

1 **DRAFT 2022-2026 Action Agenda for Review – Version: March 15, 2022**

2 Draft for public review March 15 – April 15, 2022

3

4 Note for reviewers:

- 5 • Comments should be submitted through this form by Friday, April 15 at 5:00PM PT:
6 <https://survey.zohopublic.com/zs/fxCz1Y>
- 7 • For more information about the Action Agenda, visit: [https://psp.wa.gov/action-agenda-](https://psp.wa.gov/action-agenda-update.php)
8 [update.php](https://psp.wa.gov/action-agenda-update.php)

9

DRAFT

2022-2026 Action Agenda Executive Summary

Draft: March 15, 2022

Puget Sound is a special place that nourishes our health, economy, environment, and quality of life. Tribal nations have stewarded these lands and waters, and fished, hunted, 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, 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 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 incorporates human wellbeing, tribal nations' treaty rights, environmental justice, and climate justice. It provides clear guidance for funding and policy proposals protecting Puget Sound. Finally, it fulfills the Partnership's statutory mandate and purpose of the Clean Water Act's National Estuary Program (NEP).

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.

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

Three components illustrate the 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 Are Our Vision for Puget Sound Recovery

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

- 6 • [Number of southern resident killer whales](#) – By 2050, increase the population to 110
7 individuals.
- 8 • **Chinook salmon abundance** – By 2050, 2-4 populations of natural origin Chinook salmon in each
9 biogeographic area meet their abundance recovery goals to achieve self-sustaining, harvestable
10 salmon runs and we see sustained, measurable increases in natural-origin Chinook salmon
11 abundance in all populations. (Draft target; under discussion with the Salmon Recovery Council).
- 12 • **Toxics in Aquatic Life** - By 2050, 95% of the samples gathered across Puget Sound habitats
13 exhibit contaminant levels below thresholds of concern for species or human health and show
14 no increasing trends. (Draft target; pending approval)
- 15 • [Eelgrass site status](#) – By 2050, sites with long-term increases in eelgrass area significantly
16 outnumber sites with declines in each of three sub-regions of Puget Sound.
- 17 • [Shellfish beds](#) – Beginning in 2022, achieve an annual net improvement of at least 500 classified
18 commercial shellfish acres in Puget Sound, based on a three-year rolling average.
- 19 • [Swimming beaches](#) – Beginning in 2022, 95% of core beaches meet safe swimming standards
20 annually.

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

22 The Action Agenda identifies the desired outcomes we need in order to accomplish the Vital Sign goals
23 and Puget Sound recovery, and the strategies and actions we must take in the near-term to achieve the
24 outcomes. To meet the urgency and magnitude of the challenge we face, the Action Agenda
25 emphasizes a multi-benefit approach with outcomes and strategies that will help the recovery
26 community effectively make progress towards multiple goals.

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

- 32 • Protect habitat and habitat-forming processes from conversion and fragmentation.
- 33 • Protect agricultural lands and working forests from conversion.
- 34 • Restore natural flows, fish passage, flooding, and tidal inundation to freshwater and marine
35 systems by removing structural barriers or altering their management (including from major
36 infrastructure).
- 37 • Restore habitat and habitat-forming processes to support biological communities.
- 38 • Reduce toxic chemicals entering Puget Sound and connected waters, including from
39 contaminated sediments and industrial lands.

- 1 • Reduce nutrients entering Puget Sound and connected waters to improve the dissolved oxygen
- 2 marine water quality indicator.
- 3 • Prevent spills of oil and hazardous substances.
- 4 • Ensure sustainable harvest of native wild fish and shellfish populations and support treaty-
- 5 reserved fishing rights.
- 6 • Increase the resilience of the Puget Sound ecosystem (including habitats, water resources,
- 7 species, and humans) and recovery efforts by adapting to changing climate and ocean
- 8 conditions when conducting protection and restoration activities.
- 9 • Increase engagement in and trust of Puget Sound environmental and natural resource
- 10 governance.
- 11 • The health of the human population of Puget Sound is not threatened by changes in ecosystem
- 12 conditions and sensitive populations do not experience inequitable health outcomes.

13 **We are Setting Targets and Commitments for Implementing the Action Agenda**

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

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

24 Program Targets for 2022-2026 include:

Action Agenda strategy	Program name	Target
Strategy 2 – Working Lands	Ecology Floodplains by Design	4,140 acres of working lands protected or improved
Strategy 3 – Healthy Shorelines	PSP Nearshore Credits	930 tons of creosote removed
	WDFW Shore Friendly	Conduct 914 technical site visits with interested shoreline landowners and follow up with over 330 technical site visits with site-specific recommendations
Strategy 4 – Riparian Areas	WSCC Conservation Reserve Enhancement Program	675 acres of riparian buffer installed in Puget Sound agricultural areas
Strategy 5 – Floodplains and Estuaries	PSP Puget Sound Acquisition and Restoration Program	Fund 6,000 acres of salmon habitat protection or restoration projects
	WDFW Puget Sound Nearshore Ecosystem Restoration Project	Secure funds to start the process-based restoration of 2,414 acres of PSNERP identified nearshore habitat projects

	Ecology Floodplains by Design	Fund 4,554 acres of floodplain or estuary habitat restoration or reconnection
Strategy 8 – Toxic Chemical Pollution	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.
Strategy 12 – Working Lands Runoff	WSCC Shellfish Program	Fund 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 17 – Responsible Boating	DNR Derelict Vessel Removal Program	Remove or prevent 180 or more derelict vessels from entering Washington’s waterways
Strategy 20 – Climate Adaptation and Resilience	Ecology Floodplains by Design	Support 1,340 homes or structure with reduced flood or climate risk.

1

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

7 Recovery partners including state agencies, federal agencies, tribal nations, local jurisdictions, Local
8 Integrating Organizations, Lead Entities and other salmon recovery group, non-governmental
9 organizations, and the business community worked with the Partnership to develop the Action
10 Agenda. **These partners are committed to implementing the specific projects, programs, and actions**
11 **that will advance recovery progress. This is our roadmap to the next four years of progress toward a**
12 **thriving, resilient Puget Sound.**

13

1 **2022-2026 Action Agenda**

2 *Draft: March 15, 2022*

3 2022-2026 Action Agenda Comprehensive Plan 6

4 Introduction 7

5 The Challenge Before Us 7

6 The Goals and Vision for a Healthy and Resilient Puget Sound 9

7 The Framework to Achieve Success and Measure Progress 10

8 Integrating the Framework into a Theory of Change 15

9 Partners in Recovery 15

10 Funding Puget Sound Recovery 17

11 2022-2026 Action Agenda Implementation Plan 18

12 Chapter 1 | Strategies for Advancing Progress toward Desired Outcomes and Vital Signs 25

13 Chapter 2 | Institutional Strategies 128

14 Appendix I: Adaptive Management 149

15 Appendix II: Partners in Recovery 166

16 Appendix III: Funding Recovery 178

17 Appendix IV: Glossary 185

1 **Introduction**

2 The 2022-2026 Action Agenda charts the course for Puget Sound recovery. It presents the most effective
3 and beneficial outcomes, strategies, and actions for Puget Sound protection and resilience, supported by
4 science and robust partner engagement. This recovery strategy addresses the magnitude of challenges
5 from the pressures of human activities including climate change and population growth. It calls for bold
6 leadership to direct and support recovery, maximizing expertise, experience, and networks. It
7 incorporates human wellbeing, tribal nations’ treaty rights, and environmental and climate justice. It
8 provides clear guidance for funding and policy proposals protecting Puget Sound. Finally, it fulfills the
9 Partnership’s statutory mandate and purpose of the Clean Water Act’s National Estuary Program (NEP).

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 local, city, state, federal, tribal, private, and non-profit 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 is 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.

10

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

15 **The Challenge Before Us**

16 Puget Sound is a special place that nourishes our health, economy, environment, and quality of life.
17 Tribal nations have stewarded these lands and waters, and fished, hunted, and gathered throughout the
18 region since time immemorial. Its snowcapped mountains and sparkling waters continue to attract
19 people and businesses from around the world. A healthy Puget Sound is essential to sustaining a vibrant
20 economy, meeting our obligations to tribal nations’ treaties and inherent rights, and supporting our
21 need for connection to the natural world. And because it is part of the greater, contiguous Salish Sea

1 ecosystem, protection and recovery of Puget Sound also requires cross-border communication and
2 collaboration.

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

11 Today, 5.3 million people live in the Puget Sound region. If we continue our current rate of economic
12 growth, by 2050 we may increase our population to 7 million, the equivalent of adding approximately
13 2.25 cities the size of Seattle to our watershed. If this rapid population growth occurs without adequate
14 planning and mitigation, it will bring more land conversion, development, and pollution. Anticipated
15 port expansion projects in Canada will increase vessel traffic and the threats of oil spills in our
16 waterways. Challenges are further complicated by the effects of climate change, including warming
17 ocean and air temperatures, changes in precipitation patterns and reduced snowpack, and ocean
18 acidification. Puget Sound recovery and protection efforts are falling short against these formidable
19 pressures caused by our growth and development.

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

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

37 Puget Sound will never be as it was prior to settler colonialism and industrialization. Yet, Puget Sound
38 can be a resilient ecosystem that supports healthy and diverse human communities, and the habitats

1 and species that we care about and rely upon. We can grow our cities and towns more carefully, protect
2 areas and systems that are relatively intact, restore floodplains and shorelines we previously degraded,
3 and improve water quality and quantity for all. To achieve thriving natural systems and communities, we
4 must plan for the range of potential impacts of an uncertain future. Our decisions and policies
5 concerning population growth, climate change, governance, public perceptions, economic factors,
6 environmental justice, and other forces will drive how the region changes and, ultimately, the wellbeing
7 of the people who are inextricably connected to the health of Puget Sound.

8 **The Goals and Vision for a Healthy and Resilient Puget Sound**

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

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

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

25 We are people who care about Puget Sound. We span borders and boundaries, sectors, and
26 strata. We envision a future in which generations can hear the calls of whales, witness the
27 spawning of salmon, taste locally harvested shellfish, swim in clean water, and experience the
28 unique cultural fabric that ties our region together. Our vision includes a resilient ecosystem—
29 one that can adapt to the impacts of climate change and the pressures of a growing human
30 population, while meeting the needs of its native creatures. Our vision includes a thriving
31 economy, sustainable farms and forests, and human communities with high quality of life and
32 the businesses that support them. And most importantly, our vision includes a broad community
33 of engaged citizens who commit to save Puget Sound.

34 The recovery community consists of hundreds of partners including scientists, tribal nations
35 representatives, resource managers, community and business leaders, policy makers, educators, and
36 students. The Partnership, along with these partners, are working to make this vision a reality by
37 pursuing ambitious action, securing needed funding, seeking supporting legislation, applying resources
38 and legal tools, and holding ourselves accountable for implementing all actions needed to make Puget

1 Sound resilient. Because we are all connected to Puget Sound, we ask everyone to make the same
2 commitment. We ask you to join us in protecting habitat, recovering iconic species, and ensuring that
3 the lands and waters sustain generations to come.

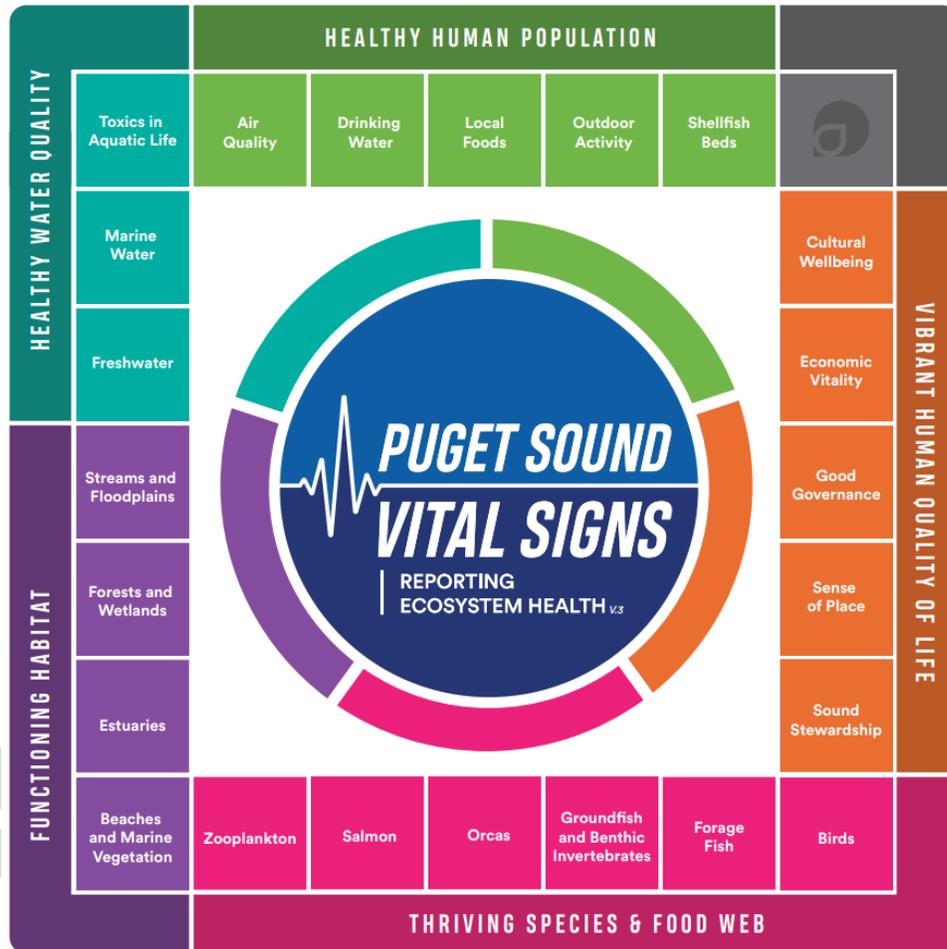
4 **The Framework to Achieve Success and Measure Progress**

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

- 15 • Vital Signs
- 16 • Puget Sound Indicators
- 17 • Vital Sign Indicator targets
- 18 • Desired outcomes
- 19 • Strategies
- 20 • Actions and commitments

21
22
23
24
25
26
27
28
29
30
31
32

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



6
 7 **Puget Sound Indicators** – The Partnership uses a set of indicators to monitor our progress, evaluate
 8 success of strategies and actions, and learn and inform planning and implementation. [The Puget Sound](#)
 9 [Indicators](#) are a suite of measures comprised of Puget Sound [Vital Sign Indicators](#) and [Action Agenda](#)
 10 [Progress Indicators](#). Vital Sign Indicators – monitored and reported on by a diversity of partners – are
 11 the specific measures to help us evaluate the status and trends for each Vital Sign.

12 **Targets** for six Vital Sign Indicators help articulate our long-term goals for Puget Sound. These ambitious
 13 and bold targets, outlined below, are part of our vision for the future. They represent iconic and valued
 14 components of the Puget Sound ecosystem and are strongly linked to the work proposed in this Action
 15 Agenda.

1 *Vital Sign Indicator targets*

- 2 • [Number of southern resident killer whales](#) – By 2050, increase the population to 110 individuals.
- 3 • Chinook salmon abundance – By 2050, 2-4 populations of natural origin Chinook salmon in each
- 4 biogeographic area meet their abundance recovery goals to achieve self-sustaining, harvestable
- 5 salmon runs and we see sustained, measurable increases in natural-origin Chinook salmon
- 6 abundance in all populations. (Draft target; under discussion with the Salmon Recovery Council).
- 7 • Toxics in Aquatic Life – By 2050, 95% of the samples gathered across Puget Sound habitats
- 8 exhibit contaminant levels below thresholds of concern for species or human health and show
- 9 no increasing trends. (Draft target; pending approval)
- 10 • [Eelgrass site status](#) – By 2050, sites with long-term increases in eelgrass area significantly
- 11 outnumber sites with declines in each of three sub-regions of Puget Sound.
- 12 • [Shellfish beds](#) – Beginning in 2022, achieve a net gain of at least 500 acres approved for shellfish
- 13 harvesting every year.
- 14 • [Swimming beaches](#) – Beginning in 2022, 95% of core beaches meet safe swimming standards
- 15 annually.
- 16

17 We achieve these targets by implementing the Action Agenda strategies, which are detailed in the

18 Implementation Plan. Action Agenda Progress Indicators are designed to track our implementation of

19 the strategies. The Action Agenda Progress Indicators and their targets will be developed in the coming

20 years. These indicators describe what we need to achieve to improve Puget Sound health and the Vital

21 Signs. The development, monitoring, and assessment of Action Agenda Progress Indicators will give the

22 recovery community a routine way to assess barriers to progress, focus planning efforts, and adaptively

23 manage our plans. Action Agenda Progress Indicators serve as the bridge between our shorter-term

24 planning documents and the longer-term goals that we are trying to achieve.

25 **Desired outcomes** – [Desired outcomes](#) show us how we get from Vital Signs to strategies and actions on

26 the ground. They describe the reductions in adverse effects on the ecosystem (example: reducing toxic

27 pollution in stormwater runoff) and the changes in human activities that create them (example:

28 reducing impervious surfaces from development) that are necessary to make progress toward the Vital

29 Signs and statutory goals. The desired outcomes are detailed in Appendix I. The five overarching

30 categories of desired outcomes are:

- 31 • Protect and restore habitat and habitat-forming processes
- 32 • Protect and improve water quality
- 33 • Protect the food web and imperiled species
- 34 • Prevent the worst effects of climate change
- 35 • Ensure human wellbeing

36 To meet the urgency and magnitude of the challenge we face, the Action Agenda emphasizes a multi-

37 benefit approach with outcomes and strategies that will help the recovery community effectively make

38 progress towards multiple goals. The Partnership measures progress towards Puget Sound recovery

1 goals using Vital Sign Indicators; hence any outcome that we expect will benefit multiple Vital Sign
2 Indicators can be considered multi-benefit. The Partnership assessed the strength of the relationship
3 between desired outcomes and Vital Sign Indicators. Appendix I provides an illustration of this
4 relationship. This assessment identified eleven of twenty-three desired outcomes that appear to
5 generate substantial benefits to multiple Vital Signs, or multi-benefit results. Progress toward any one of
6 these eleven multi-benefit desired outcomes could result in improvements to 25% or more of the Vital
7 Sign Indicators. Implementation of this Action Agenda provides an important opportunity to consider
8 the multi-benefit desired outcomes with partners and evaluate how to use them, in concert with the
9 other desired outcomes, to achieve recovery. The multi-benefit desired outcomes are:

- 10 • Protect habitat and habitat-forming processes from conversion and fragmentation.
- 11 • Protect agricultural lands and working forests from conversion.
- 12 • Restore natural flows, fish passage, flooding, and tidal inundation to freshwater and marine
13 systems by removing structural barriers or altering their management (including from major
14 infrastructure).
- 15 • Restore habitat and habitat-forming processes to support biological communities.
- 16 • Reduce toxic chemicals entering Puget Sound and connected waters, including from
17 contaminated sediments and industrial lands.
- 18 • Reduce nutrients entering Puget Sound and connected waters to improve the dissolved oxygen
19 marine water quality indicator.
- 20 • Prevent spills of oil and hazardous substances.
- 21 • Ensure sustainable harvest of native wild fish and shellfish populations and support treaty-
22 reserved fishing rights.
- 23 • Increase the resilience of the Puget Sound ecosystem (including habitats, water resources,
24 species, and humans) and recovery efforts by adapting to changing climate and ocean
25 conditions when conducting protection and restoration activities.
- 26 • Increase engagement in and trust of Puget Sound environmental and natural resource
27 governance.
- 28 • The health of the human population of Puget Sound is not threatened by changes in ecosystem
29 conditions and sensitive populations do not experience inequitable health outcomes.

30 **Strategies** – Action Agenda strategies describe effective approaches for advancing progress toward
31 desired outcomes, Vital Signs, and overall recovery. Each strategy is expected to advance one or more
32 desired outcome by addressing the underlying conditions that give rise to sources of stress on the
33 ecosystem or enhance capacity to address a stressor. Strategies address a 5- to 30-year time horizon and
34 describe the kinds of policies, actions, or approaches that could be applied by many groups in many
35 different areas. Strategies are described in more detail in the Implementation Plan.

36 **Actions and Commitments** – An action describes the activities that are a shared focus for implementing
37 each strategy from 2022-2026. This could include restoration and acquisition; program development,
38 improvement, or implementation; education; outreach; research; legislative or policy improvements; or
39 other types of activities. Actions are intended to guide partner implementation and innovation and

1 inform the focus of public and private funding and implementation support by the boards and regional
2 partners. Actions are described in more detail in the Implementation Plan.

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

10

DRAFT

1 **Integrating the Framework into a Theory of Change**

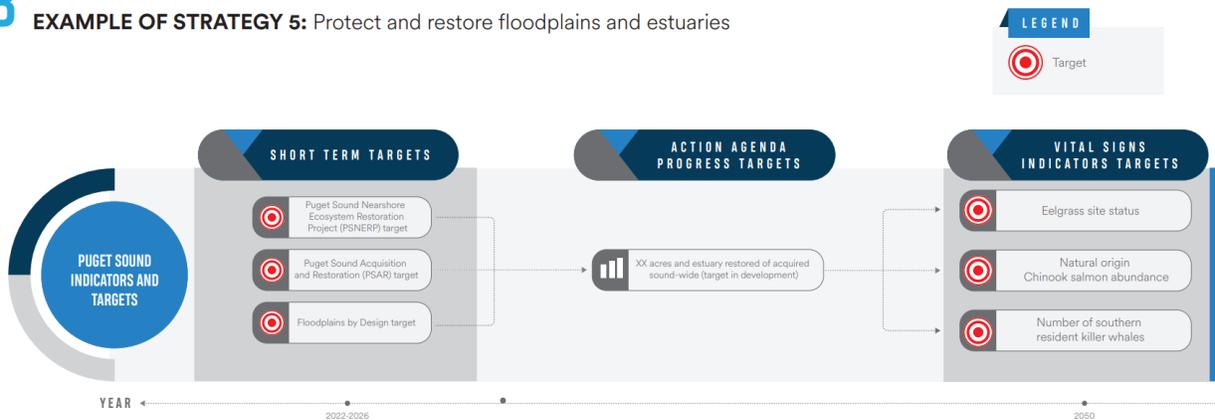
2 The elements of this framework to achieve success and monitor progress integrate into a theory of
 3 change. Strategies and actions identify what we need to work on for the coming four years. Program
 4 targets articulate some of the contributions state agency recovery programs hope to make. Desired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

13 **A HOW DOES EACH ACTION AGENDA STRATEGY ACCELERATE RECOVERY?
 EXAMPLE OF STRATEGY 5: Protect and restore floodplains and estuaries**



13

14 **B HOW DO WE MEASURE OUR PROGRESS FOR EACH STRATEGY?
 EXAMPLE OF STRATEGY 5: Protect and restore floodplains and estuaries**



14

15

1 **Partnership Boards and Partners**

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

- 8
- 9 • **The Leadership Council** members work on high-priority legislative and policy issues to
10 accelerate recovery and mobilize funding.
- 11 • **The Ecosystem Coordination Board** represents a diverse set of partners and is responsible for
12 seeking funding and other resources, assisting with public education activities, and encouraging
13 communication and collaboration among all the partners involved in Puget Sound recovery.
- 14 • **The Science Panel** provides scientific advice to the Leadership Council and guidance for
15 preparing the Action Agenda and the State of the Sound.
- 16 • **The Salmon Recovery Council** advises the Leadership Council on decisions relating to salmon
17 recovery and the implementation of the Puget Sound Salmon Recovery Plan.
- 18 • **The Puget Sound Ecosystem Monitoring Program** generates, organizes, synthesizes, and
19 communicates scientific information to track ecosystem conditions that directly address
20 management and science questions critical to Puget Sound recovery.

21

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

26

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

35

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

1 **Funding Puget Sound Recovery**

2 Achieving our collective vision of protecting and restoring Puget Sound requires increasing the efficient
3 and effective use of existing funds, identifying, and securing additional dedicated funding sources, and
4 building a portfolio of private funding and financing programs—including innovative, market-based
5 programs – which invest in Puget Sound recovery. Partners must have the capacity to quickly scale their
6 recovery work with increased investment. To that end, we need to build supporting infrastructure
7 capable of moving important recovery projects quickly from concept to implementation and to facilitate
8 streamlined matchmaking between fund sources and protection and restoration efforts. We also need
9 funding approaches that make progress toward dismantling the disproportionate impacts felt by some
10 communities and focus on Tribal Treaty Rights and environmental justice.

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

- 15 1. Establish a clear picture of the size and nature of the funding need for Puget Sound recovery
- 16 2. Maintain and increase funding from existing Puget Sound recovery sources
- 17 3. Develop and implement a major new source of state funding
- 18 4. Build a portfolio of new private funding sources
- 19 5. Enhance capacity for rapid funding response

20 Funding approaches must also center Tribal Treaty Rights and environmental justice to begin
21 dismantling the disproportionate impacts felt by some communities. Protecting Puget Sound will
22 become increasingly expensive over time if human population, climate change, and other ecosystem
23 pressures increase as currently projected. Accelerating funding for our large capital programs and fully
24 funding the Action Agenda will be essential to meeting our Puget Sound statutory recovery goals. More
25 information about the key components of the funding strategy is included in Appendix III.

26

1 2022-2026 Action Agenda Implementation Plan

2 Draft: March 15, 2022

3

4 Chapter 1 | Strategies for Advancing Progress toward Desired Outcomes and Vital Signs 25

5 Strategy 1 – Smart Growth 25

6 Special Focus Area: Infrastructure 29

7 Strategy 2 – Working Lands 31

8 Strategy 3 – Healthy Shorelines 35

9 Strategy 4 – Riparian Areas 40

10 Strategy 5 – Floodplains and Estuaries 44

11 Strategy 6 – Fish Passage Barriers..... 50

12 Strategy 7 – Freshwater Availability 54

13 Strategy 8 – Toxic Chemical Pollution..... 58

14 Strategy 9 – Water Pollution Source Identification and Correction 62

15 Strategy 10 – Stormwater Runoff and Legacy Contamination 66

16 Strategy 11 – Wastewater Systems 72

17 Strategy 12 – Working Lands Runoff..... 77

18 Strategy 13 – Oil Spills..... 81

19 Strategy 14 – Invasive Species 85

20 Strategy 15 – Harvest, Hatchery, and Adaptive Management of Salmon Recovery 89

21 Strategy 16 – Submerged Aquatic Vegetation..... 92

22 Strategy 17 – Responsible Boating..... 96

23 Strategy 18 – Awareness of Effects of Climate Change 100

24 Strategy 19 – Greenhouse Gas Emissions and Carbon Sequestration..... 103

25 Strategy 20 – Climate Adaptation and Resilience 107

26 Strategy 21 – Place Attachment..... 111

27 Strategy 22 – Outdoor Recreation 115

28 Strategy 23 – Good Governance 117

29 Strategy 24 – Cultural Practices and Local Foods 120

30 Strategy 25 – Economic Benefits 123

31 Strategy 26 – Human Health..... 125

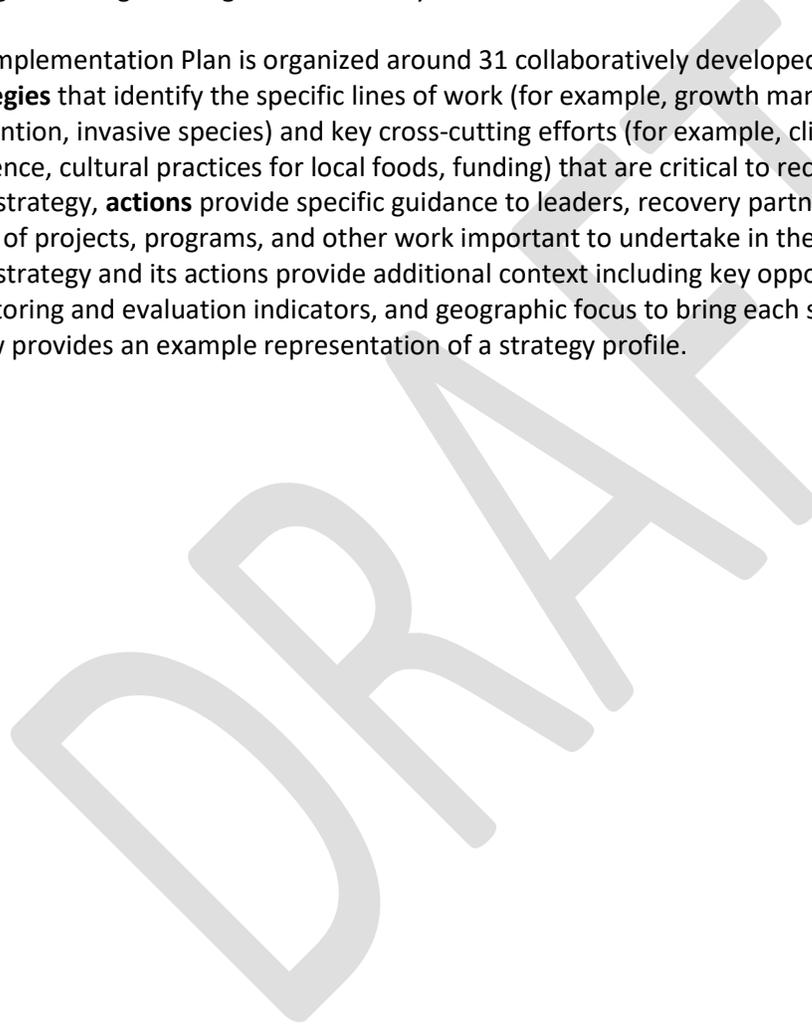
1 Chapter 2 | Institutional Strategies 128
2 Strategy A – Funding 129
3 Strategy B – Strategic Leadership and Collaboration..... 133
4 Strategy C – Research and Monitoring 136
5 Strategy D – Education Partnerships 142
6 Strategy E – Stewardship and Motivating Action 146
7

DRAFT

1 **Introduction**

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

8 The Implementation Plan is organized around 31 collaboratively developed and science-informed
9 **strategies** that identify the specific lines of work (for example, growth management, pollution
10 prevention, invasive species) and key cross-cutting efforts (for example, climate change adaptation and
11 resilience, cultural practices for local foods, funding) that are critical to recovery of Puget Sound. Within
12 each strategy, **actions** provide specific guidance to leaders, recovery partners, and funders about the
13 types of projects, programs, and other work important to undertake in the next four years. Profiles for
14 each strategy and its actions provide additional context including key opportunities, ongoing work,
15 monitoring and evaluation indicators, and geographic focus to bring each strategy to life. The graphic
16 below provides an example representation of a strategy profile.



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

- | |
|---|
| 1. Act on the understanding that people are part of nature and that the wellbeing of one depends on the wellbeing of the other. |
| 2. Factor our response to climate change into everything we do. |
| 3. Understand our role. |
| 4. Hold ourselves accountable. |
| 5. Act boldly and move forward together. |

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

4 Human wellbeing is all about how people thrive. It includes physical and psychological health of
5 individuals, as well as governance and the social, cultural, and economic wellbeing of society. Human
6 wellbeing has a strong foundation in the Puget Sound recovery framework, including representation in
7 the statutory recovery goals and Vital Signs. The 2022-2026 Implementation Plan calls on us to bring
8 focus to human wellbeing in our recovery efforts because:

- 9 • The integration of human wellbeing considerations has been found to accelerate ecosystem
10 recovery;
- 11 • The costs and consequences of inaction will only continue to grow, and will continue to
12 disproportionately impact historically marginalized communities;
- 13 • Scientific evidence calls for the need to prioritize human wellbeing as a strategic means of
14 achieving ecosystem goals;
- 15 • Improving our understanding of human wellbeing can ensure a more holistic and successful
16 approach to achieving Puget Sound recovery; and
- 17 • Integrating human wellbeing into our recovery efforts gives us additional tools for engaging
18 communities and harnessing broad support in concrete ways.

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

- 21 • Address actions to recognize residents' place attachment to Puget Sound
- 22 • Improve the ability for all residents to access responsible outdoor recreation
- 23 • Provide inclusive and transparent governance practices to improve engagement
- 24 • Engage with communities to enhance access to cultural practices and local foods
- 25 • Implement policies and programs that impact economic conditions in Puget Sound
- 26 • Implement programs to protect human health

27 Maintaining robust and healthy communities that provide local jobs and equitable access to the benefits
28 of living in the region is central to protecting and recovering Puget Sound. This Plan provides guidance
29 for achieving human wellbeing and biophysical outcomes at the same time by integrating human
30 wellbeing opportunities and concerns into all of our Puget Sound recovery work. These **implementation**
31 **considerations** identify opportunities to, for example, improve human health while also reducing

1 stormwater runoff; or enhance access to decision-making and governance while also improving the
2 health of shorelines.

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

4 Climate change is not a distant issue that will affect Puget Sound in the future - it is impacting our work
5 now. The changing climate poses serious risks to human health and safety, water quality and quantity,
6 and species of concern. The costs and consequences of inaction will only continue to grow and will
7 continue to disproportionately impact BIPOC communities. This Plan recognizes that the effectiveness of
8 our protection and recovery actions today will be compromised if we do not integrate climate change
9 mitigation and adaptation into everything we do. It also recognizes that our response to climate change
10 must better reflect the diverse communities that constitute the Puget Sound region to eliminate
11 disproportionate impacts. While climate change poses an immense challenge to achieving our statutory
12 recovery goals, it also comes at a time with a significant opportunity to respond with bold and ambitious
13 actions and to hold ourselves accountable within this Action Agenda.

14 The 2022-2026 Implementation Plan both identifies specific strategies to address and respond to climate
15 change and lays out a set of climate change considerations as part of the guidance for all other
16 strategies. Implementation considerations on climate change for each strategy help guide the recovery
17 community toward multi-benefit projects and programs that will stand up to a changing climate over
18 time. The three strategies that speak directly to climate change call out specific actions that the recovery
19 community can take now. These include strategies to increase the overall awareness of climate change
20 effects in Puget Sound, identify activities that advance greenhouse gas emission reductions and carbon
21 sequestration, and improve climate adaptation and resilience across Puget Sound.

22 **3. Understand our role.**

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

29 **4. Hold ourselves accountable.**

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

35

1 **5. Act boldly and move forward together.**

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

- 5 • Partnership Boards and regional partners;
- 6 • Partners working towards innovative and collaborative solutions to complex challenges;
- 7 • Local entities developing funding strategies for actions that advance recovery;
- 8 • State agency budget development for new initiatives and ongoing support for critical programs;
- 9 • National Estuary Program (NEP) funding decisions; and
- 10 • Policy priorities and the Partnership’s biennial state agency budget ranking process.

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

17

1 Chapter 1 | Strategies for Advancing Progress toward Desired Outcomes
2 and Vital Signs

3
4 Strategy 1 – Smart Growth

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

7
8 *Strategy Description*

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

13
14 Development of natural areas throughout Puget Sound has disrupted natural hydrologic processes and
15 habitat functions. If we continue along our path towards adding 1.7 million additional residents, or the
16 equivalent of an additional two and a half Seattles, expected in the Puget Sound area by 2050, the need
17 for housing and commercial development, and the network of infrastructure (roads and utilities) to
18 serve such development, must be balanced with protection of the important functions provided by
19 forested and riparian areas as well as agricultural lands.

20
21 We must redirect development pressure and reduce conversion of ecologically important lands, while
22 supporting working lands, and protecting and restoring natural and vegetated areas. This strategy
23 focuses on protecting ecologically important lands by channeling population growth into previously
24 designated preferred growth areas and reducing conversion of forests, farms, and natural areas into
25 land for homes, businesses, and roads.

26
27 To foster smart development and protect habitats, the recovery community will need to work alongside
28 transportation authorities, state and local decision-makers, natural resource and land use planners, as
29 well as investors and developers to improve implementation of regulations and incentives that channel
30 development into preferred growth areas. To prevent conversion of ecologically important lands, we
31 must improve implementation of, and make modifications to, the Growth Management Act (GMA) to
32 foster the protection of these natural areas and working lands. These protections should be
33 incorporated into regional infrastructure planning and supported by creating incentives for new market
34 demands for growth in city centers.

35
36 Implementing the Land Development and Cover and other Implementation Strategies supports the
37 success of this strategy.

