient than either could develop alone. The State and Tribes recognize that, while each government is ultimately responsible for making its own decisions and taking actions within its legal authority and fiscal constraints, through mutual efforts at communication and consultation we can, as individual governments, take steps that move us toward a common goal in a coordinated and cooperative manner.

Participating Tribes and consortia and the Partnership established the Partnership/Tribal Co-management Council (PTCC). The function of the PTCC serves as an additional communication channel between the individual Tribes and the Partnership on issues of mutual concern. The PTCC is intended to enhance government-to-government communication and is specifically not intended to supplant the individual government-to-government relationship between the State and tribal governments. Participation in the PTCC is voluntary and is co-chaired by a Commissioner of the Northwest Indian Fisheries Commission and the Chair of the Partnership’s Leadership Council.

The Partnership recently created a permanent, full-time Tribal Liaison position. The Tribal Liaison is the first point of contact for tribal governments and works to maintain and improve intergovernmental relations by answering questions, providing timely and accurate information, and serving as a resource. The Tribal Liaison works closely with the Executive Director, Equity and Environmental Justice Manager, Executive Team, and other teams throughout the organization to ensure early, informed, and meaningful engagement with tribal partners. The Tribal Liaison collaborates with all Partnership programs in their work related to tribal engagement and government-to-government relationships (including salmon recovery efforts and meeting tribal nations’ treaty and sovereign rights) and works to build staff capacity and understanding of government-to-government relations and working with tribal governments and consortia.

## WHAT DOES SUCCESS LOOK LIKE?

Puget Sound recovery will be successful with continued strong relationships across the region based on good communication, trust, and transparency. Strong relationships will lead to integrated approaches across sectors and jurisdictions. Engagement will be inclusive and accessible with processes that include broad audiences and partners and center Puget Sound as a sustained priority for leadership across the region. Leaders and decision-makers will understand why and how to integrate climate and human wellbeing into funding and prioritization decisions and legislative actions, policies and funding will honor local priorities developed through existing networks. Success will also look like investments that are utilized strategically to strengthen our recovery work.

## COLLABORATING PARTNERS

- ▶ Tribal governments, representatives, and consortia
- ▶ First Nations
- ▶ Transboundary partners (for example, the Washington State - British Columbia Environmental Cooperation Council)
- ▶ Puget Sound Partnership boards and advisory councils
- ▶ State Legislators and the Governor
- ▶ Local Integrating Organizations
- ▶ Strategic Initiative Lead Teams
- ▶ Salish Sea Institute
- ▶ Salmon recovery and watershed groups
- ▶ Marine Resources Committees
- ▶ Environmental Caucus
- ▶ Academic and research institutions
- ▶ Federal agencies (for example, Northwest Straits Commission)
- ▶ State agencies
- ▶ Chambers of commerce and economic development councils
- ▶ Local governments (for example, city and county)
- ▶ Nongovernmental organizations
- ▶ Philanthropic organizations

## ACTIONS

### Elevate Puget Sound recovery as a priority for leadership at all levels. (ID #208)

#### *Key opportunities for 2022-2026 include:*

- ▶ Engage in policy reform through local, state, and federal legislative processes;
- ▶ Support the Governor's Office in making Puget Sound and salmon recovery the cornerstone of Governor Inslee's third term of office;
- ▶ Create a Puget Sound National Program Office with the U.S. Environmental Protection Agency;
- ▶ Leverage strategic leadership within caucuses.

### Broaden and deepen the coalition demanding a healthy Puget Sound. (ID #209)

#### *Key opportunities for 2022-2026 include:*

- ▶ Continually assess and improve inclusiveness of decision-making and planning spaces;
- ▶ Build the capacity of and remove barriers for local partners, specifically LIOs, to advance shared local and regional recovery priorities;
- ▶ Cultivate and expand relationships with and leadership by partners in the private sector;
- ▶ Build out transboundary coordination, specifically increased cooperation and coordination with tribal nations and First Nations, to further cross-border engagement and progress on issues of importance across the Salish Sea;
- ▶ Improve LIOs' strategic partnerships by increasing the organizational and governmental diversity of their voting membership.

### Advance diversity, equity, inclusion, and environmental justice in Puget Sound recovery efforts. (ID #128)

#### *Key opportunities for 2022-2026 include:*

- ▶ Align with the policy and equity goals outlined in Strategy C and Strategy 26 to implement the Healthy Environment for All (HEAL) Act;
- ▶ Develop a Puget Sound Partnership agency-wide diversity, equity and inclusion, and environmental justice action plans;
- ▶ Integrate diversity, equity, inclusion, and environmental justice principles by conducting outreach with vulnerable populations and underserved communities and inviting them to be voting members of the Partnership's Boards and LIOs;
- ▶ Reduce barriers, particularly for vulnerable populations and underserved communities, to participate in the Partnership's boards and overall recovery work by promoting hybrid approaches that also reduce emissions;
- ▶ Ensure that Puget Sound recovery funding streams are adapted to support diversity, equity, inclusion, environmental justice, and the rights of tribal nations.



### **Strengthen relationships and understanding to enhance collaboration. (ID #210)**

**Key opportunities for 2022-2026 include:**

- ▶ Ensure broad understanding of, recognition of, and support for tribal nations' treaty and sovereign rights and tribal nations' role as co-managers of natural resources (i.e., Boldt Decision);
- ▶ Ensure that "free, prior and informed consent" is well provided for when developing legislative actions and policies;
- ▶ Effectively engage local partners, such as LIOs, to share information and increase transparency;
- ▶ Increase opportunities for comment and partnership from LIOs to support increased collaboration;
- ▶ Convene Leadership Council-led forums to celebrate successes and support removing barriers to progress in the recovery effort.

### **Strengthen the leadership framework to guide the Puget Sound recovery effort and set action and funding priorities. (ID #123)**

**Key opportunities for 2022-2026 include:**

- ▶ Lead the development of Vital Sign Indicator targets as benchmarks for success and focal points for partner action and investments;
- ▶ Develop a strategic plan for the medium- to long-term allocation of state funding toward salmon recovery priorities as outlined in the regional and watershed chapters of the Puget Sound Salmon Recovery Plan;
- ▶ Effectively engage local partners like LIOs to share information and increase transparency;
- ▶ Implement and support local and regional projects to remove barriers to recovery across Puget Sound;
- ▶ Complete the 2026-2030 Action Agenda as the region's next roadmap to ecosystem recovery.



## STRATEGY C

### Research and Monitoring

**Coordinate and invest in research and monitoring to support Puget Sound recovery.**

#### STRATEGY DESCRIPTION

Focused, relevant research and monitoring is an important foundation for Puget Sound recovery work. This strategy focuses on how social and natural science research and monitoring projects can improve policy choices and adaptive management and increase access to and use of more diverse ways of knowing. Scientific research and monitoring help us understand how and to what degree human activities affect the health of Puget Sound, and what efforts are most effective in reducing the negative pressures from these activities. Science programs illuminate the impact of current and past recovery efforts and the work that remains to achieve a healthier Puget Sound for all.

Actions for this strategy include leveraging and directing funding to high-priority research and monitoring projects, developing the capacity for effectiveness monitoring and assessment, improving incorporation of Indigenous knowledge in research and monitoring, broadening, coordinating the knowledge network within the Salish Sea ecosystem, and improving science communication. This strategy also highlights the need to better incorporate human wellbeing considerations across recovery activities and amplifies the need for more interdisciplinary and transboundary research on how the wellbeing of people and nature depend on one another.



#### WHAT DOES SUCCESS LOOK LIKE?

We will be successful when Puget Sound recovery decisions and overall recovery adaptive management are informed by scientific research and monitoring, evidence-based advice and recommendations, scientific review, technical syntheses, transboundary collaboration, and strategic investments in research, assessment, and ecosystem monitoring. Ongoing, sustained coordination of scientific efforts and contributions come from many individuals and institutions across all sectors within the Salish Sea ecosystem, and diverse ways of knowing are incorporated from an expansive knowledge network across the region. Information from scientific research and monitoring is disseminated to Puget Sound recovery stakeholders in a clear and timely fashion. Ongoing convening and input from the Science Panel, Social Science Advisory Committee, Salmon Science Advisory Group, PSEMP, Canadian partners, and other groups is maintained and remains essential to ensure investments in research and monitoring are made strategically. Scientific findings are translated into resonant and compelling communications, so policymakers and non-science audiences understand how to use the research and what it means for everyday life and long-term investments in the region.

## COLLABORATING PARTNERS

- ▶ Tribal governments, representatives, and consortia
- ▶ First Nations
- ▶ Puget Sound Partnership Boards (Science Panel)
- ▶ Academic and research institutions (for example, Washington Sea Grant, Puget Sound Institute, Washington Stormwater Center, Oregon State University, University of Washington, Western Washington University, Washington State, British Columbia, and elsewhere)
- ▶ Puget Sound Ecosystem Monitoring Program, its steering committee, subcommittees, and workgroups
- ▶ State agencies (for example, science programs)
- ▶ Federal agencies (for example, science programs)
- ▶ Businesses and private sector (for example, funders of scientific investigations relevant to the Puget Sound socio-ecological system)
- ▶ Community members and residents (for example, Citizen Science programs, preK-16 curriculum, front-line communities who develop, hold, and share information about social and ecological conditions)
- ▶ Local governmental (for example, city and county)
- ▶ Local Integrating Organizations
- ▶ Nongovernmental organizations who invest in, coordinate, and use community scientists and who support, conduct, and communicate science relevant to the Salish Sea

## ACTIONS

### Direct and leverage funding and investments to advance science, monitoring, and adaptive management for Puget Sound recovery. (ID #121)

#### **Key opportunities for 2022-2026 include:**

- ▶ Develop, fund, and maintain an online searchable database to serve as a comprehensive clearinghouse of scientific information and expertise for use by the Puget Sound protection and recovery community;
- ▶ Select and fund investigations that address priority research objectives and work actions in the [Science Work Plan for 2020-2024](#) through Partnership awards for Puget Sound scientific research and monitoring to Accelerate Recovery in 2021-2023 and 2023-2025 and partners' (for example, Sea Doc Society, Washington Sea Grant, King County, NOAA Fisheries, Department of Ecology, and Skagit River System Co-op) awards and staffing commitments to carry out investigations that align with priority research and monitoring work actions;

- ▶ Build an ongoing research collaboration—including jointly funded investigations and a new Puget Sound fellowship program—between the Partnership and Washington Sea Grant;
- ▶ Update the strategic plan for the Puget Sound Ecosystem Monitoring Program, and develop and begin to implement an unbiased Science Work Plan for 2025-2028 that is designed to inform good policy;
- ▶ Develop, fund, and maintain an online searchable database to serve as a comprehensive clearinghouse of scientific information and expertise for use by the Puget Sound recovery community.

### Coordinate efforts to assess and report on ecosystem conditions and the effectiveness of ecosystem recovery strategies and actions. (ID #122)

#### **Key opportunities for 2022-2026 include:**

- ▶ Coordinate PSEMP in increasingly open, transparent, and inclusive ways;
- ▶ Ensure that local, long-term, and inherently efficient volunteer monitoring programs are well funded, maintained, regionally respected, and designed to offer the added benefit of educating and involving the public;
- ▶ Review and adapt the quality, depth, and breadth of research, monitoring, and assessment and the networks through which scientists collaborate and engage with policy makers, science-policy interfaces, and program managers;
- ▶ Follow, assess, and report on Puget Sound indicators\*
- ▶ Develop and apply innovative tools to understand ecosystem conditions as they change over time, and to predict and document those changes; ensure that reporting systems are piloted with partners (for example, LIOs);
- ▶ Analyze and synthesize existing information, especially using Puget Sound indicators, to evaluate and report on the ecosystem conditions and the effects of recovery efforts, giving greater attention to inequities in the distribution of environmental burdens and recovery efforts;

\*Introduced in Chapter 3 of the Comprehensive Plan



- ▶ Foster exploration and discovery through coordination of subject matter experts and through comprehensive assessments (such as cumulative effects evaluations) and interdisciplinary investigations;
- ▶ Communicate scientific research and monitoring information, on a regular basis, to policy makers, program managers, and the public at large, to achieve greater and sustained support for evidenced-based policy and management decisions critical for achieving goals and objectives;
- ▶ Ensure local volunteer monitoring programs are well funded, maintained, regionally respected, and designed to offer the added benefit of educating and involving the public;
- ▶ Ensure that reporting systems are Beta tested and will work for a variety of partners who will use them, including LIOs.

**Implement priority science work actions from the Science Work Plan for 2020-2024. (ID #182)**

**Key opportunities for 2022-2026 include:**

- ▶ Select and fund investigations that address priority research and monitoring actions through Partnership awards for Puget Sound scientific research and Monitoring to Accelerate Recovery in 2021-2023 and 2023-2025 and partners' awards and staffing commitments to carry out investigations that align with priority science work actions;
- ▶ Build an ongoing research collaboration—including jointly funded investigations and a new Puget Sound fellowship program—between the Partnership and Washington Sea Grant.

**Collaboratively broaden and improve the knowledge network that supports Puget Sound ecosystem recovery. (ID #183)**

**Key opportunities for 2022-2026 include:**

- ▶ Learn from a diversity of partners about what is important in how the knowledge network grows from the current situation and how it functions into the future;
- ▶ Learn from others' experiences about governance and management approaches that have fostered broader engagement and improved network outcomes, especially those that have emphasized incorporation of Indigenous knowledge and addressed environmental justice;
- ▶ Identify practical means by which research and monitoring programs and other knowledge providers can access and manage financial and intellectual resources to sustain management-relevant investigations and boundary spanning activities;
- ▶ Learn from diverse partners about what makes information "legitimate" and the limitations of traditional western approaches to applied science; conduct evaluation studies to understand and amplify funding impacts;
- ▶ Enhance networking across sectors and disciplines and among different types of programs and diverse groups of individuals across Puget Sound and the entire Salish Sea.

## Inclusive Knowledge Network

The Partnership's [Science Work Plan for 2020-2024](#) introduces the concept of an inclusive knowledge network (IKN) that will link various forms of knowledge (such as, Indigenous, local, and scientific) and the people and organizations who develop, hold, and share knowledge and understandings.

We anticipate collaborations among tribal nations, others who work and know the land, managers, and scientists to develop linkages to put knowledge to use in service of tribal nations, communities overburdened with environmental impacts, and all people who are connected to the future of Salish Sea ecosystems.

This approach builds on our understanding that:

- ▶ learning across world views and knowledge systems will strengthen the foundation of Puget Sound recovery efforts as a greater diversity of participants engage in the recovery community.
- ▶ putting knowledge to use supports vibrant culture, healthy people, and resilient communities.

We envision an inclusive knowledge network through which Indigenous, local, and scientific knowledge is provided respectfully and equitably for use in participatory decision making that recognizes tribal nations' treaty and sovereign rights and accounts for the views and voices of the most vulnerable members of society.



Figure 11. Baskets by Althea Wilson, Lummi Nation - Hysh'qe (thank you).

Althea Wilson, a member of the Lummi Nation and the curriculum development coordinator for the Northwest Indian College's Native Environmental Science Program, talked with us in 2020 about inclusive knowledge. She used the metaphor of baskets: for thousands of years baskets have been a deep and meaningful part of the culture and way of life for Indigenous people. Baskets represent how knowledge is put to use to sustain people and culture, reflecting understandings of how to cultivate and manage vegetation and how to harvest materials and weave them together.

Baskets are created for specific uses; they carry what people need, share what people have, and hold sacred items. Althea talked with us about how an inclusive knowledge network could weave

together Indigenous and western knowledge, reflect an understanding and use of local resources and an artistic and spiritual expression of culture and place.

Baskets have meaning because they are made by specific people in a specific cultural context. Similarly, an inclusive approach to developing, sharing, and putting knowledge to use should appreciate the people, relationships, and cultural context in which knowledge is produced and shared. When weaving together Indigenous and western knowledge it is important to acknowledge this is done in the context of co-management.

Althea also talked about thank-you baskets (Hysh'qe, the Coast Salish word for thank you) that represent reciprocity, exchange of wealth, and a system to help one another and to pull people together in community. We are grateful for Althea's thoughtfulness, patience, and artistry.



**Improve linkages among Indigenous knowledge and research and monitoring. (ID #184)**

**Key opportunities for 2022-2026 include:**

- ▶ Find creative and meaningful ways to partner with Indigenous science programs;
- ▶ Invest in research and monitoring projects and broader strategies that recognize and build on Indigenous knowledge to generate a collective understanding of ecosystems relationships and systems thinking;
- ▶ And identify greater opportunities to achieve recovery goals and objectives.

**Recognize and embrace human health and wellbeing as a component of ecosystem recovery by identifying and supporting interdisciplinary research that explores and emphasizes the ways in which the health and wellbeing of people and nature are integrated. (ID #185)**

**Key opportunities for 2022-2026 include:**

- ▶ Prioritize research and monitoring across Puget Sound that considers the interactions of fundamental social, ecological, and health and wellbeing factors and supports and incentivizes collaborations of biophysical and social scientists.

**Build and sustain robust programs and relationships across science-policy interfaces to inform recovery. (ID #186)**

**Key opportunities for 2022-2026 include:**

- ▶ Support partners in ecosystem recovery to understand and explore resilience as a strategy, encouraging adoption of adaptive tactics that evolve with new information over time, rather than continue with those more rigid tactics;

- ▶ Identify opportunities when ‘policy windows’ are open and when knowledge can be linked to action;
- ▶ And engage decision-makers in the production and sharing of policy- and management-relevant information.

**Communicate science findings clearly and to the appropriate audiences. (ID #187)**

**Key opportunities for 2022-2026 include:**

- ▶ Foster partnerships that support access to the full range of communication approaches and tools that build and sustain the case for Puget Sound recovery (for example, [PSEMP Communications Strategy](#)).

**Develop and analyze alternative future scenarios to help leaders make decisions that will lead to system-level change under a range of projections for climate change, population growth, and other uncertainties. (ID #188)**

**Key opportunities for 2022-2026 include:**

- ▶ Develop and use the alternative future scenario analysis to explore alternative futures and evaluate tradeoffs, among the variety of things valued by Puget Sound residents, across possible approaches to managing growth and governing our behaviors;
- ▶ Investigate and better understand the deeper connections, feedback loops, and system structures that drive future conditions to more directly address, plan for, and mitigate those drivers;
- ▶ Explore current and planned actions to understand their efficacy into the uncertain future;
- ▶ Institute future scenarios approaches as a mindset facilitated through tool kits designed to enable practitioners in the recovery system to consider the many ways the future may unfold and how strategies can be made more robust, responsive, and effective.



## STRATEGY D

### Education Partnerships

**Ensure learners of all ages, including those from vulnerable populations and underserved communities, have multiple pathways to prepare for careers in the green economy by aligning resources within the educator, ecosystem recovery, and climate resilience communities of practice.**

#### STRATEGY DESCRIPTION

Expand collaborations between pre-kindergarten to post-secondary (preK-16) education networks and recovery and climate resilience communities at state and local levels to:

- ▶ Increase participation by youth, families, teachers, and communities in Puget Sound recovery and climate resilience actions by creating an open knowledge network to facilitate collaborations and creation of meaningful experiences, paid internships, and mentorships;
- ▶ Grow the workforce for the transition to a green economy by working with workforce development boards and Career Connect Washington to create pre-apprenticeship, apprenticeship, and on-the-job training opportunities.