38

1 *Vital Signs*

- Freshwater
- Beaches and Marine Vegetation
- Estuaries
- Forests and Wetlands
- Streams and Floodplains
- Birds
- Forage Fish
- Salmon

2

3 *What does success look like?*

4 We are achieving our recovery goals of increasing functioning habitat through restoration and improving
5 water quality in the Puget Sound region by protecting ecologically important lands, including beaches,
6 estuaries, forests and wetlands, streams, and floodplains, from conversion. Preferred high growth areas
7 are become increasingly dense as development is channeled away from ecologically important lands.
8 Residents of UGAs are thriving with equitable access to natural spaces. Working lands are intact and
9 thriving, and water infiltration and holding capacity of upland areas are maintained. Indicators of
10 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.

18

19 *Actions*

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

21 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.

32

33

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

2 Key opportunities for 2022-2026 include:

- 3 • Improve planning and zoning within UGAs;
- 4 • Improve the wellbeing of people living in those areas by increasing access to amenities, services,
5 green space, and affordable housing;
- 6 • Ensure transparent, effective, clear, and consistent implementation of regulations to provide
7 consistency and improved conditions for developers and investors within preferred high-growth
8 areas.

9
10 **Modify the Growth Management Act to serve as a more effective tool for channeling growth and
11 preventing conversion. (ID #178)**

12 Key opportunities for 2022-2026 include:

- 13 • Integrate climate change responses and salmon restoration goals and strategies into the GMA;
- 14 • Incorporate an enforceable net ecological gain standard into the GMA;
- 15 • Improve incentives available through the GMA for channeling growth and development into
16 preferred high-growth areas;
- 17 • Provide authority for local governments to consult with tribes in GMA implementation;
- 18 • Consider opportunities where multiple-benefit aspects of recovery projects may increase
19 affordable housing options for communities and support efforts that move low-income housing
20 stock outside climate-vulnerable areas and/or buy down the cost of developing green
21 infrastructure that serves historically marginalized neighborhoods.

22
23 *Implementation Considerations*

24 The Implementation Plan describes multiple benefits for each strategy by providing human wellbeing
25 and climate change considerations for project implementers and designers. These were developed with
26 guidance from the recovery community and are intended to highlight effective ways to achieve multiple
27 benefits for strategies and desired outcomes. While more progress is needed to fully integrate human
28 wellbeing and climate change considerations into strategy implementation, these are key factors for the
29 recovery community to consider when prioritizing, designing, and adapting their projects.

30
31 **Key opportunities for 2022-2026 to integrate human wellbeing considerations into smart growth
32 efforts include:**

- 33 • Advance the awareness of the public health, recreation, and local food benefits gained by
34 maintaining and increasing green space and habitats in and around urban areas.
- 35 • Engage communities, specifically historically marginalized communities, and youth in urban
36 areas, into smart growth planning process design, implementation, and decision-making.
- 37 • Incorporate consideration of culturally significant spaces (for example, community gardens) into
38 the design of new development.
- 39 • Ensure use of practices that demonstrate effective ways to maximize benefits and minimize
40 adverse impacts of growth and development when undertaking new projects that intentionally
41 support natural resources industries.

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

- 3 • Develop and right-size stormwater infrastructure using projections for future precipitation
4 regimes.
- 5 • Consider sea level rise and flooding projections to emphasize need for smart development and
6 discourage new building in or near floodplains or the shorelines.
- 7 • Transit oriented development should reduce vehicle miles traveled by single-occupancy
8 vehicles, as well as need for large parking lot/impervious surfaces in urban areas, which
9 contribute to urban heat island effect and stormwater runoff and pollution.
- 10 • New development should prioritize renewable energy and low-carbon design elements during
11 construction and building use, including equitable distribution of broadband to incent working
12 at home (materials, LEED-type design).

13
14 *Collaborating Partners*

- 15 • Tribal governments, representatives, and consortia
- 16 • State agencies (for example, Department of Commerce, Department of Fish and Wildlife,
17 Department of Ecology, Department of Transportation, Washington State Conservation
18 Commission, Emergency Management Division, Department of Natural Resources)
- 19 • Federal agencies (for example, Federal Highway Administration, Federal Transit Administration,
20 Department of Housing and Urban Development)
- 21 • Local governments (for example, city- and county-level land use planners and decision-makers)
- 22 • Local Integrating Organizations
- 23 • Salmon recovery and watershed groups
- 24 • Businesses/private sector (for example, developers and investors)

25
26 *Ongoing Programs*

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

- 32
- 33 • [Growth Management Services](#)
- 34 • [Ecosystems Support](#)
- 35 • [Natural Areas](#)
- 36 • [Natural Heritage Programs](#)
- 37 • [Planning, environmental review and funding programs](#)
- 38 • [Voluntary Stewardship Program](#)
- 39
- 40

1 Special Focus Area: Infrastructure

2 Transportation and utility infrastructure like highways, roads, bridges, dams, and railroads benefit
3 humans. They allow us to store and transport resources and enable us to easily visit different parts of
4 our region. Yet infrastructure can have adverse effects as well, by fragmenting habitats and blocking the
5 movement of water, sediment, and animals. Avoiding, removing, minimizing, or mitigating these
6 adverse effects of infrastructure on the ecosystem is essential for Puget Sound recovery.

7 *Relevant strategies*

8 The 2022 Action Agenda includes several strategies related to designing infrastructure so that it
9 contributes positively to restoration or minimizes adverse effects on the ecosystem:

- 10 • Strategy #1: Advance **smart development** and protect intact habitats and processes by
11 channeling population growth into attractive, transit-oriented urban growth areas with easy
12 access to natural spaces.
- 13 • Strategy #3: Protect and restore **marine shorelines** by improving compliance, incentives, and
14 strategic planning rooted in an understanding of coastal processes, with a focus on bluff-backed
15 beaches.
- 16 • Strategy #5: Protect and restore **floodplains and estuaries** (including associated riparian
17 habitats) by advancing integrated river basin management planning, policies, and regulations
18 and accelerating implementation of reach-scale plans.
- 19 • Strategy #6: Address **fish passage** barriers and reopen salmon habitat by accelerating strategic
20 planning and sequenced implementation of projects.
- 21 • Strategy #10: Manage **stormwater runoff and legacy contamination** by improving regulatory
22 frameworks and incentives, including using a comprehensive approach at the site and landscape
23 scales.
- 24 • Strategy #11: Reduce pollutants released from and prevent pollutants from entering
25 **wastewater systems** (for example, treatment plants and large and small onsite septic) by
26 improving regulatory frameworks and incentives and investing in new technology.

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

- 29 • **Hood Canal Bridge.** The bridge pontoons span more than 80 percent of the width of Hood Canal
30 and extend to a depth of 15 feet creating a barrier that contributes to high salmon and
31 steelhead predation and migration impediments.
- 32 • **Dams.** Dams, including Electron Hydro, Howard Hanson, and Mud Mountain, affect the flow of
33 freshwater, block fish from accessing habitat, and degrade rivers and streams.
- 34 • **Interstate-5 through the Nisqually Delta.** This section of I-5 acts as a dam across the Nisqually
35 Delta that constricts the flow of water into and out of the mouth of the Nisqually River
36 contributes to flood risk through erosion and sediment accretion and impacts the salinity of the
37 estuary.

- 1 • **Highway 101 at the Duckabush Estuary.** This estuary is impacted by fill, dikes, and road
2 infrastructure, which blocks water channels and limits critical habitat for fish and wildlife,
3 including endangered salmon species.
- 4 • **Burlington Northern Santa Fe (BNSF) Railroad.** Railroad infrastructure impairs and impedes
5 essential nearshore habitat and natural shoreline processes along 52 miles of the shoreline (with
6 another 21 miles of railroad within 200 feet of the shoreline) from the Nisqually Delta to the
7 Canadian border.
- 8 • **Lake Washington Ship Canal and Ballard Locks (Hiram M. Chittenden Locks).** The Lake
9 Washington Ship Canal poses challenges for salmon migration including predation, high water
10 temperatures, and susceptibility to disease.
- 11 • **Jackson Beach (San Juan Island) shoreline armoring.** This site is a known surf smelt and sand
12 lance spawning beach and presents an opportunity to restore habitat for these forage fish by
13 removing heavy armor.
- 14 • **Numerous floodplain dikes and levees.** Dikes and levees disconnect streams and rivers from
15 floodplain habitat and disrupt ecosystem functions.

16 *What's needed*

- 17 • Full funding from the state legislature of capital funding programs—including Puget Sound
18 Acquisition and Restoration (PSAR), Floodplains by Design, Puget Sound Nearshore Ecosystem
19 Restoration Project (PSNERP) matching, and Estuary and Salmon Restoration Program (ESRP).
- 20 • Effective and efficient spending, aligned with Action Agenda priorities, of Infrastructure
21 Investment and Jobs Act funds.
- 22 • Targeted attention and appropriations from the state and federal government for the largest
23 projects—such as Nisqually I-5, the Hood Canal Bridge, Lake Washington Ship Canal, Hiram M.
24 Chittenden Locks, and Howard Hanson Dam.
- 25 • Funding and coordinated partner engagement with BNSF to reduce impacts to nearshore
26 habitat from railroad infrastructure.

1 Strategy 2 – Working Lands

2 Reduce pressure for land conversion by supporting the long-term viability and sustainability of
3 agricultural lands, including large and small parcel, hobby and working farms, and working forests
4 through resilience and integrated management planning, improved incentives, and improved land use
5 regulations.
6

7 *Strategy Description*

8 Agricultural lands and working forests provide habitat that supports animals like deer, elk, birds, and
9 salmon and can support water filtration and storage. Maintaining working lands in their current state is
10 beneficial in preventing the degradation of habitat and downstream environmental conditions as well as
11 beneficial for the natural resource economy, jobs, and production of local foods. While forestry and
12 agricultural activity can have their impacts on the surrounding environment, the effect is often lower
13 than after conversion to residential or commercial land uses.
14

15 By keeping working lands working, we can maintain vibrant agricultural and forestry industries, and we
16 can reduce the pressure to convert those lands to more developed uses that can lead to greater
17 pollution, expansion of urban heat islands, and loss of habitat.
18

19 This strategy aims to support the long-term viability of agricultural lands and working forests. It focuses
20 on increasing agricultural resilience along with improving local jurisdictions’ adoption and
21 implementation of plans, regulations, and policies that support healthy working lands. There is also an
22 opportunity to expand the use of and support for incentives and technical assistance available for
23 owners of agricultural lands and working forests.
24

25 Implementing the Land Development and Cover, Floodplains and Estuaries, and other, Implementation
26 Strategies supports the success of this strategy.
27

28 *Vital Signs*

- | |
|--|
| <ul style="list-style-type: none"> • Outdoor Activity • Freshwater • Forests and Wetlands • Birds • Economic Vitality |
|--|

29

30 *What does success look like?*

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

- 37 • Decreasing the acres of private agricultural lands and forest lands converted to other uses,
38 sound-wide

- Increasing percentage of working lands enrolled in protection programs
- Decreasing the loss of forest cover in the upper, middle, and lower areas of watersheds

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);
- And 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;
- And enhance tax benefits, particularly for those areas that have the potential to increase carbon sequestration.

Implementation Considerations

The Implementation Plan describes multiple benefits for each strategy by providing human wellbeing and climate change considerations for project implementers and designers. 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.

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

- 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.

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

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

10
11 *Collaborating Partners*

- 12 • Tribal governments, representatives, and consortia
- 13 • Federal Agencies (National Ocean and Atmospheric Administration, Environmental Protection
14 Agency, US Forest Service, and US Department of Agriculture)
- 15 • State agencies (Washington Department of Natural Resources, Washington Department of Fish
16 and Wildlife, Washington Department of Ecology, Washington Department of Commerce,
17 Washington State Department of Agriculture, and Conservation Commission)
- 18 • Local Governments (for example, city- and county-level local land use planners and permitting
19 offices)
- 20 • Academic/research institutions (Washington State University and extension programs)
- 21 • Local Integrating Organizations
- 22 • Conservation districts
- 23 • Salmon recovery and watershed groups
- 24 • Community members/residents (for example, agricultural landowners, forest landowners, and
25 membership organizations for agriculture and forest owners)
- 26 • Nongovernmental organizations (NGOs) (for example, Skagitonians and Washington Farmland
27 Trust)

28
29 *Ongoing Programs*

30 *Ongoing programs provide regulatory oversight, technical support, implementation resources, funding,*
31 *or guidance and serve as the critical foundation for Puget Sound recovery. The following is a list of*
32 *example state and federal ongoing programs that help to implement this strategy. Many more local,*
33 *tribal nations, and non-governmental programs exist that support this strategy. See [Puget Sound Info](#) for*
34 *a broader list of relevant programs. Programs that have set 4-year targets to accelerate their*
35 *contributions to Puget Sound recovery are indicated in bold (*).*

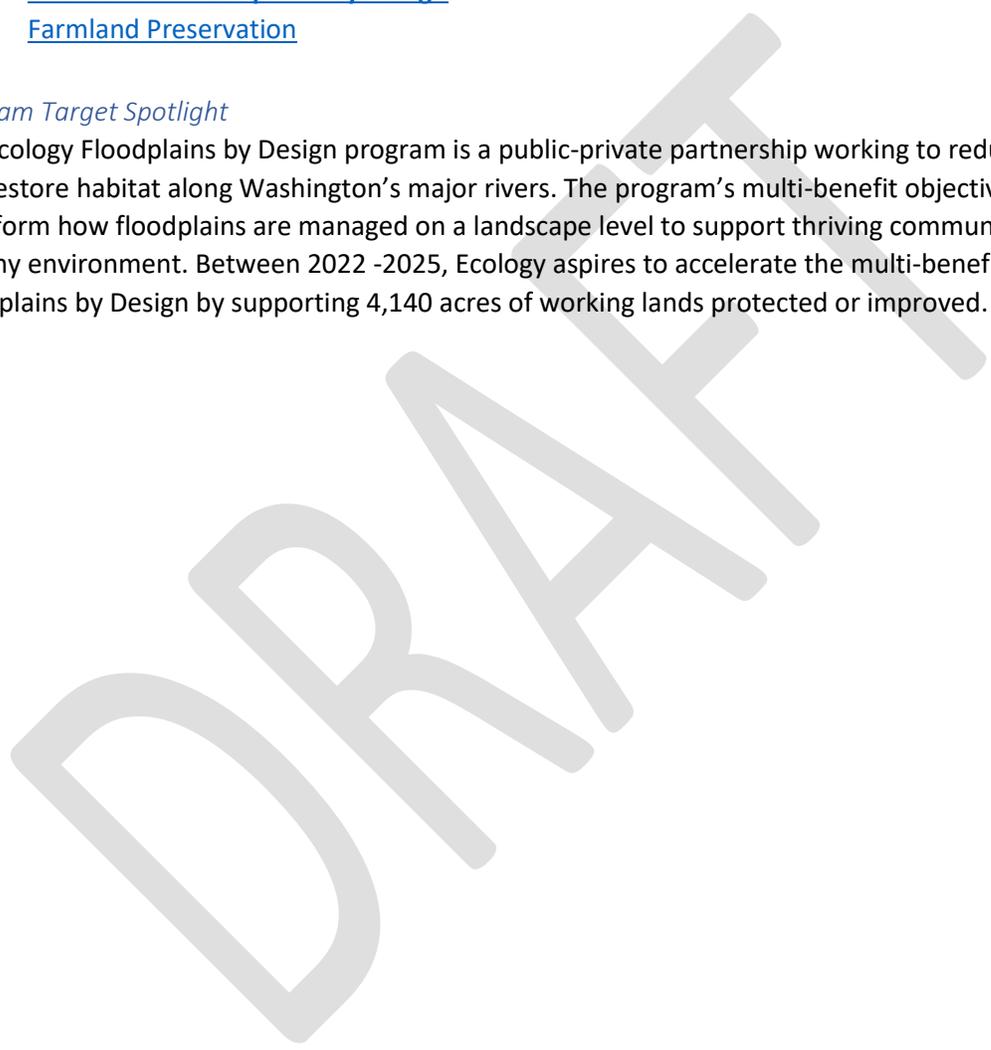
- 36
- 37 • [Growth Management Services](#)
- 38 • [DNR Forest Practices Program including the Habitat Conservation Plan](#)
- 39 • [Washington Wildlife and Recreation Program](#)
- 40 • [Ecosystems Support](#)

- 1 • [Urban and Community Forestry](#)
- 2 • [Washington Community Forest Trust Program](#)
- 3 • [Community Forests Program](#)
- 4 • [Readiness and Environmental Protection Integration Program](#)
- 5 • [Agricultural Conservation Easement Program](#)
- 6 • [Forest Legacy Program](#)
- 7 • [Shorelands - Floodplains by Design*](#)
- 8 • [Farmland Preservation](#)
- 9

10 *Program Target Spotlight*

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

16
17



1 Strategy 3 – Healthy Shorelines

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

4
5 *Strategy Description*

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

11
12 Across Puget Sound, 715 miles, or nearly 30 percent, of shorelines are armored, and over half of those
13 are on private property. Shoreline armor, including seawalls and bulkheads, is intended to prevent
14 erosion and protect homes and infrastructure. However, armor makes a dynamic shoreline static,
15 disrupting many of the natural processes that replenish sand and gravel to the beaches of Puget Sound.
16 With armored shorelines, beach material can wash away more quickly, threatening infrastructure and
17 nearshore habitat. Armor can also leach toxics into the water supply and harm aquatic organisms.
18 Impacts from armored shorelines include a loss of spawning habitat for forage fish and loss of food
19 sources and resting zones for juvenile salmon.

20
21 In some places, armor must be maintained to protect public safety and existing infrastructure. However,
22 there also are many opportunities to preserve natural shorelines along Puget Sound where armor is not
23 necessary, or to restore previously modified shoreline by removing armor or replacing it with more
24 natural protective options called “soft shore protection.”¹ For this strategy to be effective, regulatory
25 programs, incentive programs for armor removal or replacement, and funding and technical support for
26 project planning and implementation must work collectively to advance the pace and scale of shoreline
27 restoration.

28
29 Implementing the Shoreline Armoring, Land Development and Cover, Shellfish, and other
30 Implementation Strategies support the success of this strategy.

31
32 *Vital Signs*

- | |
|---|
| <ul style="list-style-type: none"> • Freshwater • Beaches and Marine Veg • Estuaries • Streams and Floodplains • Birds • Forage Fish • Salmon • Shellfish |
|---|

33

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

1 *What does success look like?*

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

- 6 • Minimizing miles of new shoreline armor and maximizing the miles of shoreline armor removed,
7 sound-wide
- 8 • Reducing the total extent of shoreline armor sound-wide
- 9 • Increasing the percent of feeder bluffs in functional condition

10

11 *Actions*

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

14 Key opportunities for 2022-2026 include:

- 15 • Evaluate and improve implementation of existing shoreline regulations and policies (which could
16 include single-family residences as well as emergency construction permits);
- 17 • Conduct effective and active compliance monitoring and enforcement to support and reinforce
18 permitting decisions by state and local regulatory agencies;
- 19 • Identify nearshore restoration opportunities in industrial and municipal areas; preventing
20 conversion of nearshore habitats through voluntary acquisitions;
- 21 • Review/improve shoreline regulations including the incorporation of potential future changes to
22 shorelines from climate change;
- 23 • Cultivating political support for regulatory staff to implement existing regulations and conduct
24 compliance, monitoring, and enforcement.

25

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

28 Key opportunities for 2022-2026 include:

- 29 • Educate, communicate with, and assist marine and shoreline property owners and the
30 community to best pursue voluntary ecologically-friendly shoreline management alternatives;
- 31 • Combine communication with financial, social, and technical incentives (for example, tax
32 benefits, market-based solutions, or restoration permit streamlining) to accelerate shoreline
33 management on residential properties such as shoreline armor prevention and removal;
- 34 • Increase coordination among regional and local partners to ensure that existing knowledge and
35 resources are leveraged, and that related programs are funded appropriately for the long-term.

36

37

38

39

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

3 Key opportunities for 2022-2026 include:

- 4 • Develop and complete a standardized framework for parcel-scale mapping of Puget Sound
5 shoreline attributes and prioritization of protection, followed by a comprehensive parcel-by-
6 parcel prioritized analyses of all marine shorelines, by drift cell, that includes habitat value,
7 ecosystem services, risk of development, vulnerability to sea-level rise, and the frequency and
8 intensity of storms;
- 9 • Make this information and other regional information and criteria easily accessible to inform
10 strategic decision-making and land use planning;
- 11 • Improve education, coordination, and communication between agencies, partners, and
12 community members to leverage and catalyze beneficial projects for restoration and habitat
13 improvement.

14
15 **Increase and improve coastal process-based design and technical training. (ID #17)**

16 Key opportunities for 2022-2026 include:

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

24
25 *Implementation Considerations*

26 The Implementation Plan describes multiple benefits for each strategy by providing human wellbeing
27 and climate change considerations for project implementers and designers. These were developed with
28 guidance from the recovery community and are intended to highlight effective ways to achieve multiple
29 benefits for strategies and desired outcomes. While more progress is needed to fully integrate human
30 wellbeing and climate change considerations into strategy implementation, these are key factors for the
31 recovery community to consider when prioritizing, designing, and adapting their projects.

32
33 **Key opportunities for 2022-2026 to integrate human wellbeing consideration in efforts to protect and**
34 **restore marine shorelines include:**

- 35 • Protect and restore shorelines in places and in such a way as to reduce human health risks,
36 enhance place attachment, protect opportunities for cultural practices, and expand equitable
37 access to responsible recreation and stewardship.
- 38 • Expand inclusion of historically marginalized communities in governance and decisions about
39 how and where we protect and restore marine shorelines.
- 40 • Prioritize opportunities to realize multiple benefits for habitat, livelihoods, and human wellbeing
41 in protecting and restoring marine shorelines.

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

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

11
12 *Collaborating Partners*

- 13 • Tribal governments, representatives, and consortia
- 14 • Federal Agencies
- 15 • State agencies (Department of Fish and Wildlife and Department of Ecology)
- 16 • Local governments (for example, city and county local land use planners and permitting offices)
- 17 • Conservation Districts
- 18 • Marine Resource Committees
- 19 • Non-profits and other project sponsors (implementers of Shore Friendly programs and
20 restoration projects)
- 21 • Community members/residents (for example, shoreline property owners)
- 22 • Local Integrating Organizations
- 23 • Salmon recovery and watershed groups
- 24 • Washington Sea Grant

25
26 *Ongoing Programs*

27 *Ongoing programs provide regulatory oversight, technical support, implementation resources, funding,*
28 *or guidance and serve as the critical foundation for Puget Sound recovery. The following is a list of*
29 *example state and federal ongoing programs that help to implement this strategy. Many more local,*
30 *tribal nations, and non-governmental programs exist that support this strategy. See [Puget Sound Info](#) for*
31 *a broader list of relevant programs. Programs that have set 4-year targets to accelerate their*
32 *contributions to Puget Sound recovery are indicated in bold (*).*

- 33
- 34 • [Shorelands - Shoreline Master Programs](#)
- 35 • **[Shore Friendly Programs*](#)**
- 36 • [Hydraulic Project Approval Program](#)
- 37 • [Regulatory Program](#)
- 38 • [Office of Protected Resources](#)
- 39 • **[Partnership Nearshore Credits Program*](#)**
- 40

1 *Program Target Spotlight*

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

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

14
15 *Geographic Scope*

16 Shoreline armoring exists all around Puget Sound but is more
17 prevalent in some areas than others. Approaches vary by
18 location as armor is associated with small residential parcels in
19 some areas and large public or private infrastructure (ports,
20 railroad) in others (Figure 1). Armor prevention and removal
21 should prioritize areas where there is the greatest potential to
22 protect or restore nearshore processes that sustain beach
23 structure. Management strategies should focus on feeder bluffs
24 which supply sediment to beaches and help shape shoreline
25 ecosystems.



1 Strategy 4 – Riparian Areas

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

4
5 *Strategy Description*

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

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

19
20 Intact forested riparian corridors can better preserve and restore habitat function than land converted
21 to residential or commercial development. A comprehensive suite of tools, including improved
22 regulatory frameworks and funding for incentives, must be deployed to deliver the scale and pace of
23 riparian protection and restoration needed to achieve resilience in Puget Sound.

24
25 Implementing the Floodplains and Estuaries, B-IBI, Land Development and Cover, and other
26 Implementation Strategies supports the success of this strategy.

27
28 *Vital Signs*

- | |
|---|
| <ul style="list-style-type: none"> • Freshwater • Beaches and Marine Veg • Estuaries • Forests and Wetlands • Streams and Floodplains • Birds • Salmon |
|---|

29
30 *What does success look like?*

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

- 1 • Increasing acres of floodplain, estuary, and riparian habitat acquired for protection or restored,
2 sound-wide;
- 3 • Increasing acres treated with BMPs across private lands;
- 4 • Stabilizing water temperature in streams and rivers; and
- 5 • Increasing the extent of forest cover in freshwater riparian zones.

6
7 *Actions*

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

10 Key opportunities for 2022-2026 include:

- 11 • Amend the Growth Management Act (GMA) and Shoreline Management Act (SMA) to
12 implement a statewide riparian standard through local land use planning and regulation;
- 13 • Establish a riparian plant propagation program at public and private nurseries to meet future
14 riparian restoration needs;
- 15 • Gather and evaluate riparian management, guidance, and implementation data;
- 16 • Enhance funding for and capacity of riparian area owners, tribal governments, local
17 governments, and nongovernmental organizations (for example, Conservation Corps) to acquire,
18 restore, and manage riparian properties;
- 19 • Develop a monitoring program to track implementation –and effectiveness – of a variety of tools
20 and incentives.

21
22 **Provide incentives, financial and technical support to local jurisdictions that have prioritized riparian**
23 **restoration. (ID #201)**

24 Key opportunities for 2022-2026 include:

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

31
32 *Implementation Considerations*

33 The Implementation Plan describes multiple benefits for each strategy by providing human wellbeing
34 and climate change considerations for project implementers and designers. These were developed with
35 guidance from the recovery community and are intended to highlight effective ways to achieve multiple
36 benefits for strategies and desired outcomes. While more progress is needed to fully integrate human
37 wellbeing and climate change considerations into strategy implementation, these are key factors for the
38 recovery community to consider when prioritizing, designing, and adapting their projects.

39
40
41

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

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

10
11 **Key opportunities for 2022-2026 to integrate climate change responses in efforts to protect and**
12 **restore riparian areas include:**

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

18
19 *Collaborating Partners*

- 20 • Tribal governments, representatives, and consortia
- 21 • Federal agencies (National Oceanic and Atmospheric Administration, Environmental Protection
22 Agency, US Fish and Wildlife Service, and Natural Resources Conservation Service)
- 23 • State agencies (Department of Fish and Wildlife, Recreation Conservation Office, Washington
24 Conservation Commission, Department of Ecology, Department of Natural Resources,
25 Department of Agriculture, and Department of Transportation)
- 26 • Salmon recovery and watershed groups
- 27 • Conservation Districts
- 28 • Local Integrating Organizations
- 29 • Local governments (for example, city and county)
- 30 • Forest landowner organizations (for example, Washington Farm Forestry Association,
31 Washington Forest Protection Association)
- 32 • Academic/research institutions (for example, UW Precision Forestry Cooperative)
- 33 • WDFW Hydraulics Program

34
35 *Ongoing Programs*

36 *Ongoing programs provide regulatory oversight, technical support, implementation resources, funding,*
37 *or guidance and serve as the critical foundation for Puget Sound recovery. The following is a list of*
38 *example state and federal ongoing programs that help to implement this strategy. Many more local,*
39 *tribal nations, and non-governmental programs exist that support this strategy. See [Puget Sound Info](#) for*
40 *a broader list of relevant programs. Programs that have set 4-year targets to accelerate their*
41 *contributions to Puget Sound recovery are indicated in bold (*).*

- 1 • Tribal governments, representatives, and consortia
- 2 • [DNR Forest Practices Program including the Habitat Conservation Plan](#)
- 3 • [Shorelands - Shoreline Master Programs](#)
- 4 • [Governor's Salmon Recovery Office](#)
- 5 • [Puget Sound Acquisition and Restoration](#)
- 6 • [Salmon Recovery Funding Board](#)
- 7 • [Washington Wildlife and Recreation Program](#)
- 8 • [Ecosystems Support](#)
- 9 • [Hydraulic Project Approval Program](#)
- 10 • [Conservation Reserve Enhancement Program \(CREP\)*](#)
- 11 • [Agricultural Conservation Easement Program](#)
- 12 • [Forest Riparian Easement Program](#)
- 13 • [Clean Water Act Section 303\(d\): Impaired Waters and Total Maximum Daily Loads \(TMDL\)](#)
- 14 [program](#)
- 15

16 *Program Target Spotlight*

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

22

1 Strategy 5 – Floodplains and Estuaries

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

5

6 *Strategy Description*

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

11

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

17

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

24

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

31

32 River-basin planning is a collaborative approach where residents and stakeholders impacted by an issue
33 help create solutions for their community. This participation results in a strategy that proposes
34 coordinated actions and projects that benefit local agricultural operations, fish habitat, and flood risk
35 reduction. In [gʷəḏʰadad](#) (pronounced gwa-zah-did), “Teaching of Our Ancestors”, tribal nations
36 identified floodplains as one of five key targets in their Tribal Habitat Strategy, focusing efforts on
37 protecting, restoring, and enhancing hydrological and geomorphic connectivity between rivers and their
38 floodplains and deltas for a recovered future. Please see the [Tribal Habitat Strategy story map](#) for more
39 information.

40

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

1 *Vital Signs*

- Freshwater
- Beaches and Marine Veg
- Estuaries
- Forests and Wetlands
- Streams and Floodplains
- Birds
- Salmon

2

3 *What does success look like?*

4 We are achieving our recovery goal of increasing functioning habitat in the Puget Sound region by
5 preventing fragmentation of rivers, floodplains, and estuaries, removing or changing the management of
6 levees, floodgates, tidegates, roads, existing development, and other barriers in floodplains and
7 estuaries; and restoring floodplains, tidal wetlands, and estuaries through multi-benefit approaches.

8 Indicators of success include:

- 9 • Increasing the acres of floodplain, estuary, and riparian habitat acquired for protection or
10 restoration.
- 11 • Limiting the number of new development permits in floodplains and estuaries or limiting the
12 acres of floodplain and estuary habitat converted to development or newly disconnected from
13 flows/inundation.
- 14 • Increasing floodplain function in large and small river systems.
- 15 • Increasing the percent of estuarine habitat area in functional condition.
- 16 • Increasing the number of accessible pocket estuaries and embayments.
- 17 • Increasing habitat through reconnection of floodplain side channels and riverine wetlands

18 *Actions*

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

21 Key opportunities for 2022-2026 include:

- 22 • Enhance funding for and capacity of landowners, tribal governments, local governments, and
23 nongovernmental organizations to acquire, restore, and manage floodplain and estuarine
24 properties; remove or set back barriers to pocket estuary function;
- 25 • Work with landowners to allow estuarine connectivity during key timeframes for salmon;
- 26 • Purchase key properties that allow for permanent restoration and protection of habitat and
27 connectivity;
- 28 • Remove culverts and maintaining improved streamflow functions;
- 29 • Develop approaches to more rapidly access funding when properties become available; and
30 develop a framework to identify highest priority salmon habitats to protect in Puget Sound.

31
32
33
34

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

3 Key opportunities for 2022-2026 include:

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

16
17 **Develop and maintain a Puget Sound-wide framework to build public support and political will,**
18 **develop partnerships, mobilize funding resources, streamline permitting, and support monitoring for**
19 **integrated floodplain management approaches to enhance outcomes for fish populations, flood risk,**
20 **and agricultural viability (farm, fish, flood). (ID #19)**

21 Key opportunities for 2022-2026 include:

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

33
34 **Prioritize, design, and implement reach-scale restoration and protection projects within a river basin**
35 **or watershed. (ID #20)**

36 Key opportunities for 2022-2026 include:

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

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

3 Key opportunities for 2022-2026 include:

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

11
12 **Increase and improve floodplain and estuary regulation implementation, compliance, enforcement,**
13 **incentives, and communication. (ID #195)**

14 Key opportunities for 2022-2026 include:

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

21
22 *Implementation Considerations*

23 The Implementation Plan describes multiple benefits for each strategy by providing human wellbeing
24 and climate change considerations for project implementers and designers. These were developed with
25 guidance from the recovery community and are intended to highlight effective ways to achieve multiple
26 benefits for strategies and desired outcomes. While more progress is needed to fully integrate human
27 wellbeing and climate change considerations into strategy implementation, these are key factors for the
28 recovery community to consider when prioritizing, designing, and adapting their projects.

29
30 **Key opportunities for 2022-2026 to integrate human wellbeing consideration in efforts to protect and**
31 **restore floodplains and estuaries include:**

- 32 • Consider real estate reforms such as flood disclosure forms to protect floodplains and increase
33 resident knowledge of surrounding floodplains.
- 34 • Consider impacts of housing inequities on residents living in or near floodplains and support
35 habitat restoration projects that move low-income housing stock outside climate-vulnerable
36 areas in ways that enable families to thrive economically and/or communities to maintain social
37 cohesion.
- 38 • Integrate outdoor recreation and stewardship opportunities into floodplain and estuarine
39 projects and plans.
- 40 • Meaningfully engage with tribal nations in floodplain and river basin restoration and protection
41 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.
- 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.

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 (Environmental Protection Agency (EPA Region 10 Puget Sound Team [and Puget Sound Federal Task Force](#)), [U.S. Army Corps of Engineers](#), [Federal Emergency Management Agency](#))
- State agencies (Department of Fish and Wildlife, Puget Sound Partnership, Department of Ecology, Department of Natural Resources, Emergency Management Division)
- Puget Sound Partnership boards
- Local Integrating Organizations
- Salmon recovery and watershed groups
- Local governments (for example, city and county)
- Academic/research institutions (Puget Sound Institute, University of Washington Climate Impacts Group, Puget Sound Ecosystem Monitoring Program work groups)
- Businesses/private sector
- Nongovernmental organizations (for example, The Nature Conservancy)

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 non-governmental programs exist that support this strategy. See [Puget Sound Info](#) for a broader list of relevant programs. Programs that have set 4-year targets to accelerate their contributions to Puget Sound recovery are indicated in bold ().*

- **[Shorelands - Floodplains by Design](#)***
- **[Puget Sound Acquisition and Restoration](#)***

- 1 • **NOAA Fisheries**
- 2 • [Salmon Recovery Funding Board](#)
- 3 • [Estuary and Salmon Restoration Program](#)
- 4 • [Puget Sound Nearshore Ecosystem Restoration Program*](#)
- 5 • [National Flood Insurance Program and Biological Opinion](#)
- 6 • [Continuing Authorities Program](#)
- 7 • [National Coastal Wetlands Conservation Grant Program](#)
- 8

9 *Program Target Spotlight*

10 The [Puget Sound Partnership Puget Sound Acquisition and Restoration](#) (PSAR) program implements
11 priority salmon habitat protection and restoration projects in Puget Sound. Between 2022-2026, the
12 Puget Sound Partnership aspires to accelerate PSAR’s program performance by funding 6,000 acres of
13 salmon habitat protection or restoration projects.

14 The [WDFW Puget Sound Nearshore Ecosystem Restoration Project](#) (PSNERP) objective is to complete
15 process-based nearshore habitat restoration with three science-based planning objectives of restoring
16 1) the connectivity and size of large river delta estuaries, 2) the number and quality of coastal
17 embayments, and 3) the size and quality of beaches. Between 2022-2026, WDFW aspires to accelerate
18 the PSNERP program performance by securing the funds needed to start the process-based restoration
19 of 2,414 acres of PSNERP-identified nearshore habitat projects.

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

25
26

1 Strategy 6 – Fish Passage Barriers
2 Address fish passage barriers and reopen salmon habitat by accelerating strategic planning and
3 sequenced implementation of projects.
4

5 *Strategy Description*

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

11
12 Fish passage barriers are found on lands owned and managed by government or private entities. As a
13 result, public agencies, private landowners, local, state, tribal, and federal governments, and non-profit
14 community groups must work together to locate fish passage barriers and identify the highest priority
15 projects to ensure that limited funds are well-spent. A variety of types of funds support fish passage
16 barrier and habitat restoration work, but more is needed.

17
18 Implementing the Chinook and other Implementation Strategies supports the success of this strategy.
19

20 *Vital Signs*

- | |
|--|
| <ul style="list-style-type: none">• Salmon |
|--|

21
22 *What does success look like?*

23 We achieve our recovery goal of thriving species and foodwebs in the Puget Sound region by removing
24 or managing culverts, dams, and other infrastructure to ensure fish passage and functioning
25 downstream habitat. The indicator of success is increasing the miles of streams opened to fish as a
26 result of fish passage barrier removal.
27

28 *Actions*

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

31 Key opportunities for 2022-2026 include:

- 32 • Reach an agreement with United States Army Corps of Engineers (USACE) and Tacoma public
33 utilities on timely construction and adaptive management of the Howard Hanson Dam juvenile
34 fish passage;
- 35 • Implement adaptive management of the new adult trap at the Buckley diversion dam;
- 36 • Convene partners to identify barriers and discuss dam removal benefits for fish and ecosystem
37 functions, adaptive management provisions in dam management and operating plans (including
38 those identified in local salmon recovery plans) to meet instream flow goals, and actions that
39 support fish passage, survival, and reintroduction at the Columbia River and Snake River Dams
40 for the benefit of Southern Resident Orcas.
41

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

3 Key opportunities for 2022-2026 include:

- 4 • Identify priority watersheds and fish passage barrier projects (including low flow or diversion
5 issues in addition to culverts and dams);
- 6 • Identify opportunities to remove outdated dams or dams that have consistently failed to comply
7 with environmental regulations;
- 8 • Consider strategic and varied approaches for private and public culvert removal;
- 9 • Streamline funding opportunities for private culverts and barrier removal;
- 10 • Support utilization of adaptive management of existing guidelines, coding, and laws in place;
- 11 • Integrate stormwater data to support salmon health;
- 12 • Include stormwater and climate change priorities in transportation plans;
- 13 • Support landowners to address railroad barriers (for example, BNSF and neighboring land
14 owners); address flood safety regulation and permit obstacles;
- 15 • Engage tribal nations and other partners to identify barrier removal projects;
- 16 • improve migration pathways around dams;
- 17 • Improve forest road maintenance and stabilization, as well as enhancing road decommissioning
18 programs;
- 19 • Create a statewide ranking and prioritization program to provide a cost-benefit analysis of each
20 project;
- 21 • Fulfill the state’s obligation to replace fish passage culverts;
- 22 • Support Washington State Department of Fish and Wildlife (WDFW) compilation and
23 development of statewide strategies that includes prioritization and sequencing of barriers;
- 24 • Implement the restoration permit streamlining pilot program authorized under ESSHB 1382;
- 25 • Monitor and evaluate responses to fish passage barrier actions;
- 26 • Include fish passage, stormwater and climate change priorities in transportation plans;
- 27 • Increase collaboration across agencies to remove passage barrier by watershed, stream reach,
28 or subbasin to encourage economies of scale and open larger sections of streams.

29
30 *Implementation Considerations*

31 The Implementation Plan describes multiple benefits for each strategy by providing human wellbeing
32 and climate change considerations for project implementers and designers. These were developed with
33 guidance from the recovery community and are intended to highlight effective ways to achieve multiple
34 benefits for strategies and desired outcomes. While more progress is needed to fully integrate human
35 wellbeing and climate change considerations into strategy implementation, these are key factors for the
36 recovery community to consider when prioritizing, designing, and adapting their projects.

37
38 **Key opportunities for 2022-2026 to integrate human wellbeing considerations in efforts to address**
39 **fish passage barriers and reopen salmon include:**

- 40 • Consider opportunities to bring jobs and economic benefits to communities through culvert,
41 bridge, dam removal improvements, and subsequent habitat restoration work.

- Expand inclusion of historically marginalized 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 K-12 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 include:

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

Collaborating Partners

- Tribal governments, representatives, and consortia
- Federal agencies (US Forest Service, NOAA, U.S. Army Corps of Engineers (and other dam operators), Federal Highway Administration)
- Department of Transportation
- State agencies (Department of Fish and Wildlife, Department of Natural Resources, Department of Transportation)
- 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/residents (for example, private property owners)
- Local park districts

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 non-governmental programs exist that support this strategy. See [Puget Sound Info](#) for a broader list of relevant programs. Programs that have set 4-year targets to accelerate their contributions to Puget Sound recovery are indicated in bold ().*

- [Family Forest Fish Passage Program](#)
- [Puget Sound Acquisition and Restoration](#)

1
2
3
4
5
6
7
8
9

- [Salmon Recovery Funding Board](#)
- [WDFW Habitat Recovery & Protection \(Fish Passage\)](#)
- [WSDOT Improving Fish Passage \(Fish Barrier Correction\)](#)
- [Brian Abbott Fish Barrier Removal Board \(FBRB\) grant program](#)
- [Recreation and Conservation Office Grants \(Family Forest Fish Passage Program Grants\)](#)
- [National Culvert Removal, Replacement and Restoration Grant Program \(National Fish Passage Program\)](#)

DRAFT

1 Strategy 7 – Freshwater Availability

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

5
6 *Strategy Description*

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

14
15 In January 2018, the Legislature passed the streamflow restoration law ([RCW 90.94](#)) that helps restore
16 stream flows to levels necessary to support robust, healthy, and sustainable salmon populations while
17 providing water for homes in rural Washington. The law directs local planning groups to develop
18 watershed plans that offset impacts from new domestic permit-exempt wells and achieve a net
19 ecological benefit within the watershed. The Legislature appropriated \$300 million over the course of 15
20 years to help with the implementation of projects that improve streamflow. The funds are available
21 statewide and administered through a competitive grant program.

22
23 This strategy builds on this direction from the Legislature, as well as other policies and initiatives, by
24 supporting planning for how Washington will manage and protect instream habitat and water levels,
25 such that human communities and instream biota can thrive over the long term. The near-term
26 objectives for water demand and water conservation address four key sectors: municipalities,
27 agriculture, industry, and rural domestic water users. Demand and conservation goals will be met
28 through a combination of implementation and enforcement of rules, voluntary participation in
29 conservation programs (and efforts to utilize reclaimed water), market-based approaches to adjust
30 water usage, integrated river basin planning with residents and stakeholders, and deployment of
31 current and emerging water conservation technologies.

32
33 Implementing the Floodplains and Estuaries, B-IBI, Land Development and Cover, and other
34 Implementation Strategies supports the success of this strategy.

35
36 *Vital Signs*

- | |
|---|
| <ul style="list-style-type: none"> • Freshwater • Forests and Wetlands • Streams and Floodplains • Salmon |
|---|

37

1 *What does success look like?*

2 We are achieving our recovery goal of increasing functioning habitat and ensuring adequate abundant
3 water quantity in the Puget Sound region by reducing or mitigating surface water diversions and
4 groundwater withdrawals to meeting instream flow targets, increasing the amount of infiltration and
5 water holding capacity of upland areas (developed lands, agricultural lands and working forests, and
6 natural lands), increasing awareness of local geology driving groundwater systems, protecting from
7 actions that degrade storage potential, and identifying opportunities for enhanced storage. The
8 indicator of success is maintaining flows in summer.

9

10 *Actions*

11 **Implement and improve technologies, voluntary programs, financial and technical assistance**
12 **programs, and market-based approaches to reduce water demand and encourage conservation. (ID**
13 **#27)**

14 Key opportunities for 2022-2026 include:

- 15 • Implement voluntary programs and financial programs identified in Watershed Restoration and
16 Enhancement Plans or Watershed Plan amendments;
- 17 • Address population stress and effects of public water systems on water supply and stream flows
18 given decreased snowpack and increased droughts and achieve near-term objectives for water
19 demand and conservation across municipalities, agriculture, industry, and rural domestic water
20 users;
- 21 • Expand and accelerate incentives for voluntary action; coordinate regulatory activities;
- 22 • Provide ongoing support and monitor for voluntary programs to inform corrective action;
- 23 • Address policy/legislative issues related to water laws;
- 24 • Provide easy to understand information on feasible and effective practices to landowners,
25 residents, and visitors.

26

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

29 Key opportunities for 2022-2026 include:

- 30 • Implement watershed plans that offset impacts from new domestic permit-exempt wells;
- 31 • Update watershed plans; provide watershed planning guidance at the state-level;
- 32 • Allocate funding to implement projects that improve streamflow, particularly in basins where
33 that has not been conducted;
- 34 • Monitor and define baseline demand and flow conditions;
- 35 • Conduct effectiveness and impact monitoring in the context of climate change;
- 36 • Update watershed assessments to understand susceptibility and resilience to development;
- 37 • Update water law and policies to address existing and future water shortages;
- 38 • Update plans that focus on critical aquifer recharge areas with draw-down data;
- 39 • Engage LIOs to develop watershed-scale plans that address local recovery needs;
- 40 • Leverage mitigation certification programs for landowners;

- 1 • Utilize forestry management research and BMPs for watershed health recovery;
- 2 • Evaluate habitat and fish trends at the watershed scale.

3
4 **Understand and plan for future water needs and changing climate and ecosystem conditions by**
5 **engaging all water users in a watershed to identify specific actions around water science, technology,**
6 **management, and conservation. (ID #29)**

7 Key opportunities for 2022-2026 include:

- 8 • Ensure watershed-scale planning addresses water quantity, water quality, fish habitat, and
9 instream flows;
- 10 • Implement and adaptively manage Watershed Restoration and Enhancement Plans and
11 Watershed Plan Amendments;
- 12 • Support water use data collection (metering and reporting) to improve watershed level
13 knowledge about watershed carrying capacity, consumptive uses and effects on stream
14 hydrology and habitat;
- 15 • Improve knowledge of water users and how their uses affect stream hydrology;
- 16 • Support proactive planning for how Washington will manage and protect instream habitat and
17 water levels given stress from changing climate conditions (for example, seawater intrusion) and
18 demands/water use priorities of growing human populations;
- 19 • Develop tools, data sharing systems, and models for Puget Sound instream flow monitoring and
20 conservation;
- 21 • Coordinate outreach between watersheds and agencies on water quality and quantity
22 enforcement;
- 23 • Support technical assistance that is attuned to climate change impacts;
- 24 • Increase funding and support to guide enforcement of water quantity and quality standards to
25 protect water resources for salmon.

26
27 *Implementation Considerations*

28 The Implementation Plan describes multiple benefits for each strategy by providing human wellbeing
29 and climate change considerations for project implementers and designers. These were developed with
30 guidance from the recovery community and are intended to highlight effective ways to achieve multiple
31 benefits for strategies and desired outcomes. While more progress is needed to fully integrate human
32 wellbeing and climate change considerations into strategy implementation, these are key factors for the
33 recovery community to consider when prioritizing, designing, and adapting their projects.

34
35 **Key opportunities for 2022-2026 to integrate human wellbeing considerations in efforts to reduce**
36 **water demand and encourage conservation include:**

- 37 • Use modeling systems to establish a baseline understanding of drinking water quality across
38 wells.
- 39 • Tailor outreach campaigns to reduce water demand without disenfranchising historically
40 marginalized communities.
- 41 • Allocate funding and provide incentives to transition small communities from septic systems to
42 small-scale water treatment/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 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/strategies.
- Understand variable climate impact on future water availability and use climate change modeling to inform management decisions across watersheds.
 - For example, tools and resources from UW Climate Impacts Group, Northwest Climate Adaptation Science Center, and the USFS Northwest Climate Hub.

Collaborating Partners

- Tribal governments, representatives, and consortia
- Federal agencies
- State agencies (Department of Fish and Wildlife, Department of Ecology)
- Local governments (for example, city and county)
- Local Integrating Organizations
- Salmon recovery and watershed groups (Watershed Restoration and Enhancement Committees convened by Department of Ecology)
- Businesses/private sector
- Nongovernmental organizations
- Community members/residents

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 non-governmental programs exist that support this strategy. See [Puget Sound Info](#) for a broader list of relevant programs. Programs that have set 4-year targets to accelerate their contributions to Puget Sound recovery are indicated in bold ().*

- Streamflow Restoration Competitive Grant Program
- [Instream Flows](#)
- [Clean Water State Revolving Fund](#)
- [Legacy Roads and Trails Program](#)

1 Strategy 8 – Toxic Chemical Pollution

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

4
5 *Strategy Description*

6 Aquatic life and people in the Puget Sound Basin are exposed to thousands of chemicals every day from
7 a wide variety of human activities, both past and present. From common household goods like furniture
8 and electronics to industrial mainstays like paint, electrical wiring and caulking to pesticides, automotive
9 chemicals, pharmaceuticals and personal care products like shampoo, our world is awash in toxics.
10 These toxics make their way into the ecosystem and have detrimental effects on both humans,
11 particularly people of color, and wildlife. The impacts of some of these chemicals are well known while
12 for others, such as Chemicals of Emerging Concern (CECs), the impacts are less well known.

13
14 This strategy will alleviate the levels and effects of toxic contaminants in Puget Sound aquatic life and
15 people and promote the development and use of safer alternatives. This strategy centers on creating
16 incentives, programs, and regulations for the removal of the primary legacy sources of Polychlorinated
17 Biphenyls (PCBs) (for example, old building materials), Polycyclic Aromatic Hydrocarbons (PAHs) (for
18 example, creosote pilings), and Polybrominated Diphenyl Ethers (PBDEs) (for example, flame
19 retardants). The incentives for removal focus on locations where these efforts are likely to have the
20 greatest reduction of toxic impacts to marine species and protect disproportionately impacted
21 populations. Implementing the Toxics in Fish, Shellfish and other Implementation Strategies supports
22 the success of this strategy.

23
24 *Vital Signs*

- | |
|--|
| <ul style="list-style-type: none"> • Shellfish Beds • Marine Water |
|--|

25
26 *What does success look like?*

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

- 33 • Reducing levels of chemical contaminants in indicator species that represent four major Puget
34 Sound ecosystem habitats: juvenile and adult salmon (Chinook and Coho), English sole, and
35 Pacific Herring.
 - 36 • Increasing the number of pollution prevention visits to small businesses conducted by local
37 jurisdictions
 - 38 • Increasing the percentage/pounds of creosote removed from overwater structure and creosote
39 piling removal, sound-wide
- 40

1 *Actions*

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

3 Key opportunities for 2022-2026 include:

- 4 • Educate decision-makers, suppliers, and consumers on gaps and limitations of existing state and
- 5 federal regulations;
- 6 • Increase the use and demand for safer alternatives;
- 7 • Pass state, regional, or federal legislative reform to prevent toxics and protect historically
- 8 marginalized communities.

9

10 **Prioritize, prevent, and manage (regulations, permits, and incentives) chemicals of emerging concern.**

11 **(ID #43)**

12 Key opportunities for 2022-2026 include:

- 13 • Identify, prioritize, and monitor chemicals of emerging concern (CECs) (including integration of
- 14 human health risk and thresholds);
- 15 • Expand agency capacity to accelerate planning and regulatory actions;
- 16 • Develop voluntary programs to prevent, remove or treat CECs.

17

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

19 Key opportunities for 2022-2026 include:

- 20 • Increase capacity and funding for product testing;
- 21 • Identify human health risks and exposures;
- 22 • Expand capacity through collaborative partnerships.

23

24 **Develop and implement programs that incentivize, remove, or replace toxic laden products with safer**

25 **alternatives, ensure their proper disposal. (ID #45)**

26 Key opportunities for 2022-2026 include:

- 27 • Expand partnerships with businesses;
- 28 • Identify funding for and initiate product replacement programs;
- 29 • Support green chemistry programs;
- 30 • Initiate product stewardship and producer responsibility programs.

31

32 *Implementation Considerations*

33 The Implementation Plan describes multiple benefits for each strategy by providing human wellbeing

34 and climate change considerations for project implementers and designers. These were developed with

35 guidance from the recovery community and are intended to highlight effective ways to achieve multiple

36 benefits for strategies and desired outcomes. While more progress is needed to fully integrate human

37 wellbeing and climate change considerations into strategy implementation, these are key factors for the

38 recovery community to consider when prioritizing, designing, and adapting their projects.

39

40

41

42

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

- 3 • Build support for a precautionary approach to toxic chemical regulation, socialize protective
4 regulatory approaches and improve residents’ understanding of connections between toxic
5 chemicals and impacts.
- 6 • Recognize and address disproportionate chemical exposures to tribal nations, indigenous
7 communities, and historically marginalized communities through fish consumption and other
8 pathways.
- 9 • Develop pollution prevention outreach campaigns in multiple languages with existing groups
10 and residents to promote safer products and reduce the use of products with toxic chemicals.
- 11 • Fund and promote the use of community-based processes that meaningfully engage tribal
12 nations, indigenous communities, and historically marginalized communities to identify
13 priorities for place-based pollution prevention and ecosystem recovery.
 - 14 ○ Ensure engagement with tribal nations and historically marginalized communities during
15 chemical action planning (governance).
 - 16 ○ Account for information on sensitive populations in chemical action planning and toxic
17 chemical regulation.
- 18 • Support local municipalities and counties with the implementation of preferred purchasing
19 programs and communicate the benefit and value for regional outcomes.

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

- 23 • Center climate equity and justice considerations in parallel with pollution prevention efforts.
24 Consider disproportionate impacts on historically marginalized communities.
- 25 • Strategies should emphasize goals for equitable outcomes and look to close the racial and social
26 equity gaps regarding the impacts of toxics on historically marginalized communities.
- 27 • Consider the potential to promote both the toxic chemical reduction and greenhouse gas
28 reduction benefits of reducing vehicle miles traveled in single occupancy vehicles.
- 29 • Identify and remediate upland sites that may be a source of contaminants to adjacent water
30 bodies if flooded by extreme high-water events.

32 *Collaborating Partners*

- 33 • Tribal governments, representatives, and consortia
- 34 • Federal agencies (US Geographic Survey’s Washington Water Science Center; NOAA’s Mussel
35 Watch)
- 36 • State agencies (Department of Ecology, [Safer Products for Washington](#) and [Puget Sound Toxics](#)
37 info)
- 38 • [Southern Resident Orca Task Force](#)
- 39 • Local governments (for example, city and county)
- 40 • Local Integrating Organizations
- 41 • Salmon recovery and watershed groups

- 1 • Private sector/businesses (for example, suppliers)
- 2 • Community members/residents (for example, consumers)
- 3 • EPA Clean Water Act Program
- 4 • Nongovernmental organizations

5

6 *Ongoing Programs*

7 *Ongoing programs provide regulatory oversight, technical support, implementation resources, funding,*
8 *or guidance and serve as the critical foundation for Puget Sound recovery. The following is a list of*
9 *example state and federal ongoing programs that help to implement this strategy. Many more local,*
10 *tribal nations, and non-governmental programs exist that support this strategy. See [Puget Sound Info](#) for*
11 *a broader list of relevant programs. Programs that have set 4-year targets to accelerate their*
12 *contributions to Puget Sound recovery are indicated in bold (*).*

- 13
- 14 • [Hazardous Waste and Toxics Reduction - Pollution Prevention Assistance Partnership in Puget](#)
15 [Sound](#)
- 16 • **[Hazardous Waste and Toxics Reduction - Reducing Toxic Threats, Toxics Reduction Technical](#)**
17 **[visits and special projects](#)**
- 18 • [Hazardous Waste and Toxics Reduction - Compliance Inspections](#)
- 19 • [Hazardous Waste and Toxics Reduction - Corrective Action project management and education](#)
20 [and outreach](#)
- 21 • [National Pollution Discharge Elimination System \(NPDES\) permit program](#)
- 22 • [Healthy, Resilient, and Sustainable Communities grant program](#)
- 23 • [Toxics Release Inventory Program](#)
- 24

25 *Program Target Spotlight*

26 The [Ecology Toxics Reduction program](#) provides pollution prevention technical assistance to willing
27 businesses. Technical assistance provided by the program is focused on identifying and implementing
28 opportunities to reduce toxic chemical use or the generation of hazardous waste and promoting waste
29 best management practices to protect Washington’s environment, residents, and workers from toxic
30 threats. Between 2022-2026, Ecology aspires to work with Washington businesses to accelerate the
31 Toxics Reduction program performance by reducing the amount of toxic chemicals used or generated
32 hazardous waste by an additional 8,000 pounds, a 5% increase above their existing target reduction of
33 160,000 pounds. The Toxics Reduction program also aspires to generate additional cost savings for
34 participating businesses of \$20,000 above their existing cost-savings target of \$400,000.

35

1 Strategy 9 – Water Pollution Source Identification and Correction

2 Address fecal pollution and other cumulative water pollution impacts on Puget Sound through pollution
3 identification and correction (PIC) programs and total maximum daily load (TMDL) plans.
4

5 *Strategy Description*

6 Fecal coliform bacteria are a widely used indicator of the presence of other microorganisms that can
7 cause disease. Contact with water or consumption of shellfish polluted with bacteria and viruses from
8 fecal pollution can cause illness. In Puget Sound, fecal pollution comes from both point-source origins
9 such as combined sewer overflows as well as non-point-source origins such as surface water runoff or
10 failing septic systems and from livestock, pets, and wildlife.
11

12 Pollution identification and correction (PIC) programs in Puget Sound are a key element in a strategy to
13 help identify and correct sources of fecal pollution; however, these programs are frequently
14 underfunded. Total maximum daily load (TMDL) plans set limits on the allowable levels of fecal coliform
15 concentrations and specify how much pollution must be reduced or eliminated to achieve clean water.
16

17 Successful strategies will include both regulatory and voluntary efforts to identify and correct fecal
18 pollution in Puget Sound. Ensuring compliance with existing regulations and providing incentives to
19 motivate efforts to reduce fecal pollution and support local monitoring programs will be essential for
20 strategy success.
21

22 Implementing the Shellfish and Marine Water Quality Implementation Strategies supports the success of
23 this strategy.
24

25 *Vital Signs*

- | |
|--|
| <ul style="list-style-type: none"> • Local Foods • Outdoor Activity • Shellfish Beds • Marine Water Quality • Economic Vitality |
|--|

26
27 *What does success look like?*
28 We are achieving our recovery goals of healthy human populations, healthy water quality, increasing
29 functioning habitat, and thriving species and food web by ensuring that all onsite septic systems (OSS)
30 are inventoried, inspected, maintained, and operational; reducing disease-causing (pathogenic) bacteria
31 and viruses in stormwater runoff from residential and commercial lands, agricultural land, and
32 recreational and outdoor activities; ensuring that levels and patterns of contamination in fish and
33 shellfish harvested from Puget Sound waters and levels and patterns of pollutants and biotoxins in
34 surface waters do not threaten the health of Puget Sound communities or vulnerable populations.
35 Indicators of success include:

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

1 *Actions*

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

4 Key opportunities for 2022-2026 include:

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

12
13 **Support watershed cleanup implementation and the development of cleanup plans such as Total**
14 **Maximum Daily Loads (TMDLs) and other strategies to limit fecal pollution. (ID #10)**

15 Key opportunities for 2022-2026 include:

- 16 • Ensure cleanup plans identify pollution sources and outline strategies to protect and restore
17 water bodies from the cumulative impacts of point and non-point sources;
- 18 • Analyze the effectiveness of TMDLs;
- 19 • Expand source measures and indicators needed.

20
21 **Fund, develop, and implement programs to address fecal pollution from people experiencing**
22 **homelessness or with inadequate access to sanitary services. (ID #156)**

23 Key opportunities for 2022-2026 include:

- 24 • Develop a strategy to stop fecal pollution from encampments;
- 25 • Assess the near-term needs;
- 26 • Provide adequate resources and facilities.

27
28 **Support fishers, hikers, and other recreational users through outreach and education to understand**
29 **and reduce the effects of human and pet waste on water quality. (ID #63)**

30 Key opportunities for 2022-2026 include:

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

35
36 *Implementation Considerations*

37 The Implementation Plan describes multiple benefits for each strategy by providing human wellbeing
38 and climate change considerations for project implementers and designers. These were developed with
39 guidance from the recovery community and are intended to highlight effective ways to achieve multiple
40 benefits for strategies and desired outcomes. While more progress is needed to fully integrate human
41 wellbeing and climate change considerations into strategy implementation, these are key factors for the
42 recovery community to consider when prioritizing, designing, and adapting their projects.

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

- 3 • Promote broad engagement among stakeholders and provide stable funding to develop PIC
4 programs, integrate TMDLs, and reduce the financial and capacity burdens on smaller
5 jurisdictions.
- 6 • Develop environmental health disparities maps for communities and tribal nations to
7 understand cumulative water pollution impacts throughout Puget Sound.
- 8 • Assess regional inequities associated with toxics and water pollution to gauge inequitable
9 distribution and prioritize areas of action.
- 10 • Improve integration between regulatory agencies and landowners around pollution prevention
11 programs.
- 12 • Develop community resources through green infrastructure to support water quality and
13 expand beyond PIC programs.
- 14 • Integrate outdoor recreation and stewardship performance measurements into TMDL and PIC
15 programs.
- 16 • Reduce administrative burden of and develop more inclusive guidelines for pollution
17 identification and prevention incentive programs.
- 18 • Consult with tribal nations early and prioritize their interests in developing approaches to
19 pollution prevention that align with Tribal Nations Treaty Rights.
- 20 • Integrate and share data publicly from agencies and tribal nations to inform cumulative water
21 pollution prevention programs.
- 22 • Expand tools and resources to improve state and local water quality policy and regulation.
- 23 • Share best practices and focus on implementing practices proven to effectively address water
24 pollution.

25
26 **Key opportunities for 2022-2026 to integrate climate change responses in efforts to address fecal**
27 **pollution and other cumulative water pollution impacts include:**

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

31
32 *Collaborating Partners*

- 33 • Tribal governments, representatives, and consortia
- 34 • Federal agencies (Environmental Protection Agency)
- 35 • State agencies (Department of Ecology ([Water Quality Atlas](#)), [Department of Health](#))
- 36 • Local governments (for example, city and county)
- 37 • Local Integrating Organizations
- 38 • Salmon recovery and watershed groups
- 39 • Conservation Districts

1 *Ongoing Programs*

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

7

- 8 • [Shellfish Growing Area Classification and Water Quality Restoration Program](#)
- 9 • [Water Quality - Clean Up Polluted Waters - standards and water quality improvement plans \(TMDLs\)](#)
- 10 • [Water Quality - Reduce Nonpoint Source Water Pollution](#)
- 11 • [Water Quality - Provide Financial Assistance](#)
- 12 • [Clean Water Act Section 303\(d\): Impaired Waters and Total Maximum Daily Loads \(TMDL\) program](#)
- 13 • Puget Sound Starts Here
- 14 • [Puget Sound Conservation Districts](#)

15

16

17

18

1 Strategy 10 – Stormwater Runoff and Legacy Contamination
2 Manage stormwater runoff and legacy contamination by improving regulatory frameworks and
3 incentives, including using a comprehensive approach at the site and landscape scales.
4

5 *Strategy Description*

6 Urban stormwater is the leading contributor to water quality pollution in urban creeks, streams,
7 and rivers in the state. Urban stormwater is also a significant contributor of toxics to marine sediment,
8 including contaminated sites undergoing cleanup. Increasing volume of stormwater runoff due to
9 development can also lead to flooding, property damage, and degraded in-stream habitat. This strategy
10 aims to support planning and implementation efforts that incentivize growth in areas that do not harm
11 stream health and work to minimize toxic chemical concentrations in stormwater.
12

13 To achieve this strategy, stormwater permitting requirements or other local government programs must
14 reduce nutrients and toxic chemicals in stormwater from residential and commercial lands. We must
15 also increase local stormwater management capacity, and increase funding for actions, incentives, and
16 local capacity to reduce nutrient loads. It will also be critical to continue to identify and fix toxic hotspots
17 and increase the pace of cleanup of priority contaminated sites, while eliminating disproportionate
18 impacts to historically marginalized communities.
19

20 Implementing the Toxics in Fish, Land Development and Cover, B-IBI, Marine Water Quality, and other
21 Implementation Strategies supports the success of this strategy.
22

23 *Vital Signs*

- Drinking Water
- Local Foods
- Outdoor Activity
- Shellfish Beds
- Freshwater
- Marine Water
- Toxics in Aquatic Life
- Beaches and Marine Veg
- Estuaries
- Forests and Wetlands
- Streams and Floodplains
- Birds
- Salmon
- Economic Vitality

24
25 *What does success look like?*

26 We achieve our recovery goals of healthy water quality and vibrant quality of life by protecting
27 ecologically important lands from development (including beaches, estuaries, forests and wetlands,
28 streams and floodplains); restoring in-stream and riparian areas of rivers and streams, increasing
29 infiltration and water holding capacity of upland areas (developed lands, agricultural lands and working
30 forests, and natural lands); reducing toxic hotspots through improved source control and/or treatment
31 where stormwater runoff or wastewater contain significant concentrations of numerous toxic chemicals;

1 prioritizing and cleaning up in-water and near-water sites that exceed state standards for contamination;
2 reducing nutrient loading in stormwater runoff from residential and commercial lands and from
3 agricultural lands and working forests; reducing disease-causing (pathogenic) bacteria and viruses in
4 stormwater runoff from residential and commercial lands; and ensuring that levels and patterns of
5 pollutants and biotoxins in surface waters do not threaten the health of Puget Sound communities or
6 vulnerable populations. Indicators of success include:

- 7 • Increasing the percentage of legacy sites redeveloped or under development, sound-wide.
- 8 • Increasing the number and distribution of Low Impact Development and green infrastructure
9 projects.
- 10 • Eliminating the disproportionate impacts to overburdened communities.

11

12 *Actions*

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

14 Key opportunities for 2022-2026 include:

- 15 • Create sufficient motivators to incentivize cross-jurisdictional/cross-departmental planning for
16 growth and water resources;
- 17 • Undertake watershed planning processes;
- 18 • Incentivize landowners to use LID principles and practices;
- 19 • Coordinate with tire manufacturers to eliminate harmful additives to tires;
- 20 • Promote the distribution of funds across jurisdictional boundaries to better facilitate the
21 restoration of water quality;
- 22 • Integrate existing plans across watersheds;
- 23 • Identify and pass land use regulations and ordinances that are adequate to protect stream
24 function, salmon populations, and other water resources.

25

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

27 Key opportunities for 2022-2026 include:

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

31

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

34 Key opportunities for 2022-2026 include:

- 35 • Create priority maps with parcel-level detail on the retrofit potential to reduce stormwater
36 pollution runoff; share and incentivize through grant programs to fund key retrofits with local
37 governments and other partners;
- 38 • Engage decision-makers to increase support for additional stormwater funding;
- 39 • Convey the need for watershed-based planning, stormwater approaches, and implementation;
- 40 • Enable adaptive management of programs to respond to newly available science, such as new
41 science about tire residues or flame retardants.

42

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

2 Key opportunities for 2022-2026 include:

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

7
8 **Increase and stabilize funding that supports actions, incentives, and local capacity to reduce nutrient**
9 **loads. (ID #34)**

10 Key opportunities for 2022-2026 include:

- 11 • Identify priority areas for stormwater nutrient reduction;
- 12 • Incorporate nitrogen reduction BMPs into stormwater management manuals and plans.

13
14 **Develop and implement education and outreach and behavior change campaigns and fund projects to**
15 **reduce nutrient impacts from residential, stormwater, and agricultural runoff. (ID #35)**

16 Key opportunities for 2022-2026 include:

- 17 • Assess existing programs for relevancy; identify state and local partners to work to develop and
- 18 disseminate information;
- 19 • Enhance education on low-impact development BMPs and related techniques.

20
21 **Adjust stormwater permitting requirements or other local government programs to address nutrients**
22 **in stormwater from residential and commercial lands. (ID #36)**

23 Key opportunities for 2022-2026 include:

- 24 • Conduct research on nutrient removal in stormwater BMPs;
- 25 • Incorporate nutrient BMPs into stormwater management manuals.

26
27 **Find and fix toxic hotspots (information, planning, education, funding, and implementation). (ID #41)**

28 Key opportunities for 2022-2026 include:

- 29 • Identify priority hotspots—such as high loading land-uses and transportation corridors;
- 30 • Incorporate human health and environmental justice into prioritization;
- 31 • Secure funding for incentives and pilots to invest in targeted interventions including source
- 32 control and treatment;
- 33 • Consider cost-benefit analyses of each priority hotspot to allocate limited funds.

34
35 **Increase the streamlining of legal processes and the pace of clean-up of priority contaminated sites**
36 **(information, planning, funding, implementation, and monitoring). (ID #61)**

37 Key opportunities for 2022-2026 include:

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

40
41 *Implementation Considerations*

42 The Implementation Plan describes multiple benefits for each strategy by providing human wellbeing
43 and climate change considerations for project implementers and designers. These were developed with
44 guidance from the recovery community and are intended to highlight effective ways to achieve multiple

1 benefits for strategies and desired outcomes. While more progress is needed to fully integrate human
2 wellbeing and climate change considerations into strategy implementation, these are key factors for the
3 recovery community to consider when prioritizing, designing, and adapting their projects.
4

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

- 7 • Allocate resources, education, and outreach efforts to historically marginalized communities (for
8 example, The ECOSS Stormwater program) and ensure diverse participation in decision-making
9 and design processes around stormwater management, legacy containments regulatory
10 frameworks, and incentive programs.
- 11 • Leverage existing K-12 education programs (for example, StormFest, Green Streets, etc.) to
12 improve understanding of stormwater and its impact on Puget Sound large-scale green
13 infrastructure is considered—in both rural and urban settings—that provides human amenities
14 and benefits.
- 15 • Improve understanding of the impacts of legacy contaminants on local foods.
- 16 • Expand training and employment in green stormwater infrastructure jobs.
- 17 • Center health equity in designing for urban growth and increasing density.
- 18 • Target infrastructure funding to equally consider human health, smart development, and
19 stormwater management.
20

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

- 23 • New development and retrofits should prioritize low impact and biophilic design elements
24 (carbon-sequestering vegetation, green roofs, etc.), and developers should have incentives to
25 protect existing mature trees/or disincentives for removing them.
- 26 • Prioritize creation and restoration of urban green spaces that are resilient to floods (if near
27 rivers), contain trees to help filter and reduce stormwater run-off, or are areas that could be de-
28 paved and replaced with natural landscaping.
- 29 • Promote green and nature-based infrastructure as a stormwater, climate adaptation, carbon
30 sequestration, and human wellbeing solution.
- 31 • Consider future changes in climate and ocean conditions when finding and fixing toxic hotspots.
- 32 • Consider areas resilient to future changes in climate and ocean conditions when incentivizing
33 redevelopment in areas associated with high loads of toxic chemicals.
- 34 • Incorporate targeted climate change information when developing and distributing relevant
35 outreach resources about nutrient impacts from stormwater and agricultural runoff.
36

37 *Collaborating Partners*

- 38 • Tribal governments, representatives, and consortia
- 39 • State Agencies (Department of Ecology, Department of Natural Resources, Department of
40 Commerce, Department of Fish and Wildlife, Recreation and Conservation Office, Department of
41 Agriculture, Puget Sound Partnership, and Department of Transportation)
- 42 • Academic/research institutions (Washington Stormwater Center, Puget Sound Institute, and
43 Puget Sound Ecosystem Monitoring Program (PSEMP))

- 1 • Federal agencies (Environmental Protection Agency, National Oceanic and Atmospheric
- 2 Administration, and Department of Transportation)
- 3 • Local governments (for example, city and county)
- 4 • Local Integrating Organizations
- 5 • Salmon recovery and watershed groups
- 6 • Conservation Districts
- 7 • Nongovernmental organizations (for example, The Nature Conservancy and Washington
- 8 Environmental Council)
- 9 • Community members/residents (for example, Stewardship Partners)

10
11 *Ongoing Programs*

12 *Ongoing programs provide regulatory oversight, technical support, implementation resources, funding,*
13 *or guidance and serve as the critical foundation for Puget Sound recovery. The following is a list of*
14 *example state and federal ongoing programs that help to implement this strategy. Many more local,*
15 *tribal nations, and non-governmental programs exist that support this strategy. See [Puget Sound Info](#) for*
16 *a broader list of relevant programs. Programs that have set 4-year targets to accelerate their*
17 *contributions to Puget Sound recovery are indicated in bold (*).*

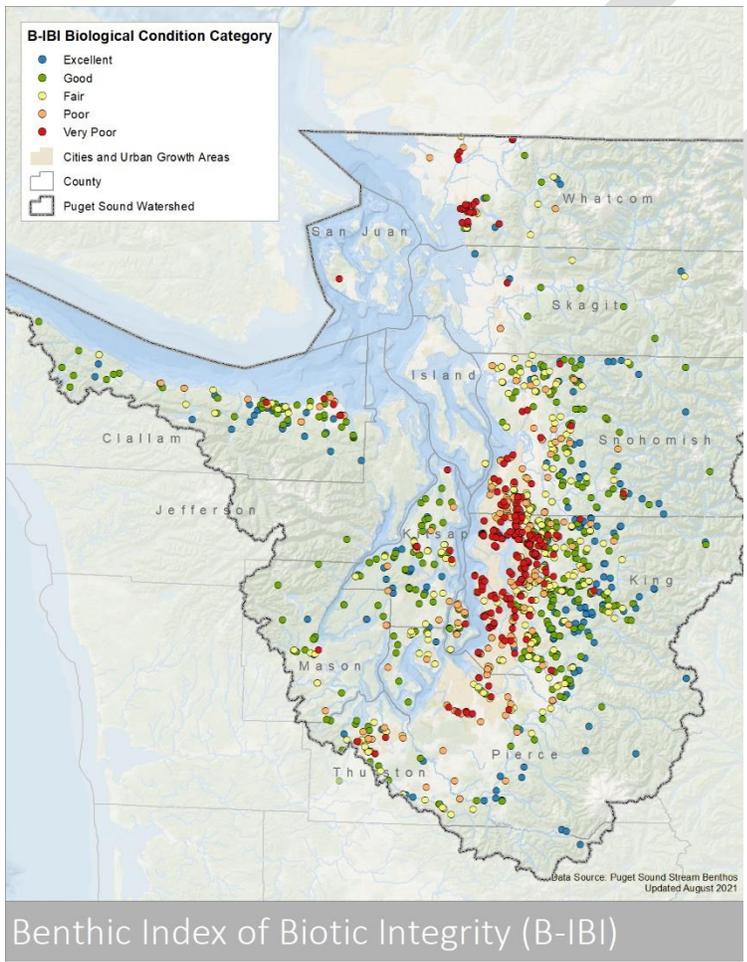
- 19 • [Creosote and Marine Debris Removal Program](#)
- 20 • [Puget Sound Watershed Characterization Assessment](#)
- 21 • [Toxic Cleanup Program - Remedial Action Grant Program](#)
- 22 • [Water Quality - Control Stormwater and Wastewater Pollution](#)
- 23 • [Water Quality - Provide Financial Assistance](#)
- 24 • **[Partnership Nearshore Credits Program](#)***
- 25 • [National Pollutant Discharge Elimination System \(NPDES\) permit program](#)
- 26 • [Superfund Program and National Priority List](#)

1 *Geographic Scope*

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

9
10 Marine water quality: Human sources of nutrients from wastewater treatment plants and stormwater
11 runoff have a significant impact on dissolved oxygen in Puget Sound. Maximum dissolved oxygen
12 depletions are predicted to occur in inlets where flushing is relatively poor compared to the main
13 channel

14



15 **Benthic Index of Biotic Integrity (B-IBI)**
16 *Map caption: Biological condition of stream sites throughout Puget Sound as measured by the B-IBI. The*
17 *map reflects data from the most recent sample collected at each stream site since 2006.*

18

1 Strategy 11 – Wastewater Systems

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

5
6 *Strategy Description*

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

14
15 A regulatory strategy includes the recent issuance of a National Pollutant Discharge Elimination System
16 (NPDES) general permit for municipal wastewater nutrient loads for WWTPs, which were found to
17 contribute to existing water quality impairments in Puget Sound. Implementing advanced treatment
18 technology to fulfill this permit will require developing a funding pathway for WWTPs to overcome
19 financial barriers associated with major capital upgrades. Existing state and federal funding, including
20 low-interest loans to assist and reduce costs to wastewater utility ratepayers is one element of this
21 strategy, but new funding sources or expanded levels of funding will be needed to support local
22 implementation efforts.