For students, these actions will provide more opportunities for meaningful environmental experiences, internships, and mentorships. Patterns of inequity will be addressed by offering these experiences first to those furthest from opportunity in rural and urban areas so that the future green workforce mirrors the demographic makeup of local communities. Collaborations among school communities and recovery communities of practice provide many co-benefits. For example, by engaging with a local school or community on a restoration project, planners can learn about social and ecological conditions to shape project design and get help to install and monitor long-term project success.

The pace of building restoration and climate adaptation projects is currently limited by a shortage of workers with the skills to plan, design, build, and maintain green infrastructure. Workforce training programs for the full range of emerging green jobs need to be created. Young people who are ready to enter the workforce and people in career transition need certificate and apprenticeship programs. To ensure that training is effective and sustainable, both educators and employers from each emerging field should be involved in program development and implementation. Training programs should be designed to prepare participants for family-wage careers. Many training programs currently available (for example, AmeriCorps) are often designed for those who can afford to work for little to no wage, excluding a significant portion of the population.

## Definition of education used in this strategy:

Indian education dates to a time when all children were identified as gifted and talented. Each child had a skill and ability that would contribute to the health and vitality of the community. Everyone in the community helped to identify and cultivate these skills and abilities. The elders were entrusted to oversee this sacred act of knowledge being shared. That is still our vision for Indian education today.

From: Where the Sun Rises: Addressing the Educational achievement of Native Americans in Washington State (2008).

## WHAT DOES SUCCESS LOOK LIKE?

Collaboration between recovery and climate resilience communities of practice (including scientists, policymakers, storytellers, engineers, project managers, businesses etc.) and the education community (including students, families, teachers, administrators, etc.) is active and ongoing. Increased understanding of the many dimensions and scales (for example, geographical, human, temporal and environmental) of the socio-ecological systems of the Salish Sea will increase student capacity to adapt to changing career opportunities. Fostering educational collaborations across geographic and disciplinary divides will provide many additional experience-based learning opportunities and deepen students' relationships with the environment. Collaborations will be increased by creation of an open knowledge network to help people share and find information about who is doing what type of work, where and why. The network will also link to ecosystem career training opportunities, apprenticeships, and employers. Increased collaborations will provide a myriad of benefits:

- ▶ More student and community resources will become available to assist restoration efforts
- ▶ Teachers will gain access to additional sources of ideas and skills so they can better prepare their students for emerging challenges
- ▶ Internship and mentorship opportunities will increase; and
- ▶ Youth from rural and urban communities who have been underserved, will gain new pathways leading to green careers jobs. Furthermore, increased participation of youth in planning and leadership forums will broaden perspectives and remind planners to consider the impacts of their decisions on future generations

## COLLABORATING PARTNERS

- ▶ Rural and urban communities
- ▶ Tribal governments, representatives, and consortia
- ▶ Federal, state and local government agencies
- ▶ Public and private education institutions in Washington State and British Columbia
- ▶ Nongovernmental organizations
- ▶ Conservation districts
- ▶ Labor unions and worker-focused coalitions
- ▶ Businesses and utilities
- ▶ Local Integrating Organizations
- ▶ Vulnerable populations and underserved communities
- ▶ Community-based organizations

## ACTIONS

**Coordinate planning and implementation across education and restoration partner networks. (ID #189)**

***Key opportunities for 2022-2026 include:***

- ▶ Assemble a planning team that includes policy and technical representatives from the Washington State Office of Superintendent of Public Instruction (OSPI), other state agencies, tribal nations, education institutions, employers, labor unions and environmental organizations to develop and implement this strategy;
- ▶ Ensure environmental justice principles are embedded in Partnership funded projects that include education, workforce development and career pathway components;
- ▶ Develop targeted, strategic communications to recruit participants and gain the support of administrators at each level of hierarchy within organizations;
- ▶ Encourage state agencies to incentivize staff in project and educator collaborations;
- ▶ Identify targets and intermediate progress measures for actions that increase preK-16, apprenticeship, and ecosystem recovery and green infrastructure partner collaborations;
- ▶ Recruit educator liaisons to participate in each of the Strategic Initiative Advisory Teams (SIAT) to identify projects that may be appropriate for youth participation;
- ▶ Identify gaps in workforce development needs and develop intermediate progress measures to monitor workforce preparedness as demographics, technology and environmental needs change over time;

- ▶ Include educational and workforce components in proposal evaluation criteria of some grant processes, such as those for the Science Panel, Puget Sound Ecosystem Monitoring Program (PSEMP), and Strategic Initiative Lead (SIL) solicitations.

**Identify funding sources to support collaborations between ecosystem recovery partners and preK-16 educators. (ID #190)**

**Key opportunities for 2022-2026 include:**

- ▶ Review and take actions on federal and state funding opportunities;
- ▶ Support the open knowledge network through funding and by promoting its use by the restoration and climate resilience communities of practice;
- ▶ Hire education coordinators to set up successful collaborations identified by partners in the open knowledge network;
- ▶ Compensate student interns to ensure inclusion of students who are unable to afford to participate in unpaid internships and programs like Youth Conservation Corps and encourage partner organizations to do the same;
- ▶ Prioritize funding for programs that serve youth and workers who want to obtain additional skills from communities most impacted by environmental disparities.

**Expand meaningful education and leadership experiences, internships and mentorships in classroom settings and ‘earn while you learn’ apprenticeships and other paid training opportunities. (ID #191)**

**Key opportunities for 2022-2026 include:**

- ▶ Provide students with equitable education, training, experience, and mentoring necessary to gain real-world work experience and become effective and long-term advocates for environmental, regulatory, and policy improvements within their communities, regions and state;
- ▶ Provide educators with the opportunity, funding, and capacity necessary to enable equitable student and resident participation in local and meaningful community ecosystem monitoring and recovery projects and programs;
- ▶ Identify incentives for municipalities to support design, project implementation, and maintenance of employment opportunities for this locally trained workforce.

**Green Stormwater Infrastructure Workforce Development and Career Pathways Coalition.**

The Green Stormwater Infrastructure Workforce Development and Career Pathways (WDCP) Coalition launched in early 2020, in response to chronic green stormwater infrastructure (GSI) Workforce Development challenges that were identified at the Puget Sound Green Infrastructure Summits and other contexts. This coalition was formed to both illuminate and begin to tackle the challenges related to developing sustainable, equitable, and inclusive career pathways within the green stormwater infrastructure field. The coalition includes academic, non-profit, Conservation District, government, and business representatives from the Central Puget Sound region.

**Include representatives of youth organizations in regional planning forums to increase youth involvement in planning and implementing projects in local areas. (ID #192)**

**Key opportunities for 2022-2026 include:**

- ▶ Create and support opportunities for secondary school level youth to participate in regional planning forums as a means of meeting graduation requirements individually or through organized local groups;
- ▶ Build structures for youth to participate in planning forums;
- ▶ Expand project opportunities for Youth Conservation Corps and resources to sustain involvement;
- ▶ Include youth as one of the underrepresented groups in trainings and actions to address justice, equity, diversity, and inclusion.

**Develop clear information on career pathways and the curriculum, training, and program tools needed to grow an equitable green workforce with durable, family wage jobs. (ID #212)**

**Key opportunities for 2022-2026 include:**

- ▶ Identify existing and needed career pathway components (such as courses, field experiences, internships, certifications, apprenticeships, etc.) and paid training opportunities aligned with the variety of natural resources, green infrastructure, restoration, and climate preparedness fields in Washington State;
- ▶ Create and maintain an open knowledge network to share and find information about new and ongoing projects related to recovery or related fields. Include information about who is doing what, where, why, and how to contact them. Source data from existing databases such as Puget Sound Info, and from publicly funded project grantees. Link to databases that list ecosystem career training opportunities, apprenticeships and job listings;
- ▶ Provide educators with the knowledge, skills, capacity, and funding to incorporate climate change and the transition to a clean economy into their standard school curriculum;
- ▶ Collaborate with employers, educators, workforce development professionals to develop curriculum, training, or certifications needed to meet the needs of Puget Sound recovery-focused work and the transition to a green economy;
- ▶ Collect and review programs and materials that have been successfully used in other locations and disseminate to schools and teachers;
- ▶ Coordinate with state and federal agencies implementing workforce programs and assessments related to the Infrastructure Investment and Jobs Act.



Figure 12. The inaugural 2021 YESS cohort, ready to work!  
Photo credit: YESS Staff Lead.

### Youth Engaged in Sustainable Systems (YESS) Program - PEI-MTSG-Highline School District

During the summer of 2021, 13 students in the Highline School District participated in the inaugural Youth Engaged in Sustainable Systems (YESS) program. These students earned a participation stipend, high school graduation credit, and learned skills needed to be employed in entry-level restoration positions. The students worked on restoration projects in their community and in nearby state parks and at Camp Waskowitz. The Pacific Education Institute worked with Highline School District teachers to finalize a Career & Technical Education (CTE) framework for Restoration Ecology. Mountains to Sound Greenway Trust Restoration Crew Leads worked with the teachers to prepare activities and training for skills needed in restoration. This three-way partnership between a member of the environmental education field, a restoration and conservation organization, and a school district was key to the success of the program.



## STRATEGY E

### Stewardship and Motivating Action

**Build issue awareness to increase public support for Puget Sound recovery and cultivate stewardship behaviors that benefit Puget Sound.**

#### STRATEGY DESCRIPTION

Stewardship of Puget Sound resources by the region's residents—estimated at 5.3 million and counting—is critical to the long-term recovery and protection of Puget Sound. Across Puget Sound, residents volunteer, advocate, and commit their time and energy to protect and restore our waters, land, and wildlife. A recent study shows that Puget Sound residents engage in environmental stewardship and environmentally friendly behaviors at higher levels than the national average. The willingness of people to pursue stewardship actions is critical to the effort to restore and protect Puget Sound. Public involvement in and support for recovery efforts and strategies to increase stewardship of Puget Sound helps foster broad-scale actions to address polluted water, degraded land and habitat, and imperiled species. Building issue awareness fosters improved civic processes, engages residents in government, and enables public officials to make well-informed decisions on recovery issues. Behavior change methods, such as incentive programs and community-based social marketing, can foster beneficial behaviors and discourage detrimental ones, by building capacity, providing an incentive, or removing barriers to action.

Engagement in stewardship activities is an expression of community engagement, altruism, social capital, individual and collective initiative, sense of ownership and connection to place, and an optimistic willingness to invest in future conditions. Residents with a strong sense of place are more likely to engage in actions that help improve the ecosystem. Residents also vary in their opinions of environmental governance in the region. This shows that in some places, decision-makers might need to do more to build capacity and trust and include residents in planning efforts. Decision-makers could also help foster people's connections to Puget Sound to improve beliefs about environmental governance and recovery overall, in part by listening closely to community needs.

This strategy includes actions that strengthen awareness across the region on the magnitude of the challenges to achieve resilience in Puget Sound. It amplifies the ongoing work of recovery partners, especially at the local level, to connect with residents and build the capacity and infrastructure necessary to support stewardship activities. The actions included also amplify the need for further social science research, particularly the questions outlined in the [Social Science for the Salish Sea](#) report.

#### WHAT DOES SUCCESS LOOK LIKE?

Indicators of success include improving the [Sound Behavior Index](#) (SBI). This index tracks 28 specific practices that can affect water quality and aquatic habitats such as yard and garden care, vehicle and home maintenance, and pet waste disposal. The SBI is based on a survey that asks residents about specific, measurable, repetitive behaviors within households to analyze aggregate change over time.

#### COLLABORATING PARTNERS

- ▶ Tribal governments, representatives, and consortia
- ▶ First Nations
- ▶ Puget Sound Partnership boards (for example, Leadership Council, Ecosystem Coordination Board, Puget Sound Salmon Recovery Council, and Science Panel)
- ▶ Community members and residents (including education, communication, and outreach networks)
- ▶ Stormwater Outreach for Regional Municipalities member organizations
- ▶ Puget Sound Starts Here steering committee and organizations implementing programs connected to Puget Sound Starts Here
- ▶ Vulnerable populations and underserved communities
- ▶ Conservation Districts
- ▶ Marine Resource Committees
- ▶ Local governmental (for example, city and county)
- ▶ Local Integrating Organizations
- ▶ Nongovernmental organizations (who support, conduct, and implement social science relevant to the Salish Sea)

- ▶ State agencies
- ▶ Salmon recovery and watershed groups and Regional Fisheries Enhancement Groups
- ▶ Academic and research institutions (for example, in Washington State, British Columbia, and elsewhere)
- ▶ Puget Sound Ecosystem Monitoring Program (including steering committee, subcommittees, and workgroups)
- ▶ Transboundary partners (for example, Canadian governmental institutions who support and conduct social science relevant to the Salish Sea)

## ACTIONS

### Cultivate broad-scale stewardship practices and behaviors among Puget Sound residents that benefit Puget Sound. (ID #125)

**Key opportunities for 2022-2026 include:**

- ▶ Sustain and further projects and programs that advance individual behavior change;
- ▶ Support landowner coordination for landscape-scale conservation;
- ▶ Address barriers faced by vulnerable populations and underserved communities that hinder them from participating in stewardship practices and behavior changes by allocating funds, designing targeted outreach, and providing resources;
- ▶ Advance and incentivize individual pro-environmental behavior change among residents, visitors, and climate migrants to the Salish Sea.

### Build issue awareness and understanding to increase public support and engagement in recovery actions. (ID #126)

**Key opportunities for 2022-2026 include:**

- ▶ Expand and promote public participation in governance processes through education, training, experiential, and mentoring programs, with a targeted focus on vulnerable populations and underserved communities;
- ▶ Address barriers faced by vulnerable populations and underserved communities that hinder them from engaging in recovery actions;
- ▶ Engage community-based organizations in developing awareness campaigns for residents;
- ▶ Develop communication materials in multiple languages to raise awareness among different audiences.

### Build social and institutional infrastructure that supports stewardship behaviors and removes barriers. (ID #127)

**Key opportunities for 2022-2026 include:**

- ▶ Expand and promote public participation in governance processes;
- ▶ Allocate funding to build the capacity of residents and community-based organizations to engage in stewardship behaviors;
- ▶ Address the needs of vulnerable populations and underserved communities so they can meaningfully engage in and advocate for stewardship behaviors;
- ▶ Bolster and expand voluntary environmental programs for local businesses and private landowners, particularly those owned by vulnerable populations and underserved communities.

### Investigate the research questions outlined within Social Science for the Salish Sea

**Key opportunities for 2022-2026 are to engage with social scientists to gather input on the following questions from the Social Science for the Salish Sea report:**

- ▶ What factors motivate landowners to engage in or resist ecosystem recovery actions? What about land rights-holders, such as tribal nations and other stakeholders, such as the non-landowning public? (Ask related questions of these groups as well.) [Question #3]
- ▶ What is the current status of, and potential for, collaborating with different industries in ecosystem recovery? (For example, natural resource industries such as forestry and fishing, ports, pipelines, mines, pulp mills, etc.) [Question #6]
- ▶ How do resource management and conservation affect people in different and differential ways (for example, economic, psychological, physical, and cultural effects)? [Question #11]
- ▶ How do power and politics influence decision-making processes and actions taken in the Salish Sea? [Question #26]
- ▶ How can we advance eco-cultural (also called biocultural) approaches to stewardship and restoration? [Question #30]

## APPENDIX I: ADAPTIVE MANAGEMENT

Adaptive management is a learning and decision-making process. Practicing adaptive management results in greater effectiveness and ensures that the ongoing efforts to implement current and improve future Action Agendas are informed by the best evidence available. This Action Agenda builds on more than a decade of collaborative, science-driven planning by drawing content from Implementation Strategies, LIO ecosystem recovery plans, Orca Task Force recommendations, collaboration among transboundary recovery partners, the Tribal Habitat Strategy (*gʷədᶻadad*), past Action Agendas, and other plans. It also adapts and improves upon previous Action Agendas by defining success with multi-benefit outcomes and targets and capturing more comprehensive representation of ongoing partner and stakeholder work.

To facilitate effective adaptive management, the Partnership utilizes the [Open Standards for the Practice of Conservation \(Conservation Standards\)](#), an internationally recognized set of best practices that enable evidence-based adaptive management through a coordinated process of planning, monitoring, reporting, and learning. The framework is described in the section entitled **Conservation Standards Framework** below.

## The Role of Science

Adaptive management relies on gathering of pertinent data, data analysis, and the implementation of change once we understand what helps or hinders progress. Science and data analysis inform prioritization of action by identifying which human actions most affect the health of Puget Sound and what efforts are most effective in reducing those pressures. Supporting science and data analysis are also crucial for evaluating past efforts and informing future decisions about prioritizing and implementing action.

To guide planning for recovery, the Partnership relies on scientific advisors and partner organizations, including the Science Panel, PSEMP, Washington State academic and research institutions, many governments and nongovernmental organizations, and the broader scientific community. These advisors and partners provide scientific information and input through a variety of reports and engagement forums.

For example, science informs us how human pressures affect the ecosystem and which pressures are the most important to address. [The Puget Sound Pressures Assessment \(2017\)](#) informs understanding of the pressures on Puget Sound's freshwater, marine, nearshore, and terrestrial resources. The assessment identifies the critical ecosystem vulnerabilities that must be addressed to achieve sustainable, long-term recovery. The assessment provides the scientific input for prioritizing Vital Signs and informs the development of Implementation Strategies. Implementation Strategies serve as the strategic plans for accelerating progress toward the Puget Sound statutory goals and are described further in *The Role of Implementation Strategies* section.

Understanding the human dimensions of Puget Sound recovery helps to ensure a more complete, holistic, and ultimately more successful approach to achieving ecosystem goals. Social sciences help us understand how individual and collective human behavior can enable or limit progress. The Human Wellbeing Vital Signs, for example, directly relate to people's interactions with the natural environment of Puget Sound and include familiar aspects of human health, such as clean air and access to local foods. They also include key measures of psychological and cultural wellbeing, like sense of place and ability to participate in cultural practices related to the environment. The effort to address human wellbeing within the context of our Puget Sound statutory goals falls within a broader attempt to better understand the full spectrum of roles that people play in ecosystem recovery.

The [Social Sciences Advisory Committee](#) (SSAC) engages social scientists from multiple disciplines to primarily advise the Science Panel on matters related to the social sciences, salmon, and ecosystem recovery and to inform and support other Partnership goals.

To guide the incorporation of science into recovery planning, the Science Panel and Partnership staff rely on the Strategic Science Plan and Science Work Plan. The 2010 Strategic Science Plan provides the overall framework for development and coordination of the science activities necessary to support Puget Sound recovery under the Action Agenda. The plan describes at a high level how science should inform policy for Puget Sound recovery, through assessing risks, evaluating potential management strategies, and monitoring and evaluating progress. The plan is a high-level document that is revised as needed.

The Science Work Plan, which is updated every four years, identifies the near-term scientific advancements needed to recover Puget Sound. The plan also suggests how science can better support recovery. The Science Panel helps inform the allocation of limited resources by identifying science work actions and recommending improvements. They prioritize science that fills critical gaps, supports innovation, supports continuity, links socio-ecological resilience, and is relevant to the policy landscape.