23
24 Implementing the Marine Water Quality, Shellfish, and other Implementation Strategies supports the
25 success of this strategy.

26
27 *Vital Signs*

- | |
|--|
| <ul style="list-style-type: none"> • Local Foods • Outdoor Activity • Shellfish Beds • Marine Water • Toxics in Aquatic Life • Beaches and Marine Veg • Economic Vitality |
|--|

28
29 *What does success look like?*

30 We achieve our recovery goals of healthy human populations, healthy water quality, and increasing
31 functioning habitat, thriving species, and food webs by ensuring municipal wastewater discharges of
32 nutrients to Puget Sound meet water quality-based effluent limits and other requirements of the
33 nutrients general permit; ensuring municipal wastewater discharges of disease-causing (pathogenic)
34 bacteria and viruses to Puget Sound meet water quality-based effluent limits; reducing spills of
35 untreated sewage; ensuring onsite septic systems (OSS) are inventoried, inspected, maintained, and
36 operational; ensuring levels and patterns of contamination in fish and shellfish harvested from Puget

1 Sound waters and levels and patterns of pollutants and biotoxins in surface waters do not threaten the
2 health of Puget Sound communities or vulnerable populations. Indicators of success include:
3 • Increasing the percentage/number of Onsite Sewage Systems in compliance
4 • Achieving nutrient balance in marine water
5 • Decreasing spills of untreated sewage

6

7 *Actions*

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

10 Key opportunities for 2022-2026 include:

- 11 • Implement the Nutrient General Permit;
- 12 • Plan for and implementation of treatment enhancement;
- 13 • Understand opportunities for trading programs.

14

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

17 Key opportunities for 2022-2026 include:

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

20

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

23 Key opportunities for 2022-2026 include:

- 24 • Identify and prioritize impacts from outfalls to shellfish beds;
- 25 • Analyze options for reducing flow, better placement, or removal of outfalls;
- 26 • Support upgrades identified for prioritized facilities while considering potential damage to
27 existing habitat (for example, kelp beds) and shoreline areas important to historically
28 marginalized communities.

29

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

32 Key opportunities for 2022-2026 include:

- 33 • Generate adequate funding for sustained local OSS management, program development,
34 implementation and enforcement, and to strengthen and standardize local OSS and LOSS
35 management programs;
- 36 • Establish adequate funding to encourage property owners to become part of state LOSS;
- 37 • Enhance county-level standards; update health department records about OSS and LOSS to
38 educate counties, lenders, and buyers;
- 39 • Ensure landowners have access to and are eligible for incentives, loans and other funding
40 sources for OSS maintenance and upgrades.

41

42

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

2 Key opportunities for 2022-2026 include:

- 3 • Design and upgrade systems to stop combined sewer overflow (CSO) events;
- 4 • Prioritize historically marginalized communities;
- 5 • Research and support alternatives to separate combined sewer systems;
- 6 • Reduce water use to avoid the need for upgrades;
- 7 • Increase installation of rain gardens for private homeowners and commercial developers and
- 8 owners.

9
10 **Extend centralized sewer systems in areas where conditions are not suitable for onsite sewage**
11 **systems (OSS). (ID #155)**

12 Key opportunities for 2022-2026 include:

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

20
21 **Promote appropriate reclaimed water projects to reduce pollutant loading to Puget Sound. (ID #211)**

22 Key opportunities for 2022-2026 include:

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

30
31 *Implementation Considerations*

32 The Implementation Plan describes multiple benefits for each strategy by providing human wellbeing
33 and climate change considerations for project implementers and designers. These were developed with
34 guidance from the recovery community and are intended to highlight effective ways to achieve multiple
35 benefits for strategies and desired outcomes. While more progress is needed to fully integrate human
36 wellbeing and climate change considerations into strategy implementation, these are key factors for the
37 recovery community to consider when prioritizing, designing, and adapting their projects.

38
39 **Key opportunities for 2022-2026 to integrate human wellbeing considerations in efforts to reduce and**
40 **prevent pollutants from wastewater systems include:**

- 41 • Connect impacts from pollutants to local issues to foster community engagement, particularly
- 42 with communities reliant on the natural environment or ecosystem services for recreational,
- 43 subsistence, or economic purposes, including tourism, hospitality, aquaculture, or agriculture.

- 1 • Increase educational efforts and access to information for communities and address barriers to
2 engagement in historically marginalized communities, particularly the region’s indigenous and
3 immigrant communities (for example, Asian Americans and Pacific Islanders) who participate in
4 fishing, shellfish harvesting, and/or consume more seafood than the wider population.
- 5 • Understand that MWQ issues are both partly caused by and experienced by coastal
6 communities when engaging these communities in planning and implementation actions. For
7 example, residents’ inadequate onsite septic system maintenance can cause nutrient pollution,
8 which can lead to beach closures. Beach closures can limit shellfish harvesting, fishing, or other
9 forms of coastal recreation, which can negatively impact residents’ traditional ways of life and
10 even identity, notably among the region’s indigenous communities.

11

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

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

23

24 *Collaborating Partners*

- 25 • Tribal governments, representatives, and consortia
- 26 • Federal agencies (EPA and HUD)
- 27 • State agencies (Department of Ecology and Department of Health)
- 28 • Academic/research institutions (for example, UW Salish Sea Modeling Center)
- 29 • Local governments (for example, city and county)
- 30 • Local Integrating Organizations
- 31 • Salmon recovery and watershed groups
- 32 • Community members/residents (for example, onsite sewage system owners)

33

34 *Ongoing Programs*

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

- 40 • [Shellfish Growing Area Classification and Water Quality Restoration Program](#)
- 41 • [Wastewater Management Program \(Large and Small Onsite Sewage Systems\)](#)

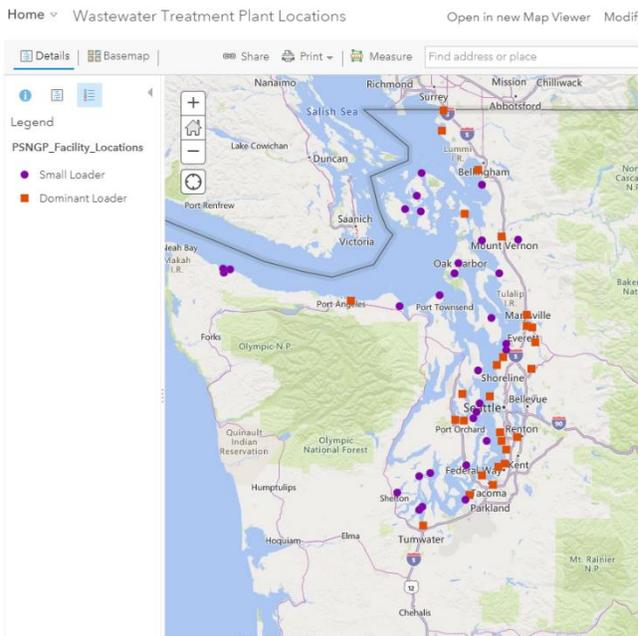
- 1 • [Water Quality - Control Stormwater and Wastewater Pollution](#)
- 2 • [Water Quality - Provide Financial Assistance](#)
- 3 • [Clean Water State Revolving Fund](#)

4

5 *Geographic Scope*

6 The 2022 Puget Sound Nutrient General Permit applies to 58 domestic WWTPs discharging to marine
7 and estuarine waters of Washington waters of the Salish Sea. The permit applies to 58 facilities that
8 discharge to Puget Sound. Seven of those facilities are dominant loaders contributing over 80% of the
9 nutrients. For locations of Wastewater Treatment plants, see the map at this link: [Wastewater](#)

10 [Treatment Plant Locations \(arcgis.com\)](#)



11
12
13
14

1 Strategy 12 – Working Lands Runoff

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

4
5 *Strategy Description*

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

12
13 Better management of runoff from agricultural and forest lands is best achieved through helping and
14 incentivizing landowners to use BMPs that reduce volume and improve the quality of surface water
15 runoff. Numerous programs, guidelines, and technical assistance opportunities already exist to help
16 landowners identify potential pollution impacts and implement BMPs to reduce, control, or eliminate
17 pollution. Delivery of these services, however, is frequently based on landowner interest and capacity
18 and may not be targeted to specific locations to address resource concerns. Better targeting and
19 coordination of these programs to address priority resource concerns and alignment with regulatory
20 efforts will make them more effective. In addition, incentive-based approaches and
21 improved compliance with water quality protection policies are necessary and should include
22 both permitted sources (for example, Confined Animal Feeding Operations and dairies) and non-point
23 sources (for example, pasture-based, hobby, and small livestock operations). Actions should prioritize
24 eliminating disproportionate impacts on historically marginalized communities.

25
26 Implementing the B-IBI, Land Development and Cover, Shellfish, Marine Water Quality, and other
27 Implementation Strategies support the success of this strategy.

28
29 *Vital Signs*

- | |
|--|
| <ul style="list-style-type: none"> • Local Foods • Outdoor Activity • Shellfish Beds • Freshwater • Marine Water • Beaches and Marine Veg • Forests and Wetlands • Streams and Floodplains |
|--|

30
31 *What does success look like?*

32 We achieve our recovery goals of healthy water quality by increasing infiltration and water holding
33 capacity of upland areas (developed lands, agricultural lands and working forests, and natural lands;
34 reducing nutrient loading in runoff from agricultural lands and working forests; reducing disease-causing
35 (pathogenic) bacteria and viruses in runoff from agricultural lands; and ensuring levels and patterns of

1 pollutants and biotoxins in surface waters do not threaten the health of Puget Sound communities or
2 vulnerable populations. Indicators of success include:

- 3 • Reducing the total volume and pollutant loading of agriculture runoff
- 4 • Increasing acres treated by and/or number of BMPs on private agricultural lands
- 5 • Reducing nutrient concentration in streams and rivers
- 6 • Reducing disproportionate impacts on historically marginalized communities

7
8 *Actions*

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

11 Key opportunities for 2022-2026 include:

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

16
17 **Implement agricultural management practices proven to reduce nutrient loads. (ID #6)**

18 Key opportunities for 2022-2026 include:

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

22
23 **Expand and improve incentives and education for agricultural land users to motivate voluntary actions**
24 **for reducing fecal pollution. (ID #7)**

25 Key opportunities for 2022-2026 include:

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

30
31 **Strengthen and implement authorities and programs that prevent fecal pollution from agricultural**
32 **lands. (ID #8)**

33 Key opportunities for 2022-2026 include:

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

37
38 **Facilitate the increased use or performance of best management practices, including increasing**
39 **riparian restoration, to reduce stream temperatures. (ID #196)**

40 Key opportunities for 2022-2026 include:

- 41 • Identify the co-benefits of implementing actions within this strategy where reduction in stream
42 temperatures may be achieved;
- 43 • Increase shade and amount of vegetation;

- 1 • Remove invasive species;
- 2 • Align regulatory requirements with state incentive programs.

3 4 *Implementation Considerations*

5 The Implementation Plan describes multiple benefits for each strategy by providing human wellbeing
6 and climate change considerations for project implementers and designers. These were developed with
7 guidance from the recovery community and are intended to highlight effective ways to achieve multiple
8 benefits for strategies and desired outcomes. While more progress is needed to fully integrate human
9 wellbeing and climate change considerations into strategy implementation, these are key factors for the
10 recovery community to consider when prioritizing, designing, and adapting their projects.

11 12 **Key opportunities for 2022-2026 to integrate human wellbeing considerations in efforts to reduce and** 13 **prevent non-point source pollutants from agricultural and forest lands include:**

- 14 • Integrate databases and open knowledge networks to share information and increase
15 transparency in decision-making about water pollution activities across watersheds.
- 16 • Create new funding mechanisms, beyond reimbursement-based mechanisms, to support
17 projects in historically marginalized communities.

18 19 **Key opportunities for 2022-2026 to integrate climate change responses in efforts to reduce and** 20 **prevent non-point source pollutants from agricultural and forest lands include:**

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

26 27 *Collaborating Partners*

- 28 • Tribal governments, representatives, and consortia
- 29 • Federal agencies (US Department of Agriculture, Natural Resources Conservation Service)
- 30 • State agencies (Department of Ecology, Department of Health, Washington State Department of
31 Agriculture, and Washington State Conservation Commission (specifically the Voluntary
32 Stewardship Program))
- 33 • Conservation Districts
- 34 • Businesses/private sector
- 35 • Local Integrating Organizations
- 36 • Salmon recovery and watershed groups
- 37 • Community members/residents (for example, Agricultural and working forest landowners and
38 land users)

1 *Ongoing Programs*
2 *Ongoing programs are contributing efforts that provide regulatory oversight, technical support,*
3 *implementation resources, funding, or guidance and serve as the critical foundation for Puget Sound*
4 *recovery. The following is a list of example state and federal ongoing programs that help to implement*
5 *this strategy. Many more local, tribal nations, and non-governmental programs exist that support this*
6 *strategy. See [Puget Sound Info](#) for a broader list of relevant programs. Programs that have set 4-year*
7 *targets to accelerate their contributions to Puget Sound recovery are indicated in bold (*).*
8

- 9 • [Forest Practices Program including the Habitat Conservation Plan](#)
- 10 • [Shellfish Growing Area Classification and Water Quality Restoration Program](#)
- 11 • [Water Quality - Reduce Nonpoint Source Water Pollution](#)
- 12 • **[Shellfish Funding*](#)**
- 13 • [Environmental Quality Incentives Program](#)
- 14 • [Puget Sound Conservation Districts](#)
- 15 • [Nutrient Management Plans, technical assistance](#)
- 16 • [Conservation Reserve Enhancement](#)
- 17

18 **Program Target Spotlight**

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

27

1 Strategy 13 – Oil Spills

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

4
5 *Strategy Description*

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

14
15 The actions described below will ensure that prevention efforts are robust and targeted; preparedness
16 efforts are comprehensive and well-coordinated, and response efforts are vigilant, nimble, and
17 grounded in transparent, independent science. Preventing spills from happening in the first place is by
18 far the most cost-effective and ecologically-sound approach.

19
20 *Vital Signs*

- | |
|---|
| <ul style="list-style-type: none"> • Marine Water • Toxics in Aquatic Life • Orcas |
|---|

21
22 *What does success look like?*

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

27
28 *Actions*

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

31 Key opportunities for 2022-2026 include:

- 32 • Increase funding to complete assessments (for example, National Resource Damage) and
33 baseline valuations to inform risk consequences assessments;
- 34 • Improve consideration of non-monetizable values in risk assessments such as cultural,
35 subsistence, spiritual, and other place-based values;
- 36 • Improve Washington State Environmental Policy Act (SEPA), transboundary coordination, and
37 associated reviews of projects;
- 38 • Assess and address any substantive contemporary changes in maritime shipping and
39 recreational vessel dynamics that could markedly increase or concentrate marine traffic;

- 1 • Ensure past regional risk modeling efforts and vetted guidance inform current and future
2 assessments;
- 3 • Maintain and adapt our transboundary marine safety forums for advancement and coordination
4 of proactive measures.

5
6 **Strengthen and integrate spill response readiness of all partners, including federal, state, tribal
7 nations, local government, oil spill response organizations, and transboundary partners. (ID #65)**

8 Key opportunities for 2022-2026 include:

- 9 • Coordinate the newly administered United States Coast Guard (USCG) response strategies and
10 the Northwest Area Contingency Plan (NWACP) such that consistent policies and tools are
11 deployed to meet foundational and aspirational marine preparedness needs in Puget Sound;
- 12 • Ensure that Washington’s spill response standards and tribal nations’ interests are incorporated
13 into new federally recognized contingency plans for [Sector Puget Sound](#);
- 14 • Provide ongoing coordination with federal, tribal nations, state and local contingency planning
15 partners, and the regulated community for these new plans, while enhancing opportunities for
16 local, tribal nations, academic, nongovernmental, and interested communities to engage;
- 17 • Add capacity for Southern Resident Killer Whale (SRKW) deterrence including expanded
18 deployment of vessels of opportunity and training;
- 19 • Provide funding to development and implement (for example, tools and strategies) to respond
20 to non-floating oil products.

21
22 **Increase capacity for early local response to spills and seek restoration using the best available science
23 and technology. (ID #66)**

24 Key opportunities for 2022-2026 include:

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

35
36 *Implementation Considerations*

37 The Implementation Plan describes multiple benefits for each strategy by providing human wellbeing
38 and climate change considerations for project implementers and designers. These were developed with
39 guidance from the recovery community and are intended to highlight effective ways to achieve multiple
40 benefits for strategies and desired outcomes. While more progress is needed to fully integrate human
41 wellbeing and climate change considerations into strategy implementation, these are key factors for the
42 recovery community to consider when prioritizing, designing, and adapting their projects.

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

- 4 • Better articulate connections between oil spills (of all scales) and their impacts on the Puget
5 Sound ecosystem, including human health and communities.
- 6 • Effectively and widely distribute locally relevant preparedness, planning, and response
7 information and best management practices on individual, small- and large-scale oil spills to
8 residents of Puget Sound.
 - 9 ○ Translate information on oil spills into locally relevant languages and a spectrum of
10 media (for example, video, social media campaigns, K-12 curricula, and phone) is
11 leveraged to effectively reach communities.
 - 12 ○ Leverage community-based organizations to partner with for outreach and engagement
13 to communities (for example, Sustainability Ambassadors, and Duwamish Alive).
- 14 • Expand trainings (for example, community-based Hazardous Waste Operations and Emergency
15 Response (HAZWOPER), voluntary Vessel Turn-In Program (VTIP) opportunities, and more widely
16 engage communities (for example, tribal nations, and local responders) in oil spill responses and
17 clean up (for example, oilspills101.wa.gov).
 - 18 ○ Conduct training programs for recreational boaters (through Vessels of Opportunity)
19 to participate in oil spill preparedness, planning, and response are created and
20 enhanced.
- 21 • Develop guidance that provides specific examples for how to hold accessible meetings (time,
22 locations, incentives/compensation, etc.). This includes asking communities how they want to
23 be involved.
- 24 • Identify funding that can embed outreach expertise with technical staff on the ground (vs. only
25 at HQ) to increase access and equity in communication and education coupled with oil spill
26 prevention.
- 27 • Outreach to and engagement with communities, especially those most likely to be impacted by
28 current or future spills, to determine optimal pathways for residents to engage in local and
29 regional spill preparedness, planning, response, and decision-making. Understand connections
30 between how culturally significant terrestrial and aquatic foods sources are impacted or at risk
31 of oil spills and how to expand protection sources.
- 32 • Include information on oil spill preparedness, planning, and response in navigational maps.
- 33 • Training programs for natural resource industry companies and local government staff to
34 participate in oil spill preparedness, planning, and response are created and enhanced.
- 35 • Leverage existing city and county public meetings to synergize oil spill preparedness, planning,
36 and response across jurisdiction and sector.
- 37 • Create a coordinating body and/or hub to provide education, training, communication, and
38 technical support to local groups around oil spills, invasive species, and boater best practices.
- 39 • Identify populations sensitive to the impacts of oil spills (of all scales) across Puget Sound.
- 40 • 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
- Federal agencies (for example, United States Coast Guard, NOAA)
- State agencies (for example, Washington Department of Ecology, Washington Department of Fish and Wildlife)
- Marine Resources Committees (MRCs) (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 (COASST), Seattle Audubon, Northwest Straits Foundation)
- First Nations
- Canadian federal and provincial agencies (for example, Transport Canada, Canadian Coast Guard, BC Environmental Assessment Office)

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 non-governmental programs exist that support this strategy. See [Puget Sound Info](#) for a broader list of relevant programs. Programs that have set 4-year targets to accelerate their contributions to Puget Sound recovery are indicated in bold ().*

- **[Derelict Vessel Removal Program](#)***
- [Regional Oil Spill Planning](#)
- [Spill prevention](#)
- [Spill Preparedness](#)
- [Spill response](#)
- [Puget Sound Area Contingency Plan](#)

1 Strategy 14 – Invasive Species
2 Monitor and rapidly respond to the introduction and spread of terrestrial and aquatic invasive species.

3
4 *Strategy Description*

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

10
11 This strategy focuses on the need to protect and restore the native diversity and abundance of Puget
12 Sound species and prevent and respond to the introduction of terrestrial and aquatic invasive species.
13 To be effective at protecting and enhancing biodiversity in the ecosystem, species recovery plans must
14 be implemented in an integrated and coordinated way, across geographies and jurisdictions. This
15 includes supporting ongoing programs and efforts across state agencies to monitor, assess and rapidly
16 respond to the introduction and spread of terrestrial and aquatic invasive species. Monitoring invasive
17 species will allow agencies to establish targeted approaches to ultimately reduce invasive populations
18 and limit their spread to other locations.

19
20 *Vital Signs*

- | |
|---|
| <ul style="list-style-type: none">• Groundfish and Benthic Invertebrates• Salmon• Economic Vitality• Marine vegetation |
|---|

21
22 *What does success look like?*

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

25
26 *Actions*

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

29 Key opportunities for 2022-2026 include:

- 30
 - Use surveillance to detect invasive species and better understand pathways of introduction.

31
32 **Develop, fund, and implement coordinated outreach and incentive programs that educate and raise**
33 **awareness and motivate action for Puget Sound residents (including boaters) to reduce the spread of**
34 **invasive species. (ID #202)**

35 Key opportunities for 2022-2026 include:

- 36
 - Use surveillance to detect invasive species and better understand pathways of introduction;

37
 - Educate communities including residents and visitors including boaters and K-12 students;

- 1 • Increase education and signage at all public boat launches, large and, perhaps small (cleaning, disinfection, enforcement) for both marine and freshwater bodies;
- 2
- 3 • Include education (flyers) when registering boat licenses and purchasing fish and shellfish harvest licensing;
- 4
- 5 • Increase more boat inspection stations along highways (like Zebra mussels), like along trucker way stations.
- 6
- 7

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

9 Key opportunities for 2022-2026 include:

- 10 • Address key invasive species research questions;
- 11
- 12 • Collaborate on monitoring and mitigation across state and local agencies and tribal co-managers;
- 13
- 14 • Support pilot studies to test invasive removal and management approaches;
- 15 • Establish regulations for inter and intrastate boat inspections.
- 16

17 *Implementation Considerations*

18 The Implementation Plan describes multiple benefits for each strategy by providing human wellbeing and climate change considerations for project implementers and designers. 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.

24

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

- 26 • Better articulate connections between invasive species and their impacts on the Puget Sound ecosystem, including human health and communities.
- 27
- 28 • 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.
- 29
- 30 • Expand training and financial support for community science to monitor invasive species.
- 31
- 32 • Leverage existing preK-12 curricula to include invasive species identification and prevention created and awareness of invasive species.
- 33
- 34 • 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.
- 35
- 36 • 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-12 curricula), identify, remove, eradicate, and prevent invasive species at the local level.
- 37
- 38
- 39
- 40

- 1 • Engage residents in frequented community spaces (for example, garden stores, social media,
2 grocery stores, and restaurants).
- 3 • Develop (or leverage existing) guidance on plain language material development and how to
4 create accessible materials in multiple languages and formats for meetings.
- 5 • Ensure field staff from all jurisdictions are trained in recognizing and preventing invasive species.
- 6 • Collaborate with nurseries, native plant and gardening groups, and schools in education on
7 native plant benefits and impacts of non-native plants.
- 8 • Include information on invasive species identification, removal, and prevention in navigational
9 maps.
- 10 • Develop communication materials articulating connections between the natural resources
11 industry and Puget Sound recovery; enhance messaging around sustainable and non-sustainable
12 products (for example, sustainable fish consumption).
- 13 • Create a coordinating body and/or hub to provide education, training, communication, and
14 technical support to local groups around oil spills, invasive species, and boater best practices.
- 15 • Identify populations sensitive to the impacts of invasive species across Puget Sound.

16
17 **Key opportunities for 2022-2026 to integrate climate change responses in efforts to monitor and**
18 **rapidly respond to the introduction and spread of terrestrial and aquatic invasive species include:**

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

23
24 *Collaborating Partners*

- 25 • Tribal governments, representatives, and consortia
- 26 • State agencies (Washington Department of Fish & Wildlife, Washington Department of
27 Transportation)
- 28 • Nongovernmental organizations (for example, PreK-12 education programs, Pacific Northwest
29 Invasive Species Council)
- 30 • Businesses/private sector
- 31 • Local governments (for example, city and county)
- 32 • Local Integrating Organizations
- 33 • Salmon recovery and watershed groups
- 34 • Academic/research institutions (for example, UW Sea Grant)

35
36 *Ongoing Programs*

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

1 *tribal nations, and non-governmental programs exist that support this strategy. See [Puget Sound Info](#) for*
2 *a broader list of relevant programs.*

3
4
5
6
7
8
9
10

- [2015 Washington Invasive Species Council Strategic Plan](#)
- [Aquatic Invasive Species Prevention and Enforcement](#)
- [Invasive Species Management](#)
- [Puget Sound Corps](#)
- [USGS Science and Research Programs](#)

DRAFT

1 Strategy 15 – Harvest, Hatchery, and Adaptive Management of Salmon Recovery
2 Implement harvest, hatchery, and adaptive management elements of salmon recovery

3

4 *Strategy Description*

5 The Treaty Tribes and the Washington Department of Fish and Wildlife (WDFW) co-manage hatchery
6 production and salmon harvest allocations in Washington State. For hatchery and harvest strategies to
7 be effective recovering Puget Sound salmonids and support tribal treaty rights, they must consider the
8 status of habitat protection and recovery. All salmon, whether hatchery- or natural-origin, need healthy
9 habitats in which to grow and migrate through. Hatcheries are used selectively in Puget Sound to
10 prevent extinction, rebuild populations, and augment natural salmon runs for harvest in areas where
11 populations have been depleted due to habitat loss and predation. Many management sectors make
12 decisions that affect these habitats. Ensuring that these decisions also provide for habitat protection
13 and recovery consistent with harvest and hatchery strategies (commonly known as “H-integration”) is
14 essential for hatchery and harvest strategies to succeed. Improved monitoring and sharing of
15 information about salmon habitats, survival of salmon at different life-stages, and hatchery and harvest
16 strategies are needed to learn what strategies are working and how to improve them.

17

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

20

21 *Vital Signs*

- Local Foods
- Outdoor Activity
- Groundfish and Benthic Invertebrates
- Salmon
- Cultural Wellbeing
- Economic Vitality

22

23 *What does success look like?*

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

29

30 *Actions*

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

33 Key opportunities for 2022-2026 include:

34

- Continue and secure sustainable funding for pinniped population assessments and diet studies;

- 1 • Advance discussions with co-managers and the Washington State Academy of Sciences about
2 science-supported, MMPA-grounded options for reducing pinniped predation;
- 3 • Implement, assess and learn from pinniped deterrence pilot studies in Puget Sound and
4 removals in the Columbia River;
- 5 • Adaptively manage piscivorous warm water game fish to ensure compatibility with salmon
6 recovery.

7
8 **Increase salmon productivity by protecting genetic diversity and reducing competition by**
9 **implementing hatchery and harvest management strategies and expanding available habitat while**
10 **ensuring abundant salmon for harvest, treaty rights, and other species such Southern Resident Killer**
11 **Whales that dependent on salmon. (ID #205)**

12 Key opportunities for 2022-2026 include:

- 13 • Continue to implement best practices for hatchery management, including developing a joint
14 co-manager hatchery policy;
- 15 • Implement and adaptively manage hatchery genetic management plans (HGMPs) which are
16 developed by co-managers and approved by NOAA to ensure that the operation does not
17 impede recovery;
- 18 • Continue to implement increased state and tribal hatchery production to support prey
19 availability for Southern Resident orcas;
- 20 • Implement large habitat restoration efforts that expand available habitat and reduce
21 competition;
- 22 • Improve coordination between fishery co-managers, SRKW researchers, and the salmon
23 recovery community to prioritize and improve habitat conditions for constraining stocks in
24 fisheries and to recover stocks documented to be critical prey for SRKW.

25
26 **Ensure sustainable harvest of hatchery and natural salmon and support treaty-reserved fishing rights.**
27 **(ID #206)**

28 Key opportunities for 2022-2026 include:

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

34
35 *Implementation Considerations*

36 The Implementation Plan describes multiple benefits for each strategy by providing human wellbeing
37 and climate change considerations for project implementers and designers. These were developed with
38 guidance from the recovery community and are intended to highlight effective ways to achieve multiple
39 benefits for strategies and desired outcomes. While more progress is needed to fully integrate human
40 wellbeing and climate change considerations into strategy implementation, these are key factors for the
41 recovery community to consider when prioritizing, designing, and adapting their projects.

1
2 **Key opportunities for 2022-2026 to integrate human wellbeing considerations in efforts to implement**
3 **harvest, hatchery, and adaptive management elements of salmon recovery include:**

- 4 • Document and promote the value and ecosystem services of salmon and salmon hatcheries (e.g,
5 provisioning, human health, culture, and spirituality, etc.) and address the environmental justice
6 impacts to these human needs and values, when making management decisions regarding
7 salmon recovery.
8 • Deepen awareness and understanding of tribal treaty rights and the co-manager relationship
9 among the recovery community and the public, building support, commitment, and action to
10 uphold treaty obligations.
11

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

- 14 • Integrate lessons learned from the Salish Sea Marine Survival Study about factors controlling
15 salmon mortality into hatchery, harvest, and habitat management practices
16 • Assess the readiness of Puget Sound hatcheries to provide and adapt their services in the face of
17 climate change and secure funding to make the necessary changes so that hatchery programs
18 are successful.
19 • Consider “H-integration” strategies that account for habitat viability in harvest and hatchery
20 management decisions.
21 • Ensure sustainable support for monitoring efforts (e.g., adult and juvenile migrant monitoring,
22 intensively monitored watersheds, effectiveness of recovery actions, and population
23 assessments accounting for different sources of mortality at different life-stages (freshwater to
24 ocean conditions, etc.) that enable management decisions to be grounded in accurate
25 assessments of current and projected future conditions.
26

27 *Collaborating Partners*

- 28 • Federal agencies (National Oceanic and Atmospheric Administration)
29 • Tribal governments, representatives, and consortia
30 • State agencies (Department of Fish and Wildlife)
31 • Northwest Indian Fisheries Commission (NWIFC)
32 • Nongovernmental organizations (NGOs) (e.g., Long Live the Kings)
33 • Salmon recovery and watershed groups
34 • Local Integrating Organizations (LIOs)
35

36 *Example Ongoing Programs*

- 37 • Fisheries Management (OGP_NOAA01) (*OGP in review*)
38 • Endangered Species Act take prohibition (salmon) (OGP_NOAA08) (*OGP in review*)
39 • Fishery and Hatchery Science and Management (OGP_WDFW12)
40

1 Strategy 16 – Submerged Aquatic Vegetation

2 Protect and restore submerged aquatic vegetation (SAV) by expanding public outreach, education, and
3 voluntary programs, ensuring regulatory protection, and implementing restoration projects.
4

5 *Strategy Description*

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

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

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

19 Implementing the Shoreline Armoring and other Implementation Strategies supports the success of this
20 strategy.
21

22 *Vital Signs*

- | |
|---|
| <ul style="list-style-type: none"> • Beaches and Marine Veg • Forage Fish • Marine Water |
|---|

23
24 *What does success look like?*

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

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

34

1 *Actions*

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

4 Key opportunities for 2022-2026 include:

- 5 • Utilize marine vegetation data to identify distribution trends and establish priority areas for
6 conservation and recovery;
- 7 • Integrate marine vegetation, climate change, and sediment loading considerations into existing
8 policies, programs, and permitting processes, such as Shoreline Master Programs (SMPs);
- 9 • Design new or retrofits of existing in-water and over-water structures to avoid impacts to
10 existing and historic eelgrass and kelp habitat;
- 11 • Expand anchor-out zones at suitable sites and regulation.