Both the Strategic Science Plan and Science Work Plan are key companions to the Action Agenda and are incorporated into the Action Agenda by reference. One example of how the Science Work Plan has influenced the direction of the recovery effort over time is found in the 2014 Biennial Science Work Plan, which originally defined the elements of recovery planning that have been adopted as standard components of an Implementation Strategy.

Another way the recovery community uses science is to jumpstart the development of an Implementation Strategy. The Puget Sound Institute compiles existing resources and knowledge on the challenge at issue. The initial materials include information about status and trends of key ecosystem indicators; underlying drivers, pressures, and stressors that inhibit recovery; current approaches to recovery and whether they are effective; and key uncertainties that require resolution. The Action Agenda's reliance on Implementations Strategies and these standard components for defining needed recovery action has increased over time, as explained in *The Role of Implementation Strategies* section.

# THE CONSERVATION STANDARDS FRAMEWORK

The Partnership uses the Conservation Standards framework to enable evidence-based adaptive management consisting of the following elements:

- ▶ **Assess and Plan:** The Partnership supports partners in applying a standard set of planning best practices to their contributing plans, in which key barriers and root causes of ecosystem degradation, theories of change, prioritization choices, and outstanding science and management questions (uncertainties) are made explicit and transparent.
- ▶ **Implement:** The Partnership supports partners in successfully implementing the Action Agenda, through board forums, legislative work, and other efforts of the Management Conference.
- ▶ **Analyze:** The Partnership evaluates our collective progress in implementing the Action Agenda and achieving statutory goals, by managing a set of shared indicators and targets and harnessing the expertise of the science and monitoring community to address key science and management questions identified through the planning and implementation process.
- ▶ **Adapt and Share:** The Partnership facilitates shared learning and identifying adaptive actions through effective science-policy dialogue.



Figure 13. The Partnership's framework for evidence-based adaptive management.

## Assess and Plan

Adaptive management begins with strategic, results-based planning. The Action Agenda is Puget Sound's overarching strategic plan; it reflects the priorities of the recovery community for the next four years based on information and science-based recovery strategies contained in local and regional plans. The Action Agenda not only considers and incorporates these plans but is developed through a process that engages the people that can implement them—hundreds of diverse partners from state and federal agencies, tribal nations, local governments, and business and environmental groups. As these partners come together to agree on and prioritize needed actions, they develop a shared vision for the future of Puget Sound recovery. As a result, the Action Agenda becomes a trusted and credible source that partners can use to guide implementation and investment decisions in the coming years.

The Partnership is required to prioritize actions in the Action Agenda Implementation Plan to inform the allocation of limited federal, state, and local resources. Based on the framework described here, the Implementation Plan accomplishes this by identifying the 31 strategies and 137 actions necessary to advance the regional and local plans over the next four years. The following component recovery plans informed the updating of the Action Agenda Implementation Plan:

- ▶ Implementation Strategies
- ▶ Local Integrating Organizations' (LIOs) Ecosystem Recovery Plans
- ▶ Puget Sound Salmon Recovery Plan
- ▶ Tribal Habitat priorities
- ▶ Orca Task Force recommendations
- ▶ 2020-2024 Science Work Plan
- ▶ Expert working groups

These all serve as important component plans to the Action Agenda and reveal areas of shared focus where actions will advance multiple aspects of ecosystem recovery. These plans are all created through science-informed and collaborative processes that capture the expertise and most recent thinking from around the region. Partners reviewed and provided feedback on desired outcomes, strategies, and actions via public workshops, partner, and board meetings. Specifically, the list of desired outcomes, strategies, and actions were identified following a consistent process that included:

- ▶ Synthesizing content from existing plans. Partnership staff identified content using existing plans, including Implementation Strategies (IS) and Local Integrating Organization (LIO) plans as initial sources. Tribal nations priorities, salmon recovery plans, and the Orca Task Force recommendations also provided important strategies for the Action Agenda and revealed areas of commonality where strategies will advance multiple aspects of recovery.
- ▶ Subject matter expert review. Partnership staff worked in collaboration with representatives of tribal nations, LIOs, state agencies, and the Environmental Protection Agency (EPA) to assemble data about the stressors and sources that are addressed through existing plans.
- ▶ Broader partner engagement and workshops. The Partnership hosted public workshops, providing an opportunity for partners and community members from across Puget Sound to come together to co-generate actions that will advance Puget Sound recovery.
- ▶ Board review and decision. Following a public comment and final review period the Leadership Council approved and adopted the finalized Action Agenda.

In developing the Action Agenda's Implementation Plan, the Partnership and its partners identified the [desired outcomes](#) and strategies that are common across those plans. Desired outcomes and supporting strategies guide the next four years of implementation and inform actions that include science research needs, program and policy changes, restoration actions, and public engagement.





## THE ROLE OF IMPLEMENTATION STRATEGIES

Implementation Strategies are strategic plans for accelerating progress toward Puget Sound statutory goals. They are developed by the entire Puget Sound recovery community and strive to identify specific actors to implement specific approaches to accelerate recovery. Implementation Strategies are designed and developed in a way that describes a logical chain of outcomes that need to be achieved to advance toward specific Vital Sign Indicator targets. Approaches identified through the Implementation Strategies process are considered the best approaches for accelerating progress toward recovery and play a central role in defining where to focus the collective actions in Puget Sound. Specifically, they inform the desired outcomes and strategies articulated in the Action Agenda Implementation Plan.

Each Implementation Strategy is developed following best practices as defined by the Conservation Standards. As described earlier in this section, the Conservation Standards framework provides a system to make decisions based on best available information and a consistent language and taxonomy for all recovery partners to use.

The first step in developing an Implementation Strategy is identifying and making use of existing resources that are relevant to the topical area (for example, shellfish, toxics in fish, land development and cover). This includes curating the best available scientific information, identifying local and regional strategic planning documents, and relevant information on ongoing programs, social and environmental justice considerations, and other relevant information. For example, LIO Ecosystem Recovery Plans provide a local lens through which to view regional problems and strategies. The information is gathered and presented to Implementation Strategy Leads who convene partners. These partners are involved in creating an Implementation Strategy to set a baseline of knowledge and shared work on which to advance more effective strategies. Implementation Strategy development processes are continually improved by more effectively integrating local planning efforts, changing climate and ocean conditions, and the best available social science to inform and prioritize regional actions.

As each Implementation Strategy is developed, it includes a set of standard elements. Each Implementation Strategy clarifies the pressures or behaviors and external drivers that

created the problem it is intended to address. Considering existing strategies or ongoing programs, the Implementation Strategy next describes where intervention will be most impactful. Approaches are then developed and ranked based on agreed upon criteria such as technical and financial feasibility, the likelihood of reducing adverse environmental effects, and whether approaches will reduce adverse effects for vulnerable populations without incurring additional hardship. Needed approaches and actions called for in Implementation Strategies focus on addressing gaps and barriers that hinder progress toward recovery and may include policy changes, site-specific recovery projects, regional programs, or additional scientific research and inquiry as well as modeling and monitoring. External review and comments by technical experts and interested members of the public help to round out the content, ensuring that approaches are relevant, accurate, and understandable to a wider audience.

Creating an Implementation Strategy is just the beginning; it sets in motion a process of implementation and adaptation informed by monitoring and evaluation. The Action Agenda brings elements from all the Implementation Strategies together into one place and identifies both where each Implementation Strategy is unique and where they overlap. The Action Agenda also considers the role of other plans, such as the LIO Ecosystem Recovery Plans and the Orca Task Force recommendations. Some circumstances may exist where Implementation Strategies are revised or combined with other strategies that have similar outcomes.

The 2016 Action Agenda introduced Implementation Strategies and described a transition toward using Implementation Strategies to prioritize recovery actions and achieve specific recovery targets. The Action Agenda has continued to increase its reliance on Implementation Strategies because they result in more targeted and specific approaches to achieve Puget Sound recovery based on current scientific knowledge and analyses of existing recovery work—functioning as hubs for information and collaboration. Additionally, the robust and inclusive process ensures that these shared plans include input from a variety of perspectives and consider factors such as feasibility,

potential local and regional impact, and cost effectiveness. The process is designed to incorporate as many views as possible, while remaining focused on how to move forward with implementation.

The Implementation Strategy program continues work to better connect and “network” the existing strategies and identifying necessary actions needed to achieve the desired outcomes for recovery by asking the question “Where can we identify fewer, more impactful actions that will lead to multiple positive outcomes across the Sound?”

## THE ROLE OF LIO ECOSYSTEM RECOVERY PLANS

Local Integrating Organizations (LIOs) are local forums that collaboratively work to develop, coordinate, and implement strategies and actions that contribute to the protection and recovery of the ecosystem. The Partnership established LIOs with the goal of developing sub-regional building blocks for participation and engagement in Puget Sound recovery efforts. The Partnership believes local groups are well-positioned to understand and respond to the complex and diverse environmental, social, and economic factors inherent to Puget Sound. The role of these groups and their participating partners is discussed in further detail in Appendix II.

Local Integrating Organizations (LIOs) adaptively manage locally focused Ecosystem Recovery Plans and continually identify priority actions that align with their plans and best serve their communities. The Ecosystem Recovery Plans (most completed prior to this Action Agenda’s publication and adaptively managed since) are formal products that guide local recovery through the LIO and are used to communicate with decision makers, local legislators, and the public, and for input in regional planning processes. Information from LIO Ecosystem Recovery Plans is synthesized and tailored to inform Implementation Strategies and other regional planning processes, including the Action Agenda. For this Action Agenda, LIO Ecosystem Recovery Plans were consulted to identify the desired outcomes and strategies that are common across them. These plans identify pressures facing human wellbeing and environmental recovery and protection, strategies to address pressures, quantitative goals, chronic barriers to recovery, gaps in research and data essential for recovery, and specific actions and programs that align with prioritized strategies.

LIO Ecosystem Recovery Plans:

- ▶ Use a rigorous, transparent, and collaborative technical and policy process that identifies the highest-priority recovery strategies and actions in each LIO area, helping direct limited funding to where it will be most effective.
- ▶ Inform development of regional Implementation Strategies.
- ▶ Account for existing ongoing programs in the LIO area and identify gaps where additional work is needed.
- ▶ Integrate content from other local plans to ensure consistency with regional priorities, terminology, and planning frameworks so that local priorities can inform decision-making and sequencing of recovery actions at the regional level.
- ▶ Build on and work in conjunction with related recovery efforts including salmon recovery; local growth management; Total Maximum Daily Loads (TMDL) to improve water quality; shellfish Pollution Identification and Correction (PIC) programs; and others.

Local Integrating Organization members contributed significant time and resources to develop and continue to work to adaptively manage LIO Ecosystem Recovery Plans, and they are among the key partners who provide opportunities for public involvement in developing and implementing recovery strategies. Additionally, through their work on LIO Ecosystem Recovery Plans, they provide an essential link to integrating salmon recovery priorities into the Action Agenda framework and connect regional strategies to the unique and diverse local communities of Puget Sound. More information about these organizations and each LIO Ecosystem Recovery Plan is available on the [Local Integrating Organizations](#) website and [Puget Sound Info](#).



## THE ROLE OF SALMON RECOVERY PLANS

Salmon are integral to the identity and culture of Puget Sound. Yet several Puget Sound salmon runs including Chinook, Hood Canal summer chum, and steelhead are threatened, and the 22 populations of Chinook salmon still remaining are dangerously below federal recovery goals. The [Puget Sound Salmon Recovery Plan](#) outlines strategies and actions for achieving recovery of threatened Chinook salmon stocks in Puget Sound. Although the plan was written to meet federal requirements under the [Endangered Species Act](#) (1973), most—if not all—of its strategies and actions contribute to overall ecosystem recovery. Likewise, many of the strategies in the Action Agenda are essential for salmon recovery. We are connecting these two efforts seamlessly and efficiently to achieve the Partnership's twin goals of Chinook salmon recovery and ecosystem recovery.

The Partnership and its partners strive to integrate salmon recovery and Puget Sound recovery efforts in several ways:

- ▶ Many recovery partners have formal roles in the statewide salmon recovery effort. The Leadership Council is the regional salmon recovery organization for Puget Sound salmon species (excluding Hood Canal summer chum) and works closely with the Puget Sound Salmon Recovery Council (PSSRC) to oversee funding, implementation, and adaptive management of the Puget Sound Salmon Recovery Plan. Similarly, the Science Panel has incorporated the PSSRC's recovery planning priorities into the development of the Science Work Plan. The Salmon Science Advisory Group—a joint workgroup of the Science Panel and PSSRC—provides the PSSRC with scientific advice. The Hood Canal Coordinating Council is the salmon recovery organization for Hood Canal and Eastern Strait of Juan de Fuca summer chum.
- ▶ Priorities and actions for salmon recovery in the Action Agenda are derived from the Chinook Salmon Implementation Strategy—a roll-up of the local watershed salmon recovery chapters and identified gaps developed by the Partnership and PSSRC—and the Puget Sound Salmon Recovery Plan. The Puget Sound Salmon Recovery Plan consists of 16 local watershed chapters, a regional chapter, and a nearshore chapter. Therefore, the Action Agenda reinforces the Salmon Recovery Plan's call to action, enables the coordination of investment and implementation across the two efforts, and incorporates both local and regional priorities for salmon recovery.
- ▶ At the local scale, Lead Entities are community-driven organizations that oversee implementation of watershed chapters of the Puget Sound Salmon Recovery Plan. Lead Entities identify and prioritize habitat protection and restoration projects that will make the largest contribution to salmon recovery within their watersheds and are linked to the priorities and strategies in their local salmon recovery chapters. Salmon recovery Lead Entities and watershed groups participate in Local Integrating Organizations, ensuring that LIO Ecosystem Recovery Plan long-term strategies incorporate salmon recovery priorities.
- ▶ The Partnership continues to pursue options for further integrating salmon recovery and Puget Sound ecosystem recovery efforts. This approach will not only help to expose and allow intentional reconciliation of competing priorities and tradeoffs within the recovery efforts, but it will drive a more efficient use of public time and resources and make space for more holistic ways to achieve Puget Sound recovery.

More information on Puget Sound salmon recovery and how that effort is integrated with Puget Sound recovery is available on the Partnership's [website](#).

## THE ROLE OF TRIBAL NATIONS

Since time immemorial, the native tribes of Puget Sound have managed their ancestral homelands and abundant natural resources in accordance with their unique tribal values and teachings. Puget Sound ecosystems have become degraded and now only supply a fraction of the resources that once used to support the tribes in Puget Sound. Because individual tribes' livelihoods and cultural identities are at stake, they are on the front lines of Puget Sound recovery and are fiercely committed to protecting salmon and other treaty resources. The tribes' tireless commitment is a direct reflection of their culture and connection to the land.

Tribes are leaders in Puget Sound recovery and have made substantial investments in recovery efforts. Tribes contribute traditional knowledge of natural resource management gained over thousands of years of living on and working these lands. They also offer significant contributions to the body of science that can shape recovery efforts, employing experts who conduct research, monitoring, and evaluation. Tribes develop and implement strategic initiatives that connect science with policy and action, which has contributed to hundreds of successful recovery projects.

As sovereign nations, tribes co-manage the natural resources they share with other residents of Washington State as agreed under treaties negotiated with the Federal Government in 1854 and 1855. Treaties are the “Supreme Law of the Land” under the U.S. Constitution. When tribes ceded their land under the treaties, they reserved their right to fish, hunt, and gather at all usual and accustomed grounds and stations. U.S. v. Washington (Boldt decision) and related cases affirmed the tribes’ role as co-managers of treaty-protected resources and their right to half of the sustainably harvestable salmon and shellfish. As affirmed by the U.S. Supreme Court, implicit in this treaty right is the responsibility of the State to protect and restore salmon and the habitats that they need to thrive. Without the persistent and vigorous efforts of tribes to uphold and defend their treaty rights, many more salmon runs would most likely already be extinct. However, threats to tribal nations’ treaty and sovereign rights remain because salmon populations continue to decline as their habitat is being degraded or developed faster than it can be restored and protected. This threat is described in detail in [Treaty Rights at Risk](#), a report written by tribes in 2011 that calls upon the federal government to fulfill its trust responsibility. Tribes also produced the [2020 State of Our Watersheds](#) report, which shows a steady decline in salmon habitat and the harmful effects of culverts, diminishing riparian buffers, and groundwater withdrawals.

Tribes recently produced [gʷədᶻadad](#), (pronounced gwa-zah-did), a tribal approach to identifying and protecting the lands, waters, and ecological processes critical to their rights, resources, and homelands. As translated from Lushootseed, gʷədᶻadad means “Teaching of our Ancestors.” It acknowledges that tribes’ beliefs and teachings are learned within their homelands, which can never be separated from tribal culture and heritage.

Tribal reports have identified—and this Action Agenda recognizes—those efforts to recover Puget Sound and treaty-protected resources have been woefully inadequate. Tribes have been instrumental in identifying and vocalizing the persistent barriers that impede recovery efforts, including a lack of political will to take on the most challenging and necessary actions for recovery such as reforming agricultural practices, population growth, and current land use regulations.

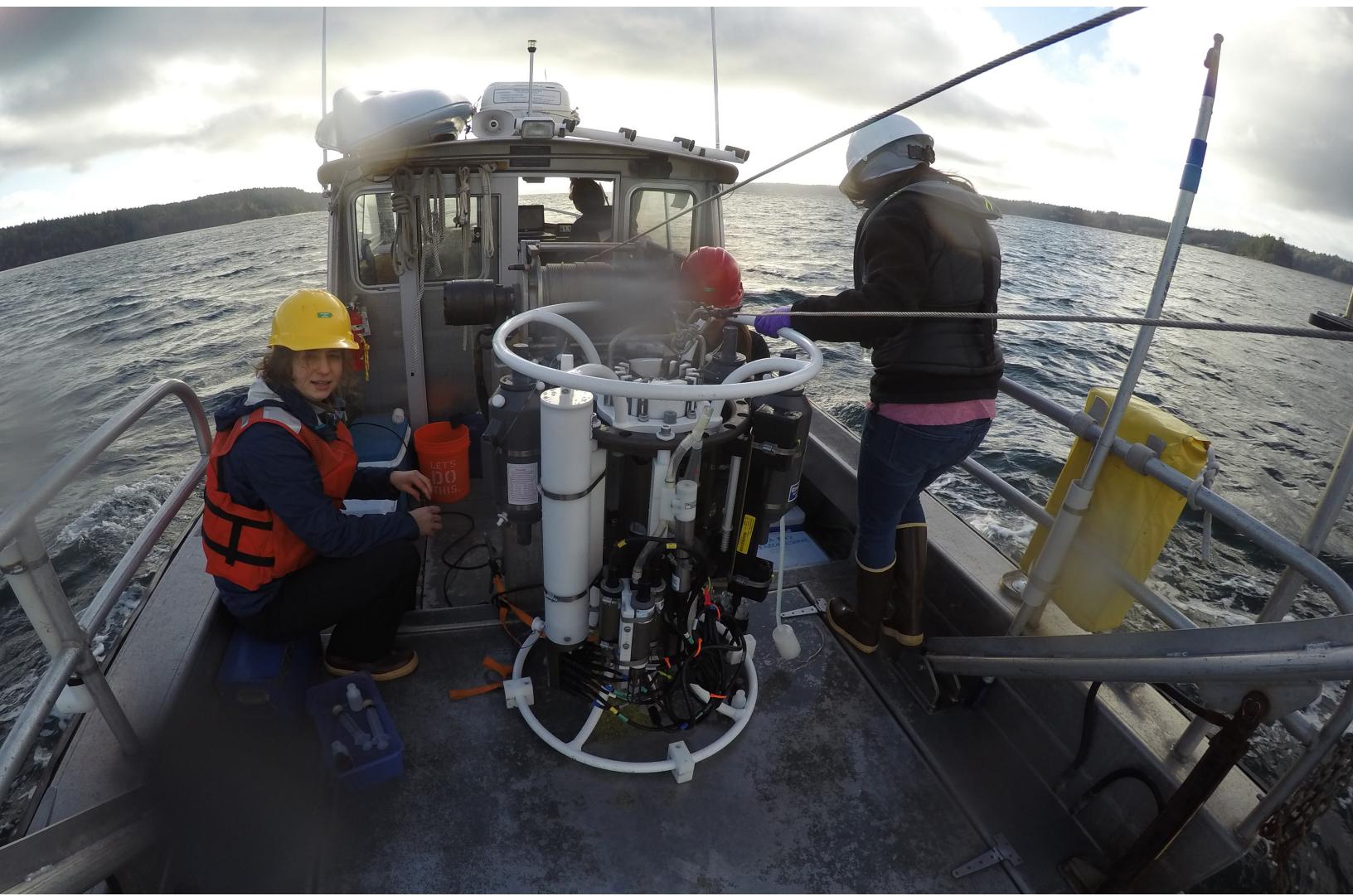
Now with climate change it is even more imperative that we take the necessary actions to address these challenges.