12
13 **Accelerate recolonization and expansion of eelgrass and kelp bed at sites shown to possess suitable**
14 **ecological conditions using transplants, propagation, outplanting, and other effective methods. (ID**
15 **#58)**

16 Key opportunities for 2022-2026 include:

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

23
24 **Target public outreach and education to foster community stewardship, individual responsibility, and**
25 **collective action to benefit eelgrass and kelp conservation and recovery. (ID #59)**

26 Key opportunities for 2022-2026 include:

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

31
32 **Implement targeted research initiatives to understand the short-and long-term factors driving**
33 **localized changes in eelgrass and kelp. (ID #60)**

34 Key opportunities for 2022-2026 include:

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

40
41 *Implementation Considerations*

42 The Implementation Plan describes multiple benefits for each strategy by providing human wellbeing
43 and climate change considerations for project implementers and designers. These were developed with

1 guidance from the recovery community and are intended to highlight effective ways to achieve multiple
2 benefits for strategies and desired outcomes. While more progress is needed to fully integrate human
3 wellbeing and climate change considerations into strategy implementation, these are key factors for the
4 recovery community to consider when prioritizing, designing, and adapting their projects.
5

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

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

15
16 **Key opportunities for 2022-2026 to integrate climate change responses in efforts to protect and**
17 **restore submerged aquatic vegetation include:**

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

24
25 *Collaborating Partners*

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

- 27 • Washington State Department of Natural Resources
- 28 • Washington State Department of Ecology Water Quality Program
- 29 • Feiro Marine Life Center
- 30 • Kwiáht
- 31 • Marine Agronomics LLC
- 32 • Marine Resources Committees
- 33 • National Marine Fisheries Service
- 34 • Northwest Straits Commission
- 35 • Northwest Straits Foundation
- 36 • The Pew Charitable Trusts
- 37 • Port Gamble S'Klallam Tribe
- 38 • Puget Sound Partnership
- 39 • Puget Sound Restoration Fund
- 40 • REEFCheck
- 41 • Salish Seaweeds

- 1 • Samish Indian Nation
- 2 • SeaDoc Society
- 3 • Tulalip Tribes
- 4 • University of Washington
- 5 • USGS
- 6 • Washington State Department of Fish and Wildlife
- 7 • Washington State University
- 8 • Western Washington University

9

10 *Ongoing Programs*

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

- 16
- 17 • [Ecosystems Support](#)
- 18 • [Leasing program for State Owned Aquatic Lands](#)
- 19 • [Nearshore monitoring and aquatic assessment](#)

20 *Geographic Scope*

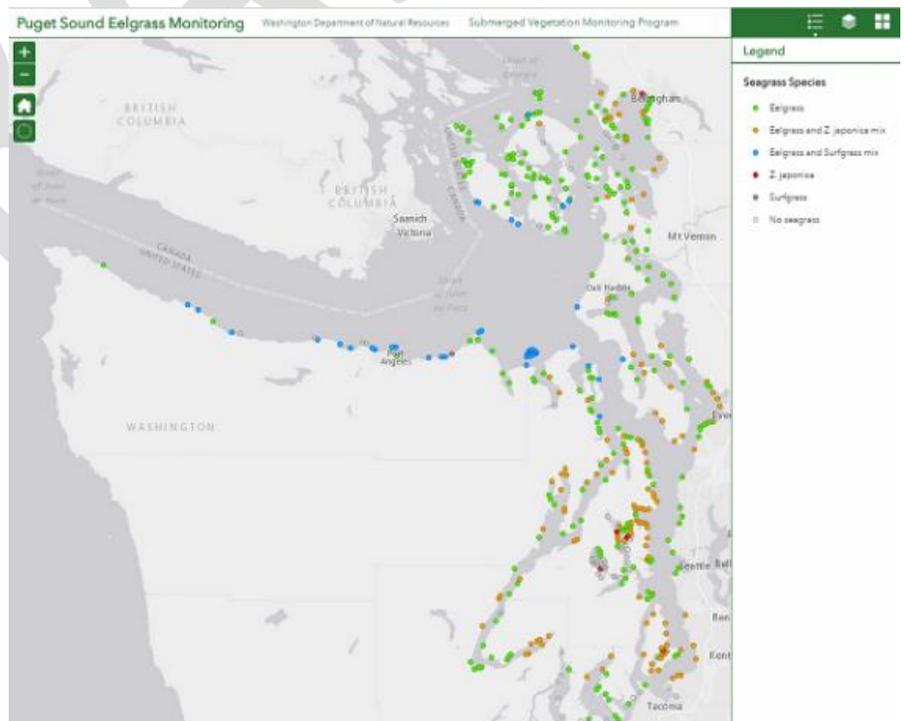
21 Washington Department of Natural
 22 Resources (WDNR) maintains Puget
 23 Sound Eelgrass Monitoring Data
 24 Viewer - An interactive map that
 25 provides access to 16 years of annual
 26 eelgrass monitoring data collected
 27 between 2000 and 2019 at selected
 28 sites in greater Puget Sound.

29

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

37

38 Read more about WDNR’s Nearshore
 39 Eelgrass Monitoring program [here](#)
 40 and explore the Marine Vegetation
 41 Atlas [here](#).



1 Strategy 17 – Responsible Boating
2 Promote best practices by boaters to protect water quality and life in Puget Sound.

3
4 *Strategy Description*

5 Boating in Puget Sound provides unparalleled access to some of Washington State’s most beautiful
6 places and views. Boating and fishing are encouraged in Puget Sound but must be done responsibly to
7 minimize impacts on the Puget Sound ecosystem.

8
9 Responsible boating best practices include complying with speed and distance regulations to protect
10 South Resident Orca and other marine mammals; disposing of sewage and gray water at dedicated
11 pump-out stations to prevent the contaminants from entering the ecosystem; proper maintaining
12 vessels to prevent contamination from derelict vessels; properly disposing of unwanted vessels to
13 prevent contamination from abandoned and sunken materials; and preventing the loss of fishing
14 equipment, properly disposing of broken equipment, and reporting any loss of fishing equipment to
15 prevent bycatch and the introduction on non-native materials into Puget Sound. Activity types to
16 promote responsible boating include outreach, education, incentives, and enforcement of the best
17 practices described above.

18
19 Implementing the Shellfish Implementation Strategy supports the success of this strategy.

20
21 *Vital Signs*

- Local Foods
- Shellfish Beds
- Groundfish and Benthic Invertebrates
- Orcas
- Economic Vitality

22
23 *What does success look like?*

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

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

30
31
32
33 *Actions*

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

36 Key opportunities for 2022-2026 include:

- Increase incentive-based and regulatory prevention and gear-retrieval programs;

- 1 • Enhance reporting of lost equipment on catch reports to Washington Department of Fish and
2 Wildlife;
- 3 • Assess primary factors contributing to lost equipment to provide more targeted education;
- 4 • Track hotspots for derelict equipment to provide more targeted enforcement and clean-up;
- 5 • Consider financial incentives, such as deposits on fishing and crabbing equipment, to promote
6 responsible behavior and fund clean-up efforts.

7

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

10 Key opportunities for 2022-2026 include:

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

22

23 **Reduce the abandonment of vessels and expand and accelerate derelict vessel removal programs. (ID**
24 **#67)**

25 Key opportunities for 2022-2026 include:

- 26 • Develop targeted education and outreach strategies for marinas, retailers, registration offices,
27 and vessel owners;
- 28 • Ensure patrols by federal and state agencies, local governments, ports, and public marinas to
29 identify potentially abandoned and derelict vessels and proactively delivering appropriate
30 outreach and enforcement;
- 31 • Increase use of existing technology and apps to report and track abandoned or derelict vessels;
- 32 • Expand funding for derelict vessel removal programs through new and existing mechanisms;
- 33 • Increase incentivizing for the Washington Vessel Turn-In Program.

34

35 **Promote implementation of and compliance with laws and guidelines for boaters and vessels to**
36 **protect orca. (ID #68)**

37 Key opportunities for 2022-2026 include:

- 38 • Research, develop, and implement quieter propulsion alternatives for boats and other vessels;
39 expand the pool of observers and technologies that provide real-time orca sightings to the
40 Whale Report Alert System through Quiet Sound and key partners;

- 1 • Develop, enhance, and support the efficacy of innovative and existing social marketing
2 campaigns (for example, Be Whale Wise) to complement and enhance the effectiveness of
3 existing outreach organizations in promoting safer boating behavior around orcas;
- 4 • Expand the use of mixed media and signage to highlight opportunities to view orcas from land;
- 5 • Enforce and adaptively manage rules for boating around orcas; monitor and provide additional
6 protection for vulnerable orcas;
- 7 • Educate boaters on the required protections and importance of distance and speed regulation,
8 including visiting boaters in partnership with charter companies.

9

10 *Implementation Considerations*

11 The Implementation Plan describes multiple benefits for each strategy by providing human wellbeing
12 and climate change considerations for project implementers and designers. These were developed with
13 guidance from the recovery community and are intended to highlight effective ways to achieve multiple
14 benefits for strategies and desired outcomes. While more progress is needed to fully integrate human
15 wellbeing and climate change considerations into strategy implementation, these are key factors for the
16 recovery community to consider when prioritizing, designing, and adapting their projects.

17

18 **Key opportunities for 2022-2026 to integrate human wellbeing considerations in efforts to promote** 19 **best practices by boaters include:**

- 20 • Boating and fishing communities' connections to Puget Sound and usage patterns are better
21 understood through their preferred outreach and engagement. Through effective outreach and
22 engagement to boating and fishing communities, better understand local knowledge of existing
23 best management practices.
- 24 • Education and training at boat launches, especially at new boat launch facilities, yacht clubs, and
25 marinas, and other water access points to describe the need for protection, cleaning and
26 inspection requirements, and BMPs are enhanced.
- 27 • Increase public beach access, especially in historically marginalized communities, and ensure
28 that water is tested to ensure it's safe for swimming, expand BEACH program.
- 29 • Develop guidance that provides specific examples for how to hold accessible meetings (time,
30 locations, and incentives/compensation, etc.). This includes asking communities how they want
31 to be involved.
- 32 • Identify funding that can embed outreach expertise with technical staff on the ground (vs. only
33 at HQ) to increase access and equity in communication and education coupled with boater
34 education.
- 35 • Develop (or leverage existing) guidance on plain language material development and how to
36 create accessible materials in multiple languages and formats for meetings.
- 37 • Include information on pump-out stations in navigational maps.
- 38 • Coordinating body and/or hub is created to provide education, training, communication, and
39 technical support to local groups around oil spills, invasive species, and boater best practices.
- 40 • Provide informational resources to promote best boating practices like pump-out stations and
41 fueling bibs that are readily available in or near tribal nations' marinas and vulnerable
42 populations.
- 43 • Incorporate connections between water quality and human health into resources.

1
2 **Key opportunities for 2022-2026 to integrate climate change responses in efforts to promote best**
3 **practices by boaters include:**

- 4 • Incorporate targeted information about current and future changes in climate and ocean
5 conditions into boater education.
6 • Promote electrification for boats and vessels.
7

8 *Collaborating Partners*

- 9 • Tribal governments, representatives, and consortia
10 • Federal agencies (U.S. Coast Guard, Northwest Straits Commission)
11 • State agencies (Department of Ecology, Department of Fish and Wildlife, Washington Parks and
12 Recreation, Natural Resources)
13 • Local governments (for example, city and county)
14 • Local Integrating Organizations
15 • Salmon recovery and watershed groups
16 • Academic/research institutions (for example, Washington Sea Grant)
17 • Community members/residents (for example, marina and boat launch owners, Recreational and
18 commercial boaters)
19 • Nongovernmental organizations (for example, Puget Soundkeeper Alliance, Northwest Straits
20 Foundation)
21 • Canadian federal and provincial agencies (for example, Canadian Coast Guard)
22

23 *Ongoing Programs*

24 *Ongoing programs provide regulatory oversight, technical support, implementation resources, funding,*
25 *or guidance and serve as the critical foundation for Puget Sound recovery. The following is a list of*
26 *example state and federal ongoing programs that help to implement this strategy. Many more local,*
27 *tribal nations, and non-governmental programs exist that support this strategy. See [Puget Sound Info](#) for*
28 *a broader list of relevant programs. Programs that have set 4-year targets to accelerate their*
29 *contributions to Puget Sound recovery are indicated in bold (*).*
30

- 31 • **[Derelict Vessel Removal Program](#)***
32 • [Clean Vessel Program](#)
33 • [Leasing program for State Owned Aquatic Lands](#)
34

35 *Program Target Spotlight*

36 The [Washington State Department of Natural Resources \(WDNR\) Derelict Vessel Removal Program](#)
37 (DVRP) works to prevent and, when necessary, remove and dispose of derelict or abandoned vessels up
38 to 200 feet in length from Washington state waters. Between 2022-2026, the WDNR aspires to
39 accelerate the DVRP performance by removing or preventing 180 or more derelict vessels from
40 Washington's waterways.
41

1 Strategy 18 – Awareness of Effects of Climate Change
2 Understand and build awareness of the effects of changing climate and ocean conditions on Puget
3 Sound.

4

5 *Strategy Description*

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

13

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

21

22 *Vital Signs*

- All Vital Signs

23

24 *What does success look like?*

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

28

29 *Actions*

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

32 Key opportunities for 2022-2026 include:

- 33 • Increase monitoring, research, and systematic assessment of climate stressors such as ocean
34 acidification, sea surface and stream temperature and their compounding impacts;
- 35 • Adopt frameworks connecting human wellbeing to ecosystem health to evaluate the impacts of
36 climate change on the holistic health including mental, emotional, and physical health of Puget
37 Sound residents, particularly historically marginalized communities;
- 38 • Adopt data-driven criteria or framework that provides evidence-based climate actions and
39 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; and
- 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;
- Increase trainings for non-tribal nations partners, engagement opportunities, and other forms of ongoing support to increase recognition of tribal nations' treaty rights and strengthen meaningful collaboration between tribal nations and non-tribal nations entities; and
- 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;
- Identifying opportunities for businesses, business groups, unions, and communities to address climate change impacts; and
- 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; and
- Advance science, integrate Indigenous knowledge, and improve BMPs to increase effective climate adaptation.

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

Key opportunities for 2022-2026 include:

- Develop and implement effective social marketing (behavior change) campaigns on 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
- Transboundary partners
- Federal agencies (National Ocean and Atmospheric Administration, FEMA, and Washington Sea Grant)
- State agencies (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/private sector
- Nongovernmental organizations (public-private partnership Floodplains by Design)
- Academic and research institutions (for example, Washington State University Extension and Washington Sea Grant)
- Community members/residents

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 non-governmental programs exist that support this strategy. See [Puget Sound Info](#) for a broader list of relevant programs.

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

1 Strategy 19 – Greenhouse Gas Emissions and Carbon Sequestration
2 Advance and support efforts to reduce greenhouse gas emissions and increase carbon sequestration.

3
4 *Strategy Description*

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

8
9 Specifically, this strategy focuses on decreasing greenhouse gas emissions and increasing the potential
10 for carbon sequestration in ways that are equitable and synergistically advance Puget Sound's statutory
11 recovery goals. This work also includes prioritizing the restoration of habitats and ecosystems that have
12 the potential to sequester carbon as well as benefit key species, like salmon, shellfish, forage fish,
13 groundfish and benthic invertebrates, and zooplankton. In addition, this work includes using our
14 positions of power and management levers to advance legislation, policies, and initiatives that aim to
15 decrease greenhouse gas emissions and sequester carbon in a socially just and inclusive manner.

16
Washington State Leadership on Climate Change Mitigation

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 limits set in state law:

- By 2030, reduce to 45% below 1990 levels
- By 2040, reduce to 70% below 1990 levels
- By 2050, reduce to 95% 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.

17
18 *Vital Signs*

- Air Quality
- Marine Water
- Beaches and Marine Vegetation
- Forests and Wetlands

19

1 *What does success look like?*

2 We achieve our recovery goals of healthy human populations, healthy water quality, and increasing
3 functioning habitat by reducing human-caused greenhouse gas emissions in Washington State by 95%
4 below 2005² levels by 2050, and increasing the amount of carbon sequestered in Puget Sound forests,
5 kelp, soils, and other significant means. The indicator of success is reducing the amount of greenhouse
6 gas emissions produced statewide or regionwide.

7
8 *Actions*

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

13 Key opportunities for 2022-2026 include:

- 14 • Fully implement the Clean Fuel Standards Act, Clean Energy Transformation Act, and Climate
15 Commitment Act; maintain continued engagement and accountability practices to ensure
16 policies have long-term impact;
- 17 • Build on state legislation to strengthen commercial building efficiency in partnerships with cities,
18 businesses, chambers of commerce, and other appropriate organizations;
- 19 • Incentivize the transition commercial and residential buildings from use of fossil fuels to
20 electricity (for example, heat pump retrofit programs);
- 21 • Support the electrification of public fleets, including Washington State Ferries; increase use of
22 renewables, decrease use of fossil fuels, and promote the creation of circular economies;
- 23 • Decarbonize the energy grid, integrating it with other states' grids and increasing its efficiency
24 so it serves communities across the region equitably
- 25 • Reinforce and fund the renewable energy storage and distribution infrastructure and systems to
26 increase the capacity of renewables;
- 27 • Expand support for farmers and encourage regenerative agriculture practices and employing
28 best practices for increasing carbon sequestration (Sustainable Farms and Fields); and
- 29 • Mandate zero waste initiatives and funding new avenues to reduce waste and create a circular
30 economy.

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

33 Key opportunities for 2022-2026 include:

- 34 • Increase research and monitoring of regional emissions, and opportunities and strategies to
35 decrease emissions and increase sequestration; and

² This Leadership Council approved outcome is being reevaluated by Partnership staff to better align with existing WA state climate legislation.

- Ensure monitoring, evaluation, and assessment of the effectiveness of greenhouse gas 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:

- Reduce the carbon intensity of fossil fuels used for transportation and electricity generation; reevaluate public transportation routes to prioritize corridors for equity and efficiency;
- 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)); and
- 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 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, 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; and
- Increase coordination for carbon sequestration and other ecosystem values developed jointly by tribal nations and state agencies and guided by best available science.

1 **Increase and ensure institutional infrastructure and funding for research and monitoring to explore,**
2 **track, and evaluate the efficacy and feasibility of carbon sequestration and emissions reduction. (ID**
3 **#141)**

4 Key opportunities for 2022-2026 include:

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

10
11 **Quantify and maximize carbon sequestration benefits of habitat protection and restoration projects.**
12 **(ID #142)**

13 Key opportunities for 2022-2026 include:

- 14 • Support, advance, and conduct research and monitoring on carbon sequestration in Puget
15 Sound ecosystems;
- 16 • Estimate carbon sequestration potential of various habitats, determine suitable locations,
17 evaluate effectiveness, and determine program feasibility; and
- 18 • Select restoration-focused pilot projects to measure effectiveness and efficacy.

19
20 **Implement and improve emissions accounting tools and inventories at the local, regional, state, and**
21 **tribal nations levels. (ID #144)**

22 Key opportunities for 2022-2026 include:

- 23 • Guide and fund the development and implementation of local and tribal action plans that
24 include emission accounting tools and inventories that are scientifically sound.

25 *Collaborating Partners*

- 26 • Tribal governments, representatives, and consortia
- 27 • Academic and research institutions (for example, Washington State University Extension,
28 Washington Sea Grant)
- 29 • Businesses/private sector
- 30 • Community members/residents
- 31 • Conservation districts
- 32 • Federal agencies
- 33 • Local governments (for example, city, county, ports, public utility, and conservation districts)
- 34 • Local Integrating Organizations
- 35 • Nongovernmental organizations
- 36 • Puget Sound Regional Council
- 37 • Salmon recovery and watershed groups
- 38 • State agencies (for example, Departments of Ecology, Natural Resources, Commerce,
39 Agriculture, and Transportation, and the Emergency Management Division)
- 40 • Transboundary partners
- 41 • Utilities and Transportation Commission

1 Strategy 20 – Climate Adaptation and Resilience

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

4
5 *Strategy Description*

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

10
11 This strategy is designed to integrate climate adaptation and resilience into our work on all our Action
12 Agenda strategies, to better protect and restore ecosystems and improve human wellbeing in ways that
13 are equitable and synergistically advance Puget Sound statutory recovery goals. The focus of this
14 strategy is on advancing the multiple benefits of our recovery work and on identifying and reducing the
15 vulnerabilities of the Puget Sound ecosystem to climate change stressors.

16
17 *Vital Signs*

- All Vital Signs

18
19 *What does success look like?*

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

- Increasing the acres of floodplain, estuary, and riparian habitat protected (acquisition) or restored
- Increasing summer flows in streams and rivers

26
27
28
29
30 *Actions*

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

34 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;
- Develop strategies to protect and restore aquatic habitats that provide refuge for sensitive species and support resilience from climate-related impacts;

- 1 • Develop climate-resilient forest management practices (including commercial forestry) and
2 reforestation approaches to reduce risks of drought and wildfire, as well as increase snowpack
3 and low summer streamflow;
- 4 • Restore and acquire areas that provide flood conveyance, slow water, and deposit sediment
5 during frequent, “ordinary” flood events by reconnecting the floodplain;
- 6 • Update the Growth Management Act (GMA) to better consider climate change impacts,
7 adaptation, and resilience;
- 8 • Expand local capacity to educate, assist, and incentivize public and private landowners to work
9 proactively to address future effects of climate change on water quantity and quality;
- 10 • Create more equitable and resilient communities, economies, and businesses that reduce
11 greenhouse gas emissions, sequester carbon, and adapt to changing conditions;
- 12 • Develop and share rural, suburban, and urban forestry management and shoreline practices
13 that use revised model laws and incentives;
- 14 • Expand broadband access to develop a smart energy grid and increase opportunities for remote
15 work; create programs to build green buildings and equitably house people in affordable green
16 buildings;
- 17 • Encourage protection of existing tree canopy to ensure regionally sequestered carbon is
18 preserved; pursue equitable economic policy levers to increase access to renewable energy (for
19 example, community solar projects);
- 20 • Ensure a just transition for workers entering green jobs;
- 21 • Increase community resilience and access to nature in all places (urban, suburban, rural, and
22 wild places);
- 23 • Encourage community land use; and
- 24 • Prioritize equitable financial investments in community-driven and community-based climate
25 solutions and opportunities.

26
27 **Increase legislative support to accelerate funding and implementation of projects, programs, and**
28 **initiatives that reduce emissions and decrease the vulnerability of Puget Sound to changing climate**
29 **and ocean conditions. (ID #147)**

30 Key opportunities for 2022-2026 include:

- 31 • Establish mechanisms for funding and financing climate resiliency responses;
- 32 • Fund local collaborative efforts to gain a basic technical understanding of resilience and identify
33 information needed to fill data gaps; and
- 34 • Create policies that address the disproportionate impacts of climate change on health and
35 hazards faced by historically marginalized communities.

36
37 **Develop and enhance guidance on best practices to reduce emissions and risks and adapt to the most**
38 **impactful climate stressors. (ID #148)**

39 Key opportunities for 2022-2026 include:

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

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

4 Key opportunities for 2022-2026 include:

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

8
9 **Ensure that overburdened and historically marginalized communities are welcomed and engaged as**
10 **full partners and support the priorities identified by communities when working to decrease the**
11 **magnitude of climate change, advance climate change adaptation, and increase resilience to climate**
12 **change. (ID #150)**

13 Key opportunities for 2022-2026 include:

- 14 • Build capacity (for example, leadership, community awareness, and education) for resilience
15 within historically marginalized and vulnerable communities to support climate actions and
16 advocacy;
- 17 • Advance community leadership by investing in long-term partnerships, capacity building, and
18 community-driven policy and decision-making processes; and
- 19 • Create opportunities and elevate community voices, including youth voices, by engaging
20 community and youth leaders around decision-making, climate action, and advocacy.

21
22 **Regreen urban spaces. (ID #151)**

23 Key opportunities for 2022-2026 include:

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

27
28 **Ensure that tribal nations' sovereignty and treaty rights are honored when working to decrease the**
29 **magnitude of climate change, advance climate change adaptation, and increase resilience to climate**
30 **change. (ID #171)**

31 Key opportunities for 2022-2026 include:

- 32 • Prioritize protection and resilience of tribal nations' resources including ecosystems producing
33 food and material resources and cultural sites;
- 34 • Ensure that Tribal Nations' Sovereignty, Treaty Rights, and the tribes' role as co-managers of
35 natural resources within Washington State are explicitly recognized; and
- 36 • Ensure that "free, prior and informed consent" from tribes when developing climate change
37 legislation and policy.

1 *Collaborating Partners*

- 2 • Tribal governments, representatives, and consortia
- 3 • Transboundary partners
- 4 • Federal agencies
- 5 • State legislature
- 6 • State agencies
- 7 • Local governments (for example, city, county, ports, public utility, and conservation districts)
- 8 • Local Integrating Organizations
- 9 • Salmon recovery and watershed groups
- 10 • Businesses/private sector
- 11 • Non-governmental organizations
- 12 • Community members/residents
- 13 • Academic and research institutions (for example, Washington State University Extension,
- 14 Washington Sea Grant)

15
16 *Ongoing Programs*

17 *Ongoing programs provide regulatory oversight, technical support, implementation resources, funding,*
18 *or guidance and serve as the critical foundation for Puget Sound recovery. The following is a list of*
19 *example state and federal ongoing programs that help to implement this strategy. Many more local,*
20 *tribal nations, and non-governmental programs exist that support this strategy. See [Puget Sound Info](#) for*
21 *a broader list of relevant programs. Programs that have set 4-year targets to accelerate their*
22 *contributions to Puget Sound recovery are indicated in bold (*).*

- 23 • [Shorelands - Coastal Hazards resilience network](#)
- 24 • [WDFW Habitat Recovery & Protection \(Fish Passage\)](#)
- 25 • [Nearshore monitoring and aquatic assessment](#)
- 26 • **[Floodplains by Design](#)***

27
28 *Program Target Spotlight*

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

34

1 Strategy 21 – Place Attachment

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

4
5 *Strategy Description*

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

12
13 This strategy aims to address potential loss and negative impacts associated with a lack of recognition,
14 understanding, and respect for diverse communities’ place attachments. This lack of recognition,
15 understanding, and respect is likely associated with inequities linked to ecosystem decline,
16 sea/landscape change, climate change, regional growth, and development. This lack of recognition,
17 understanding, and respect of communities’ place attachment is also likely linked to limited research
18 and data. This lack of recognition, understanding and respect can cause harm, conflict, opposition to
19 place-based activities (for example, restoration actions, planning efforts, or even place-based policies),
20 and negatively impact peoples’ place attachments and overall wellbeing.

21
22 This strategy provides opportunities to better recognize, understand, and respect Puget Sound
23 residents’ place attachments within ecosystem recovery. Opportunities include better identifying and
24 prioritizing residents’ place attachments, including residents currently not fully represented in the
25 Human Wellbeing Vital Sign Survey findings and other studies. Opportunities also include ensuring place
26 attachment is integrated into recovery, including those efforts linked to education, stewardship,
27 recreation, and community outreach/engagement. By intentionally integrating place attachment,
28 whether, through place-based content, activities, or assessment tools, the greater Puget Sound
29 community can help ensure place attachment is emphasized and enhanced.

30
31 *Vital Signs*

- | |
|--|
| <ul style="list-style-type: none"> • Outdoor Activity • Cultural Wellbeing • Good Governance • Sense of Place • Sound Stewardship |
|--|

32
33 *What does success look like?*

34 We achieve our recovery goal of vibrant quality of life by enhancing opportunities for stress reduction
35 and motivation from natural environments for diverse human communities; acknowledging, respecting,
36 and recognizing that attachments among all residents to Puget Sound’s environments (including natural,
37 biocultural, and anthropogenic places) are opportunities to achieve the goals of the Action Agenda. The

1 indicator of success is improving the rating of the Sense of Place Index, the Psychological Wellbeing
2 Index, and the overall life satisfaction of Puget Sound residents across demographics and diverse
3 communities.

4

5 *Actions*

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

8 Key opportunities for 2022-2026 include:

- 9 • Increase knowledge in the Puget Sound recovery community around residents' senses of place
10 and the role that place attachment may and/or could play in recovery, including the connection
11 to environmental stewardship (for example, use data and analysis from the Puget Sound HWB
12 survey);
- 13 • Increase access to and knowledge of publicly owned Puget Sound shorelines and the marine
14 ecosystem;
- 15 • Engage social scientists to work with diverse Puget Sound communities to better understand
16 social relationships, connectedness, and senses of belonging in Puget Sound;
- 17 • Continue human wellbeing vital sign survey implementation and integration of results into
18 planning, management, and communications;
- 19 • Implement community-tailored place attachment surveys and/or other studies in order to more
20 fully capture a more accurate understanding of diverse residents' place attachments;
- 21 • Integrate place attachment as a key goal or outcome for restoration activities;
- 22 • Integrate place attachment as a key goal or outcome in education, outreach, communications,
23 and engagement efforts;
- 24 • Integrate place attachment as a key goal or outcome for both protection and restoration
25 activities;
- 26 • Integrate place attachment as an assessment measure for protection and restoration activities,
27 stewardship, recreation, education, outreach, and engagement efforts; Include place
28 attachment as a potential factor in ecosystem recovery conflict;
- 29 • Engage social scientists, in partnership with tribal nations, local governments, and local NGOs, to
30 work with Puget Sound communities to better understand social relationships, connectedness,
31 and senses of belonging in Puget Sound;
- 32 • Ensure diverse geographic sites are protected and/or restored for place attachment purposes,
33 when or if culturally appropriate;
- 34 • Support and increase place attachment research opportunities in the region, including those
35 focused on frontline and/or historically marginalized communities;
- 36 • Support the integration and application of place attachment tools, frameworks, or resources in
37 regional recovery efforts.

38

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

40 Key opportunities for 2022-2026 include:

- 41 • Manage and preserve natural areas for stress reduction, motivation, and long-term place
42 attachments;
- 43 • Collaborate with public health and land and shoreline use organizations to determine best
44 practices (for example, Healthy Parks, Healthy People);

- 1 • Increase park and open space access, especially for marine shorelines, for all people and
2 communities.

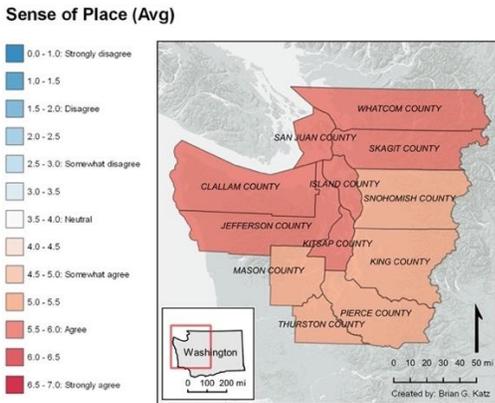
3

4 *Collaborating Partners*

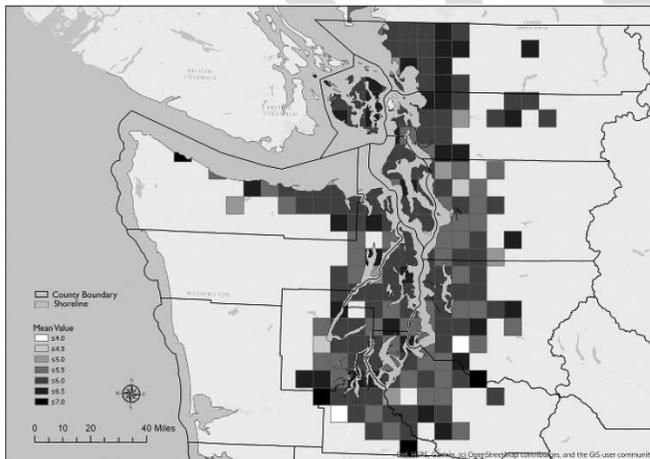
- 5 • Tribal governments, representatives, and consortia
- 6 • Federal agencies (National Institute of Health)
- 7 • State agencies (Department of Fish and Wildlife, Department of Ecology, Department of Health,
8 Department of Natural Resources, Recreation Conservation Office, and WSP)
 - 9 ○ Professional associations or organizations associated with natural resource industries or
10 place-based work
- 11 • Local governments (for example, local stewardship, recreation, and recovery practitioners or
12 planners)
- 13 • Conservation Districts
- 14 • Local Integrating Organizations
- 15 • Marine Resource Committees (MRCs)
- 16 • Salmon recovery and watershed groups
- 17 • Nongovernmental Organizations
- 18 • Academic/research institutions (Museums, zoos, interactive science centers, and aquaria)
- 19 • Businesses/private sector (Private industries focused on place or place-based products such as
20 shellfish aquaculture, tourism, and recreation; sustainable business organizations such as
21 Maritime Blue)
- 22 • Community members/residents (State and local community engagement initiatives (for
23 example, education, recreation, development, and stewardship))

1 *Geographic Scope*

2 Place attachment and sense of place more broadly are integral to residents’ health and wellbeing
3 throughout the Puget Sound region. According to the 2020 Human Wellbeing Survey results, 76% of
4 Puget Sound residents “agree” or “strongly agree” that Puget Sound plays a role in their place
5 attachment. Such findings were similar to those recorded in the 2018 Human Wellbeing Survey results.
6 This strong attachment and overall sense of place are reflected in Figure 1 (2020) and Figure 2 (2018)
7 (below).



8
9 *Sense of Place Index Mean by County (source:*
10 <https://www.pugetsoundinfo.wa.gov/ProgressMeasure/Detail/39/VitalSigns>)



11
12 *Place Attachment Index Mean Values (source: Trimbach et al. 2020)*

13
14
15

1 Strategy 22 – Outdoor Recreation

2 Expand and promote equitable access to information and opportunities for engagement for responsible
3 outdoor recreation and stewardship actions.

4
5 *Strategy Description*

6 Participation in nature-based outdoor activities is beneficial to residents’ human wellbeing in multiple
7 ways; physical movement, breathing fresher air, absorbing vitamin D, place attachment, and clearing
8 one’s thoughts all contribute to improved human wellbeing.

9
10 The goal of this strategy is to develop and promote social approaches to protect, restore, and
11 responsibly enjoy Puget Sound. Sound stewardship refers to the fact that although the 5.3 million
12 residents of Puget Sound pose the greatest threats to its natural environment, engaging residents and
13 institutions in protection, restoration, and individual behavior change offers the greatest opportunity for
14 recovering Puget Sound. This strategy seeks to identify and remove barriers resulting in the exclusion of
15 people from participating in recreation and stewardship activities. Additionally, this strategy seeks to
16 engage communities to increase knowledge of responsible use, Tribal Nations treaty rights, and define
17 opportunities that foster increased and responsible recreation within natural environments.

18
19 *Vital Signs*

- | |
|---|
| <ul style="list-style-type: none"> • Outdoor Activity • Cultural Wellbeing • Sense of Place • Sound Stewardship |
|---|

20
21 *What does success look like?*

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

- 27 • Increasing engagement in stewardship activities
- 28 • Improving the rating of the Sound Behavior Index
- 29 • Increasing the frequency of nature-based recreation by Puget Sound residents

30
31 *Actions*

32 **Engage communities to increase knowledge of responsible use, tribal nations treaty rights, and**
33 **sovereign interests and define opportunities that foster increased and responsible recreation**
34 **opportunities within natural environments. (ID #72)**

35 Key opportunities for 2022-2026 include:

- 36 • Increase the number of protection, restoration, and stormwater management/retrofit projects
37 that include multi-use elements;
- 38 • Use schools to connect with communities;
- 39 • Promote communal gardening spaces and food forests on publicly owned lands;
- 40 • Encourage private developments to integrate access to open spaces and waterways.

1 **Develop and promote social approaches to encourage behavior changes that will protect, restore, and**
2 **responsibly enjoy Puget Sound. (ID #159)**

3 Key opportunities for 2022-2026 include:

- 4 • Develop and distribute locally-relevant information, public signage, and other forms of
5 education throughout public spaces about specific actions to protect and restore Puget Sound.

6
7 **Identify and remove barriers resulting in the exclusion of people from participating in recreation and**
8 **stewardship activities. (ID #160)**

9 Key opportunities for 2022-2026 include:

- 10 • Increase funding and support for local advocacy groups that work directly with historically
11 marginalized communities;
- 12 • Assess equitable distribution of recreational opportunities;
- 13 • Engage with historically marginalized communities to assess barriers to accessing natural
14 environments in Puget Sound.

15
16 *Collaborating Partners*

- 17 • Tribal governments, representatives, and consortia
- 18 • State agencies
- 19 • Local governments (for example, city and county)
- 20 • Local Integrating Organizations
- 21 • Salmon recovery and watershed groups
- 22 • Businesses/private sector
- 23 • Nongovernmental organizations
- 24 • Community members/residents
- 25 • Tourism Bureaus
- 26 • Lodging Tax Advisory Committees
- 27 • Regional Sportsmans Organizations

28
29 *Ongoing Programs*

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

- 35
- 36 • [Creosote And Marine Debris Removal Program](#)
- 37 • [Washington Wildlife and Recreation Program](#)
- 38 • [Puget Sound Corps](#)
- 39 • [Shellfish Growing Area Classification and Water Quality Restoration Program](#)
- 40
- 41

1 Strategy 23 – Good Governance

2 Promote transparent and inclusive governance that engages all peoples equitably, with a focus on
3 expanding trust and inclusion of historically marginalized communities.

4
5 *Strategy Description*

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

13
14 The overall intent of good governance is to increase trust and transparency in management decisions by
15 including and communicating directly and effectively with new and diverse audiences. Good governance
16 best practices should be incorporated into the thinking and planning for all natural resource
17 management strategies.

18
19 Natural resources programs and policies should seek to enhance transparency and inclusion in decision-
20 making processes to increase positive perceptions of good governance and increase trust in and
21 compliance with environmental decision-making.

22
23 *Vital Signs*

- Good Governance

24
25 *What does success look like?*

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

35
36

1 *Actions*

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

5 Key opportunities for 2022-2026 include:

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

10

11 **Ecosystem recovery processes and decision making are inclusive of a broader set of committed**
12 **stakeholders and diverse forms of knowledge. (ID #161)**

13 Key opportunities for 2022-2026 include:

- 14 • Implement best practices for modifying processes to be just and inclusive;
- 15 • Increase practitioner and decision-maker understanding of historically marginalized
16 communities;
- 17 • Foster the use of new deliberative democracy tools (for example, peoples' assemblies).

18

19 **Increase capacity for overburdened and historically marginalized communities to engage in**
20 **environmental decision-making. (ID #162)**

21 Key opportunities for 2022-2026 include:

- 22 • Explore needs, barriers, and best practices for building capacity for historically marginalized
23 communities to engage in environmental decision-making by engaging directly with
24 stakeholders and local advocacy groups (for example, see WA Environmental Justice Task Force
25 recommendation, State of California guidelines for government-created documents);
- 26 • Increase funding and/or technical assistance to coalitions and/or community representatives
27 who speak on behalf of historically marginalized communities and youth, so that they may
28 meaningfully participate in environmental decision-making;
- 29 • Implement the HEAL Act;
- 30 • Ensure all virtual board meetings comply with Americans with Disabilities Act.

31

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

34 Key opportunities for 2022-2026 include:

- 35 • Explore the best pathways for listening to the concerns, interests, context, and needs, as well as
36 the current strengths, activities, and ongoing programs of communities that have not historically
37 been well represented in Puget Sound recovery efforts;
- 38 • Increase participation of historically marginalized communities in Puget Sound recovery
39 governing and advisory boards;
- 40 • Amplify tribal nations' efforts to increase opportunities for Puget Sound residents, communities,
41 and visitors to learn about tribal nations' treaty rights.

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

4 Key opportunities for 2022-2026 include:

- 5 • Increase the participation of tribal nation communities in some Puget Sound recovery governing
6 and advisory boards.

7
8 **Communications materials should be clear and concise, avoiding jargon and/or overly technical**
9 **language. Incorporate resources in various languages other than English for critical communications**
10 **materials. (ID #198)**

11 Key opportunities for 2022-2026 include:

- 12 • Amplify efforts to increase opportunities to communicate with Puget Sound residents,
13 communities, and visitors in their respective languages (other than English) about tribal nation
14 sovereignty and treaty rights;
- 15 • Develop guidance that provides specific examples for how to hold accessible meetings (time,
16 locations, incentives/compensation, etc.) including guidance for asking communities how they
17 want to be involved.

18
19 *Collaborating Partners*

- 20 • Tribal governments, representatives, and consortia
- 21 • Federal agencies (Environmental Protection Agency)
- 22 • State agencies (Department of Ecology, Department of Fish and Wildlife, Department of Health,
23 Puget Sound Partnership)
- 24 • local governmental agencies (for example, city and county)
- 25 • Nongovernmental and community organizations (for example, Front and Centered, Washington
26 Climate Assembly)
- 27 • Local Integrating Organizations
- 28 • Salmon recovery and watershed groups
- 29 • Academic/research institutions (for example, The William D. Ruckelshaus Center)
- 30 • Community members/residents

31
32 *Ongoing Programs*

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

- 38
39 • Agency Community Engagement Plans required by the HEAL Act
40
41

1 Strategy 24 – Cultural Practices and Local Foods

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

4

5 *Strategy Description*

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

12

13 Many of the cultural traditions held by Puget Sound residents are dependent on the health of Puget
14 Sound ecosystems. These cultural practices and knowledge systems are centered around local foods, in
15 addition to many other traditional, subsistence, and recreational uses and practices. The quality, safety,
16 availability, and abundance of Puget Sound food resources provide a suite of human wellbeing benefits.
17 High-quality local foods often contain fewer or no chemical fertilizers and pesticides and tend to be
18 higher in nutrition, thus contributing to physical health. The act of collecting, preparing, and sharing
19 such foods maintains cultural knowledge and practices and often builds social relationships. Some
20 communities rely on local foods more than others for their wellbeing and are likely to be impacted
21 disproportionately by declines or risks associated with local foods. There are opportunities to educate
22 agencies and support incentive programs to meaningfully engage with communities and integrate
23 cultural significance into resource assessments, food systems, critical area ordinances, hazard mitigation
24 plans, recreational plans, and other local planning activities.

25

26 *Vital Signs*

- | |
|---|
| <ul style="list-style-type: none"> • Local Foods • Cultural Wellbeing • Sense of Place |
|---|

27

28 *What does success look like?*

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

35

36

1 *Actions*

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

5 Key opportunities for 2022-2026 include:

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

12
13 **Restore and enhance native fish, shellfish, game, and plant populations consistent with species**
14 **recovery efforts. (ID #89)**

15 Key opportunities for 2022-2026 include:

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

21
22 **Improve appropriate access opportunities for harvesting local foods and other culturally significant**
23 **materials on public lands and shorelines. (ID #91)**

24 Key opportunities for 2022-2026 include:

- 25 • Support the delivery of local food harvests to accessible locations;
- 26 • Collect and disseminate existing local guides for best practices to access and harvest local foods;
- 27 • Listen to and provide resources to diverse communities with tailored approaches (for example,
28 including local representatives, educational resources, technical assistance, and funding, etc.);
- 29 • Improve land affordability, and support smaller farms for local food production;
- 30 • Enable equitable harvest of marine resources on private tidelands by tribal members, through
31 co-manager agreements; and
- 32 • Encourage access for recreational purposes by providing incentives to private shoreline
33 landowners.

34
35 *Collaborating Partners*

- 36 • Tribal governments, representatives, and consortia
- 37 • Federal agencies (Bureau of Indian Affairs, US Forest Service, US National Parks, and National
38 Oceanic and Atmospheric Administration)
- 39 • State agencies (Department of Fish and Wildlife, Department of Ecology, Department of Natural
40 Resources, and Department of Health)
- 41 • Local governments (for example, city and county local land use planners and permitting offices)
- 42 • Conservation Districts
- 43 • Marine Resource Committees (MRCs)
- 44 • Local Integrating Organizations

- 1 • Nongovernmental organizations
- 2 • Salmon recovery and watershed groups
- 3 • Businesses/private sector (for example, shellfish and aquaculture producers)
- 4 • Academic/research institutions (University of Washington, Simon Fraser, Northwest Indian
- 5 College, Western Washington, University of Victoria, and Washington Sea Grant)
- 6 • Community members/residents (for example, hunting, fishing, shellfishing, foraging, mushroom
- 7 hunting, and gardening clubs)
- 8
- 9

DRAFT

1 Strategy 25 – Economic Benefits

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

4
5 *Strategy Description*

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

15
16 *Vital Signs*

- | |
|--|
| <ul style="list-style-type: none"> • Outdoor Activity • Economic Vitality • Good Governance |
|--|

17
18 *What does success look like?*

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

- 24 • Maintaining or increasing employment in natural resource industries, including restoration
- 25 • Maintaining or increasing natural resource industry output
- 26 • Maintaining or increasing percent of employment in natural resource industries, including
27 restoration

28
29 *Actions*

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

32 Key opportunities for 2022-2026 include:

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

36

1 **Promote multi-benefit solutions in restoration and protection project development to include**
2 **considerations for job creation. (ID #98)**

3 Key opportunities for 2022-2026 include:

- 4 • Promote the economic and job creation benefits of restoration and protection projects;
- 5 • Increase assessments and reporting of tradeoffs in protection and restoration actions and the
6 extent to which multi-benefit solutions are implemented and achieve their expected results;
- 7 • Increase consideration of multi-benefits and tradeoffs to develop actionable information and
8 tools for program managers and project sponsors to increase the number and impact of multi-
9 benefit solutions in protection and restoration projects.

10
11 **Support natural resources sector jobs and production opportunities. (ID #164)**

12 Key opportunities for 2022-2026 include:

- 13 • Cultivate and support businesses seeking to produce local foods and natural resources focused
14 services, activities, and products;
- 15 • Develop and share locally-relevant information on the economic and employment benefits and
16 impacts of natural resources sectors on natural resource decision-makers, consumers, and
17 individuals seeking employment in said industries.

18
19 *Collaborating Partners*

- 20 • Tribal governments, representatives, and consortia
- 21 • Federal agencies
- 22 • State agencies
- 23 • Local governments (for example, city and county)
- 24 • Local Integrating Organizations
- 25 • Salmon recovery and watershed groups
- 26 • Businesses/private sector
- 27 • Nongovernmental organizations
- 28 • Community members/residents
- 29 • Job training organizations and programs (for example, Department of Ecology's WA
30 Conservation Corps)
- 31 • Regional or county-based chambers of commerce and Economic Alliances

32
33 *Ongoing Programs*

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

- 39
40 • [Shellfish Growing Area Classification and Water Quality Restoration Program](#)

1 Strategy 26 – Human Health

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

4
5 *Strategy Description*

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

14
15 Exposure to pollution is not distributed evenly across the geography of Puget Sound--some communities
16 face disproportionate human health threats from their interaction with Puget Sound air, water, and
17 natural resources. Vulnerability to contaminant-related health hazards varies according to a number of
18 factors, such as race, age, and socio-economic status. This strategy focuses on reducing people’s
19 exposures to air and water contaminants, with attention to inequities experienced by historically
20 marginalized communities and the risks to especially vulnerable populations. This strategy is consistent
21 with and goes above and beyond the requirements of the HEAL Act.

22
23 *Vital Signs*

- | |
|--|
| <ul style="list-style-type: none"> • Air Quality • Drinking Water • Local Foods • Shellfish Beds • Toxics in Aquatic Life |
|--|

24
25 *What does success look like?*

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

- 30 • Reducing exposure to impaired air quality
- 31 • Reducing exposure to elevated nitrates in groundwater
- 32 • Reducing disproportionate impacts on historically marginalized populations

33

1 *Actions*

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

5 Key opportunities for 2022-2026 include:

- 6 • Create economies of scale;
- 7 • Plan and begin to implement approaches for engaging historically marginalized communities in
- 8 two-way conversations;
- 9 • Conduct environmental justice assessments for significant actions;
- 10 • Identify and implement processes for considering environmental justice in budgeting,
- 11 expenditures, and granting or withholding environmental benefits;
- 12 • Develop consultation frameworks with tribal nations and consortia to communicate and
- 13 collaborate on environmental justice actions;
- 14 • Consider appropriate applications of the Washington State Environmental Health Disparities
- 15 Map for Puget Sound;
- 16 • Pursue additional community-based research to ground truth and clarify environmental health
- 17 disparities in the context of Puget Sound recovery.

18
19 **Adequately resource community-led efforts to promote education and awareness about**
20 **environmental health risks associated with air pollution, drinking water contamination, surface water**
21 **pollution, and toxics in fish and shellfish. (ID #114)**

22 Key opportunities for 2022-2026 include:

- 23 • Foster partnerships among tribal nations, state agencies, local health jurisdictions, community-
- 24 based organizations, and the research community;
- 25 • Support community education and organizing related to toxics in products (PFAS) and other
- 26 potential sources of exposure to toxics.

27
28 **Limit people’s exposures to harmful air pollution. (ID #199)**

29 Key opportunities for 2022-2026 include:

- 30 • Increase air quality studies of emissions of jet planes impacting communities;
- 31 • Develop and implement approaches to sharing real-time air quality information and short-term
- 32 forecasts to provide warnings about potentially harmful conditions (for example, expand air
- 33 quality messaging in smartphone weather apps; developing complementary approaches to
- 34 reach historically marginalized communities and vulnerable populations);
- 35 • Expand programs to reduce particulate air pollution from wood stoves, diesel engines, etc.;
- 36 • Focus these programs on reducing exposures to historically marginalized communities and
- 37 vulnerable populations; expand programs to reduce the formation of ground-level ozone,
- 38 including reducing vehicle miles powered by internal combustion;
- 39 • Expand the coverage of emission checks and standards, etc.;
- 40 • Increase investments in nature-based solutions to improving air quality (increased tree canopy,
- 41 etc.).

1 **Limit people’s exposures to harmful water pollution. (ID #200)**

2 Key opportunities for 2022-2026 include:

- 3 • Focus investments to improve drinking water systems to ensure standards are met across Puget
- 4 Sound communities, with attention to drinking water supplies and systems serving historically
- 5 marginalized communities;
- 6 • Identify and address sources of pollution that impair water quality in areas where people swim
- 7 and recreate, and other in-water recreation;
- 8 • Prevent people’s exposure to poor water quality at fresh and marine swimming and recreational
- 9 areas by maintaining and expanding beach monitoring and signage.

10
11 *Collaborating Partners*

- 12 • Tribal governments, representatives, and consortia
- 13 • State agencies
- 14 • Academia/research institutions
- 15 • Local health jurisdictions
 - 16 ○ Washington Department of Health
 - 17 ○ Washington Department of Ecology
 - 18 ○ Local health jurisdictions
 - 19 ○ University of Washington School of Public Health
- 20 • Local governments (for example, city and county)
- 21 • Local Integrating Organizations
- 22 • Salmon recovery and watershed groups
- 23 • Community members/residents

24
25 *Ongoing Programs*

26 *Ongoing programs provide regulatory oversight, technical support, implementation resources, funding,*

27 *or guidance and serve as the critical foundation for Puget Sound recovery. The following is a list of*

28 *example state and federal ongoing programs that help to implement this strategy. Many more local,*

29 *tribal nations, and non-governmental programs exist that support this strategy. See [Puget Sound Info](#) for*

30 *a broader list of relevant programs.*

- 31
- 32 • [Air - Reducing Toxic Woodstove Emissions](#)
- 33 • [Beach Environmental Assessment, Communication, and Health \(BEACH\)](#)
- 34 • [Shellfish Safety](#)
- 35 • [Urban Waters Partnership – Green Duwamish Watershed](#)
- 36

1 Chapter 2 | Institutional Strategies

2 Institutional strategies address the foundational aspects of Puget Sound recovery. They complement the
3 26 strategies that advance biophysical, climate change, and human wellbeing outcomes already
4 described. They advance most, if not all, our desired outcomes by calling for improvements in mobilizing
5 funding, strategic leadership and collaboration, research and monitoring, education partnerships, and
6 stewardship and public support.

7 These strategies are led by partners across the region including critical coordinating efforts led by the
8 Puget Sound Partnership. All partners need and benefit from institutional strategies and, for them to be
9 successful, institutional strategies require commitment, creativity, and collaboration from recovery
10 partners throughout Puget Sound.

11



1 Strategy A – Funding

2 Explore and utilize new sources of funding, enhance and increase the effectiveness of existing sources of
3 funding, and increase overall funding for Puget Sound recovery.

4
5 *Strategy Description*

6 A lack of adequate funding has been a fundamental barrier to progress in Puget Sound recovery efforts.
7 From the 2013-15 biennium to the 2021-23 biennium, the Washington State Legislature has funded
8 Puget Sound restoration and protection programs at an average of only 53 percent of what was
9 requested, a \$763 million gap that has left many high priority projects languishing unfunded. The gap for
10 salmon recovery is even more pronounced: the statewide capital cost of implementing the habitat-
11 related elements identified in regional salmon recovery plans over the past decade was \$4.7 billion.
12 However, only \$1 billion was actually invested—just under 22 percent of the need.

13
14 Underfunding leads to delayed projects; inefficient, piecemeal implementation; lost ecological benefits;
15 lost local job and economic development opportunities; and ultimately, a failure to achieve resilience in
16 Puget Sound. Only five of the 28 Puget Sound Vital Sign Indicators are at or near their 2020 targets.
17 Twenty-two of the indicators are either not making any progress towards targets or are getting worse.
18 While we wait, the human and ecological burdens associated with a degraded Puget Sound increase,
19 and the financial cost of protecting Puget Sound continues to rise. We must mobilize and accelerate
20 funding for large capital programs and fully fund the Action Agenda for Puget Sound if we are to make
21 progress towards recovery.

22
23 Fully funding Puget Sound recovery demands that we also must diversify funding sources and maximize
24 the effectiveness of existing funds. Funding for Puget Sound recovery can—and must—come from a
25 number of different sources: private and public; state and federal; traditional and innovative. New
26 market mechanisms can be leveraged to achieve funding goals outlined in this strategy and help create
27 new revenue streams (e.g., carbon credits, water quality trading, transfer of development rights, etc.)
28 Those seeking to advance Puget Sound recovery are committed to exploring and securing a diverse
29 collection of funding sources sufficient to meet the needs of Puget Sound recovery as articulated in the
30 Action Agenda and watershed and species recovery plans.

31
32 Actions within this strategy encompass work to document funding needs across Puget Sound, secure
33 sustainable and equitable funding from existing sources, establish new sources of state funds, leverage
34 innovative private financing opportunities, and improve coordination of funding streams. This strategy
35 also includes actions to build the infrastructure needed for partners to respond to rapid funding
36 availability so that projects can be scaled up quickly and successfully.

37
38 *What does success look like?*

39 Increased, consistent, and dedicated funding to support the implementation of large capital projects,
40 the Action Agenda, and the ongoing programs led by organizations across Puget Sound working to
41 advance protection, restoration, and the resilience of vibrant, enduring natural systems and

1 communities. An indicator of success is increasing the average percentage of Puget Sound recovery
2 funds requested by state agencies funded by the legislature each biennium.

3 *Collaborating Partners*

- 4 • Tribal governments, representatives, and consortia
- 5 • Environmental Protection Agency (EPA) and other members of the Puget Sound Federal Task
6 Force (e.g., USGS, NRCS, NOAA, etc.)
- 7 • Governor’s Office
- 8 • State Legislature
- 9 • State agencies
- 10 • The Nature Conservancy and other non-governmental organizations
- 11 • Puget Sound Partnership boards
- 12 • Local Integrating Organizations
- 13 • Philanthropic organizations
- 14 • Private capital investors and not-for-profit community development financial institutions.

15
16 *Actions*

17 **Secure sustainable, equitable, and dedicated federal, state, local, and tribal nations funding source(s)**
18 **to fully fund Puget Sound and salmon recovery. (ID #173)**

19 Key opportunities for 2022 – 2026 include:

- 20 • Educate the public and decision-makers on the scale and urgency of the funding need across
21 Puget Sound;
- 22 • Ensure accountability and effectiveness in how investments meant to fund Puget Sound
23 recovery are implemented;
- 24 • Advocate for strategic prioritization and alignment of federal and state infrastructure funding
25 (including the Infrastructure Investment and Jobs Act) based on restoration priorities,
26 economies of scale, science advancement, equity and environmental justice, agriculture and
27 resource land protection, and workforce development;
- 28 • Support ongoing funding for the three high-priority state capital budget requests, including the
29 Puget Sound Acquisition and Restoration (PSAR) Program, the Estuary and Salmon Restoration
30 Program (ESRP), the Puget Sound Nearshore Restoration Project (PSNERP), the Floodplains by
31 Design (FbD) Program, and the Stormwater Financial Assistance Program;
- 32 • Establish stable funding sources to fully implement local salmon recovery plans;
- 33 • Connect and apply new mobilized and diverse funding to well-vetted and prioritized local
34 projects and programs sources.

35
36 **Establish and implement a major new source of state funding. (ID #180)**

37 Key opportunities for 2022 – 2026 include:

- 38 • Assess possible revenue sources for the best match to successfully deliver Puget Sound recovery
39 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 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 full 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 FbD Program, and the Brian Abbott Fish Barrier Removal Board (FBRB).

1 **Engage partners in developing the list of Puget Sound-wide resource needs. (ID #179)**

2 Key opportunities for 2022 – 2026 include:

- 3 • Characterize the resources needed to implement salmon recovery habitat restoration and
- 4 acquisition projects, including near-term costs (4-year project list) and the full costs to restore
- 5 and revegetate riparian buffers;
- 6 • Understand the collection of existing funding sources used to support Puget Sound recovery;
- 7 • Increase coordination on state budget requests with LIO partners.

8
9 **Build infrastructure for and implement a rapid funding response capacity for Puget Sound. (ID #181)**

10 Key opportunities for 2022 – 2026 include:

- 11 • Ensure local partners have the capacity to quickly scale their recovery work with increased
- 12 investment;
- 13 • Facilitate streamlined bundling and matchmaking between funding sources and protection and
- 14 restoration projects.

15
16 **Increase coordination, efficiency, and effectiveness of current funding programs to extend impact of**

17 **current funding (ID #207)**

18 Key opportunities for 2022 – 2026 include:

- 19 • Support efforts of the Align group and the Federal Task Force to coordinate funding;
- 20 • Support the SRC Funding Subcommittee's efforts to better align existing funding programs and
- 21 authorities with salmon recovery and Puget Sound restoration priorities, including the effort by
- 22 the subcommittee to work with counties to integrate salmon recovery into existing
- 23 Conservation Futures programs.

24

1 Strategy B – Strategic Leadership and Collaboration

2 Promote strategic leadership and collaboration to support Puget Sound recovery.

3

4 *Strategy Description*

5 Recovery of Puget Sound is a collective, long-term endeavor that requires focused and dedicated
6 leadership and collaboration. Many elements enable this leadership and collaboration. Hundreds of
7 partners convene throughout the year through boards and networks such as the Leadership Council,
8 Ecosystem Coordination Board, Salmon Recovery Council, Science Panel, Puget Sound Ecosystem
9 Monitoring Program, Strategic Initiative Advisory Teams, and Local Integrating Organization committees.
10 Organizations across sectors and governments, like the Northwest Indian Fisheries Commission,
11 Governor’s Salmon Recovery Office, Maritime Blue, environmental organizations, and natural resource
12 businesses identify and advocate for recovery priorities. Strategic Leadership and collaboration across
13 partners require a unique approach with the Partnership, the Governor’s Salmon Recovery Office, and
14 NEP providing leadership and collaboration at the regional level, and LIOs conducting similar activities at
15 the local level to generate simultaneous, coordinated, and integrated planning and action to advance
16 ecosystem recovery.

17 The achievements in Puget Sound recovery to date are a function of the strategic leadership and
18 collaboration that partners have brought to address recovery challenges. Yet key gaps remain. Puget
19 Sound has not been a sustained top priority for leaders and decision-makers that have resulted in
20 needed policy change. The coalition of organizations demanding a healthy Puget Sound falls short of the
21 breadth and depth needed to affect transformational change. Diversity, equity, inclusion, and
22 environmental justice are just beginning to be addressed through the steps outlined in recent legislation
23 such as the Healthy Environment for All (HEAL) Act. Key opportunities for this strategy around
24 exchanging information with partners align with the goals for Strategy C that focus on interdisciplinary
25 research to promote diverse ways of knowing and coordinating the knowledge network across Puget
26 Sound. This strategy also aligns with the funding priorities described under Strategy A, since both focus
27 on developing strategic plans for funding allocation. The actions and key opportunities below begin to
28 address these gaps and needs.

29 *What does success look like?*

30 Puget Sound recovery will be successful with continued strong relationships across the region based on
31 good communication, trust, and transparency. Strong relationships will lead to integrated approaches
32 across sectors and jurisdictions. Engagement will be inclusive and accessible with processes that include
33 broad audiences and partners and center Puget Sound as a sustained priority for leadership across the
34 region. Leaders and decision-makers will understand why and how to integrate climate and human
35 wellbeing into funding and prioritization decisions and legislative actions, policies and funding will honor
36 local priorities developed through existing networks. Success will also look like investments that are
37 utilized strategically to strengthen our recovery work.

38 *Collaborating Partners*

- 39 • Tribal governments, representatives, and consortia
- 40 • Puget Sound Partnership boards and advisory councils

- 1 • State Legislators and the Governor
- 2 • Local Integrating Organizations
- 3 • Strategic Initiative Lead Teams (SILs)
- 4 • Salish Sea Institute
- 5 • Salmon recovery and watershed groups
- 6 • Marine Resources Committees (MRCs)
- 7 • Environmental Caucus
- 8 • Academic/research institutions
- 9 • Federal agencies (Northwest Straits Commission)
- 10 • State agencies
- 11 • Chambers of commerce and economic development councils
- 12 • Local governments (e.g., city and county)
- 13 • Nongovernmental organizations
- 14 • Philanthropic organizations

15 *Actions*

16 **Elevate Puget Sound recovery as a priority for leadership at all levels. (ID #208)**

17 Key opportunities for 2022-2026 include:

- 18 • Engage in policy reform through local, state, and federal legislative processes;
- 19 • Support the Governor’s Office in making Puget Sound and salmon recovery the cornerstone of
- 20 Governor Inslee’s third term;
- 21 • Create a Puget Sound National Program Office with the US Environmental Protection Agency;
- 22 • Leverage strategic leadership within caucuses.

24 **Broaden and deepen the coalition demanding a healthy Puget Sound. (ID #209)**

25 Key opportunities for 2022-2026 include:

- 26 • Simplify language and messages to improve communication with broader audiences;
- 27 • Build the capacity of local partners to advance shared local and regional recovery priorities;
- 28 • Cultivate and expand relationships with and leadership by partners in the private sector;
- 29 • Build out transboundary coordination to further cross-border engagement and progress on
- 30 issues of importance across the Salish Sea;
- 31 • Improve LIOs’ strategic partnerships by increasing the organizational and governmental diversity
- 32 of their voting membership.

34 **Advance diversity, equity, inclusion, and environmental justice in Puget Sound recovery efforts. (ID #128)**

36 Key opportunities for 2022-2026 include:

- 37 • Align with the policy and equity goals outlined in Strategy C and Strategy 26 to implement the
- 38 Healthy Environment for All (HEAL) Act;

- 1 • Integrate justice, equity, diversity, and inclusion principles by conducting outreach with
2 historically marginalized communities and inviting them to be voting members of the
3 Partnership’s Boards and LIOs;
- 4 • Develop a Puget Sound Partnership agency-wide Diversity, Equity & Inclusion, and
5 Environmental Justice Action Plan;
- 6 • Reduce barriers, particularly for historically marginalized communities, to participate in the
7 Partnership’s boards and overall recovery work by promoting hybrid approaches that also
8 reduce emissions;
- 9 • Ensure that Puget Sound recovery funding streams are adapted to support diversity, equity,
10 inclusion, environmental justice, and the rights of tribal nations.

11

12 **Strengthen relationships and understanding to enhance collaboration. (ID #210)**

13 Key opportunities for 2022-2026 include:

- 14 • Ensure broad understanding of, recognition of, and support for tribal sovereignty, treaty rights,
15 and tribal nations’ role as co-managers of natural resources (i.e., Boldt Decision);
- 16 • Ensure that “free, prior and informed consent” is well provided for when developing legislative
17 actions and policies;
- 18 • Effectively engage local partners such as LIOs to share information and increase transparency;
- 19 • Increase opportunities for comment and partnership from LIOs to support increased
20 collaboration;
- 21 • Convene Leadership Council-led forums to celebrate successes and support removing barriers to
22 progress in the recovery effort.

23

24 **Strengthen the leadership framework to guide the Puget Sound recovery effort and set action and
25 funding priorities. (ID #123)**

26 Key opportunities for 2022-2026 include:

- 27 • Lead the development of Vital Sign Indicator targets as benchmarks for success and focal points
28 for partner action and investments;
- 29 • Develop a strategic plan for the medium- to long-term allocation of state funding toward salmon
30 recovery priorities as outlined in the regional and watershed chapters of the Puget Sound
31 Salmon Recovery Plan;
- 32 • Effectively engage local partners like LIOs to share information and increase transparency;
- 33 • Implement and support local and regional projects to remove barriers to recovery across Puget
34 Sound;
- 35 • Complete the 2026-2030 Action Agenda as the region’s next roadmap to ecosystem recovery.

[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](#).

1 Strategy C – Research and Monitoring

2 Coordinate and invest in research and monitoring to support Puget Sound recovery.

3

4 *Strategy Description*

5 Focused, relevant research and monitoring is an important foundation for Puget Sound recovery work.

6 This strategy focuses on how social and natural science research and monitoring projects can improve
7 policy choices and adaptive management and increase access to and use of more diverse ways of
8 knowing. Scientific research and monitoring help us understand how and to what degree human
9 activities affect the health of Puget Sound, and what efforts are most effective in reducing the negative
10 pressures from these activities. Science programs illuminate the impact of current and past recovery
11 efforts and the work that remains to achieve a healthier Puget Sound for all.

12 Actions for this strategy include leveraging and directing funding to high-priority research and
13 monitoring projects, developing the capacity for effectiveness monitoring and assessment, better
14 incorporation of Indigenous knowledge in research and monitoring, broadening, and coordinating the
15 knowledge network across Puget Sound, and improving science communication. This strategy also
16 highlights the need to better incorporate human wellbeing considerations across recovery activities and
17 amplifies the need for more interdisciplinary research on how the wellbeing of people and nature
18 depend on one another.

19 *What does success look like?*

20 We will be successful when Puget Sound recovery decisions and overall recovery adaptive management
21 are informed by scientific research and monitoring, evidence-based advice and recommendations,
22 scientific review, technical syntheses, and strategic investments in research, assessment, and ecosystem
23 monitoring. Ongoing, sustained coordination of scientific efforts and contributions come from many
24 individuals and institutions across all sectors, and diverse ways of knowing are incorporated from an
25 expansive knowledge network across the region. Information from scientific research and monitoring is
26 disseminated to Puget Sound recovery stakeholders in a clear and timely fashion. Ongoing convening
27 and input from the Science Panel, Social Science Advisory Committee, Salmon Science Advisory Group,
28 PSEMP, and other groups is maintained and remains essential to ensure investments in research and
29 monitoring are made strategically. Scientific findings are translated into resonant and compelling
30 communications, so policymakers and non-science audiences understand how to use the research and
31 what it means for everyday life and long-term investments in the region.

32 *Collaborating Partners*

- 33 • Tribal governments, representatives, and consortia
- 34 • Puget Sound Partnership Boards (Science Panel)
- 35 • Academic/research institutions (Washington Sea Grant; Puget Sound Institute; Washington
36 Stormwater Center; Oregon State University, University of Washington, Western Washington
37 University, Washington State, British Columbia, and elsewhere)
- 38 • Puget Sound Ecosystem Monitoring Program, its steering committee, subcommittees, and
39 workgroups
- 40 • State agencies (science programs)

- 1 • Federal agencies (science programs)
- 2 • Businesses/private sector (Fundors of scientific investigations relevant to the Puget Sound socio-
- 3 ecological system)
- 4 • Community members/residents (Citizen Science programs, K-12 curriculum, front-line
- 5 communities who develop, hold, and share information about social and ecological conditions)
- 6 • Transboundary partners (Canadian governmental institutions who support, conduct, and
- 7 communicate science relevant to the Salish Sea)
- 8 • Local governmental (for example, city and county)
- 9 • Local Integrating Organizations
- 10 • Nongovernmental organizations who invest in, coordinate, and use community scientists and
- 11 who support, conduct, and communicate science relevant to the Salish Sea)
- 12

13 *Actions*

14 **Direct and leverage funding and investments to advance science, monitoring, and adaptive**
15 **management for Puget Sound recovery. (ID #121)**

16 Key opportunities for 2022-2026 include:

- 17 • Develop, fund, and maintain an online searchable database to serve as a comprehensive
- 18 clearinghouse of scientific information and expertise for use by the Puget Sound protection and
- 19 recovery community;
- 20 • Select and fund investigations that address priority research objectives and work actions in the
- 21 [Science Work Plan for 2020-2024](#) through Partnership awards for Puget Sound scientific
- 22 research and monitoring to Accelerate Recovery in 2021-2023 and 2023-2025 and partners' (for
- 23 example, Sea Doc Society, Washington Sea Grant, King County, NOAA Fisheries, Department of
- 24 Ecology, and Skagit River System Co-op) awards and staffing commitments to carry out
- 25 investigations that align with priority research and monitoring work actions;
- 26 • Build an ongoing research collaboration—including jointly funded investigations and a new Puget
- 27 Sound fellowship program—between the Partnership and Washington Sea Grant;
- 28 • Update the strategic plan for the Puget Sound Ecosystem Monitoring Program, and develop and
- 29 begin to implement an unbiased Science Work Plan for 2025-2028 that is designed to inform
- 30 good policy;
- 31 • Develop, fund, and maintain an online searchable database to serve as a comprehensive
- 32 clearinghouse of scientific information and expertise for use by the Puget Sound recovery
- 33 community.
- 34

35 **Coordinate efforts to assess and report on ecosystem conditions and the effectiveness of ecosystem**
36 **recovery strategies and actions. (ID #122)**

37 Key opportunities for 2022-2026 include:

- 38 • Coordinate PSEMP in increasingly open, transparent, and inclusive ways;
- 39 • Ensure that local, long-term, and inherently efficient volunteer monitoring programs are well
- 40 funded, maintained, regionally respected, and designed to offer the added benefit of educating
- 41 and involving the public;

- 1 • Review and adapt the quality, depth, and breadth of research, monitoring, and assessment and
2 the networks through which scientists collaborate and engage with policy makers, science-policy
3 interfaces, and program managers;
- 4 • Follow, assess, and report on Puget Sound indicators (introduced in Chapter 3 of the
5 Comprehensive Plan);
- 6 • Develop and apply innovative tools to understand ecosystem conditions as they change over
7 time, and to predict and document those changes; ensure that reporting systems are piloted
8 with partners (e.g., LIOs);
- 9 • Analyze and synthesize existing information, especially using Puget Sound indicators, to evaluate
10 and report on the ecosystem conditions and the effects of recovery efforts, giving greater
11 attention to inequities in the distribution of environmental burdens and recovery efforts;
- 12 • Foster exploration and discovery through coordination of subject matter experts and through
13 comprehensive assessments (such as cumulative effects evaluations) and interdisciplinary
14 investigations;
- 15 • Communicate scientific research and monitoring information, on a regular basis, to policy
16 makers, program managers, and the public at large, to achieve greater and sustained support
17 for evidenced-based policy and management decisions critical for achieving goals and
18 objectives;
- 19 • Ensure local volunteer monitoring programs are well funded, maintained, regionally respected,
20 and designed to offer the added benefit of educating and involving the public;
- 21 • Ensure that reporting systems are Beta tested and will work for a variety of partners who will
22 use them, including LIOs.

23
24 **Implement priority science work actions from the Science Work Plan for 2020-2024. (ID #182)**

25 Key opportunities for 2022 – 2026 include:

- 26 • Select and fund investigations that address priority research and monitoring actions through
27 Partnership awards for Puget Sound scientific research and Monitoring to Accelerate Recovery
28 in 2021-2023 and 2023-2025 and partners’ awards and staffing commitments to carry out
29 investigations that align with priority science work actions;
- 30 • Build an ongoing research collaboration—including jointly funded investigations and a new Puget
31 Sound fellowship program—between the Partnership and Washington Sea Grant.

32
33 **Collaboratively broaden and improve the knowledge network that supports Puget Sound ecosystem
34 recovery. (ID #183)**

35 Key opportunities for 2022-2026 include:

- 36 • Learn from a diversity of partners about what is important in how the knowledge network grows
37 from the current situation and how it functions into the future;
- 38 • Learn from others’ experiences about governance and management approaches that have
39 fostered broader engagement and improved network outcomes, especially those that have
40 emphasized incorporation of Indigenous knowledge and addressed environmental justice;

- 1 • Identify practical means by which research and monitoring programs and other knowledge
2 providers can access and manage financial and intellectual resources to sustain management-
3 relevant investigations and boundary spanning activities;
- 4 • Learn from diverse partners about what makes information “legitimate” and the limitations of
5 traditional western approaches to applied science; conduct evaluation studies to understand
6 and amplify funding impacts;
- 7 • Enhance networking across sectors and disciplines and among different types of programs and
8 diverse groups of individuals across Puget Sound and the entire Salish Sea.
9

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.

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 tribes, 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 sovereignty and accounts for the views and voices of the most vulnerable members of society.



Credit: photo and 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.

1

2 **Improve linkages among Indigenous knowledge and research and monitoring. (ID #184)**

3 Key opportunities for 2022-2026 include:

- 4 • Find creative and meaningful ways to partner with Indigenous science programs;
- 5 • Invest in research and monitoring projects and broader strategies that recognize and build on
- 6 Indigenous knowledge to generate a collective understanding of ecosystems relationships and
- 7 systems thinking;
- 8 • And identify greater opportunity to achieve recovery goals and objectives.

9

10 **Recognize and embrace human health and wellbeing as a component of ecosystem recovery by**
11 **identifying and supporting interdisciplinary research that explores and emphasizes the ways in which**
12 **the health and wellbeing of people and nature are integrated. (ID #185)**

13 Key opportunities for 2022-2026 include:

- 14 • Prioritize research and monitoring across Puget Sound that considers the interactions of
- 15 fundamental social, ecological, and health and wellbeing factors and supports and incentivizes
- 16 collaborations of biophysical and social scientists.