Tribes work closely with state agencies and local organizations on recovery efforts, including the Puget Sound Partnership. The Partnership is committed to supporting the principles of the [Centennial Accord \(1989\)](#), which recognizes the sovereign status of tribes and institutionalizes government-to-government relationships. Tribal representatives serve on the Leadership Council, Ecosystem Recovery Board, Science Panel, and Salmon Recovery Council. The Partnership Tribal Co-Management Council, and the Tribal Management Conference provide forums that the tribes use to engage in guiding Puget Sound Partnership activities, including policy development and project prioritization.

The Tribal Management Conference is a forum created by the U.S. Environmental Protection Agency for the National Estuary Program for Puget Sound. The Tribal Management Conference is a forum where Tribes coordinate their participation in the Action Agenda update and will set priorities for Puget Sound recovery in the Action Agenda and provide direct input into the National Estuary Program decisional framework.

The Tribal Management Conference forum is intended to complement the government-to-government relationship between Federal agencies and the State of Washington and Treaty Tribes identified in the Centennial Accord without relieving state and federal agencies of their obligations to consult directly on a government-to-government basis with individual Tribes.

As a guiding framework, the Tribal Management Conference will work from the Tribal Treaty Rights at Risk initiative and Tribal Habitat Priorities. The Tribal Management Conference is a forum that will focus tribal participation in the protection and restoration of the Puget Sound ecosystem to protect all tribal nations’ treaty and sovereign rights, and with further emphasis on creating opportunities to actually protect and recover Puget Sound through the implementation of the actions necessary to produce sustainable and harvestable salmon and shellfish populations, and to provide clean water.”



## Implement

The Action Agenda guides the work of diverse partners, each with a unique and important role to play in resolving the challenges posed by our shared recovery goals. State agencies use the strategies and actions to guide and support existing programs and new budget requests. Alignment with the Action Agenda is the basis for legislative outreach and state agency budget ranking. One of the Partnership's key responsibilities, as a backbone organization, is to mobilize funding to advance implementation of the Action Agenda. The Partnership uses the Action Agenda to evaluate the funding needs for recovery work, advocate for state and federal appropriations, and support our partners when they seek funding.

Every two years the Partnership provides the Governor, the Office of Financial Management, and legislative fiscal committees a ranked list of state agency budget proposals that stand to affect Puget Sound recovery. This list guides the Governor's decisions about what and how much should be funded. The ranking process objectively assesses the extent to which a funding proposal is consistent with priorities in the Action Agenda and Science Work Plan.

The Partnership also recognizes the very significant local and private investments which—though more difficult to quantify—are unquestionably critical to Puget Sound recovery. Strategies and actions support the efforts of local governments to establish and expand important programs—and secure stable financing—to advance recovery. Other partners such as businesses, federal agencies, and nongovernmental organizations may use the Action Agenda to guide their work. Additional information on the funding strategy for Puget Sound recovery is detailed in Appendix III.

## Analyze

Partners collaborate to evaluate progress in implementing the Action Agenda and toward achieving Puget Sound statutory goals in the following ways:

- ▶ Monitoring recovery progress through a suite of interconnected indicators (Puget Sound indicators),
- ▶ Assessing the effectiveness of recovery actions in achieving desired outcomes (Effectiveness Evaluation),
- ▶ Scenario planning to test the robustness of our strategies under different possible futures (Alternative Future Scenarios), and
- ▶ Collaborating to monitor, share, summarize, and utilize scientific information in support of Puget Sound recovery through the PSEMP and the Science Program (The Role of PSEMP).

To support these efforts, the Partnership and supporting Management Conference forums work closely with many partners who collect data on ecosystem status and trends, human wellbeing, and recovery progress.

## PUGET SOUND INDICATORS

### Vital Sign Monitoring

Ecosystem conditions—including human wellbeing—and progress toward achieving recovery are assessed by the indicators in the Puget Sound Vital Signs. Status and trend data for many Vital Sign Indicators are compiled by the Partnership from a variety of monitoring programs in Puget Sound, including state and federal agencies, tribal nations, local jurisdictions, and nongovernmental organizations. Technical and scientific experts from those organizations provide the data and oversee the interpretation of the results for each Vital Sign indicator.

In June 2020, the Leadership Council unanimously approved revisions to the [Puget Sound Vital Signs and indicators](#) that help to give more specificity to the statutory goals for restoring and protecting the health of Puget Sound. As a result, the Partnership now tracks the condition of 23 Vital Signs with the use of 73 indicators, some of which are slated for future development. The adoption affirms the Vital Signs and indicators as the measures of “ultimate” desired outcomes shared and embraced by the whole of the Puget Sound recovery community. The Partnership’s [Vital Sign website](#) is rich with information on each Vital Sign indicator

### Action Agenda Monitoring

Action Agenda Progress Indicators (Progress Indicators) monitor and evaluate the extent to which we are successfully implementing the Action Agenda and yielding desired outcomes. Progress Indicators are designed to help us interpret why we are or are not seeing desired improvements in Puget Sound ecosystem conditions, by measuring our human actions that are negatively or positively impacting Vital Signs. The Partnership intends to work with the recovery community to develop the Progress Indicators and to set targets for a subset of them to provide an agreed upon way to evaluate success on four- to –twelve–year timelines.

Progress Indicator Action Plans will serve as roadmaps for interpreting Progress Indicator trends, linking indicator data to other data analyses and effectiveness evaluation efforts, and identifying desired actions for partners to take in response to Progress Indicator trends and findings.

In 2021, the Partnership developed a tool that can help inform decisions about Vital Signs and outcomes on which to focus target setting and support decisions about the focus of Progress Indicator development. This draft tool, the Vital Signs-Outcomes Matrix, captures hypotheses about how the effective implementation of any one outcome will benefit a Vital Sign. The methodology for determining these relationships can be provided upon request. The chart below presents a visual representation of the theorized relationships. The Partnership intends to work with the recovery community to develop the Progress Indicators and to set targets for a subset of them to provide an agreed upon way to evaluate success on four- to twelve-year timelines.

## Representation of the strength of relationships between Vital Signs and desired outcomes

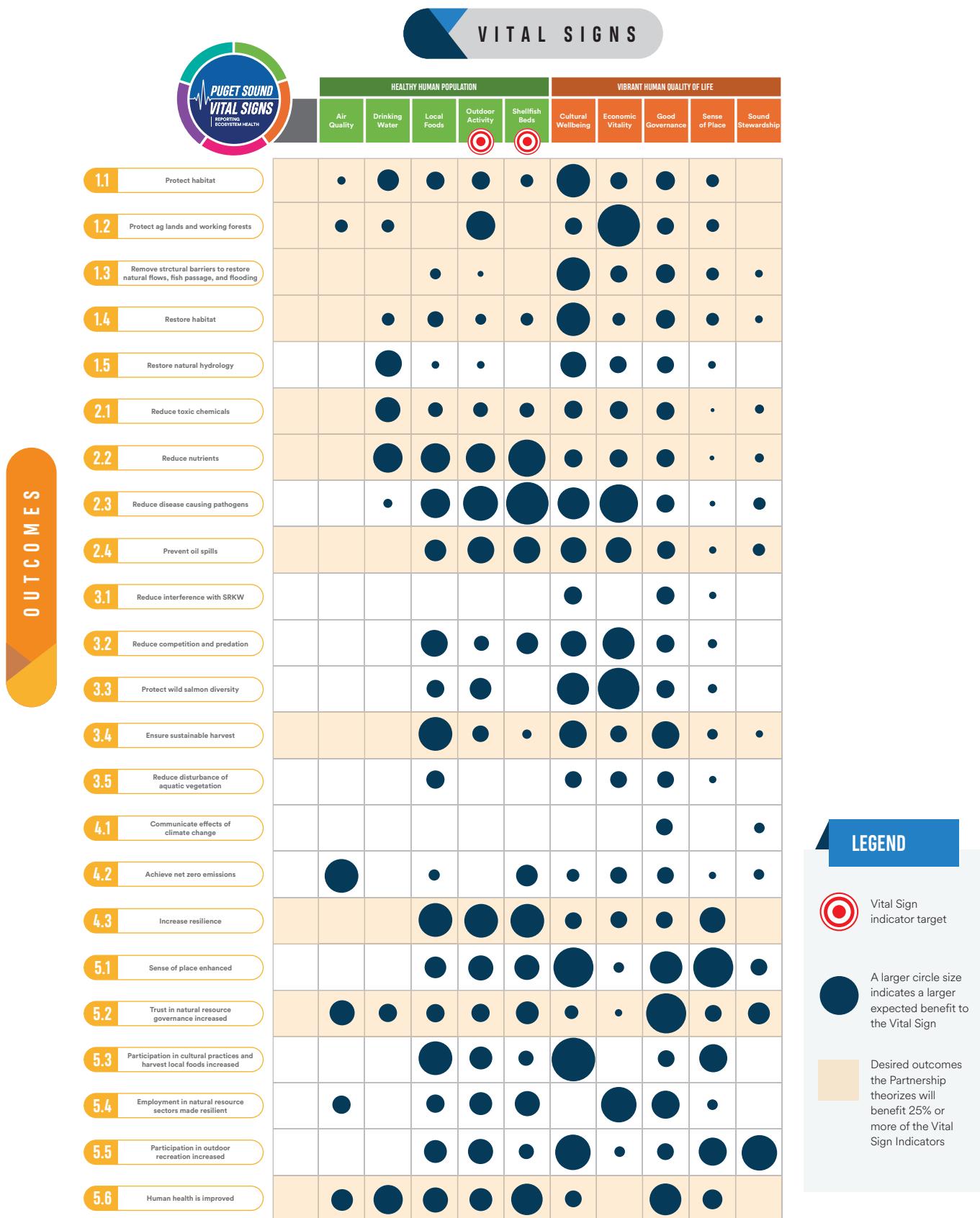


Figure 14a. Visual representation of the theorized strength of relationships between Vital Signs and desired outcomes developed by the Partnership.

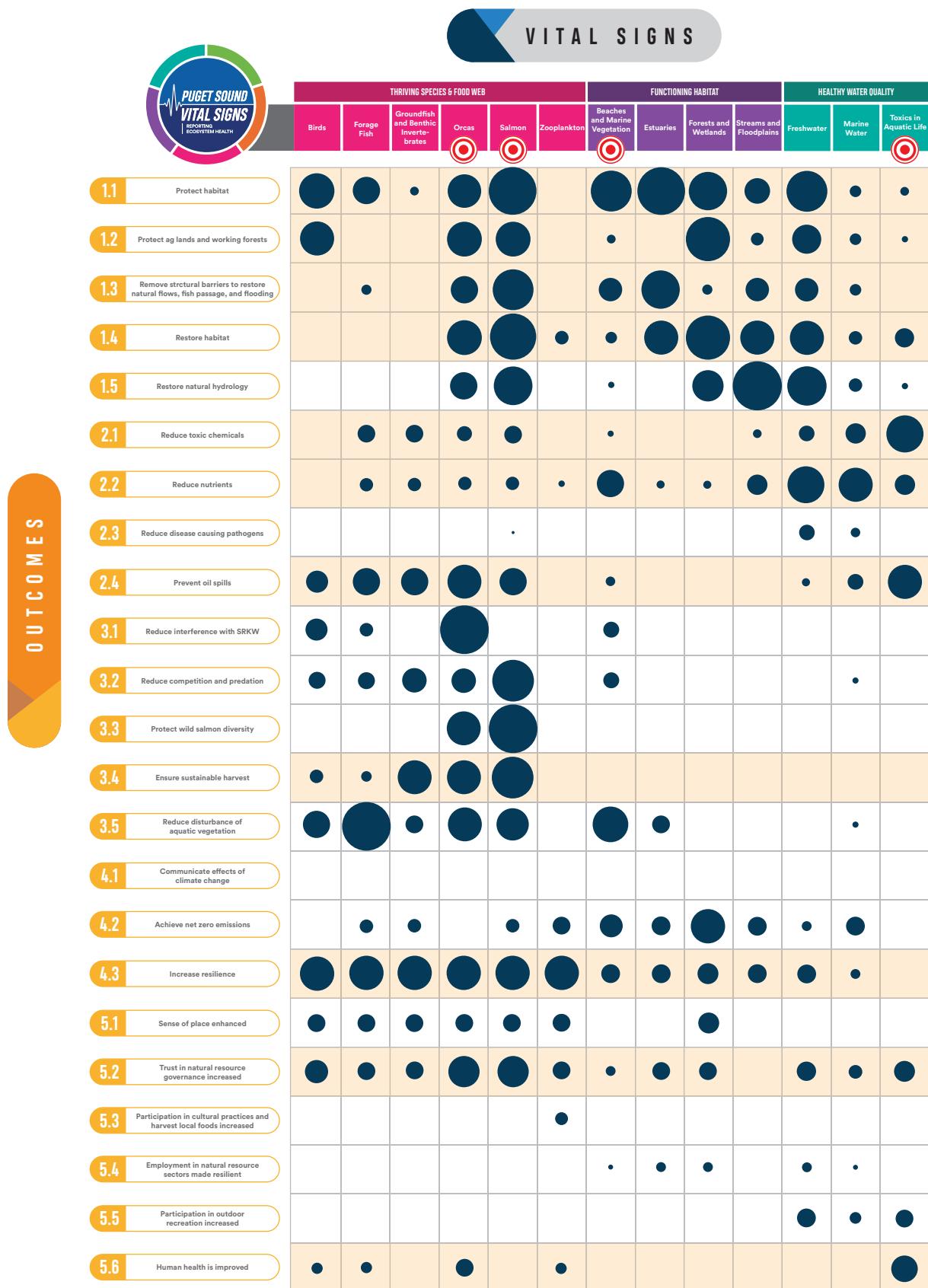


Figure 14b. Visual representation of the theorized strength of relationships between Vital Signs and desired outcomes developed by the Partnership.

## MONITORING SALMON HABITAT

The Chinook Salmon Habitat Common Indicators are another important subset of indicators that the Puget Sound Partnership curates with Lead Entities and other partners. Developed by local salmon recovery groups and adopted by the Puget Sound Salmon Recovery Council, the Chinook Common Indicators help to describe changes in Chinook salmon habitat and landscape conditions. They are designed to be reported at the watershed-scale and rolled up to track regional progress toward salmon recovery goals.

## EFFECTIVENESS EVALUATION

Many restoration and management actions have been effective in restoring the Puget Sound ecosystem, but scientific results are often reported in technical documents that can be hard to find. We are working with the PSEMP community to access and distill information about what's working to restore Puget Sound for our partners and decision-makers. By directly connecting effectiveness data to recovery actions, we can highlight successes and improve our strategies by funding actions that are the most effective.

## ALTERNATIVE FUTURE SCENARIOS

To achieve our Beyond 2020 Vision, we must proactively plan for the future. Population growth, changing climate and ocean conditions, governance, public perceptions, economics, and other factors are changing the region in ways that we do and do not understand. The Alternative Future Scenarios project is a structured way of examining the range of possible futures based on combinations of drivers (for example, high population growth and severe climate change). The project combines narrative storytelling and quantitative assessment to explore how different suites of actions or interventions (for example, restoration, policy change, etc.) affect outcomes the recovery community cares about. The outcomes could be ecological (for example, functional habitat), biophysical (for example, estimated salmon abundance), or social (for example, human health and quality of life). These outcomes are directly related to the desired outcomes defined through Vital Signs and target setting. Through this process, scenarios empower communities to plan for an uncertain future by exploring multiple possibilities of what might happen.

Future scenarios will help to illuminate strategies that are robust and resilient by evaluating their efficacy under alternative future trajectories. Some strategies, for example, could be highly successful under multiple possible futures. In other cases, some strategies may only be effective under certain conditions, and this understanding will help the recovery community proactively pivot if those conditions emerge. This analysis will also help identify potential tradeoffs and multi-benefit solutions.

The scenarios work aligns with the guiding principles as described in the Beyond 2020 Vision. Specifically, scenarios will help understand the threats and opportunities associated with changing climate and population growth. Through creating scenario narratives, the project functions as a mobilizing tool to inspire and engage audiences. Through qualitative and quantitative modeling, scenarios utilize the best available science to map current and potential climate and population trajectories and assess alternative policies and management actions. Modeling will also allow the recovery community to learn and adapt by understanding the effects of actions before they are taken, saving critical time and resources. Scenarios inherently take a holistic approach, integrating social and ecological systems, and the intersection of multiple drivers of change. Most importantly, scenarios help us look forward together to anticipate future opportunities and challenges and plan accordingly.

## THE ROLE OF PUGET SOUND ECOSYSTEM MONITORING PROGRAM

The Puget Sound Ecosystem Monitoring Program (PSEMP) is a collaborative network of subject matter experts and practitioners who collect, share, analyze, and synthesize data and information about the status of the Puget Sound ecosystem and the effectiveness of recovery actions. The program brings together diverse partners—from federal, tribal nations, state, and local government agencies; Canadian organizations; nongovernmental organizations; watershed groups; businesses; academia; Local Integrating Organizations (LIOs); and other private and volunteer groups and organizations—with the goal of coordinating data collection, findings, and assessments that are most relevant to Puget Sound recovery. For example, many of the organizations and individuals that monitor Vital Sign Indicators and other Puget Sound indicators engage in PSEMP.

The Partnership supports coordination of PSEMP as part of its monitoring program to provide vetted, scientific information about ecosystem conditions, progress toward recovery, and effectiveness of actions. The monitoring program is called for in the Partnership's enabling statute ([RCW 90.71.290](#)). The Partnership also funds collaborative monitoring-related projects through the [Monitoring to Accelerate Recovery program](#), intended to meet priority information needs of the Puget Sound indicator system and recovery partners implementing strategies. The PSEMP Steering Committee plays a central role in the monitoring to accelerate recovery solicitation and proposal evaluation process. In addition, PSEMP work groups and participating organizations play an active collaboration role to ensure the process and products associated with funded projects is credible and relevant to the intended audiences of each project.

The Partnership and PSEMP collaborated to develop a [2018-2022 strategic plan](#) that outlines a mission and objectives for PSEMP, focused on supporting collaboration, adaptive management, and communication. The 2019 PSEMP [Communications Plan](#) further expounded on PSEMP's role and key audiences to guide PSEMP work groups, the Steering Committee, and investments in collaborative projects. In 2020, the PSEMP Steering Committee recognized justice, equity, diversity, and inclusion (JEDI) as a priority that was not well-recognized in these plans and formed a JEDI Subcommittee that is working in coordination with related groups and efforts. In 2022, the PSEMP Strategic Plan will undergo an update, in alignment with updated PSEMP priorities and this Action Agenda.

## Adapt and Share

### COMMUNICATING SCIENCE, MONITORING, AND EVALUATION FINDINGS

The Partnership supports partners to communicate key findings from indicator reporting, science and monitoring syntheses, and effectiveness evaluations. Coordination efforts ensure emerging evidence about recovery progress, proven approaches, and key uncertainties informs implementation, policy, and planning efforts. Examples of communication tools and venues the Partnership uses to facilitate shared learning include:

- ▶ **Puget Sound Info.** The Puget Sound Info digital platform is the recovery community's shared platform for tracking and communicating Puget Sound recovery progress. Information about implementation progress and ecosystem conditions is reported and maintained on Puget Sound Info and targeted at multiple audiences, from journalists, to researchers, to policymakers.
- ▶ **State of the Sound.** [The State of the Sound](#) reports on recovery progress as tracked by Puget Sound Indicators and effective evaluation. It helps partners and decision-makers understand the state of the Puget Sound ecosystem, where progress is being made, where challenges remain, and where future action and focused investment are needed. The State of the Sound, which is updated every two years, addresses the following questions.
  1. How is the ecosystem doing?
  2. Are we making progress in implementing identified recovery actions?
  3. What have we learned about the effectiveness of recovery efforts and what are our next steps?
- ▶ **State of the Salish Sea Report** and recent editions of the State of Our Watersheds and State of Salmon are other important products developed by partners.
- ▶ **Salish Sea Ecosystem Conference (SSEC).** Every two years, the Salish Sea recovery community—including scientists, First Nations and tribal nation representatives, resource managers, community and business leaders, policy makers, educators, and students—present and share the latest research on the state of the ecosystem that will guide future actions for protecting and restoring the Salish Sea ecosystem. SSEC provides a forum for sharing ecosystem information and fosters collaboration between the Puget Sound and Canadian recovery community.
- ▶ **Board and partner work groups and public workshops.** The Partnership works with partners to bring timely and critical findings about Puget Sound recovery progress to various boards, steering committees, and partner work groups as opportunities and needs arise. Board meetings serve as an important public venue to disseminate emerging evidence to the recovery community and identify adaptive actions that can be taken by the Management Conference to accelerate progress. Partners also facilitate shared learning through periodic workshops and communications products.



### ADAPTIVELY MANAGING CONTRIBUTING PLANS

All local and regional plans—including LIO Ecosystem Recovery Plans, the Puget Sound Salmon Recovery Plan, Implementation Strategies, and the Action Agenda—are periodically updated to reflect emerging evidence of what is working, where we are falling short, what tools and resources are needed, and where we need to focus our efforts. As the recovery community continues to learn about the Puget Sound ecosystem, the most effective recovery actions, and the best ways to engage with and meet the needs of all the partners in recovery, the Action Agenda and collective recovery effort becomes more effective and efficient over time.

- ▶ **LIO Ecosystem Recovery Plans and Implementation Strategies** are living documents that are adaptively managed and updated. For example, recognition of unaccounted-for barriers or shifts in opportunities to carry out plans effectively may necessitate updates to the logic chains that inform Implementation Strategies and LIO plans to ensure they are sound, consistent, and accurate. This means that as new information becomes available, as additional engagement changes the direction, or as evidence emerges that strategies are no longer effective without significant changes, the recovery community can update these plans to keep them current and effective. New and updated plans may identify new information needs or approaches for accelerating recovery progress. If so, the recovery community may recognize gaps in the 2022-2026 Action Agenda Implementation Plan and pursue options for incorporating and acting upon the most recent learning and priorities. This flexible approach will help to ensure that decisions about ecosystem recovery priorities are based on the best available information about the effectiveness of management investments. This approach will also help accommodate the profound uncertainties about how the Puget Sound ecosystem—human and ecological—responds to stresses and to different management efforts.
- ▶ **The Puget Sound Salmon Recovery Plan**, like the Action Agenda, is updated on a structured timeline and similarly incorporates changes to strategies based on emerging evidence about the most important approaches to achieving salmon recovery.

Keeping these contributing plans updated allows for evidence-based adaptive management of the Action Agenda. By synthesizing content from these plans, soliciting subject matter review, and facilitating broad partner engagement, the Action Agenda update process ensures that recovery priorities reflect the recovery community’s collective knowledge and diverse perspectives on the most important approaches to achieve our statutory goals.



## APPENDIX II: PARTNERS IN RECOVERY

Ecosystem recovery is only possible with the foundational work and partnership of many organizations and champions committed to long-term protection of Puget Sound. Government agencies, tribal nations, private sector institutions, academia, nongovernmental organizations, community-based organizations, and members of the broader public have each led and stewarded the care of Puget Sound. The Partnership was created to steward the work of this broad set of partners, encouraging participation, and aiming to reflect the diversity of our region's growing, multicultural population.

This appendix describes the governing structure of the Partnership and the roles and responsibilities of the partners involved in Puget Sound recovery—and, specifically, in the updating of this Action Agenda. The boards and organizations formally associated with the Partnership are depicted in figure 15. These groups and additional partners are described below.

### Action Agenda governing structure

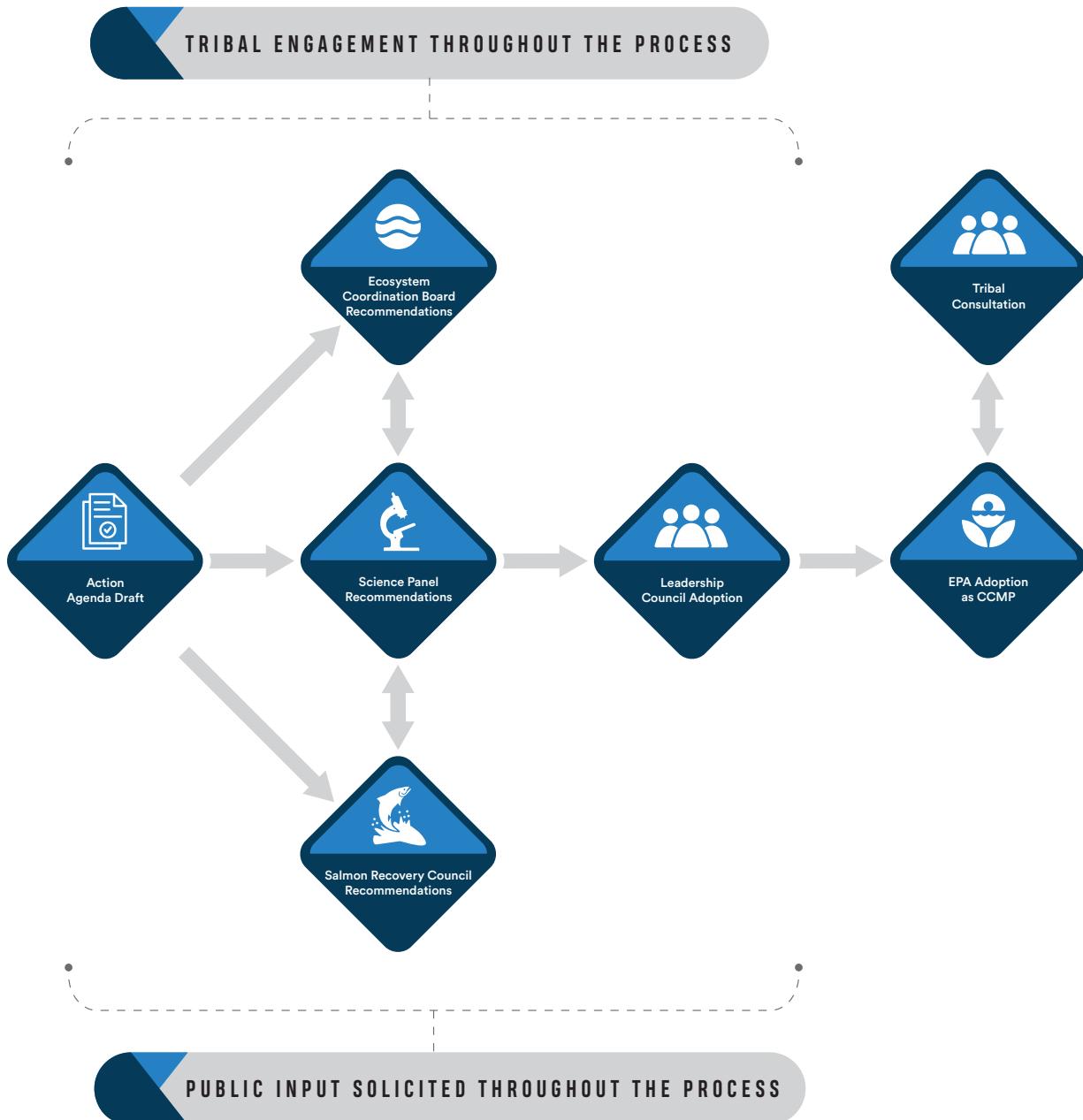


Figure 15: The Action Agenda update, adoption, and approval governing structure.

Interested members of the public are welcome to engage in many of the supporting groups described in this section. Community members and residents can also support the recovery effort through their own actions by, for example, voting for programs and candidates that support the stewardship of the Puget Sound and by considering sustainability and the environment in their purchasing decisions.

Efforts are underway within the Partnership to broaden the scope of opportunities to more meaningfully engage communities. The Partnership is mandated by the Healthy Environment for All (HEAL) Act (RCW 70A.02) to implement environmental justice strategies and actions intended to reduce environmental and health disparities of Puget Sound communities. This requires the Partnership to, among other actions, create and implement an equitable community engagement plan that guides engagement with vulnerable populations and underserved communities for new and existing programs.

The HEAL Act defines vulnerable populations as “population groups that are more likely to be at higher risk for poor health outcomes in response to environmental harms. This includes, but is not limited to:

- ▶ Racial or ethnic minorities;
- ▶ Low-income populations;
- ▶ Populations disproportionately impacted by environmental harms; and
- ▶ Populations of workers experiencing environmental harms.”

An underserved community is defined as “a geographic area where vulnerable populations face combined, multiple environmental harms and health impacts, and includes, but is not limited to, highly impacted communities.” The Partnership’s community engagement plan and ongoing efforts to work toward equity and environmental justice, including the implementation of the HEAL Act, will continue to evolve throughout the timeline of this Action Agenda. Possible outcomes will include identifying new members of the recovery community, engaging with new and diverse partners in our efforts to recover the Puget Sound, and updating our governing structure as we continue to become more informed, inclusive, and equitable.

## Who are the Partners in Recovery?

### PUGET SOUND PARTNERSHIP

The Partnership coordinates the region’s collective effort to recover Puget Sound. The Partnership brings together hundreds of partners to mobilize action and investments around a common agenda to protect and restore Puget Sound. The Partnership is not a regulatory, grant, nor on-the-ground implementing agency. It facilitates collaboration to optimize Puget Sound recovery. The Partnership provides leadership through the collective development of the Action Agenda, progress measurements, and funding strategy. The Comprehensive Plan provides more detail on the Partnership’s backbone role. The executive director is appointed by and reports to the Governor to strategically focus, manage, and guide the work of the Partnership.

### PUGET SOUND PARTNERSHIP BOARDS AND MANAGEMENT CONFERENCE

The Partnership’s three statutory boards direct and support the Partnership in its charge of mobilizing and accelerating the science-informed effort to recover Puget Sound. Additionally, two advisory councils advise and provide information to the Leadership Council related to Puget Sound recovery. These boards and advisory councils are integral to the Partnership’s role and coordinate their priorities for maximum effectiveness via system-wide shared goals.



## LEADERSHIP COUNCIL

The Governor appoints the seven at-large member seats of the Leadership Council, which sets policy and strategic direction for Puget Sound recovery. The Leadership Council adopts, revises, and guides the focus and development of the Action Agenda. In addition, the Leadership Council serves as the regional salmon recovery organization for Puget Sound salmon species (except Hood Canal summer chum) and oversees implementation of the Puget Sound Salmon Recovery Plan with advice and support from the Puget Sound Salmon Recovery Council. Advice and recommendations from boards, the Puget Sound Salmon Recovery Council, partners, and the public inform the Leadership Council's decisions. Members of the Leadership Council also convene partners annually to identify and recommend legislative policy and budget priorities to help guide the Washington State Legislature. As leaders from around Puget Sound, Council members work on high-priority policy issues that accelerate the recovery effort and mobilize funding for recovery plans.



### ***The Leadership Council Advances Recovery***

Jay Manning—current Chair of the Leadership Council Chair—convened a process in the summer of 2021 to discuss policy ideas and legislative priorities to support Puget Sound and salmon recovery in the 2022 legislative session. The process engaged Partnership board members that represent Tribal nations, state agencies, nongovernmental organizations, and local governments. The group shared a set of recommendations for legislative priorities with the Governor's office, which subsequently produced a budget and legislation that would implement many of the same ideas. The Leadership Council continued to support implementation of these priorities in the state legislature, leading to progress on many important fronts. Even where major policy proposals failed to pass—on riparian habitat protection and growth management, for example—the Leadership Council's engagement during the 2022 session provided the opportunity to advance important conversations that will continue into the future. To learn more about how the Leadership Council's legislative priorities fared in the 2022 session, visit the Partnership's [2022 Legislative Session Recap](#).

## ECOSYSTEM COORDINATION BOARD

Designed to serve as the voice for diverse partner groups, the Ecosystem Coordination Board (ECB) includes one representative from each geographic action area, two representatives from the business community, two representatives from environmental interests, three representatives from tribal nations, one representative each from counties, cities, and port districts, and three representatives each from state and federal agencies with environmental management responsibilities in Puget Sound. The 27-member board focuses on problem solving and the practical aspects of implementing the Action Agenda and component plans and strategies. The board advises the Leadership Council and the Partnership's executive director, on major strategic and implementation decisions. The board is responsible for seeking funding and other resources, assisting with public education activities, and encouraging communication and collaboration among all the partners involved in Puget Sound recovery. Consisting of effective project and program implementers, the board focuses on overcoming persistent barriers to the success of Puget Sound recovery efforts. Many board members are also elected officials, including state representatives and senators, city councilmembers, county commissioners, and tribal nation representatives. Instituting a caucus organization, these members have the ability to share their diverse perspectives on recovery programs and actions with their respective networks, to learn from each other about what is needed to recover Puget Sound, and to ensure government programs and actions are designed with Puget Sound recovery in mind.



### ***The Ecosystem Coordination Board Advances Recovery***

In 2019, the board convened a subcommittee focused on supporting local governments to participate in protection and recovery of the Puget Sound. In 2020, this subcommittee explored existing conservation incentive programs and financing mechanisms that are and could be applied in the Puget Sound region. In 2021, the ECB collaborated with the Habitat Strategic Initiative to interview local land use planning and permit staff in 11 Puget Sound counties to identify the tools needed to support county-level practitioners with encouraging voluntary land protection.

## SCIENCE PANEL

The Science Panel provides scientific advice to the Leadership Council and guidance for preparing the Action Agenda and the State of the Sound. The Science Panel has assisted in developing an ecosystem-level strategic science program, establishing indicators of ecosystem health, setting policy-based recovery targets, and ensuring the scientific basis for the Action Agenda and Implementation Strategies. The Science Panel is specifically responsible for guiding development and implementation of a regional monitoring program (Puget Sound Ecosystem Monitoring Program), identifying critical research needs, and preparing the Strategic Science Plan, Science Work Plan, and Puget Sound Science Update. The Panel's guidance to the Partnership, Leadership Council, and Ecosystem Coordination Board (ECB) forms the basis of the strategic approach to Puget Sound recovery articulated in the Action Agenda.



### ***The Science Panel Advances Recovery***

In the 2021 State of the Sound report, the Panel called for decisive action to achieve a Puget Sound that sustains a healthy economy, ecology and environment for all. The Panel noted Puget Sound recovery requires transformative change which recognizes and embraces ecosystem recovery as a human as well as an ecological process. The Panel also recognized that building a resilient Puget Sound ecosystem depends on three components: diversity, connectivity, and adaptation. To make progress toward transformational changes, the Science Panel is leading work around alternative future scenarios that leverages advances in modeling to better address uncertainties and provide insights on potential future conditions.

## PUGET SOUND SALMON RECOVERY COUNCIL

The Puget Sound Salmon Recovery Council includes representatives from the diverse constituents working on salmon recovery throughout the Sound, including representatives from federal agencies, state agencies, local jurisdictions, all Puget Sound tribal nations, all Puget Sound watersheds, business and agriculture entities, and environmental entities. The PSSRC advises the Leadership Council on decisions relating to salmon recovery and the implementation of the Puget Sound Salmon Recovery Plan. The PSSRC's recommendations help set priorities for the types of recovery work to conduct, determine what issues to focus on, and provide recommendations for future projects and funding. More information about the PSSRC and subcommittees is included in the *Supporting organizations and work groups* section below.

## PUGET SOUND ECOSYSTEM MONITORING PROGRAM

The Puget Sound Ecosystem Monitoring Program (PSEMP), described in detail in Appendix I, is a collaborative network of subject matter experts from many monitoring organizations and different parts of the region. Together, they generate, organize, synthesize, and communicate scientific information, across political and organizational boundaries, to track ecosystem conditions that directly address management and science questions critical to Puget Sound recovery. This collaborative network includes partners from federal, tribal nations, state, and local government agencies; Canadian organizations; nongovernmental organizations; watershed groups; business; academic researchers; LIOs, and other private and volunteer groups and organizations. Topical work groups convene to create and support a collaborative, inclusive, and transparent approach to regional monitoring and assessment that builds upon and facilitates communication among the many monitoring programs and efforts operating in Puget Sound, the greater Salish Sea, and statewide. Steering Committee and Partnership staff help link the monitoring community to the Partnership's boards and other managers and decision makers to support science-based decisions and adaptive management of the Puget Sound recovery effort.

In 2020, the Partnership started rotating the Leadership Council meetings around the Puget Sound to co-host a local forum with local leadership, including Local Integrating Organizations (LIO) and Lead Entity leadership and committee members, to address the intersection of local and regional recovery priorities. In 2021, the Partnership started this same process with the ECB. These rotating meetings serve to:

- ▶ Expand local decisionmaker engagement with the Puget Sound recovery community, especially those elected officials who are not currently designated members of the Management Conference boards and Puget Sound Salmon Recovery Council, or already members of their respective LIO or Lead Entity committees.
- ▶ Discuss local priorities and determine how the Leadership Council and the ECB can support action to address the gaps and barriers related to those priorities.
- ▶ Discuss regional priorities and determine how they might be supported at the local level.

These and all the efforts described in this Appendix will continue strengthening and supporting the partners working together and toward Puget Sound protection and recovery.