17

18 **Build and sustain robust programs and relationships across science-policy interfaces to inform**
19 **recovery. (ID #186)**

20 Key opportunities for 2022-2026 include:

- 1 • Support partners in ecosystem recovery to understand and explore resilience as a strategy,
2 encouraging adoption of adaptive tactics that evolve with new information over time, rather
3 than continue with those more rigid tactics;
- 4 • Identify opportunities when ‘policy windows’ are open and when knowledge can be linked to
5 action;
- 6 • And engage decision-makers in the production and sharing of policy- and management-relevant
7 information.

8

9 **Communicate science findings clearly and to the appropriate audiences. (ID #187)**

10 Key opportunities for 2022-2026 include:

- 11 • Foster partnerships that support access to the full range of communication approaches and
12 tools that build and sustain the case for Puget Sound recovery (e.g., [PSEMP Communications](#)
13 [Strategy](#))

14

15 **Develop and analyze alternative future scenarios to help leaders make decisions that will lead to**
16 **system-level change under a range of projections for climate change, population growth, and other**
17 **uncertainties. (ID #188)**

18 Key opportunities for 2022-2026 include:

- 19 • Develop and use the alternative future scenario analysis to explore alternative futures and
20 evaluate tradeoffs, among the variety of things valued by Puget Sound residents, across possible
21 approaches to managing growth and governing our behaviors;
- 22 • Investigate and better understand the deeper connections, feedback loops, and system
23 structures that drive future conditions to more directly address, plan for, and mitigate those
24 drivers;
- 25 • Explore current and planned actions to understand their efficacy into the uncertain future;
- 26 • Institute future scenarios approaches as a mindset facilitated through tool kits designed to
27 enable practitioners in the recovery system to consider the many ways the future may unfold
28 and how strategies can be made more robust, responsive, and effective.

29

30

1 Strategy D – Education Partnerships

2 Expand collaborations between the pre-kindergarten to post-secondary (preK-16) education networks
3 and restoration communities at state and local levels to a) increase participation by youth, families,
4 teachers, and communities in Puget Sound recovery actions; b) prepare the workforce for the green
5 economy.

6
7 *Strategy Description*

8 This strategy outlines actions designed to increase linkages between environmental and educational
9 communities. The primary goals are to optimize sharing of knowledge and resources to help restore
10 altered ecosystems and inspire and prepare the emerging workforce for the challenges of building a
11 resilient future. By creating an open network for people to share and find information about who is
12 doing what type of work and where we can make it much easier for educators and environmental
13 professionals to collaborate. For students, that means many more opportunities for meaningful
14 environmental experiences, internships, and mentorships. By offering these experiences first to those
15 furthest from opportunity, we can help address patterns of inequity and help ensure that the future
16 green workforce mirrors the makeup of local communities. For the restoration community, the schools
17 and surrounding communities are rich labor resources to assist in restoration work and conduct
18 community science.

19
20 Working with our school systems provides benefits far beyond this strategy. Our state invests over \$18.6
21 billion each year to educate more than one million students. Human behaviors are the root cause of
22 environmental degradation. The behaviors and values that guide our actions are formed during the 14
23 years we spend in school, and those behaviors can last a lifetime. Indigenous and western scientists,
24 storytellers, and policymakers are ideally positioned to provide critical knowledge to help teachers
25 shape those behaviors and guide their students through the increasing flood of information to discern
26 fact from disinformation. In addition, youth hold significant influence over their friends and families and
27 as they become voters, how they vote is influenced by what they learn.

28
29 For small businesses and individuals in career transition, collaboration between education and
30 restoration communities may mean certification programs or apprenticeship programs. To ensure that
31 training is effective and sustainable, it will be necessary to engage colleges, labor unions, design and
32 construction firms, and project implementers. This will help ensure accessibility of training, as well as
33 access to post-training job opportunities. For example, cities may have established programs for
34 traditional workforce needs, but training for a new ecosystem restoration workforce is more ad-hoc and
35 does not offer the same certainty for durable, family-wage career pathways. Currently available training
36 programs are designed for those who can afford to work for little to no wage, excluding a significant
37 portion of the population. Similarly, current projects target neighborhoods who can afford to install and
38 maintain these installations, concentrating improvements in wealthier – and often whiter –
39 neighborhoods. In Puget Sound, partners are seeing clear gaps for those who can plan, design, build,
40 maintain green infrastructure and community-driven climate adaptation projects. Stronger and more
41 equitable job education and apprenticeship programs can help bridge these gaps.

42 *[Text Box: **Definition of education used in this strategy:***

43 *Indian education dates to a time when all children were identified as gifted and talented. Each child had*
44 *a skill and ability that would contribute to the health and vitality of the community. Everyone in the*

1 *community helped to identify and cultivate these skills and abilities. The elders were entrusted to oversee*
2 *this sacred act of knowledge being shared. That is still our vision for Indian education today.*
3 *From: Where the Sun Rises: Addressing the Educational achievement of Native Americans in Washington*
4 *State (2008).]*

6 *What does success look like?*

7 Collaboration between the environmental professional (scientists, policymakers, storytellers, etc.) and
8 the education community (students, teachers, administrators, etc.) is active and ongoing. The creation
9 of an open network for people to share and find information about who is doing what type of work and
10 where will enable an increase in collaborations between the environmental and education communities.
11 These collaborations will provide a myriad of benefits. Student and community resources will become
12 available to assist restoration efforts. Teachers will be able to access new ideas and skills so they can
13 better prepare their students for emerging challenges. Students will gain internship and mentorship
14 opportunities. Prioritizing experiences for youth from historically marginalized communities will also
15 help them to gain access to the growing number of green jobs. This will help address employment
16 inequity and promote a green workforce that mirrors the community. Increased participation of youth in
17 planning and leadership forums adds additional perspectives and reminds participants to consider the
18 impacts of their decisions on future generations.

20 *Collaborating Partners*

- 21 • Tribal governments, representatives, and consortia
- 22 • Federal agencies (for example, Environmental Protection Agency (EPA): Office of Environmental
23 Education; Department of Transportation (DOT); Department of Energy (DOE))
- 24 • State agencies (for example, Office of the Superintendent of Public Instruction (OSPI),
25 Governor’s Policy Office for Education and Workforce, WA Department of Natural Resources,
26 WA Department of Fish and Wildlife, Conservation Commission, WA Department of Ecology)
- 27 • Academic/research institutions (for example, Northwest Indian College, Washington State
28 University, Salish Sea Institute, Pacific Education Institute, and other academic institutions in
29 British Columbia)
- 30 • Nongovernmental organizations (for example, E3 Washington (Catalyst Committee),
31 IslandWood, Front and Centered, Whatcom Coalition for Environmental Education, and SeaDoc
32 Society)
- 33 • Local Integrating Organizations
- 34 • Washington Sea Grant
- 35 • Puget Sound Independent Schools

37 *Actions*

38 **Coordinate planning and implementation across education and restoration partner networks. (ID** 39 **#189)**

40 Key opportunities for 2022-2026 include:

- 41 • Assemble a planning team that includes policy and technical representatives from the
42 Washington State Office of Superintendent of Public Instruction (OSPI), other state agencies,
43 tribal nations, and environmental organizations to develop and implement this strategy. Specific
44 tasks include developing targeted, strategic communications to recruit participants and gain the

- 1 support of administrators at each level of hierarchy within organizations;
- 2 • Encourage state agencies to incentivize staff in project-educator collaborations;
 - 3 • Identify targets and intermediate progress measures for actions that increase preK-12 and
 - 4 ecosystem recovery partner collaborations;
 - 5 • Recruit educator liaisons to participate in each of the Strategic Initiative Advisory Teams to
 - 6 identify projects that may be appropriate for youth participation;
 - 7 • Develop proposal evaluation criteria for Partnership grant processes to assess whether
 - 8 proposed projects include an educational component;
 - 9 • Ensure environmental justice principles are embedded in PSP funded projects that include
 - 10 education components.

11

12 **Identify funding sources to support collaborations between ecosystem recovery partners and preK-12**

13 **educators. (ID #190)**

14 Key opportunities for 2022-2026 include:

- 15 • Identify funding sources to support collaborations with educators, including school research and
- 16 restoration project involvement and encouraging other entities to provide funding;
- 17 • Provide educators with the opportunity, funding, and capacity necessary to enable student
- 18 participation in local and meaningful ecosystem monitoring and recovery projects and programs
- 19 within their communities;
- 20 • Provide educators with the knowledge, skills, capacity, and funding to incorporate climate
- 21 change and the transition to a clean economy into their standard school curriculum;
- 22 • Support and promote participation in an open data network to share information about who is
- 23 doing what and where, to identify potential opportunities for collaboration;
- 24 • Hire education coordinators to set up successful collaborations;
- 25 • Compensate student interns to ensure inclusion of students who can't afford to participate in
- 26 unpaid internships and encouraging partner organizations to do so also;
- 27 • Provide students with equitable opportunities and mentoring that allow them to gain real-world
- 28 work experience through meaningful ecosystem monitoring and recovery projects and programs
- 29 in their communities;
- 30 • Prioritize funding for projects that serve youth from communities most impacted by
- 31 environmental disparities.

32

33 **Expand meaningful education and leadership experiences, internships and mentorships in classroom**

34 **settings and 'earn while you learn' apprenticeships and other paid training opportunities. (ID #191)**

35 Key opportunities for 2022-2026 include:

- 36 • Partner with OSPI to create and maintain an open data network to identify potential ecosystem
- 37 recovery, project types, locations, and contacts;
- 38 • Provide students with the education, training, experience, and mentoring necessary to become
- 39 effective and long-term advocates for environmental regulatory and policy improvements within
- 40 their communities, as well as at regional and state levels;
- 41 • Provide outdoor-based environmental educators with the opportunity, funding, and capacity to
- 42 enable participation by residents in ecosystem monitoring and recovery projects Including
- 43 existing databases (for example, Puget Sound Info) and data from all Partnership project
- 44 grantees;

- Grow a suite of tools to support durable, family-wage jobs implementing Puget Sound recovery actions such as compensated training programs, clear information on career pathways, and a clearinghouse of stable employment opportunities related to Puget Sound recovery;
- Collaborate with employers, technical schools and higher education institutions to develop curriculum to meet the needs of Puget Sound recovery-focused work.

*[Text/Callout Box (with photograph): **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 District teachers to finalize a 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. The three-way partnership between a member of the Environmental Education field, a restoration and conservation organization, and a school district were key to the success of the program.]

*[Text/Callout Box: **Green Stormwater Infrastructure Workforce Development and Career Pathways (WDCP) Coalition.***

The Green Stormwater Infrastructure Workforce Development and Career Pathways (WDCP) Coalition launched in early 2020, in response to chronic challenges related to green stormwater infrastructure (GSI) Workforce Development 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 Corp and means for sustained involvement;
- Include youth as one of the under-represented groups in trainings and actions to address justice, equity, diversity, and inclusion.

1 Strategy E – Stewardship and Motivating Action

2 Build issue awareness to increase public support for Puget Sound recovery and cultivate stewardship
3 behaviors that benefit Puget Sound.

4
5 *Strategy Description*

6 Stewardship of Puget Sound resources by the region’s residents—estimated at 5.3 million and
7 counting—is critical to the long-term recovery and protection of Puget Sound. Across Puget Sound,
8 residents volunteer, advocate, and commit their time and energy to protect and restore our waters,
9 land, and wildlife. A recent study shows that Puget Sound residents engage in environmental
10 stewardship and environmentally friendly behaviors at higher levels than the national average. The
11 willingness of people to pursue stewardship actions is critical to the effort to restore and protect Puget
12 Sound. Public involvement in and support for recovery efforts and strategies to increase stewardship of
13 Puget Sound helps foster broad-scale actions to address polluted water, degraded land and habitat, and
14 imperiled species. Building issue awareness fosters improved civic processes, engages residents in
15 government, and enables public officials to make well-informed decisions on recovery issues. Behavior
16 change methods, such as community-based social marketing, can foster beneficial behaviors and
17 discourage detrimental ones, by building capacity, providing an incentive, or removing barriers to action.

18
19 Engagement in stewardship activities is an expression of community engagement, altruism, social
20 capital, individual and collective initiative, sense of ownership and connection to place, and an optimistic
21 willingness to invest in future conditions. Residents with a strong sense of place are more likely to
22 engage in actions that help improve the ecosystem. Residents also vary in their opinions of
23 environmental governance in the region. This shows that in some places, decision-makers might need to
24 do more to build capacity and trust and include residents in planning efforts. Decision-makers could also
25 help foster people’s connections to Puget Sound to improve beliefs about environmental governance
26 and recovery overall, in part by listening closely to community needs.

27
28 This strategy includes actions that strengthen awareness across the region on the magnitude of the
29 challenges to achieve resilience in Puget Sound. It amplifies the ongoing work of recovery partners,
30 especially at the local level, to connect with residents and build the capacity and infrastructure
31 necessary to support stewardship activities. The actions included also amplify the need for further social
32 science research, particularly the questions outlined in the [Social Science for the Salish Sea](#) report.

33
34 *What does success look like?*

35 Indicators of success include improving the [Sound Behavior Index](#) (SBI). This index tracks 28 specific
36 practices that can affect water quality and aquatic habitats such as yard and garden care, vehicle and
37 home maintenance, and pet waste disposal. The SBI is based on a survey that asks residents about
38 specific, measurable, repetitive behaviors within households to analyze aggregate change over time.

39
40 *Collaborating Partners*

- 41
- Tribal governments, representatives, and consortia

- 1 • Puget Sound Partnership boards (Leadership Council, Ecosystem Coordination Board, Salmon
2 Recovery Council, Science Panel)
- 3 • Community members/residents (including education, communication, and outreach networks)
- 4 • Stormwater Outreach for Regional Municipalities (STORM) member organizations
- 5 • Puget Sound Starts Here steering committee and organizations implementing programs
6 connected to Puget Sound Starts Here
- 7 • Front-line communities who develop, hold, and share information about social and ecological
8 conditions
- 9 • Conservation Districts
- 10 • Marine Resource Committees (MRCs)
- 11 • Local governmental (for example, city and county)
- 12 • Local Integrating Organizations
- 13 • Nongovernmental organizations (who support, conduct, and social science relevant to the Salish
14 Sea)
- 15 • State agencies
- 16 • Salmon recovery and watershed groups and Regional Fisheries Enhancement Groups
- 17 • Academic/research institutions (in Washington State, British Columbia, and elsewhere; PSEMP
18 (including steering committee, subcommittees, and workgroups)
- 19 • Transboundary partners (for example, Canadian governmental institutions who support and
20 conduct social science relevant to the Salish Sea)

21

22 *Actions*

23 **Cultivate broad-scale stewardship practices and behaviors among Puget Sound residents that benefit** 24 **Puget Sound. (ID #125)**

25 Key opportunities for 2022-2026 include:

- 26 • Sustain and further projects and programs that advance individual behavior change;
- 27 • Support landowner coordination for landscape-scale conservation;
- 28 • Address barriers faced by historically marginalized communities that hinder them from
29 participating in stewardship practices and behavior changes by allocating funds, designing
30 targeted outreach, and providing resources;
- 31 • Advance individual pro-environmental behavior change among residents, visitors, and climate
32 migrants to the Salish Sea.

33

34 **Build issue awareness and understanding to increase public support and engagement in recovery** 35 **actions. (ID #126)**

36 Key opportunities for 2022-2026 include:

- 37 • Expand and promote public participation in governance processes through education, training,
38 experiential, and mentoring programs, with a targeted focus on historically marginalized
39 communities;
- 40 • Address barriers faced by historically marginalized communities that hinder them from engaging
41 in recovery actions;
- 42 • Engage community-based organizations in developing awareness campaigns for residents;

- 1 • Develop communication materials in multiple languages to raise awareness among different
2 audiences.
3

4 **Build social and institutional infrastructure that supports stewardship behaviors and removes barriers.**
5 **(ID #127)**

6 Key opportunities for 2022-2026 include:

- 7 • Expand and promote public participation in governance processes;
8 • Allocate funding to build the capacity of residents and community-based organizations (CBOs) to
9 engage in stewardship behaviors;
10 • Address the needs of historically marginalized communities so they can meaningfully engage in
11 and advocate for stewardship behaviors;
12 • Bolster and expand voluntary environmental programs for local businesses and private
13 landowners, particularly those owned by historically marginalized communities.
14

15 **Investigate the research questions outlined within [Social Science for the Salish Sea](#)**

16 Key opportunities for 2022-2026 are to engage with social scientists to gather input on the following
17 questions from the Social Science for the Salish Sea report:

- 18 • What factors motivate landowners to engage in or resist ecosystem recovery actions? What
19 about land rights-holders, such as Tribal nations, and other stakeholders, such as the non-
20 landowning public? (Ask related questions of these groups as well.) [Question #3]
21 • What is the current status of, and potential for, collaborating with different industries in
22 ecosystem recovery? (for example, natural resource industries such as forestry and fishing,
23 ports, pipelines, mines, pulp mills, etc.) [Question #6]
24 • How do resource management and conservation affect people in different and differential ways
25 (for example, economic, psychological, physical, and cultural effects)? [Question #11]
26 • How do power and politics influence decision-making processes and actions taken in the Salish
27 Sea? [Question #26]
28 • How can we advance eco-cultural (also called biocultural) approaches to stewardship and
29 restoration? [Question #30]
30
31

1	Appendices	
2	Appendix I: Adaptive Management	149
3	The Conservation Standards Framework.....	151
4	Assess and Plan	152
5	Implement.....	158
6	Analyze.....	159
7	Adapt and Share.....	163
8	Appendix II: Partners in Recovery.....	166
9	Who are the Partners in Recovery?	167
10	Supporting Organizations and Work Groups	171
11	Governmental Entities	175
12	Appendix III: Funding Recovery	178
13	The funding strategy for Puget Sound recovery	178
14	Existing Funding Sources for Puget Sound Recovery.....	182
15	Appendix IV: Glossary.....	185

DRAFT

1 **Appendix I: Adaptive Management**

2 Adaptive management is a learning and decision-making process. Practicing adaptive management
3 results in greater effectiveness and ensures that the ongoing efforts to implement current and improve
4 future Action Agendas are informed by the best evidence available. To facilitate effective adaptive
5 management in the Puget Sound, the Partnership utilizes the [Open Standards for the Practice of](#)
6 [Conservation](#) (Conservation Standards), an internationally recognized set of best practices that enable
7 evidence-based adaptive management through a coordinated process of planning, monitoring,
8 reporting, and learning. The framework is described in the section entitled Conservation Standards
9 Framework below.

10 **The Role of Science**

11 Adaptive management relies on gathering of pertinent data, data analysis, and the implementation of
12 change once we understand what helps or hinders progress. Science and data analysis inform
13 prioritization of action by identifying which human actions most affect the health of Puget Sound and
14 what efforts are most effective in reducing those pressures. Supporting science and data analysis are
15 also crucial for evaluating past efforts and informing future decisions about prioritizing and
16 implementing action, as described in detail in the sections titled Evaluating Recovery Progress and
17 Informing Future Prioritization of Recovery Action.

18 To guide planning for recovery, the Partnership relies on scientific advisors and partner organizations,
19 including the Science Panel, PSEMP, Washington State academic and research institutions, many
20 governments and nonprofit organizations, and the broader scientific community. These advisors and
21 partners provide scientific information and input through a variety of reports and engagement forums.

22 For example, science informs us how human pressures affect the ecosystem and which pressures are
23 the most important to address. The Puget Sound Pressures Assessment (2017) informs understanding of
24 the pressures on Puget Sound’s freshwater, marine, nearshore, and terrestrial resources. The
25 assessment identifies the critical ecosystem vulnerabilities that must be addressed to achieve
26 sustainable, long-term recovery. The assessment provides the scientific input for prioritizing Vital Signs
27 and informs the development of the Implementation Strategy. Implementation strategies serve as the
28 strategic plans for accelerating progress toward the Puget Sound statutory recovery goals and are
29 described further in *The Role of Implementation Strategies* section.

30 Understanding the human dimensions of Puget Sound recovery helps to ensure a more complete,
31 holistic, and ultimately more successful approach to achieving ecosystem goals. Social sciences help us
32 understand how individual and collective human behavior can enable or limit progress. The Human
33 Wellbeing Vital Signs, for example, directly relate to people’s interactions with the natural environment
34 of Puget Sound and include familiar aspects of human health, such as clean air and access to local foods.
35 They also include key measures of psychological and cultural wellbeing, like sense of place and ability to
36 participate in cultural practices related to the environment. The effort to address human wellbeing
37 within the context of our Puget Sound statutory recovery goals falls within a broader attempt to better
38 understand the full spectrum of roles that people play in ecosystem recovery. The Social Sciences
39 Advisory Committee (SSAC) engages social scientists from multiple disciplines to primarily advise the

1 Science Panel on matters related to the social sciences, salmon, and ecosystem recovery and to inform
2 and support other Partnership goals.

3 To guide the incorporation of science into recovery planning, the Science Panel and Partnership staff
4 rely on the Strategic Science Plan and Science Work Plan. The 2010 Strategic Science Plan provides the
5 overall framework for development and coordination of the science activities necessary to support
6 Puget Sound recovery under the Action Agenda. The plan describes at a high level how science should
7 inform policy for Puget Sound recovery, through assessing risks, evaluating potential management
8 strategies, and monitoring and evaluating progress. The plan is a high-level document that is revised as
9 needed.

10 The Science Work Plan, which is updated every four years, identifies the near-term scientific
11 advancements needed to recover Puget Sound. The plan also suggests how science can better support
12 recovery. The Science Panel helps inform the allocation of limited resources by identifying science work
13 actions and recommending improvements. They prioritize science that fills critical gaps, supports
14 innovation, supports continuity, links socio-ecological resilience, and is relevant to the policy landscape.

15 Both the Strategic Science Plan and Science Work Plan are key companions to the Action Agenda and are
16 incorporated into the Action Agenda by reference. One example of how the Science Work Plan has
17 influenced the direction of the recovery effort over time is found in the 2014 Biennial Science Work
18 Plan, which originally defined the elements of recovery planning that have been adopted as standard
19 components of an Implementation Strategy.

20 Another way we use science is to jumpstart the development of an Implementation Strategy. The Puget
21 Sound Institute compiles existing resources and knowledge on the challenge at issue. The initial
22 materials include information about status and trends of key ecosystem indicators; underlying drivers,
23 pressures, and stressors that inhibit recovery; current approaches to recovery and whether they are
24 effective; and key uncertainties that require resolution. The Action Agenda's reliance on
25 Implementations Strategies and these standard components for defining needed recovery action has
26 increased over time, as explained in *The Role of Implementation Strategies* section.

27 **The Conservation Standards Framework**

28 The Partnership uses the Conservation Standards framework to enable evidence-based adaptive
29 management consisting of the following elements:

- 30 • **Assess and Plan:** The Partnership supports partners in applying a standard set of planning best
31 practices to their contributing plans, in which key barriers and root causes of ecosystem
32 degradation, theories of change, prioritization choices, and outstanding science and
33 management questions (uncertainties) are made explicit and transparent.
- 34 • **Implement:** The Partnership supports partners in successfully implementing the Action Agenda,
35 through board forums, legislative work, and other efforts of the Management Conference.
- 36 • **Analyze:** The Partnership evaluates our collective progress in implementing the Action Agenda
37 and achieving statutory recovery goals, by managing a set of shared indicators and targets and

1 harnessing the expertise of the science and monitoring community to address key science and
2 management questions identified through the planning and implementation process.

- 3 • **Adapt and Share:** The Partnership facilitates shared learning and identifying adaptive actions
4 through effective science-policy dialogue.

7 This graphic represents a cycle that is iterative, constantly adapting and improving, within a framework.



8
9 *From Open Standards for the Practice of Conservation Version 4.0 (2020)*

10 Assess and Plan

11 Adaptive management begins with strategic, results-based planning. The Action Agenda is Puget Sound’s
12 overarching strategic plan; it reflects the priorities of the recovery community for the next four years
13 based on information and science-based recovery strategies contained in local and regional plans. The
14 Action Agenda not only considers and incorporates these plans but is developed through a process
15 that engages the people that can implement them — hundreds of diverse partners from state and
16 federal agencies, tribal nations, local governments, and business and environmental groups. As these
17 partners come together to agree on and prioritize needed actions, they develop a shared vision for the
18 future of Puget Sound recovery. As a result, the Action Agenda becomes a trusted and credible source
19 that partners can use to guide implementation and investment decisions in the coming years.

20 The Partnership is required to prioritize actions in the Action Agenda Implementation Plan to inform the
21 allocation of limited federal, state, and local resources. Based on the framework described here, the
22 Implementation Plan accomplishes this by identifying the 31 strategies and 132 actions necessary to
23 advance the regional and local plans over the next four years. The following component recovery plans
24 informed the updating of the Action Agenda Implementation Plan:

- 25 • Implementation Strategies
- 26 • Local Integrating Organizations’ (LIOs) Ecosystem Recovery Plans
- 27 • Puget Sound Salmon Recovery Plan
- 28 • Tribal Habitat Priorities
- 29 • Orca Task Force Recommendations
- 30 • 2020-2024 Science Work Plan

- 1 • Expert working groups

2

3 These all serve as important component plans to the Action Agenda and reveal areas of shared focus
4 where actions will advance multiple aspects of ecosystem recovery. These plans are all created through
5 science-informed and collaborative processes that capture the expertise and most recent thinking from
6 around the region. Partners reviewed and provided feedback on desired outcomes, strategies, and
7 actions via public workshops, partner, and board meetings. Specifically, the list of desired outcomes,
8 strategies, and actions were identified following a consistent process that included:

- 9 • **Synthesizing content from existing plans.** Partnership staff identified content using existing
10 plans, including Implementation Strategies (IS) and Local Integrating Organization (LIO) plans as
11 initial sources. Tribal nations priorities, salmon recovery plans, and the Orca Task Force
12 recommendations also provided important strategies for the Action Agenda and revealed areas
13 of commonality where strategies will advance multiple aspects of recovery.
- 14 • **Subject matter expert review.** Partnership staff worked in collaboration with representatives of
15 tribal nations, LIOs, state agencies, and the Environmental Protection Agency (EPA) to assemble
16 data about the stressors and sources that are addressed through existing plans.
- 17 • **Broader partner engagement and workshops.** The Partnership hosted public workshops,
18 providing an opportunity for partners and community members from across Puget Sound to
19 come together to co-generate actions that will advance Puget Sound recovery.
- 20 • **Board review and decision.** Following a public comment and final review period for Partnership
21 Boards and partner groups, the Leadership Council approves and adopts the finalized Action
22 Agenda.

23 In developing the Action Agenda’s Implementation Plan, the Partnership and its partners identified the
24 [desired outcomes](#) and strategies that are common across those plans. Desired outcomes and supporting
25 strategies guide the next four years of implementation and inform actions that include science research
26 needs, program and policy changes, restoration actions, and public engagement.

27 [The Role of Implementation Strategies](#)

28 [Implementation Strategies](#) are [strategic plans](#) for accelerating progress toward Puget Sound statutory
29 recovery goals. They are developed by the entire Puget Sound recovery community and strive to identify
30 specific actors to implement specific approaches to accelerate recovery. Implementation Strategies are
31 designed and developed in a way that describes a logical chain of outcomes that need to be achieved to
32 advance toward specific Vital Sign Indicator targets. Approaches identified through the Implementation
33 Strategies process are considered the best approaches for accelerating progress toward recovery and
34 play a central role in defining where to focus the collective actions in Puget Sound. Specifically, they
35 inform the desired outcomes and strategies articulated in the Action Agenda Implementation Plan.

36 Each Implementation Strategy is developed following best practices as defined by the Conservation
37 Standards. As described earlier in this section, the Conservation Standards framework provides a system
38 to make decisions based on best available information and a consistent language and taxonomy for all
39 recovery partners to use.

1 The first step in developing an Implementation Strategy is identifying and making use of existing
2 resources that are relevant to the topical area (e.g., shellfish, toxics in fish, land development and
3 cover). This includes curating the best available scientific information, identifying local and regional
4 strategic planning documents, and relevant information on ongoing programs, social and environmental
5 justice considerations, and other relevant information. For example, LIO Ecosystem Recovery Plans
6 provide a local lens through which to view regional problems and strategies. The information is gathered
7 and presented to Implementation Strategy Leads who convene partners. These partners are involved in
8 creating an Implementation Strategy to set a baseline of knowledge and shared work on which to
9 advance more effective strategies. Implementation Strategy development processes are continually
10 improved by more effectively integrating local planning efforts, changing climate and ocean conditions,
11 and the best available social science to inform and prioritize regional actions.

12 As each Implementation Strategy is developed, it includes a set of standard elements. Each
13 Implementation Strategy clarifies the pressures or behaviors and external drivers that created the
14 problem it is intended to address. Considering existing strategies or ongoing programs, the
15 Implementation Strategy next describes where intervention will be most impactful. Approaches are then
16 developed and ranked based on agreed upon criteria such as technical and financial feasibility, the
17 likelihood of reducing adverse environmental effects, and whether approaches will reduce adverse
18 effects for vulnerable populations without incurring additional hardship. Needed approaches and
19 actions called for in Implementation Strategies focus on addressing gaps and barriers that hinder
20 progress toward recovery and may include policy changes, site-specific recovery projects, regional
21 programs, or additional scientific research and inquiry as well as modeling and monitoring. External
22 review and comments by technical experts and interested members of the public help to round out the
23 content, ensuring that approaches are relevant, accurate, and understandable to a wider audience.

24 Creating an Implementation Strategy is just the beginning; it sets in motion a process of implementation
25 and adaptation informed by monitoring and evaluation. The Action Agenda brings elements from all the
26 Implementation Strategies together into one place and identifies both where each Implementation
27 Strategy is unique and where they overlap. The Action Agenda also considers the role of other plans,
28 such as the LIO Ecosystem Recovery Plans and the Orca Task Force recommendations. Some
29 circumstances may exist where Implementation Strategies are revised or combined with other strategies
30 that have similar outcomes.

31 The 2016 Action Agenda introduced Implementation Strategies and described a transition toward using
32 Implementation Strategies to prioritize recovery actions and achieve specific recovery targets. The
33 Action Agenda has continued to increase its reliance on Implementation Strategies because they result
34 in more targeted and specific approaches to achieve Puget Sound recovery based on current scientific
35 knowledge and analyses of existing recovery work—functioning as hubs for information and
36 collaboration. Additionally, the robust and inclusive process ensures that these shared plans include
37 input from a variety of perspectives and consider factors such as feasibility, potential local and regional
38 impact, and cost effectiveness. The process is designed to incorporate as many views as possible, while
39 remaining focused on how to move forward with implementation.

1 The Implementation Strategy program continues work to better connect and “network” the existing
2 strategies and identifying necessary actions needed to achieve the desired outcomes for recovery by
3 asking the question “Where can we identify fewer, more impactful actions that will lead to multiple
4 positive outcomes across the Sound?”

5 The Role of LIO Ecosystem Recovery Plans

6 Local Integrating Organizations (LIOs) are local forums that collaboratively work to develop, coordinate,
7 and implement strategies and actions that contribute to the protection and recovery of the local
8 ecosystem. The Partnership established LIOs with the goal of developing sub-regional building blocks for
9 participation and engagement in Puget Sound recovery efforts. The Partnership believes local groups are
10 well-positioned to understand and respond to the complex and diverse environmental, social, and
11 economic factors inherent to Puget Sound. The role of these groups and their participating partners is
12 discussed in further detail in Appendix II.

13 LIOs adaptively manage locally focused Ecosystem Recovery Plans and continually identify priority
14 actions that align with their plans and best serve their communities. The Ecosystem Recovery Plans are
15 formal products that guide local recovery through the LIO and are used to communicate with decision
16 makers, local legislators, and the public, and for input in regional planning processes. Information from
17 LIO Ecosystem Recovery Plans is synthesized and tailored to inform Implementation Strategies and other
18 regional planning processes, including the Action Agenda. For this Action Agenda, LIO Ecosystem
19 Recovery Plans were consulted to identify the desired outcomes and strategies that are common across
20 them. These plans identify pressures facing human wellbeing and environmental recovery and
21 protection, strategies to address pressures, quantitative goals, chronic barriers to recovery, gaps in
22 research and data essential for recovery, and specific actions and programs that align with prioritized
23 strategies.

24 LIO Ecosystem Recovery Plans:

- 25 • Use a rigorous, transparent, and collaborative technical and policy process that identifies the
26 highest-priority recovery strategies and actions in each LIO area, helping direct limited funding
27 to where it will be most effective.
- 28 • Inform development of regional Implementation Strategies.
- 29 • Account for existing ongoing programs in the LIO area and identify gaps where additional work is
30 needed.
- 31 • Integrate content from other local plans to ensure consistency with regional priorities,
32 terminology, and planning frameworks so that local priorities can inform decision-making and
33 sequencing of recovery actions at the regional level.
- 34 • Build on and work in conjunction with related recovery efforts including salmon recovery; local
35 growth management; Total Maximum Daily Loads (TMDL) to improve water quality, shellfish
36 Pollution Identification and Correction (PIC) programs; and others.

37 LIO members contribute significant time and resources to develop and adaptively manage LIO
38 Ecosystem Recovery Plans, and they are among the key partners who provide opportunities for public

1 involvement in developing and implementing recovery strategies. Additionally, through their work on
2 LIO Ecosystem Recovery Plans, they provide an essential link to integrating salmon recovery priorities
3 into the Action Agenda framework and connect regional strategies to the unique and diverse local
4 communities of Puget Sound. More information about these organizations and each LIO ecosystem
5 recovery plan is available on the [Local Integrating Organizations](#) website and [Puget Sound Info](#).

6 The Role of Salmon Recovery Plans

7 Salmon are integral to the identity and culture of Puget Sound. Yet several Puget Sound salmon runs
8 including Chinook, Hood Canal summer chum, and steelhead are threatened, and the 22 populations of
9 Chinook salmon still remaining are dangerously below federal recovery goals. The [Puget Sound Salmon
10 Recovery Plan](#) outlines strategies and actions for achieving recovery of threatened Chinook salmon
11 stocks in Puget Sound. Although the plan was written to meet federal requirements under the
12 [Endangered Species Act](#) (1973), most—if not all—of its strategies and actions contribute to overall
13 ecosystem recovery. Likewise, many of the strategies in the Action Agenda are essential for salmon
14 recovery. We are connecting these two efforts seamlessly and efficiently to achieve the Partnership’s
15 twin goals of Chinook salmon recovery and ecosystem recovery.

16 The Partnership and its partners strive to integrate salmon recovery and Puget Sound recovery efforts in
17 several ways:

- 18 • Many recovery partners have formal roles in the statewide salmon recovery effort. The
19 Leadership Council is the regional salmon recovery organization for Puget Sound salmon species
20 (excluding Hood Canal summer chum) and works closely with the Puget Sound Salmon Recovery
21 Council (PSSRC) to oversee funding, implementation, and adaptive management of the Puget
22 Sound Salmon Recovery Plan. Similarly, the Science Panel has incorporated the PSSRC’s recovery
23 planning priorities into the development of the Science Work Plan. The Salmon Science Advisory
24 Group—a joint workgroup of the Science Panel and PSSRC—provides the PSSRC with scientific
25 advice. The Hood Canal Coordinating Council is the salmon recovery organization for Hood Canal
26 and Eastern Strait of Juan de Fuca summer chum.
- 27 • Priorities and actions for salmon recovery in the Action Agenda derive from the Chinook Salmon
28 Implementation Strategy—a roll-up of the local watershed salmon recovery chapters and
29 identified gaps developed by the Partnership and PSSRC—and the Puget Sound Salmon
30 Recovery Plan. The Puget Sound Salmon Recovery Plan consists of 16 local watershed chapters,
31 a regional chapter, and a nearshore chapter. Therefore, the Action Agenda reinforces the
32 Salmon Recovery Plan’s call to action, enables the coordination of investment and
33 implementation across the two efforts, and incorporates both local and regional priorities for
34 salmon recovery.
- 35 • At the local scale, Lead Entities are citizen-based organizations that oversee implementation of
36 watershed chapters of the Puget Sound Salmon Recovery Plan. Lead Entities identify and
37 prioritize habitat protection and restoration projects that will make the largest contribution to
38 salmon recovery within their watersheds and are linked to the priorities and strategies in their
39 local salmon recovery chapters. Salmon recovery Lead Entities and watershed groups participate

1 in Local Integrating Organizations, ensuring that LIO Ecosystem Recovery Plan long-term
2 strategies incorporate salmon recovery priorities.