## Supporting Organizations and Work Groups

Multiple boards, work groups, advisory bodies, and implementing networks affiliated with the Puget Sound Partnership provide scientific, advisory, and implementation support for Puget Sound recovery. These groups provide strategic advice and expert guidance on the Action Agenda update process, setting recovery targets, and the Science Work Plan. They also provide specific guidance on the strategies for protecting and restoring watersheds, protecting, and restoring nearshore and marine habitat, and preventing, reducing, and controlling nutrient, toxic, and pathogen pollution loadings in Puget Sound. Conservation Districts, for example, provide technical assistance and incentives to private landowners and working lands managers to implement best management practices. Many of these groups exist for reasons beyond Puget Sound recovery and give generously of their time for our collective efforts to protect this place. Many standing subcommittees and advisory groups also support the development and implementation of the Action Agenda. Members and participants are drawn from state and federal agencies and leadership bodies, as well as key partners with subject expertise and interest in Puget Sound recovery. Contributors with explicit roles are described below.

### STRATEGIC INITIATIVE LEADS AND ADVISORY TEAMS

In 2012, the Puget Sound Partnership's Leadership Council established three initiatives to tackle multiple issues critical to Puget Sound recovery—stormwater, habitat, and shellfish. To manage this effort, agency and institutional partners assembled into three Strategic Initiative Lead teams, charged with bringing people and ideas together to improve water, habitat, and communities. Strategic Initiatives are a way of categorizing priority topics for recovery: stormwater, habitat, and shellfish (all discussed in the Implementation Plan). The Strategic Initiatives direct action and resources toward the most significant scope of problems facing Puget Sound. Strategic Initiatives are increasingly informed by more focused and detailed Implementation Strategies.

- ▶ **Strategic Initiative Leads** provide technical and programmatic leadership to help implement the Action Agenda through strategy development and subaward investments of Puget Sound Geographic funding appropriated by Congress to EPA. Strategic Initiative Leads are selected by the EPA through a competitive grant process and are currently led by:
  - » Stormwater lead – Washington Department of Ecology
  - » Habitat lead – Washington Department of Natural Resources and Department of Fish and Wildlife
  - » Shellfish lead – Washington Department of Health
- ▶ **Strategic Initiative Advisory Teams** are an opportunity for partners representing diverse organizations and perspectives to provide technical and policy input to the Strategic Initiative Leads on priorities and funding. Team members are technical and policy experts that represent a range of local, regional, and tribal nations experience and perspectives. The advisory teams were first established in 2016 and members serve for two-year terms. The Strategic Initiative Leads and Puget Sound Partnership jointly coordinate the Strategic Initiative Advisory Teams, with the Strategic Initiative Leads providing technical and policy leadership and the Partnership providing process support.

Together, the Strategic Initiative Leads and Strategic Initiative Advisory Teams are essential to the development and implementation of the Action Agenda and have the following responsibilities:

- ▶ Propose regional recovery and protection priorities to the Puget Sound management community.
- ▶ Coordinate with regional, tribal nations, and local partners to improve and adaptively manage Puget Sound strategic planning processes.
- ▶ Collaborate to address issues that affect all three Strategic Initiatives, such as climate change.
- ▶ Develop, manage, and implement Implementation Strategies.
- ▶ Establish the key sequences of actions to lead from present conditions to long term goals.
- ▶ Solicit, identify, review, and prioritize local and regional funding requests.
- ▶ Manage grants which implement priority Puget Sound recovery work from the Action Agenda Implementation Plan.

## LOCAL INTEGRATING ORGANIZATIONS

Local Integrating Organizations are local forums that collaboratively work to develop, coordinate, and implement strategies and actions that contribute to the protection and recovery of the ecosystem. LIOs provide a venue for stakeholders and partners to identify and develop locally driven recovery strategies. Elected officials (tribal, state, county, city), local government staff, non-profit organizations, special districts (for example, conservation districts), salmon recovery groups, agriculture, businesses and industry members, educational institutions, and residents participate in LIOs to collaboratively develop and foster implementation of the relevant local Ecosystem Recovery Plans and the Puget Sound Action Agenda. LIOs meet regularly to coordinate projects, strategize funding opportunities for priority actions, initiatives, and programs, exchange research, and identify science-based ecosystem recovery strategies and actions that incorporate community needs and values.

As of June 2022, there are ten active LIOs representing geographic areas in Puget Sound. Visit the [LIO Geography Map](#) for more information. Each LIO receives capacity funding to support planning and coordination efforts.



In 2020, LIOs began co-hosting local forums with the partnership boards (Leadership Council and ECB) to address the intersection of local and regional recovery priorities. These local forums are objective-driven discussions that cover complex acute and chronic challenges that require collaborations and actions at multiple scales. Many times, this equates to transboundary, cross-jurisdictional, multi-scale issues of highest priority.

LIOs adaptively manage locally focused Ecosystem Recovery Plans and identify priority actions that align with their recovery plans and best serve their communities. LIOs provide several substantial contributions to the development and implementation of the Action Agenda:

- ▶ Identifying near-term ecosystem recovery priorities and providing local context
- ▶ Developing collaboration and co-production principles with the Partnership and the Strategic Initiative Leads
- ▶ Reviewing and elaborating on strategies and actions to identify key opportunities for implementation
- ▶ Supporting ongoing programs
- ▶ Coordinating across government jurisdictions, tribal nations, and community groups to elevate and act on Puget Sound recovery issues

Detailed information about these organizations is available on the [Local Integrating Organizations website](#) and [PS Info](#).



## PUGET SOUND SALMON RECOVERY COUNCIL AND SUBCOMMITTEES

Described in the Management Conference section above, the Puget Sound Salmon Recovery Council (PSSRC) predates the Puget Sound Partnership and remains in place to advise the Leadership Council in carrying out its salmon recovery responsibilities as the designated regional organization for salmon recovery in Puget Sound ([RCW 77.85.090](#)). The PSSRC developed the Chinook Implementation Strategy, with assistance from the Partnership, and oversees adaptive management and regional implementation of the Puget Sound Salmon Recovery Plan.

The PSSRC currently has several subcommittees and advisory groups. For example, the Salmon Science Advisory Group—a joint workgroup of the Science Panel and PSSRC—provides scientific support to the PSSRC to assist with implementing and updating the Puget Sound Salmon Recovery Plan, Action Agenda, and Science Work Plan. The PSSRC also has a Funding Subcommittee working to mobilize new sources of funding for the salmon recovery effort, and a Regulatory & Incentives Subcommittee working to improve both voluntary and regulatory mechanisms to protect freshwater, estuarine, and marine habitats on which Chinook salmon rely. The Puget Sound Salmon Recovery Plan, Chinook Implementation Strategy, and the forthcoming Puget Sound Steelhead Recovery Plan serve as important foundations for the Habitat Strategic Initiative. The PSSRC's recovery planning priorities, which can be found on the *Partnership's website*, provide more information about these plans and current update and development efforts.

## SALMON RECOVERY AND WATERSHED GROUPS

State, federal and local agencies, tribal nations, community groups, businesses, and nongovernmental organizations work together to implement the Puget Sound Salmon Recovery Plan at both the watershed and regional scales. The plan outlines strategies and actions for achieving recovery of threatened salmon stocks in Puget Sound.

The Governor's Salmon Recovery Office develops the state's strategy and tracks progress including efforts specific to Puget Sound. At the local scale, Lead Entities are the watershed-based organizations that oversee

implementation of watershed chapters of the Puget Sound Salmon Recovery Plan and develop lists of salmon habitat recovery projects for funding every year. Salmon recovery Lead Entities and watershed groups participate in Local Integrating Organizations, ensuring that the Local Integrating Organizations' Ecosystem Recovery Plans incorporate salmon recovery priorities.

Lead Entities are established in law ([RCW 77.85](#)). Primary among their responsibilities is management of an annual process to identify and prioritize habitat protection and restoration projects that will make the largest contribution to salmon recovery within their watersheds. These projects undergo significant technical and policy review at the local scale before being forwarded to the statewide Salmon Recovery Funding Board for further technical review and approval. Some of these projects may also be incorporated in the Action Agenda as implementation activities in the Implementation Plan. More information on Lead Entities' roles and work is available on the [Partnership's Salmon Recovery website](#).

## NORTHWEST STRAITS COMMISSION AND MARINE RESOURCES COMMITTEES

The Northwest Straits Commission is a regional coordinating body of community volunteers and scientists. The commission provides funding, training, and support to seven county-based Marine Resources Committees. The Northwest Straits Commission facilitates regional coordination and connects the committees' work to regional planning processes such as the Action Agenda and Puget Sound Nearshore Estuary Restoration Program.

## ENVIRONMENTAL CAUCUS

The Environmental Caucus is represented on both the ECB and the Puget Sound Salmon Recovery Council. The Environmental Caucus—which includes but is not limited to nongovernmental environmental organizations—brings an important perspective to the ECB and PSSRC in their advisory roles to the Leadership Council on funding and implementation of the Action Agenda and the Puget Sound Salmon Recovery Plan.

## ACADEMIC AND RESEARCH INSTITUTIONS

Several programs from regional academic institutions contribute to Puget Sound recovery. For example, the Puget Sound Institute was established by the University of Washington, the Environmental Protection Agency, and the Puget Sound Partnership to support the Partnership as the bridge between the scientific community and the groups tasked with protecting and restoring Puget Sound. Likewise, the Washington State University Stormwater Center brings significant expertise to the Stormwater Strategic Initiative. In addition, the following organizations contribute to reporting on indicators, including:

- ▶ ECO Resource Group
- ▶ Greene Economics LLC
- ▶ King County
- ▶ National Oceanic and Atmospheric Administration
- ▶ Oregon State University
- ▶ Puget Sound Partnership
- ▶ United States Geological Survey
- ▶ Washington Department of Ecology
- ▶ Washington Department of Fish and Wildlife
- ▶ Washington Department of Health
- ▶ Washington Department of Natural Resources

## Governmental Entities

Federal, state and local agencies, intergovernmental bodies, and tribal nations collaborate with the Partnership and are important agents of leadership, funding, and regulatory support. These groups are described below. The role of tribal nations is expanded on in Appendix I and in Institutional Strategy B.

### TRIBAL NATIONS

As sovereign nations, tribes co-manage the natural resources they share with other residents of Washington State as agreed under treaties negotiated with the Federal Government in 1854 and 1855. Treaties are the “Supreme Law of the Land” under the U.S. Constitution. When tribes ceded their land under the treaties, they reserved their right to fish, hunt, and gather at all usual and accustomed grounds and stations. U.S. v. Washington (Boldt decision) and related cases affirmed the tribes’ role as co-managers of treaty-protected resources and their right to half of the sustainably harvestable salmon and shellfish. As affirmed by the U.S. Supreme Court, implicit in this treaty right is the responsibility of the State to protect and restore salmon and the habitats that they need to thrive.

Tribes work closely with state agencies and local organizations on recovery efforts, including the Puget Sound Partnership. The Partnership is committed to supporting the principles of the [Centennial Accord \(1989\)](#), which recognizes the sovereign status of tribes and institutionalizes government-to-government relationships. Tribal representatives serve on the Leadership Council, Ecosystem Recovery Board, Science Panel, and Salmon Recovery Council. The Partnership Tribal Co-Management Council, and the Tribal Management Conference provide forums that the tribes use to engage in guiding Puget Sound Partnership activities, including policy development and project prioritization.

### FEDERAL

Federal agencies contribute to Puget Sound recovery by promoting information sharing, developing joint work priorities, participating in the Management Conference Boards and advisory committees, and by collaborating across agencies to support the development and implementation of the Action Agenda. Nine federal agencies have signed a Memorandum of Understanding to form a Federal Task Force committed to these working principles, and to affirm that federal agencies with Puget Sound interests are actively participating. Partner agencies include those with environment and natural resource responsibilities—such as the U.S. Environmental Protection Agency, National Oceanic and Atmospheric Administration, U.S. Fish and Wildlife Service, U.S. Geological Survey, Natural Resources Conservation Service, and U.S. Army Corps of Engineers—as well as those with local defense and security responsibilities such as the U.S. Coast Guard, U.S. Army, and U.S. Navy. To guide its engagement with Puget Sound recovery, the federal task force has developed an Action Plan that supports implementation of priority recovery strategies and actions, including science and reporting. The Puget Sound Federal Task Force (PSFTF), working with the Puget Sound Partnership and other Management Conference partners, will use the PSFTF’s Action Plan to continue to improve understanding, recognition, and alignment of federal ongoing programs with Action Agenda implementation. In addition, governmental partners coordinate with tribal nations and the state on other plans relevant to Puget Sound recovery, such as the U.S. Coast Guard’s Northwest Area Contingency Plan, the Corps of Engineers’ Puget Sound Master Plan, and The Recovery Plan for Southern Resident Killer Whales.



### **ENVIRONMENTAL PROTECTION AGENCY (EPA)**

The EPA works alongside the Partnership, state agencies, tribes, and others to collaborate in regional planning efforts including transboundary collaboration with Canada, leverage funding for recovery, and support scientific research. Additionally, the EPA administers important federal programs supporting Puget Sound recovery including the National Estuary Program (NEP). The National Estuary Program supports on-the-ground improvements for clean and safe water, protected and restored habitat, thriving species, and a vibrant quality of life for all.

As an important federal partner in Puget Sound recovery, the EPA establishes the NEP Puget Sound Funding Model and works closely with the Partnership, Strategic Initiative Leads, and other partners in recovery. This work includes establishing regional priorities for Puget Sound protection including developing Implementation Strategies; coordinating and collaborating with others to adaptively manage recovery work; and managing sub-awards to local, tribal, state, county, nongovernmental organizations, and academic institutions to carry out a wide variety of projects, assessments, and monitoring.

### **NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA)**

The National Oceanic and Atmospheric Administration leads the steelhead recovery planning effort and reviews the status of listed salmon and steelhead under the Endangered Species Act (ESA) every five years. The administration works closely with the Partnership to manage Chinook and steelhead recovery plans for the Puget Sound.

### **STATE**

State agencies with natural resource and human health responsibilities promote coordination, communication, and program alignment. Agencies working toward Puget Sound recovery include the departments of Ecology, Natural Resources, Fish and Wildlife, Commerce, Transportation, Health, and Agriculture; the State Conservation Commission; the Recreation and Conservation Office; the Governor's Salmon Recovery Office; the Governor's Office; and the Office of Financial Management. Additional leadership roles are taken on by the Departments of Ecology, Fish and Wildlife, Health, and Natural Resources, which serve as Strategic Initiative Leads. The Department of Commerce and Washington State University's Stormwater Center also contribute to the Stormwater Strategic Initiative.

### **CITIES, COUNTIES, AND SPECIAL-PURPOSE DISTRICTS**

Much of the effort and some of the most important decisions to recover Puget Sound occurs at the local level. Cities and counties are at the frontline for addressing impacts—they develop and implement growth management plans and development regulations, manage surface water runoff, treat wastewater, and provide numerous services to residents. Many elected officials and staff from counties and cities participate in Local Integrating Organizations and Lead Entities. Working cooperatively with cities and counties is essential for federal and state agencies, tribal nations, and nongovernmental interests. In addition to participating as individual jurisdictions, counties work together through the Washington State Association of Counties and the County Coastal Caucus, and cities work together through the Association of Washington Cities.

## TRANSBOUNDARY PARTNERS AND FORUMS

As part of the greater Salish Sea ecosystem, Puget Sound is influenced and affected by events and activities in Canada. To facilitate coordinated and complementary action for long-term protection and restoration, a number of established regional mechanisms currently promote cooperation on transboundary issues on local and Sound-wide scales. The Partnership's boards—which support and guide the agency in its charge of mobilizing and accelerating the science-based effort to protect and restore Puget Sound—include Canadian members. The ECB invited representatives of the Canadian government and the Fraser Basin Council to join as ex-officio members of the Board in 2013, and the Science Panel invited a member from Canada's Department of Fisheries and Oceans to join the Panel the same year. The Partnership encourages participation and contributions from these members to help support the advancement of transboundary dialogue and issues. In 2022, to promote additional transboundary information sharing across the Management Conference and identify whether any emerging issues would benefit from heightened attention or development of a new forum, the Environmental Protection Agency, Washington State Department of Ecology, the Puget Sound Partnership, and leaders from the Partnership's Boards plan to launch an informal Ad Hoc transboundary caucus.

### ***Key transboundary issues include:***

- ▶ Southern Resident Orca recovery
- ▶ Vessel safety and risk management
- ▶ Oil spill prevention, preparedness, and response
- ▶ Marine debris
- ▶ Marine survival of salmonid species
- ▶ Marine and freshwater quality
- ▶ Streamflows
- ▶ Flooding
- ▶ Marine species at risk (for example, Chinook salmon)
- ▶ Toxics in the food web
- ▶ Shellfish beds
- ▶ Underwater noise and vessel disturbance
- ▶ Invasive European green crab management

### ***Transboundary coordination mechanisms include:***

- ▶ Southern Resident Orca Task Force Participation of Canadian representatives on the Partnership's boards
- ▶ Biennial Salish Sea Ecosystem Conference
- ▶ The U.S. Environmental Protection Agency and Environment and Climate Change Canada Statement of Cooperation, and Working Group
- ▶ The Washington State/British Columbia Environmental Cooperation Council Regional Joint Response Teams co-chaired by Canadian and U.S. federal agencies. The teams implement joint Canada-U.S. inland and marine pollution contingency plans that provide for an international coordination mechanism to ensure an appropriate and effective cooperative response between Canada and the United States in the event of an oil release or hazardous substances emergency along the shared inland boundaries and in marine waters, including in the Puget Sound and Georgia Basin region.
- ▶ Pacific States/British Columbia Oil Spill Task Force
- ▶ Joint meetings of the Puget Sound Harbor Safety Committee and Pacific Coast Marine Advisory Review Panel
- ▶ Southern Resident Killer Whale Technical Working Groups and Indigenous and Multi-Stakeholder Advisory Group
- ▶ Be Whale Wise
- ▶ The International Airshed Strategy
- ▶ Participation in U.S.-Canada workshops convened by the Commission for Environmental Cooperation
- ▶ First Nation coordinating mechanisms including the Coast Salish Gathering and the Transboundary Indigenous Caucus of the Canada-U.S. Joint Marine Pollution Contingency Plan Pacific—Geographical Annex
- ▶ Quiet Sound and Enhancing Cetacean Habitat and Observation (ECHO)
- ▶ Pacific States—British Columbia: Oil Spill Task Force



## APPENDIX III: FUNDING RECOVERY

As a region, we must commit to address the lack of sufficient funding to achieve protection and recovery of Puget Sound by increasing the efficient and effective use of existing sources, identifying and securing additional dedicated funding sources, and building a portfolio of private funding and financing programs—including innovative, market-based programs.

Important to achieving our vision, we must also ensure local partners have the capacity to quickly scale their recovery work with increased investment. To that end, we need to build supporting infrastructure capable of moving important recovery projects quickly from concept to implementation and to facilitate streamlined matchmaking between fund sources and restoration projects.

The costs of protecting Puget Sound will become increasingly expensive over time if human population, climate change, and other ecosystem pressures increase as currently projected. We need to accelerate funding for our large capital programs and fully fund the Action Agenda for Puget Sound if we are to recover Puget Sound.



## The funding strategy for Puget Sound recovery

An effective funding strategy for Puget Sound recovery aims to define the full range of funding needs for Puget Sound recovery, to maintain and efficiently use existing funding, to meaningfully engage local voices to help determine how and where to best spend funding with clarity and impact, and to secure additional funding to fully implement Action Agenda strategies and actions. Funding approaches must also support increased capacity to integrate cross-cutting principles and practices of honoring tribal nations' treaty and sovereign rights, equity, and environmental justice to begin dismantling the disproportionate impacts felt by some communities.

The funding strategy for Puget Sound recovery includes five key components:

- ▶ Establish a clear picture of the size and nature of the funding need for Puget Sound recovery
- ▶ Maintain and increase funding from existing Puget Sound recovery sources, including developing a major new source of state funding
- ▶ Increase the effectiveness of investment decisions for existing sources of funding
- ▶ Build a portfolio of new private funding sources
- ▶ Enhance capacity for rapid funding response

These components are described in more detail below.

### ESTABLISH A CLEAR PICTURE OF THE SIZE AND NATURE OF THE FUNDING NEED FOR PUGET SOUND RECOVERY

There are multiple funding needs for Puget Sound—for agency operations, for capital projects, for ongoing programs, for science and monitoring, and for other key aspects of Puget Sound recovery. As described in the 2021 State of the Sound, priority Puget Sound recovery programs are consistently—and severely—underfunded.

A compelling case for resources rests on determining the resources necessary to implement this Action Agenda. Understanding what resources are necessary will require further analysis, which is why the Partnership endorses the State–Tribal Riparian Work Group's recommendation to characterize the resources needed to implement salmon recovery habitat restoration and acquisition projects, including near-term costs (four-year project list) and the full costs to restore and revegetate riparian buffers.

The recovery community also recognizes that a great deal of capacity is contained in ongoing programmatic work at federal, tribal nations, state, and local levels. Funds for programs and activities the Partnership is not able to calculate or account for bring great benefit to Puget Sound. Understanding this universe of work and its financial sustainability is critical to more comprehensively defining the funding gap. To that end, the Partnership collects available financial information on state, federal, private, and local funds budgeted by ongoing programs—managed by state agencies with benefits to Puget Sound—with each cycle of the Washington State biennial budget. This accounting helps us to better understand where funding is coming from, the types of activities it supports, and to understand funding trends over time.

### MAINTAIN AND INCREASE FUNDING FROM EXISTING PUGET SOUND RECOVERY SOURCES

The large community of partners working towards recovering Puget Sound are committed and effective advocates for the federal, state, and local funding available for Puget Sound recovery. Advocacy from the Partnership and others—and the good work of that supportive congressional delegation—appears to be paying off. Recent federal budget proposals have increased—rather than eliminated—funding for the EPA Geographic Program and the National Estuary Program, and an even greater influx of funding through the Bipartisan Infrastructure Law of 2021 presents a five-year window of opportunity for making progress toward salmon and Puget Sound recovery.

The Partnership will continue to educate the public and decisionmakers on the scale and urgency of funding need. Mechanisms for doing so include this Action Agenda, State of the Sound reports, Puget Sound Days on the Hill and Salmon Day on the Hill events, and our state budget rankings. In particular, the Partnership urges support for ongoing funding for the three Strategic Initiatives, with emphasis on the Habitat Strategic Initiative (where the relative funding gap is largest). In anticipation of additional funding through the Bipartisan Infrastructure Law, the Partnership will work to advance strategic prioritization and alignment of federal and state infrastructure funding based on restoration priorities, economies of scale, science advancement, equity and justice, agriculture and resource land protection, and workforce development.

Elsewhere at the state and local level, the recovery community advocates for maintaining and enhancing other existing recovery funding sources, such as ongoing grant programs, local utility fees, state funding to support coordination of the recovery effort, and more. In particular, fully funding high-priority state capital budget requests—including the Puget Sound Acquisition and Restoration (PSAR) Program, the Estuary and Salmon Restoration Program (ESRP), the Floodplains by Design Program, and the Stormwater Financial Assistance Program—are recognized as essential components of Puget Sound recovery. Additionally, new state funding will be available through the Climate Commitment Act, described in more detail in the text box.

### ***Develop and Implement a Major New Source of State Funding***

While recent developments at the federal level are encouraging, the scale of the funding need for Puget Sound recovery suggests a new, dedicated source of state funding may be necessary. The numbers from the past decade make it readily apparent that status quo approach to state funding is unable to match the need:

From the 2013-15 biennium to the 2021-23 biennium, the Washington State Legislature funded Puget Sound restoration and protection programs at an average of only 53 percent of what was requested, a \$763 million gap that has left many high priority projects languishing unfunded. None of the previous three Action Agendas saw full funding for their Near Term Action (NTA) lists: for 2014-2015, funding was secured for only 32 percent of the need; for 2016-2018, funding was secured for only 52 percent of the need; and for 2018-2022, funding has been secured for only 24 percent of the need. Around 90 percent of NTA owners reporting a barrier to implementing their action cited a lack of funding and resources. The gap for salmon recovery is even more pronounced: the statewide capital cost of implementing the habitat-related elements identified in regional salmon recovery plans over the past decade was \$4.7 billion. However, only \$1 billion was invested—just under 22 percent of the need.

Addressing these gaps will require a new approach. To that end, the Partnership will assess possible revenue sources to identify the best match for successfully delivering Puget Sound recovery funding at the necessary scale and pace. In conjunction, the Partnership is committed to building a coalition to support the passage of the new source of revenue before and during the legislative session.

### ***Climate Commitment Act (CCA)***

The Climate Commitment Act establishes the Climate Investment Account and several additional sub accounts including the Natural Climate Solutions Account. These accounts will provide hundreds of millions of dollars in new revenue to be directed at everything from climate resilience to habitat restoration with specific set asides to meet environmental justice priorities. The Puget Sound Partnership and related organizations will be developing a strategy to maximize the impacts of these new funds on Puget Sound restoration and address the disproportionate climate impacts on tribal nations and environmental justice communities. The Act also provides that spending proposals will be reviewed by the Environmental Justice Council consistent with the requirements of the Climate Commitment Act and the Healthy Environment for All (HEAL) Act and must be specifically appropriated by the legislature. Key sections of the legislation relevant to Puget Sound include clean water investments that:

- ▶ Restore and protect estuaries, fisheries, and marine shoreline habitats
- ▶ Make corrections to fish passage
- ▶ Increase carbon storage in aquatic and coastal ecosystems
- ▶ Reduce flood risk and restore natural floodplain ecological function
- ▶ Improve aquatic habitat mapping and modeling
- ▶ Improve stormwater treatment especially through green stormwater infrastructure
- ▶ Protect or plant trees in marine shorelines and freshwater riparian areas
- ▶ Preserve natural and working lands from the threat of conversion to development or loss of critical habitat

## INCREASE THE EFFECTIVENESS OF INVESTMENT DECISIONS FOR EXISTING SOURCES OF FUNDING

An already compelling case for Puget Sound recovery funding will be strengthened by ensuring accountability and effectiveness in how investments meant to fund Puget Sound recovery are implemented. State and federal agency partners are working to improve the implementation of Puget Sound recovery actions through coordinated funding and investment. Coordinated investments are investments that pool resources from multiple groups to deliver multiple benefits to the environment and communities. By coordinating investments, partners can align financial resources and regulatory authorities to reduce administrative costs and delays to project implementation caused by the requirements and schedules of state and federal grant programs. Coordinated investment may also result in the implementation of several multi-benefit recovery projects in a single geographic area, through which benefits to the environment and community are magnified.

The Puget Sound Institute (PSI) supports this work by looking at previous investments made by Strategic Initiative Leads (SILs) and others (including more than 200 NEP-funded recovery projects) to analyze the effectiveness of previous investments, identify challenges and barriers, and recommend next steps. These syntheses identify and communicate outcomes and lessons learned to support recovery planning and funding decisions by the Puget Sound recovery community. Synthesis products provide a knowledge base that supports the development and adaptive management of Implementation Strategies. These syntheses are scoped and developed in coordination with the Lead Organizations (LO) but are independent products produced by PSI. Previous synthesis products include the Pathogens LO, Watershed LO, Marine and Nearshore LO syntheses and a comparative analysis of integrated floodplain management efforts in Puget Sound.

The Partnership and its boards are using this information to integrate and maximize Puget Sound recovery potential of existing funding sources, such as the county-level Conservation Futures program. This work will better integrate salmon recovery into existing programs. Combined with parallel legislative efforts to raise the effective levy lid level, this ensures that more dollars spent on Conservation Futures will go even further for Puget Sound recovery. Likewise, the Partnership's recently launched accountability initiative seeks to ensure existing programs are effectively advancing the desired outcomes articulated in the Action Agenda.

## BUILD A PORTFOLIO OF NEW PRIVATE FUNDING SOURCES

To date, Action Agenda implementation has relied heavily on public funds. As illustrated above, this state and federal funding—although critical—has proven neither reliable nor adequate to meet recovery partners' needs. Thus, it will be essential to diversify the sources of funding for Puget Sound.

Private and nongovernmental sectors present an excellent opportunity to expand available funding; moreover, recent investments from private and philanthropic organizations suggest that this approach holds promise. The Partnership—and the recovery community more broadly—continues to explore strategies to more fully engage academia, foundations, and for-profit and non-profit sectors to increase funding available for Puget Sound recovery. In the coming years, Partnership Boards and other key partners within the Puget Sound recovery community will work to identify potential funders, understand how potential funders make investment decisions, and tailor communication and investment-grade performance measures to motivate and enable their participation in funding Action Agenda implementation.

In particular, the agency on behalf of the State Tribal Riparian Protection and Restoration Work Group has undertaken an effort to assess whether and how private-public partnerships may be able to deliver riparian protection and restoration. The Partnership also supports the implementation of the Water 100 program and exploring Puget Sound recovery as a vehicle for investments into blue carbon and other ecosystem service markets. Meanwhile, the Partnership will continue to steward and expand the [Puget Sound Partnership Nearshore Credits Program](#), including through upfront capital investments.

## ENHANCE CAPACITY FOR RAPID FUNDING RESPONSE

Aligning the pipeline of recovery projects—and the personnel to identify, plan, and implement them—with the available funding will facilitate the rapid implementation of restoration work needed to accelerate Puget Sound recovery. Most fundamentally this involves ensuring local partners have the resources to quickly scale their recovery work with increased investment. The urgency of robust and responsive institutions becomes more pronounced with the likelihood of increased federal investments.

Likewise, state and federal agency partners are working to improve the implementation of Puget Sound recovery actions through coordinated funding and investment. Coordinated investments are investments that pool resources from multiple groups to deliver multiple benefits to the environment and communities. By coordinating investments, partners can align financial resources and regulatory authorities to reduce administrative costs and delays to project implementation caused by the requirements and schedules of state and federal grant programs. Coordinated investment may also result in the implementation of several multi-benefit recovery projects in a single geographic area, through which benefits to the environment and community are magnified. To support coordinated investments, the Partnership continues to explore opportunities to facilitate streamlined bundling and matchmaking between fund sources and restoration projects, thereby providing a temporal and geographic bridge between funding and project implementation.

### **EXISTING FUNDING SOURCES FOR PUGET SOUND RECOVERY**

Federal, state, local, and tribal nations currently provide much of the funding for Puget Sound recovery actions. Nongovernmental agencies, private foundations, businesses, and individuals also provide funding. Major sources of federal, state, and local funding are described in the next sections.

### **FEDERAL PROGRAMS**

The federal government provides funding for actions in the Action Agenda. Some federal agencies are funded to engage in protection and restoration activities, while others award grants to support and match the work of nonfederal partners. For example, the U.S. Environmental Protection Agency's (EPA) National Estuary Program Funds support that Partnership's backbone role. The EPA's Puget Sound Geographic Funds provide support to other Washington State agencies to develop and implement the Action Agenda and manage programs advancing the three Strategic Initiatives (Habitat, Shellfish, Stormwater). The EPA also awards grants to a Tribal Implementation Lead to advance tribal nations' treaty and sovereign rights and Puget Sound protection and restoration, and to tribal nations and tribal consortia for capacity purposes.

Federal agencies can also direct existing funds for national programs in this region. The following federal programs make important contributions to Puget Sound recovery programs. A full list of programs is provided in the supporting materials, including the Puget Sound Federal Task Force Action Plan.

- ▶ U.S. Environmental Protection Agency's Puget Sound National Estuary Program Funds
- ▶ U.S. Environmental Protection Agency's Puget Sound Geographic Funds
- ▶ U.S. Environmental Protection Agency's Puget Sound Bipartisan Infrastructure Funds
- ▶ National Oceanic and Atmospheric Administration's Restoration Center
- ▶ National Oceanic and Atmospheric Administration's Pacific Coastal Salmon Recovery Fund grant programs
- ▶ U.S. Environmental Protection Agency's Clean Water Act section 319 federal grants and Clean Water State Revolving Fund Loans (administered by the Washington State Department of Ecology, with state match requirements)
- ▶ Various programs administered by the U.S. Fish and Wildlife Service, U.S. Geological Survey, National Park Service, U.S. Coast Guard, U.S. Department of Defense, U.S. Army Corps of Engineers, U.S. Forest Service, National Resources Conservation Service, Federal Emergency Management Administration, Federal Housing Administration, Federal Transit Administration, and other federal agencies that lead work related to Puget Sound recovery

### **STATE PROGRAMS**

Washington State invests in a variety of programs and projects that contribute to Puget Sound recovery. For example, the state funds capital projects, such as wastewater treatment plants, stormwater retrofits, and nearshore habitat protection and restoration. The state also funds the operating budgets for several state agencies that manage and protect natural resources. The following state programs make important contributions to Puget Sound recovery.

- ▶ Puget Sound Acquisition and Restoration Fund
- ▶ Estuary and Salmon Restoration Program
- ▶ Floodplains by Design
- ▶ Salmon Recovery Funding Board grant programs
- ▶ Washington State Department of Ecology's water quality grants and loan programs, including the Centennial Clean Water Fund and Stormwater Financial Assistance Program
- ▶ Fish Passage Barrier Removal Board
- ▶ Washington Wildlife and Recreation Program

## LOCAL GOVERNMENT

Cities, counties, and special purpose districts also contribute funding for actions that advance Puget Sound recovery. Local entities invest in wastewater treatment, septic tank management, stormwater management, infrastructure, shellfish and habitat protection, and restoration. Special-purpose districts exist separately from local governments and provide services such as water, electricity, and drainage. Conservation Districts also contribute resources through their work with private landowners on a voluntary basis. The Shore Friendly program, for example, is administered by conservation districts in collaboration with local government and non-profit organizations and provides education, technical assistance, and incentives supporting the removal and replacement of shoreline armoring on private property. Local funds can be generated through a variety of mechanisms authorized by Washington State, including utility fees, permit fees, and assessments on local properties such as conservation futures programs. As with state operating budgets, well-funded local programs, both regulatory and voluntary—such as the Shoreline Management Act, Growth Management Act, stormwater enforcement, and incentive-based conservation help—play a critical role in preventing additional habitat degradation and decline in Puget Sound health. Unfortunately, local programs are often inadequately funded to perform critical implementation and enforcement work.

## NONGOVERNMENTAL AND PRIVATE ORGANIZATIONS

Restoring Puget Sound cannot be a public sector effort alone. The scale of resources required is simply too large, and the solutions too dispersed, to rely solely on government funding. The historical track record bears this out: as noted in the call out box above, state appropriations for Puget Sound recovery have—consistently for almost a decade—fallen dramatically short of what is needed. At the same time, a healthy Puget Sound will deliver countless direct and indirect benefits to individuals and businesses. Thus, everyone has a role to play in supporting Puget Sound recovery.

Fortunately, many parts of the private sector—including individuals, businesses, and philanthropic organizations—increasingly recognize the direct connection between a healthy Puget Sound and a healthy economy. Private sector contributions to Puget Sound recovery can take a variety of forms; indeed, that flexibility and innovation is one part of what makes their engagement so critical. Corporate environmental, social, and governance initiatives for many large local companies tackle carbon pollution, water quantity and quality impacts, and habitat protection and restoration. These efforts are most effective when they account for and address not only the direct, day-to-day operations of the business but also the supply chains in which their businesses are embedded.

Investments in Puget Sound recovery projects can help companies achieve their sustainability goals. Matchmaking between those complementary efforts is and will continue to be a key component of directing investment towards projects that will deliver the greatest impact. The Water 100 Project—a joint project of The Nature Conservancy and Puget Sound Partnership that maps 100-plus solutions for clean and abundant water identified by scientific experts, engineers, and conservation practitioners—connects businesses to solutions that mitigate their water risks and support a clean Puget Sound.

Likewise, Maritime Blue—an alliance of Washington maritime stakeholders committed to the development of maritime business, technology, and practices that promote a sustainable future contributing to economic growth, ecological health, and thriving communities—will be a key vehicle for driving best practices and standards for ecosystem recovery across the maritime industry.

In addition to direct funding, nongovernmental and private organizations are well-positioned to deploy financial tools and mechanisms for the benefit of Puget Sound recovery—tools that have been traditionally inaccessible to the public sector. Pay-for-performance arrangements—such as those utilized by Ecosystem Investment Partners—can deliver specified environmental outcomes at scale and price point that public sector project processes typically cannot. Similarly, tools such as the resilience bond developed by Blue Forest Conservation bundle funding from a wide—and sometimes unconventional—cross-section of stakeholders to accelerate implementation of large-scale, multi-benefit ecosystem recovery projects. At These types of public-private partnerships can address priority issues. For example, the National Fish and Wildlife Foundation's Community Salmon Fund leverages federal funds to raise private dollars for two of the Strategic Initiatives: Habitat and Shellfish.

Finally, private sector and other nongovernmental entities can reduce financial burdens for landowners through cost-sharing opportunities that incentivize conservation actions on private property. For example, land trusts negotiate with (and compensate) private landowners to secure conservation easements to protect terrestrial and aquatic habitat function. Likewise, low-interest financing, such as the clean water loans administered by Craft3 to finance septic system repair and replacement offer private landowners' easy access to the capital necessary to implement important conservation measures on their property. That model could feasibly be employed for other conservation projects in other habitat types, including to support expansion of the Shore Friendly program and accelerated removal of fish passage barriers on private land.

## APPENDIX IV: GLOSSARY



# APPENDIX IV: GLOSSARY

---

## **Action Agenda**

The Action Agenda for Puget Sound charts the course to recovery of our nation's largest estuary by volume. It complements and incorporates the work of many partners to describe strategies and actions needed to recover a healthy and resilient Puget Sound. These strategies and provide opportunities for federal, tribal, state, local, and private entities to better invest resources and coordinate action.

## **Action Agenda Progress Indicators**

Action Agenda Progress Indicators ("Progress Indicators") track the successful implementation of strategies and assess progress toward managing human pressures on the ecosystem. They provide feedback on the collective performance of recovery efforts and help the recovery community invest more efficiently in issues that need the most attention.

## **Adaptive Management Framework**

The Adaptive Management Framework describes the Partnership's approach to results-based management. The Framework is applied by the Partnership and by partners who implement the Action Agenda with the goal of improving the practice of science-based recovery of the Puget Sound ecosystem. This approach helps to ensure that decisions about ecosystem recovery priorities are based on the best available information about the effectiveness of management investments.

## **Backbone Organization**

The backbone organization mobilizes, coordinates and facilitates the process of collective impact. Key functions include guiding vision and strategy, supporting aligned activities, establishing shared measurement systems, building public will, and mobilizing funding to support the initiative. The Partnership defines itself as a backbone organization for guiding collective impact in recovering Puget Sound.

## **Blue Carbon**

The term blue carbon is the carbon stored and sequestered in coastal ecosystems such as mangrove forests, seagrass meadows or intertidal salt marshes.

## **Climate Adaptation**

The process of adjusting to actual or expected climate and its effects, to moderate harm or exploit beneficial opportunities. (IPCC)

## **Climate Equity**

See *equity*.

## **Climate Justice**

The justice that links development and human rights to achieve a human-centered approach to addressing climate change, safeguarding the rights of the most vulnerable people, and sharing the burdens and benefits of climate change and its impacts equitably and fairly. (Mary Robinson Foundation for Climate Justice, 2018).

## **Climate Migrant**

The person who migrates from an area where the environment has been severely damaged by climate change or who must leave their home because they have become uninhabitable. Can be any person who is moving or has moved across an international border or within a State away from their habitual place of residence, regardless of (1) the person's legal status; (2) whether the movement is voluntary or involuntary; (3) what the causes for the movement are; or (4) what the length of the stay is. (IPCC)

## **Climate Resilience**

The capacity of social, economic, and environmental systems to cope with a hazardous event to maintain essential function, identity, and structure, while also maintaining the capacity for adaptation, learning, and transformation. (IPCC)

## **Collective Impact**

The approach to large-scale change in which groups of people commit to a common agenda to solve a specific problem.

## **Community Land Use**

The term used to describe the human use of land. It represents the economic and cultural activities (for example, agricultural, residential, industrial, mining, and recreational uses) that are practiced at a given place.

## **Community Resilience**

The term used to describe the interconnected network of systems that directly impact human society at a grassroots community level, including the socioeconomic, ecological, and built environments.

## **Comprehensive Plan**

The Comprehensive Plan is one of two components of the Action Agenda (See Implementation Plan); the Comprehensive Plan charts the longer-term vision for recovery and explains the recovery framework.

## **Cultural Wellbeing**

The extent to which people feel able to maintain their cultural traditions and measured by the level of satisfaction with participation in cultural practices, including spiritual or religious practices related to the environment, native practices, and environmentally related social activities (as defined by the Cultural Wellbeing Vital Sign).

**Desired Outcomes**

The desired outcomes are statements that describe what we intend to accomplish—the positive change we want to see in Puget Sound. The desired outcomes focus on reducing adverse effects on the ecosystem (for example, toxic pollution in stormwater runoff) and managing the human activities that create them (for example, impervious surfaces from development), while maintaining healthy, vibrant, and equitable communities.

**Disproportionate Impacts**

In the context of environmental justice, this refers to when one group or population bears an environmental or health impact that is substantially higher than the average distribution. This impact is usually compounded by existing inequities due to historic discrimination against certain groups.

**Diversity**

The presence of differences within a given setting, collective, or group. An individual is not diverse—a person is unique. Diversity is about a collective or a group and exists in relationship to others. A team, an organization, a family, a neighborhood, and a community can be diverse. A person can bring diversity of thought, experience, and trait, (seen and unseen) to a team—and the person is still an individual.

**Drivers**

The human actions that give rise to stress on the ecosystem, but also may provide benefits to humans. In some cases, related drivers are grouped for ease of analysis.

**Equity**

The act of developing, strengthening, and supporting procedural and outcome fairness in systems, procedures, and resource distribution mechanisms to create equitable (not equal) opportunity for all people. Equity is distinct from equality which refers to everyone having the same treatment without accounting for differing needs or circumstances. Equity has a focus on eliminating barriers that have prevented the full participation of historically and currently oppressed groups.

**Ecosystem Coordination Board**

The purpose of the Ecosystem Coordination Board is to advise and assist the Puget Sound Partnership Leadership Council in carrying out its responsibilities in implementing chapter 90.71 RCW including development and implementation of the Action Agenda.

**LIO Ecosystem Recovery Plan**

The action-based recovery plan developed by a Local Integrating Organization (LIO). Each LIO regularly updates their five-year Ecosystem Recovery Plan that outlines specific strategies and actions that guide local ecosystem recovery and advises regional scale recovery.

**Effectiveness Assessment**

The Partnership uses an effectiveness monitoring framework with two parts. First, the actions to restore the ecosystem must be evaluated. Second, the results must be communicated to decision makers as they plan their next round of recovery actions. By directly connecting effectiveness data to recovery actions, the Partnership intends to highlight successes and improve strategies by funding actions that are the most effective.

**Environmental Justice**

The fair treatment and meaningful involvement of all people regardless of race, color, national origin or income with respect to development, implementation, and enforcement of environmental laws, regulations and policies. This includes using an intersectional lens to address disproportionate environmental and health impacts by prioritizing highly impacted populations, equitably distributing resources and benefits, and eliminating harm.

**Guiding Principles for Ecosystem Management**

The rules or frameworks for decisions in ecosystem management that set the priorities for ecosystem recovery.

**Health Disparities**

The higher burden of illness, injury, disability, or death experienced by one group or population relative to another.

**Human Wellbeing**

Everything that allows humans to thrive. It includes familiar topics such as physical and psychological health, as well as governance, social, cultural, and economic wellbeing. For the purposes of Puget Sound recovery, the focus is on human wellbeing as it relates to human engagement with the natural environment of Puget Sound.

**Implementation Plan**

The Implementation Plan describes the work we must do over the next four years to make progress toward the goals and desired outcomes for Puget Sound recovery. It is the action component of the Action Agenda. To meet the magnitude of the challenge we face, the Implementation Plan lays out bold strategies to make measurable improvements on the natural environment (also referred to as biophysical conditions) of Puget Sound, the wellbeing of the people who inhabit the region, and the strength of our governing and community institutions tasked with recovering Puget Sound.

**Implementation Strategy**

The recovery plans for achieving specific ecosystem targets for the Puget Sound Vital Sign indicators. They describe the sequence of steps, activities, and results needed to move closer to a recovery goal.

### **Implementation Considerations**

This plan provides guidance for achieving human wellbeing and biophysical outcomes at the same time by integrating human wellbeing opportunities and advancing DEI and EJ through foundational assessments and engagement of vulnerable populations and underserved communities into all aspects of our recovery work. These implementation considerations identify opportunities to, for example, improve human health while also reducing stormwater runoff; or enhance equitable access to decision-making and governance processes while also improving the health of shorelines. Implementation considerations for climate change for each strategy help guide the recovery community toward multi-benefit projects and programs that will stand up to a changing climate and ocean conditions over time.

### **Inclusive Knowledge Network**

The Partnership's [Science Work Plan for 2020-2024](#) introduces the concept of an inclusive knowledge network (IKN) that will link various forms of knowledge (i.e., Indigenous, local, and scientific) and the people and organizations who develop, hold, and share knowledge and understandings. This concept will focus on collaborations among tribal nations, others who work and know the land, managers, and scientists to develop linkages to put knowledge to use in service of tribal nations, vulnerable populations and underserved communities overburdened with environmental impacts, and all people who are connected to the future of Salish Sea ecosystems.

### **Inclusion**

The state of being valued, respected and supported. Inclusion focuses on the needs of every individual and ensuring the right conditions are in place for each person to achieve their full potential.

### **Indicator**

The type of progress measure and along with Vital Signs, are intended to (1) describe ecosystem conditions; (2) help track progress towards recovery goals and objectives and understand if progress is being made and management actions are working; and (3) inspire focused action. Taken together, Vital Signs and their indicators describe what ecosystem recovery should “look like” by describing what the Puget Sound recovery community wants to protect and restore.

### **Institutional Infrastructure**

The institutional Infrastructure consists of processes, procedures, and physical tools. Whether public or private, large or small, elements of institutional infrastructure can enable, motivate, or impede desired actions or behaviors.

### **Integrated River Basin Management Planning**

The integrated floodplain management is an emerging form of planning, action, and management where partners from a wide variety of sectors, including local jurisdictions, conservation districts, and representatives from agricultural industry, agree on a set of shared visions, strategies, and actions to improve floodplain health.

### **Just Transition**

A principle, a process and a practice. The principle of just transition is that a healthy economy and a clean environment can and should co-exist. The process for achieving this vision should be a fair one that should not cost workers or community residents their health, environment, jobs, or economic assets. Any losses should be fairly compensated. And the practice of just transition means that the people who are most affected by pollution – the frontline workers and the fenceline communities – should be in the leadership of crafting policy solutions. ([Just Transition Alliance](#))

### **Lead Entity**

The watershed-based organization that oversees implementation of watershed chapters of the [Puget Sound Salmon Recovery Plan](#).

### **Leadership Council**

The Leadership Council is the governing body of the Puget Sound Partnership. Its seven members are leading community members chosen from around the Sound. Members are appointed by the Governor to serve four-year terms but may continue to serve until being officially reappointed or replaced by a new member.

### **Local Integrating Organization**

The consortium of local and tribal organizations that guides the planning and implementation of actions at the ecosystem scale and prioritizes local actions for investment in one of nine geographical areas around Puget Sound.

### **Management Conference**

The Puget Sound Management Conference includes: the statutorily-described Partnership including the Puget Sound Partnership state agency, Leadership Council, Ecosystem Coordination Board, and Science Panel; and the broader partnership coalition that includes tribal governments, the Puget Sound caucuses affiliated with the Ecosystem Coordination Board, the Puget Sound Salmon Recovery Council, Northwest Straits Commission, implementing networks, formal and informal interest groups, watershed groups, individual local governments, and representatives from Canadian agencies.

### **Multi-Benefit Outcomes**

The Partnership, as well as the Puget Sound recovery community at large, have limited resources to address numerous very challenging and complex problems, including climate change. Therefore, as the Partnership works to address climate change more thoroughly within the context of Puget Sound recovery, the Partnership seeks to advance high-leverage, multi-benefit, and systems-based solutions which provide a multiplicity of benefits (directly to Puget Sound ecosystems and species, as well as indirectly to Puget Sound residents), address pervasive issues, utilize an understanding of the larger context, and leverage available resources efficiently and effectively. Doing so will optimize resources, funding, and capacity to effectively and efficiently decrease the vulnerability of Puget Sound to climate stressors and simultaneously advance Puget Sound recovery.

**Ongoing Programs**

The continuing efforts—regulatory, oversight, technical support, guidance—that provide the foundation for Puget Sound ecosystem protection and recovery and align with the Action Agenda’s strategies and actions.

**Open Standards (or Conservation Standards)**

The Open Standards for the Practice of Conservation link science, policy, and performance management, and are the foundation of the adaptive management framework for the recovery efforts coordinated by the Puget Sound Partnership.

**Partnership/Tribal Co-Management Council**

The monthly forum that provides opportunities for early and frequent involvement of tribal nations in Puget Sound Partnership activities.

**Pressures**

The human activities that stress the ecosystem but may benefit humans. As reported in the [Puget Sound Pressures Assessment](#), there are 41 critical ecosystem pressures (species and habitats).

**Pressure Source**

The human activity that may affect the physical, structural, and ecological processes and functions in the Puget Sound ecosystem. Sources give rise to stressors. While contributing to ecosystem degradation, sources may also be beneficial to humans.

**Puget Sound Ecosystem Monitoring Program**

The collaborative network of subject matter experts from many monitoring organizations and different parts of the region. Together, they generate, organize, synthesize, and communicate scientific information, across political and organizational boundaries, to track ecosystem conditions that directly address management and science questions critical to Puget Sound recovery.

**Puget Sound Partnership**

The Puget Sound Partnership (Partnership) is the state agency leading the region’s collective effort to restore and protect Puget Sound. The Puget Sound Partnership brings together hundreds of partners to mobilize partner action around a common agenda, advance Sound investments, and advance priority actions by supporting partners.

**Puget Sound Pressures Assessment**

Summarizes pressures on specific endpoints in Puget Sound ecosystems and identifies ecosystem vulnerabilities.

**Puget Sound Recovery Atlas**

The Puget Sound Recovery Atlas provides online updates on project implementation and ongoing programs.

**Puget Sound Salmon Recovery Council**

The Puget Sound Salmon Recovery Council advises the Puget Sound Partnership’s Leadership Council on decisions relating to salmon recovery and the implementation of the Puget Sound Salmon Recovery Plan. The Puget Sound Salmon Recovery Council’s recommendations help set priorities for the types of recovery work to conduct, determine what issues to focus on, and provide recommendations for future projects and funding.

**Puget Sound Salmon Recovery Plan**

The [Puget Sound Salmon Recovery Plan](#) was developed in 2005 by regional experts and adopted by NOAA Fisheries in 2007 to meet obligations under the Endangered Species Act. Subsequently, local experts in each watershed worked together to craft 16 individual chapters of the Recovery Plan to specify local recovery goals, priority recovery actions, and monitoring needs.

**Reach-Scale Planning**

The reaches are sections of rivers and estuaries defined for planning purposes, based on natural characteristics and existing land uses. See examples from Snohomish County [Sustainable Lands Strategy](#).

**Recovery**

The protection and restoration of essential resources and functions. The Partnership builds a shared vision for recovery through the Action Agenda, which identifies the top priority actions or programs to stay on course to recovery.

**Recovery Community**

The individuals, groups, organizations, agencies who identify or are identified as helping the effort to protect and restore the Puget Sound ecosystem or have taken part in planning and action that supports this effort.

**Recovery Goals**

The [Washington State statute](#) that created the Puget Sound Partnership defines the following recovery [goals](#): Healthy human population, Vibrant quality of life, Thriving species and food web, Functioning habitat, and Healthy water quality. The Partnership is the state agency leading the region’s collective effort to restore and protect Puget Sound in order to meet these goals.

**Recovery Targets**

The policy statements that express desired future conditions for human health and quality of life, species and food webs, habitats, water quantity, and water quality.

**Resilience or resilient**

See climate resilience

**Salish Sea**

The bioregion encompassing the inland marine waterways of British Columbia and Washington and their watersheds.

**Salish Sea Ecosystem Conference**

The Salish Sea Ecosystem Conference convenes every two years and the Salish Sea recovery community—including scientists, First Nations and tribal government representatives, resource managers, community and business leaders, policymakers, educators, and students—gets together to present and share the latest research on the state of the ecosystem, and to guide future actions for protecting and restoring the Salish Sea ecosystem. The Salish Sea Ecosystem Conference provides a forum for sharing ecosystem information and fosters collaboration between the Puget Sound and Canadian recovery community.

**Settler Colonialism**

The complex social process in which at least one society seeks to move permanently onto the terrestrial, aquatic, and aerial places lived in by one or more other societies who already derive economic vitality, cultural flourishing, and political self-determination from the relationships they have established with the plants, animals, physical entities, and ecosystems of those places.

**Science-informed Decision-making**

The structured approach to deciding on actions and strategies for Puget Sound recovery that are informed by scientific information.

**Science Panel**

The Science Panel's expertise and advice are critical to the Puget Sound Partnership's efforts to develop a comprehensive, science-based plan to restore Puget Sound. The members, appointed by the Leadership Council, are chosen from the top scientists in Washington State.

**Science Work Plan**

The Science Panel developed a Science Work Plan for 2020–2024, which describes strategies to improve our collective understanding of Puget Sound. Implementing this Science Work Plan will generate information that the Puget Sound recovery community uses to improve decision-making and accelerate recovery across Puget Sound for the benefit of the people and communities in the region and the ecosystems on which they depend.

**Sense of Place or Place Attachment**

The term place attachment refers to a bond or connection between people and place, including the natural environment. Place attachment is considered a dimension of sense of place. The term sense of place is defined as the extent to which people identify with and feel positively attached to a specific place.

**Social Infrastructure**

The social connections and frameworks that enable society to function and consists of the bonds that connect individuals within groups, and the bridges that connect those groups to each other. Social infrastructure consists of the social networks upon which people rely.

**Socio-ecological System**

The concept that emphasizes humans as an integrated part of nature, and stresses that the delineation between social systems and ecological systems is artificial and arbitrary.

**State of the Sound**

The summary of recovery progress, challenges, and investment in Puget Sound ecosystem protection and recovery every two years.

**Strategic Initiative**

The important focal areas that help prioritize implementation and funding of Near Term Actions.

**Strategic Initiative Lead**

The organization with technical expertise that supports development of the Action Agenda and Implementation Strategies in support of a Strategic Initiative. Leads are charged with taking input from advisory teams, developing investment plans, making funding recommendations, and administering funds for Near Term Actions.

**Strategic Initiative Advisory Team**

The committee of technical experts who advise the Strategic Initiative Lead in identifying priority approaches to recover Puget Sound and selecting projects to receive funding.

**Strategic Science Plan**

The framework for coordinating the science required for Puget Sound ecosystem recovery as outlined in the Action Agenda.

**Strategy**

The Implementation Plan is organized around 31 collaboratively developed and science-informed strategies that identify the specific lines of work (for example, growth management, pollution prevention, invasive species) and key cross-cutting efforts (for example, climate change adaptation and resilience, cultural practices for local foods, funding) that are critical to recovery of Puget Sound.

**Stressor**

The human-caused or biophysical factor that forces destructive change on the Puget Sound ecosystem. A total of 48 stressors identify the change to the ecosystem contributed by one or more sources. Examples of stressors include habitat conversion, pollution from legacy toxics, and shoreline hardening. Stressors generally are distinct from sources (also known as pressures) which are the human actions or natural processes that contribute to stressors. Generally, a single source of pressure will contribute to multiple stressors.

**Supporting Organizations**

The key agencies, organizations, and advisory bodies that support the work of the Puget Sound Partnership.

**Transcreate**

The act of transferring the creative elements of a work into another culture or language.

**Vital Signs**

The Vital Signs and their indicators are types of progress measures. They are the measures of “ultimate outcomes” that reflect the condition of the Puget Sound ecosystem, including human wellbeing, relative to the goals established in the Puget Sound Partnership statute. Vital Signs and their indicators have three uses: (1) describe ecosystem conditions; (2) help track progress towards recovery goals and objectives and understand if progress is being made and management actions are working; and (3) inspire focused action. Taken together, Vital Signs and their indicators describe what ecosystem recovery should “look like” by describing what the Puget Sound recovery community wants to protect and restore. The Vital Signs measure parts of the ecosystem that the Puget Sound recovery community has determined are important to know about and diagnose.

**Underserved Communities**

The U.S. EPA defines this term as populations sharing a particular characteristic, as well as geographic communities, that have been systematically denied a full opportunity to participate in aspects of economic, social, and civic life.

**Vulnerable Populations**

The [HEAL Act](#) defines vulnerable populations as population groups that are more likely to be at higher risk for poor health outcomes in response to environmental harms, due to: (i) Adverse socioeconomic factors, such as unemployment, high housing and transportation costs relative to income, limited access to nutritious food and adequate healthcare, linguistic isolation, and other factors that negatively affect health outcomes and increase vulnerability to the effects of environmental harms; and (ii) sensitivity factors, such as low birthweight and higher rates of hospitalization.

*This project has been funded wholly or in part by the United States Environmental Protection Agency under assistance agreement CE 01J97401 to the Puget Sound Partnership. The contents of this document do not necessarily reflect the views and policies of the Environmental Protection Agency, nor does mention of trade names or commercial products constitute endorsement or recommendation for use.*