- 3 • The Partnership continues to pursue options for further integrating salmon recovery and Puget
4 Sound ecosystem recovery efforts. This approach will not only help to expose and allow
5 intentional reconciliation of competing priorities and tradeoffs within the recovery efforts, but it
6 will drive a more efficient use of public time and resources and make space for more holistic
7 ways to achieve Puget Sound recovery.

8 More information on Puget Sound salmon recovery and how that effort is integrated with Puget Sound
9 recovery is available on the Partnership’s [website](#).

10 [The Role of Tribal Nations](#)

11 Since time immemorial, the native tribes of Puget Sound have managed their ancestral homelands and
12 abundant natural resources in accordance with their unique tribal values and teachings. Puget Sound
13 ecosystems have become degraded and now only supply a fraction of the resources that once used to
14 support the tribes in Puget Sound. Because individual tribes’ livelihoods and cultural identities are at
15 stake, they are on the front lines of Puget Sound recovery and are fiercely committed to protecting
16 salmon and other treaty resources. The tribes’ tireless commitment is a direct reflection of their culture
17 and connection to the land.

18 Tribes are leaders in Puget Sound recovery and have made substantial investments in recovery efforts.
19 Tribes contribute traditional knowledge of natural resource management gained over thousands of
20 years of living on and working these lands. They also offer significant contributions to the body of
21 science that can shape recovery efforts, employing experts who conduct research, monitoring, and
22 evaluation. Tribes develop and implement strategic initiatives that connect science with policy and
23 action, which has contributed to hundreds of successful recovery projects.

24 As sovereign nations, tribes co-manage the natural resources they share with other residents of
25 Washington State as agreed under treaties negotiated with the Federal Government in 1854 and 1855.
26 Treaties are the “Supreme Law of the Land” under the U.S. Constitution. When tribes ceded their land
27 under the treaties, they reserved their right to fish, hunt, and gather at all usual and accustomed
28 grounds and stations. U.S. v. Washington (Boldt decision) and related cases affirmed the tribes’ role as
29 co-managers of treaty-protected resources and their right to half of the sustainably harvestable salmon
30 and shellfish. As affirmed by the U.S. Supreme Court, implicit in this treaty right is the responsibility of
31 the State to protect and restore salmon and the habitats that they need to thrive.

32 Without the persistent and vigorous efforts of tribes to uphold and defend their treaty rights, many
33 more salmon runs would most likely already be extinct. However, threats to tribal treaty rights remain
34 because salmon populations continue to decline as their habitat is being degraded or developed faster
35 than it can be restored and protected. This threat is described in detail in [Treaty Rights at Risk](#), a report
36 written by tribes in 2011 that calls upon the federal government to fulfill its trust responsibility. Tribes
37 also produced the [2020 State of Our Watersheds](#) report, which shows a steady decline in salmon habitat
38 and the harmful effects of culverts, diminishing riparian buffers, and groundwater withdrawals.

1 Tribes recently produced [g^wə́dʒadad](#), (pronounced gwa-zah-did), a tribal approach to identifying and
2 protecting the lands, waters, and ecological processes critical to their rights, resources, and homelands.
3 As translated from Lushootseed, g^wə́dʒadad means “Teaching of our Ancestors.” It acknowledges that
4 tribes’ beliefs and teachings are learned within their homelands, which can never be separated from
5 tribal culture and heritage.

6 Tribal reports have identified—and this Action Agenda recognizes—those efforts to recover Puget Sound
7 and treaty-protected resources have been woefully inadequate. Tribes have been instrumental in
8 identifying and vocalizing the persistent barriers that impede recovery efforts, including a lack of
9 political will to take on the most challenging and necessary actions for recovery such as reforming
10 agricultural practices, population growth, and current land use regulations. Now with climate change it
11 is even more imperative that we take the necessary actions to addresses these challenges.

12 Tribes work closely with state agencies and local organizations on recovery efforts, including the Puget
13 Sound Partnership. The Partnership is committed to supporting the principles of the [Centennial Accord
14 \(1989\)](#), which recognizes the sovereign status of tribes and institutionalizes government-to-government
15 relationships. Tribal representatives serve on the Leadership Council, Ecosystem Recovery Board,
16 Science Panel, and Salmon Recovery Council. The Partnership Tribal Co-Management Council, and the
17 Tribal Management Conference provide forums that the tribes use to engage in guiding Puget Sound
18 Partnership activities, including policy development and project prioritization.

19 “The Tribal Management Conference is a forum created by the U.S. Environmental Protection Agency for
20 the National Estuary Program for Puget Sound. The Tribal Management Conference is a forum where
21 Tribes coordinate their participation in the Action Agenda update and will set priorities for Puget Sound
22 recovery in the Action Agenda and provide direct input into the National Estuary Program decisional
23 framework.

24 The Tribal Management Conference forum is intended to complement the government-to-government
25 relationship between Federal agencies and the State of Washington and Treaty Tribes identified in the
26 Centennial Accord without relieving state and federal agencies of their obligations to consult directly on
27 a government-to-government basis with individual Tribes.

28 As a guiding framework, the Tribal Management Conference will work from the Tribal Treaty Rights at
29 Risk initiative and Tribal Habitat Priorities. The Tribal Management Conference is a forum that will focus
30 tribal participation in the protection and restoration of the Puget Sound ecosystem to protect all tribal
31 treaty reserved rights, and with further emphasis on creating opportunities to actually protect and
32 recover Puget Sound through the implementation of the actions necessary to produce sustainable and
33 harvestable salmon and shellfish populations, and to provide clean water.”

34 **Implement**

35 The Action Agenda guides the work of diverse partners, each with a unique and important role to play in
36 resolving the challenges posed by our shared recovery goals. State agencies use the Action Agenda
37 strategies and actions to guide and support existing programs and new budget requests. Alignment with
38 the Action Agenda is the basis for legislative outreach and state agency budget ranking. One of the

1 Partnership’s key responsibilities, as a backbone organization, is to mobilize funding to advance
2 implementation of the Action Agenda. The Partnership uses the Action Agenda to evaluate the funding
3 needs for recovery work, advocate for state and federal appropriations, and support our partners when
4 they seek funding.

5 Every two years the Partnership provides the Governor, the Office of Financial Management, and
6 legislative fiscal committees a ranked list of state agency budget proposals that stand to affect Puget
7 Sound recovery. This list guides the Governor’s decisions about what and how much should be funded.
8 The ranking process objectively assesses the extent to which a funding proposal is consistent with
9 priorities in the Action Agenda and Science Work Plan.

10 The Partnership also recognizes the very significant local and private investments which—though more
11 difficult to quantify—are unquestionably critical to Puget Sound recovery. Action Agenda strategies and
12 actions support the efforts of local governments to establish and expand important programs—and
13 secure stable financing—to advance recovery. Other partners such as businesses, federal agencies, and
14 non-profits may use the Action Agenda to guide their work. Additional information on the funding
15 strategy for Puget Sound recovery is detailed in Appendix III.

16 Analyze

17 Partners collaborate to evaluate progress in implementing the Action Agenda and toward achieving
18 Puget Sound statutory recovery goals in the following ways:

- 19 • Monitoring recovery progress through a suite of interconnected indicators (*Puget Sound*
20 *indicators*),
- 21 • Assessing the effectiveness of recovery actions in achieving desired outcomes (*Effectiveness*
22 *Evaluation*),
- 23 • Scenario planning to test the robustness of our strategies under different possible futures
24 (*Alternative Future Scenarios*), and
- 25 • Collaborating to monitor, share, summarize, and utilize scientific information in support of Puget
26 Sound recovery through the PSEMP and the Science Program (*The Role of PSEMP*).

27 To support these efforts, the Partnership and supporting Management Conference forums work closely
28 with many partners who collect data on ecosystem status and trends, human wellbeing, and recovery
29 progress.

30 Puget Sound Indicators

31 *Vital Sign Monitoring*

32 Ecosystem conditions—including human wellbeing—and progress toward achieving recovery are
33 assessed by the indicators in the Puget Sound Vital Signs. Status and trend data for many Vital Sign
34 Indicators are compiled by the Partnership from a variety of monitoring programs in Puget Sound,
35 including state and federal agencies, tribal nations, local jurisdictions, and nongovernmental
36 organizations. Technical and scientific experts from those organizations provide the data and oversee
37 the interpretation of the results for each Vital Sign indicator.

1 In June 2020, the Leadership Council unanimously approved revisions to the [Puget Sound Vital Signs and](#)
2 [indicators](#) that help to give more specificity to the statutory goals for restoring and protecting the health
3 of Puget Sound. As a result, the Partnership now tracks the condition of 23 Vital Signs with the use of 73
4 indicators, some of which are slated for future development. The adoption affirms the Vital Signs and
5 indicators as the measures of “ultimate” desired outcomes shared and embraced by the whole of the
6 Puget Sound recovery community. The Partnership’s [Vital Sign website](#) is rich with information on each
7 Vital Sign indicator

8 *Action Agenda Monitoring*

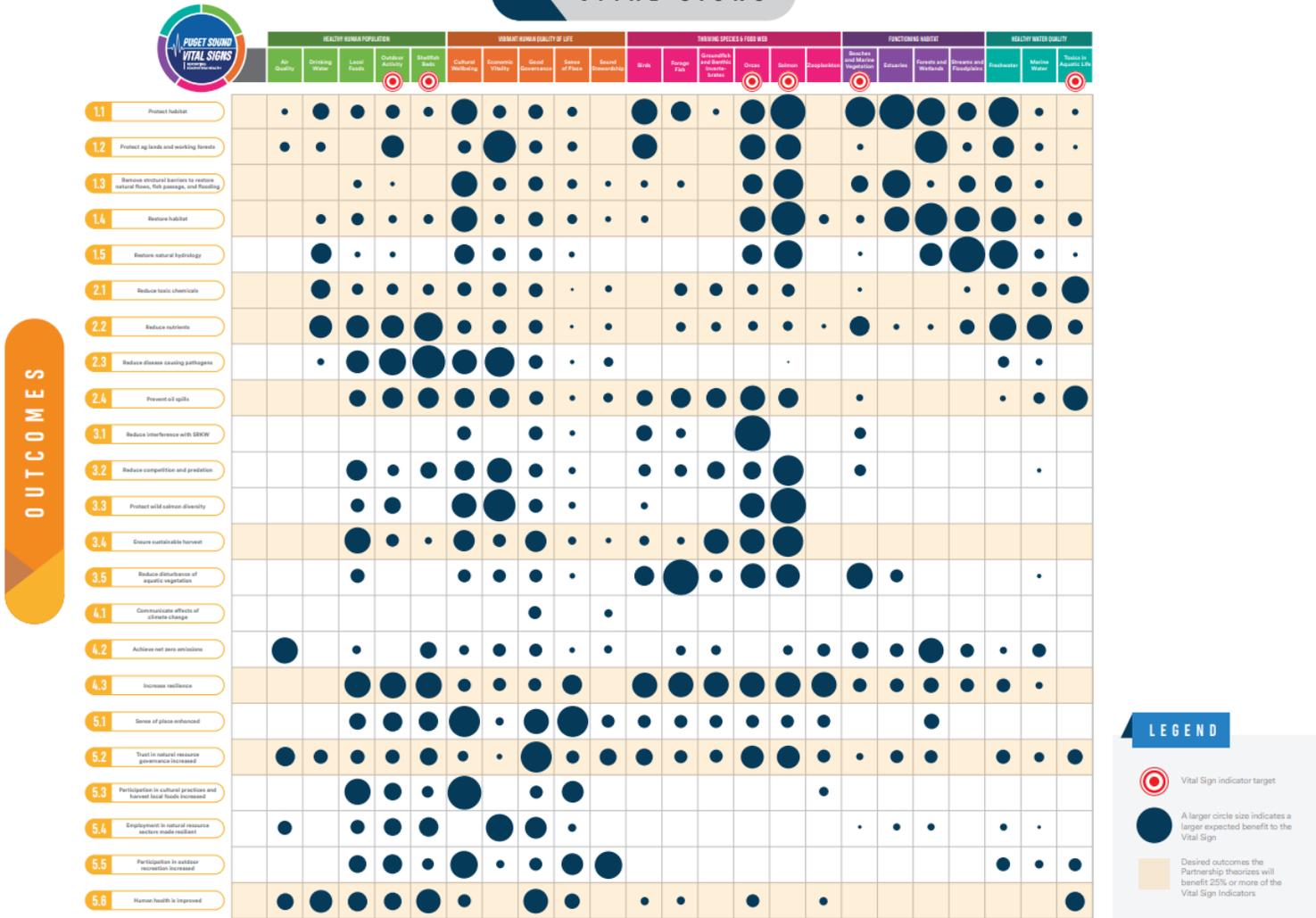
9 Action Agenda Progress Indicators (Progress Indicators) monitor and evaluate the extent to which we
10 are successfully implementing the Action Agenda and yielding desired outcomes. Progress Indicators are
11 designed to help us interpret why we are or are not seeing desired improvements in Puget Sound
12 ecosystem conditions, by measuring our human actions that are negatively or positively impacting Vital
13 Signs. The Partnership intends to work with the recovery community to develop the Progress Indicators
14 and to set targets for a subset of them to provide an agreed upon way to evaluate success on 4-to-12-
15 year timelines.

16 Progress Indicator Action Plans will serve as roadmaps for interpreting Progress Indicator trends, linking
17 indicator data to other data analyses and effectiveness evaluation efforts, and identifying desired
18 actions for partners to take in response to Progress Indicator trends and findings.

19 In 2021, the Partnership developed a tool that can help inform decisions about Vital Signs and outcomes
20 on which to focus target setting and support decisions about the focus of Progress Indicator
21 development. This draft tool, the Vital Signs-Outcomes Matrix, captures hypotheses about how the
22 effective implementation of any one outcome will benefit a Vital Sign. The methodology for
23 determining these relationships can be provided upon request. The chart below presents a visual
24 representation of the theorized relationships. This chart will be the focus of continued iteration and
25 refinement as work to identify Progress Indicators and targets progresses.

26

VITAL SIGNS



1
2
3
4
5
6
7
8
9
10
11
12

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 Partnership’s Salmon Recovery Council, the 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

1 actions, we can highlight successes and improve our strategies by funding actions that are the most
2 effective.

3 *Alternative Future Scenarios*

4 To achieve our Beyond 2020 Vision, we must proactively plan for the future. Population growth,
5 changing climate and ocean conditions, governance, public perceptions, economics, and other factors
6 are changing the region in ways that we do and do not understand. The Alternative Future Scenarios
7 project is a structured way of examining the range of possible futures based on combinations of drivers
8 (e.g., high population growth and severe climate change). The project combines narrative storytelling
9 and quantitative assessment to explore how different suites of actions or interventions (e.g.,
10 restoration, policy change, etc.) affect outcomes the recovery community cares about. The outcomes
11 could be ecological (e.g., functional habitat), biophysical (e.g., estimated salmon abundance), or social
12 (e.g., human health and quality of life). These outcomes are directly related to the desired outcomes
13 defined through Vital Signs and target setting. Through this process, scenarios empower communities to
14 plan for an uncertain future by exploring multiple possibilities of what might happen.

15 Future scenarios will help to illuminate strategies that are robust and resilient by evaluating their
16 efficacy under alternative future trajectories. Some strategies, for example, could be highly successful
17 under multiple possible futures. In other cases, some strategies may only be effective under certain
18 conditions, and this understanding will help the recovery community proactively pivot if those
19 conditions emerge. This analysis will also help identify potential tradeoffs and multi-benefit solutions.

20 The scenarios work aligns with our Guiding Principles. Specifically, scenarios will help understand the
21 threats and opportunities associated with changing climate and population growth. Through creating
22 scenario narratives, the project functions as a mobilizing tool to inspire and engage audiences. Through
23 qualitative and quantitative modeling, scenarios utilize the best available science to map current and
24 potential climate and population trajectories and assess alternative policies and management actions.
25 Modeling will also allow the recovery community to learn and adapt by understanding the effects of
26 actions before they are taken, saving critical time and resources. Scenarios inherently take a holistic
27 approach, integrating social and ecological systems, and the intersection of multiple drivers of change.
28 Most importantly, scenarios help us look forward together to anticipate future opportunities and
29 challenges and plan accordingly.

30 *The Role of PSEMP*

31 PSEMP is a collaborative network of subject matter experts and practitioners who collect, share,
32 analyze, and synthesize data and information about the status of the Puget Sound ecosystem and the
33 effectiveness of recovery actions. PSEMP brings together diverse partners—from state, federal, tribal
34 nations and local government agencies, non-governmental organizations, watershed groups, businesses,
35 academia, Local Integrating Organizations (LIOs), and other private and volunteer groups and
36 organizations—with the goal of coordinating data collection, findings, and assessments that are most
37 relevant to Puget Sound recovery. For example, many of the organizations and individuals that monitor
38 Vital Sign Indicators and other Puget Sound indicators engage in PSEMP.

1 The Puget Sound Partnership supports coordination of PSEMP as part of its monitoring program to
2 provide vetted, scientific information about ecosystem conditions, progress toward recovery, and
3 effectiveness of actions. The monitoring program is called for in the Partnership's enabling statute ([RCW](#)
4 [90.71.290](#)). The Partnership also funds collaborative monitoring-related projects through the [Monitoring](#)
5 [to Accelerate Recovery program](#), intended to meet priority information needs of the Puget Sound
6 indicator system and recovery partners implementing strategies. The PSEMP Steering Committee plays a
7 central role in the Monitoring to Accelerate Recovery solicitation and proposal evaluation process, and
8 PSEMP Work Groups and participating organizations play an active collaboration role to ensure the
9 process and products associated with funded projects is credible and relevant to the intended audiences
10 of each project.

11 The Partnership and PSEMP collaborated to develop a [2018-21 strategic plan](#) that outlines a mission and
12 objectives for PSEMP, focused on supporting collaboration, adaptive management, and communication.
13 The 2019 PSEMP [Communications Plan](#) further expounded on PSEMP's role and key audiences to guide
14 PSEMP Work Groups, the Steering Committee, and investments in collaborative projects. In 2020, the
15 PSEMP Steering Committee recognized Justice, Equity, Diversity, and Inclusion (JEDI) as a priority that
16 was not well-recognized in these plans and formed a JEDI Subcommittee that is working in coordination
17 with related groups and efforts. In 2022, the PSEMP strategic plan will undergo an update, in alignment
18 with updated PSEMP priorities and this Action Agenda.

19 **Adapt and Share**

20 Communicating Science, Monitoring, and Evaluation Findings

21 The Partnership supports partners to communicate key findings from indicator reporting, science and
22 monitoring syntheses, and effectiveness evaluations. Coordination efforts ensure emerging evidence
23 about recovery progress, proven approaches, and key uncertainties informs implementation, policy, and
24 planning efforts. Examples of communication tools and venues the Partnership uses to facilitate shared
25 learning include:

- 26 • **Puget Sound Info.** The Puget Sound Info platform is the recovery community's shared platform
27 for tracking and communicating Puget Sound recovery progress. Information about
28 implementation progress and ecosystem conditions is reported and maintained on Puget Sound
29 Info and targeted at multiple audiences, from journalists, to researchers, to policymakers.
- 30 • **State of the Sound.** The State of the Sound reports on recovery progress as tracked by Puget
31 Sound Indicators and effective evaluation. It helps partners and decision-makers understand the
32 state of the Puget Sound ecosystem, where progress is being made, where challenges remain,
33 and where future action and focused investment are needed. The most recent report, the 2021
34 State of the Sound, can be found [here](#). The State of the Sound, which is updated every two
35 years, addresses the following questions.
 - 36 1. How is the ecosystem doing?
 - 37 2. Are we making progress in implementing identified recovery actions?
 - 38 3. What have we learned about the effectiveness of recovery efforts and what are our next
39 steps?

- 1 • State of the Salish Sea Report and recent editions of the State of Our Watersheds and State of
2 Salmon are other important products developed by partners. are other important products
3 developed by partners.
- 4 • **Salish Sea Ecosystem Conference (SSEC)**. Every two years, the Salish Sea recovery community—
5 including scientists, First Nations and tribal nations representatives, resource managers,
6 community and business leaders, policy makers, educators, and students—present and share
7 the latest research on the state of the ecosystem that will guide future actions for protecting
8 and restoring the Salish Sea ecosystem. SSEC provides a forum for sharing ecosystem
9 information and fosters collaboration between the Puget Sound and Canadian recovery
10 community.
- 11 • **Board and partner work groups and public workshops**. The Partnership works with partners to
12 bring timely and critical findings about Puget Sound recovery progress to various boards,
13 steering committees, and partner work groups as opportunities and needs arise. Board meetings
14 serve as an important public venue to disseminate emerging evidence to the recovery
15 community and identify adaptive actions that can be taken by the Management Conference to
16 accelerate progress. Partners also facilitate shared learning through periodic workshops and
17 communications products.

18 [Adaptively Managing Contributing Plans](#)

19 All local and regional plans—including LIO Ecosystem Recovery Plans, the Puget Sound Salmon Recovery
20 Plan, Implementation Strategies, and the Action Agenda—are periodically updated to reflect emerging
21 evidence of what is working, where we are falling short, what tools and resources are needed, and
22 where we need to focus our efforts. As the recovery community continues to learn about the Puget
23 Sound ecosystem, the most effective recovery actions, and the best ways to engage with and meet the
24 needs of all the partners in recovery, the Action Agenda and collective recovery effort becomes more
25 effective and efficient over time.

- 26 • **LIO Ecosystem Recovery Plans and Implementation Strategies** are living documents that are
27 adaptively managed and updated. For example, recognition of unaccounted-for barriers or shifts
28 in opportunities to carry out plans effectively may necessitate updates to the logic chains that
29 inform Implementation Strategies and LIO plans to ensure they are sound, consistent, and
30 accurate. This means that as new information becomes available, as additional engagement
31 changes the direction, or as evidence emerges that strategies are no longer effective without
32 significant changes, the recovery community can update these plans to keep them current and
33 effective. New and updated plans may identify new information needs or approaches for
34 accelerating recovery progress. If so, the recovery community may recognize gaps in the 2022-
35 2026 Action Agenda Implementation Plan and pursue options for incorporating and acting upon
36 the most recent learning and priorities. This flexible approach will help to ensure that decisions
37 about ecosystem recovery priorities are based on the best available information about the
38 effectiveness of management investments. This approach will also help accommodate the
39 profound uncertainties about how the Puget Sound ecosystem—human and ecological—
40 responds to stresses and to different management efforts.

1 • **The Puget Sound Salmon Recovery Plan**, like the Action Agenda, is updated on a structured
2 timeline and similarly incorporates changes to strategies based on emerging evidence about the
3 most important approaches to achieving salmon recovery.

4 Keeping these contributing plans updated allows for evidence-based adaptive management of the
5 Action Agenda. By synthesizing content from these plans, soliciting subject matter review, and
6 facilitating broad partner engagement, the Action Agenda update process ensures that recovery
7 priorities reflect the recovery community’s collective knowledge and diverse perspectives on the most
8 important approaches to achieve our statutory recovery goals.

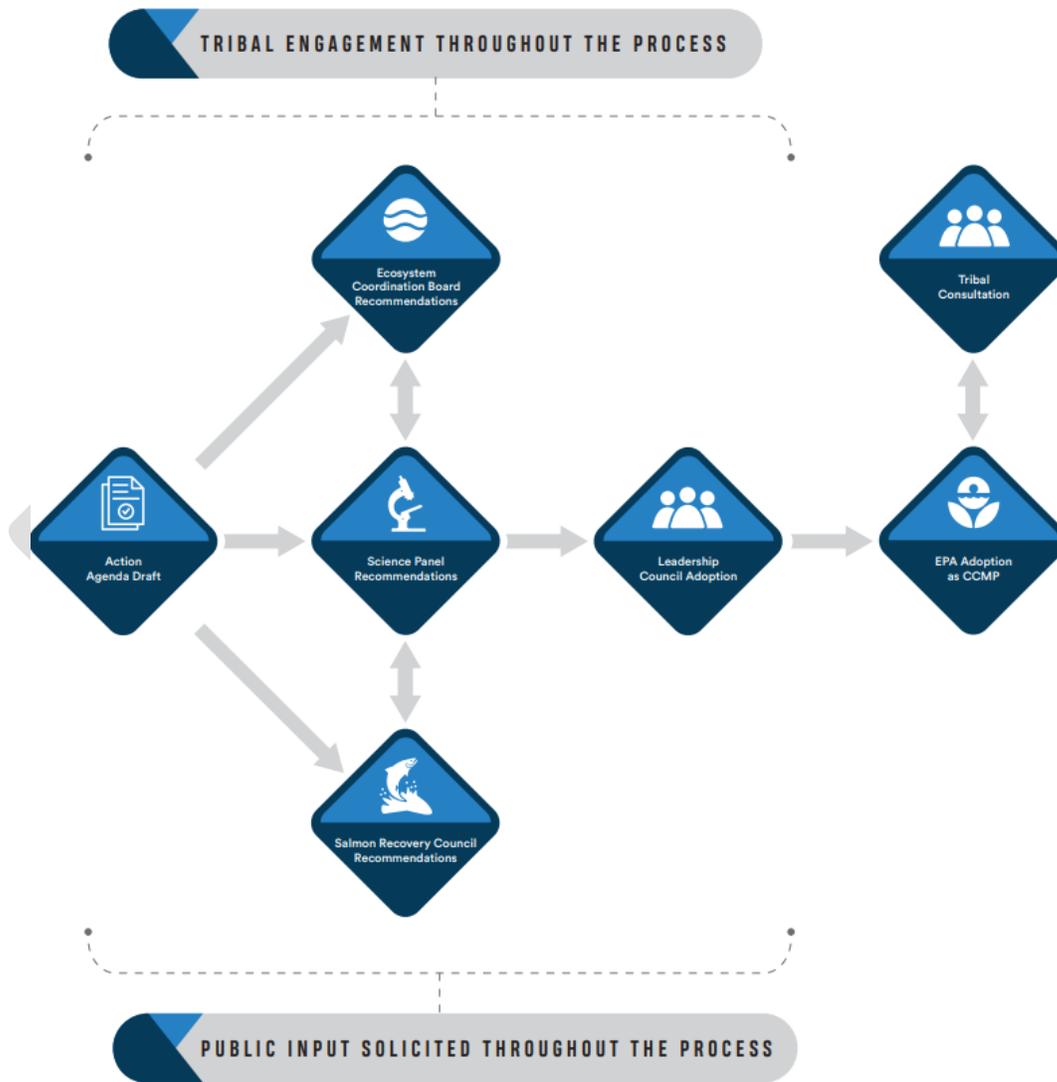
9

DRAFT

1 **Appendix II: Partners in Recovery**

2 Ecosystem recovery is only possible with the foundational work and partnership of many organizations
3 and champions committed to long-term protection of Puget Sound. Government agencies, tribal
4 nations, private-sector institutions, academia, nongovernmental organizations, community-based
5 organizations, and members of the broader public have each led and stewarded the care of Puget
6 Sound. The Puget Sound Partnership (the Partnership) was created to steward the work of this broad set
7 of partners, encouraging participation, and aiming to reflect the diversity of our region’s growing,
8 multicultural population.

9
10 This appendix describes the governing structure of the Partnership and the roles and responsibilities of
11 the partners involved in Puget Sound recovery—and, specifically, in the updating of this Action Agenda.
12 The boards and organizations formally associated with the Partnership are depicted in the graphic
13 below. These groups and additional partners are described below.



14

1 Interested members of the public are welcome to engage in many of the supporting groups described in
2 this section. Community members and residents can also support the recovery effort through their own
3 actions by, for example, voting for programs and candidates that support the stewardship of the Puget
4 Sound and by considering sustainability and the environment in their purchasing decisions.

5 Efforts are underway within the Partnership to broaden the scope of opportunities to more
6 meaningfully engage communities. The Partnership is mandated by the Healthy Environments for All
7 (HEAL) Act SB5141 to implement environmental justice strategies and actions intended to reduce
8 environmental and health disparities of Puget Sound communities. This requires the Partnership to,
9 among other actions, create and implement an equitable community engagement plan that guides
10 engagement with overburdened communities and vulnerable populations for new and existing
11 programs.

12 The HEAL Act defines vulnerable populations as “population groups that are more likely to be at higher
13 risk for poor health outcomes in response to environmental harms. This includes, but is not limited to:

- 14 • Racial or ethnic minorities;
- 15 • Low-income populations;
- 16 • Populations disproportionately impacted by environmental harms; and
- 17 • Populations of workers experiencing environmental harms.”

18 Overburdened community is defined as “a geographic area where vulnerable populations face
19 combined, multiple environmental harms and health impacts, and includes, but is not limited to, highly
20 impacted communities.” The Partnership’s community engagement plan and on-going efforts to work
21 toward equity and environmental justice, including the implementation of the HEAL Act, will continue to
22 evolve throughout the timeline of this Action Agenda. Possible outcomes will include identifying new
23 members of the recovery community, engaging with new and diverse partners in our efforts to recover
24 the Puget Sound, and updating our governing structure as we continue to become more informed,
25 inclusive and equitable.

26 **Who are the Partners in Recovery?**

27 **Puget Sound Partnership**

28 The Puget Sound Partnership coordinates the region’s collective effort to recover Puget Sound. The
29 Partnership brings together hundreds of partners to mobilize action and investments around a common
30 agenda to protect and restore Puget Sound. The Partnership is not a regulatory, grant, nor on-the-
31 ground implementing agency. It facilitates collaboration to optimize Puget Sound recovery. The
32 Partnership provides leadership through the collective development of the Action Agenda, progress
33 measurements, and funding strategy. The Comprehensive Plan provides more detail on the
34 Partnership’s backbone role. The Executive Director is appointed by and reports to the Governor to
35 strategically focus, manage, and guide the work of the Partnership.

1 Puget Sound Partnership Boards and Management Conference
2 The Puget Sound Partnership’s three statutory boards (Leadership Council, Ecosystem Coordination
3 Board, and Science Panel) direct and support the Partnership in its charge of mobilizing and accelerating
4 the science-informed effort to recover Puget Sound. Additionally, two advisory councils (the Salmon
5 Recovery Council and the Puget Sound Ecosystem Monitoring Program Steering Committee) advise and
6 provide information to the Leadership Council related to Puget Sound recovery. These boards and
7 advisory councils are integral to the Partnership’s role and coordinate their priorities for maximum
8 effectiveness via system-wide shared goals.

9

10 *Leadership Council*

11 The Governor appoints the seven at-large member seats of the Leadership Council, which sets policy
12 and strategic direction for Puget Sound recovery. The Leadership Council adopts, revises, and guides the
13 focus and development of the Action Agenda. In addition, the Leadership Council serves as the regional
14 salmon recovery organization for Puget Sound salmon species (except Hood Canal summer chum) and
15 oversees implementation of the Puget Sound Salmon Recovery Plan with advice and support from the
16 Puget Sound Salmon Recovery Council. Advice and recommendations from boards, the Puget Sound
17 Salmon Recovery Council, partners, and the public inform the Leadership Council’s decisions. Members
18 of the Leadership Council also convene partners annually to identify and recommend legislative policy
19 and budget priorities to help guide the Washington State legislature. As leaders from around Puget
20 Sound, Council members work on high-priority policy issues that accelerate the recovery effort and
21 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](#).

22

23 *Ecosystem Coordination Board*

24 Designed to serve as the voice for diverse partner groups, the Ecosystem Coordination Board includes
25 one representative from each geographic action area, two representatives from the business
26 community, two representatives from environmental interests, three representatives from tribal
27 nations, one representative each from counties, cities, and port districts, and three representatives each
28 from state and federal agencies with environmental management responsibilities in Puget Sound. The
29 27-member board focuses on problem solving and the practical aspects of implementing the Action

1 Agenda and component plans and strategies. The board advises the Leadership Council and the
2 Partnership’s Executive Director, on major strategic and implementation decisions. The board is
3 responsible for seeking funding and other resources, assisting with public education activities, and
4 encouraging communication and collaboration among all the partners involved in Puget Sound recovery.
5 Consisting of effective project and program implementers, the board focuses on overcoming persistent
6 barriers to the success of Puget Sound recovery efforts. Many board members are also elected officials,
7 including state representatives and senators, city councilmembers, county commissioners, and tribal
8 nations representatives. Instituting a caucus organization, these members have the ability to share their
9 diverse perspectives on recovery programs and actions with their respective networks, to learn from
10 each other about what is needed to recover Puget Sound, and to ensure government programs and
11 actions are designed with Puget Sound recovery in mind.
12

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.

13

14 *Science Panel*

15 The Science Panel provides scientific advice to the Leadership Council and guidance for preparing the
16 Action Agenda and the State of the Sound. The Science Panel has assisted in developing an ecosystem-
17 level strategic science program, establishing indicators of ecosystem health, setting policy-based
18 recovery targets, and ensuring the scientific basis for the Action Agenda and Implementation Strategies.
19 The Science Panel is specifically responsible for guiding development and implementation of a regional
20 monitoring program (Puget Sound Ecosystem Monitoring Program), identifying critical research needs,
21 and preparing the Strategic Science Plan, Science Work Plan, and Puget Sound Science Update. The
22 Panel’s guidance to the Partnership, Leadership Council, and Ecosystem Coordination Board forms the
23 basis of the strategic approach to Puget Sound recovery articulated in the Action Agenda.
24

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.

25

1 *The Salmon Recovery Council*

2 The Salmon Recovery Council (SRC) includes representatives from the diverse constituents working on
3 salmon recovery throughout the Sound, including representatives from federal agencies, state agencies,
4 local jurisdictions, all Puget Sound tribes, all Puget Sound watersheds, business and agriculture entities,
5 and environmental entities. The SRC advises the Leadership Council on decisions relating to salmon
6 recovery and the implementation of the Puget Sound Salmon Recovery Plan. The SRC’s
7 recommendations help set priorities for the types of recovery work to conduct, determine what issues
8 to focus on, and provide recommendations for future projects and funding. More information about the
9 SRC and subcommittees is included in the *Supporting organizations and work groups* section below.

10 *Puget Sound Ecosystem Monitoring Program*

11 PSEMP, described in detail in Appendix I, is a collaborative network of subject matter experts from many
12 monitoring organizations and different parts of the region. Together, they generate, organize,
13 synthesize, and communicate scientific information, across political and organizational boundaries, to
14 track ecosystem conditions that directly address management and science questions critical to Puget
15 Sound recovery. This collaborative network includes partners from state, federal, tribal nations,
16 Canadian, and local government agencies; nongovernmental organizations; watershed groups; business;
17 academic researchers; Local Integrating Organizations, and other private and volunteer groups and
18 organizations. Topical work groups convene to create and support a collaborative, inclusive, and
19 transparent approach to regional monitoring and assessment that builds upon and facilitates
20 communication among the many monitoring programs and efforts operating in Puget Sound, the greater
21 Salish Sea, and statewide. A Steering Committee and Partnership staff help link the monitoring
22 community to the Partnership’s boards and other managers and decision makers to support science-
23 based decisions and adaptive management of the Puget Sound recovery effort.

24 In 2020, the Partnership started rotating the Leadership Council meetings around the Puget Sound to co-
25 host a local forum with local leadership, including Local Integrating Organizations (LIO) and Lead Entity
26 (LE) leadership and committee members, to address the intersection of local and regional recovery
27 priorities. In 2021, the Partnership started this same process with the Ecosystem Coordination Board.
28 These rotating meetings serve to:

- 29 • Expand local decision-maker engagement with the Puget Sound recovery community, especially
30 those elected officials who are not currently designated members of the Management
31 Conference boards and Salmon Recovery Council, or already members of their respective LIO or
32 LE committees.
- 33 • Discuss local priorities and determine how the Leadership Council and/or Ecosystem
34 Coordination Board can support action to address the gaps and barriers related to those
35 priorities.
- 36 • Discuss regional priorities and determine how they might be supported at the local level.

37 These and all the efforts described in this Appendix will continue strengthening and supporting the
38 partners working together and toward Puget Sound protection and recovery.

1 Supporting Organizations and Work Groups

2 Multiple boards, work groups, advisory bodies, and implementing networks affiliated with the Puget
3 Sound Partnership provide scientific, advisory, and implementation support for Puget Sound recovery.
4 These groups provide strategic advice and expert guidance on the Action Agenda update process,
5 setting recovery targets, and the Science Work Plan. They also provide specific guidance on the
6 strategies for protecting and restoring watersheds, protecting, and restoring nearshore and marine
7 habitat, and preventing, reducing, and controlling nutrient, toxic, and pathogen pollution loadings in
8 Puget Sound. Conservation Districts, for example, provide technical assistance and incentives to private
9 landowners and working lands managers to implement best management practices. Many of these
10 groups exist for reasons beyond Puget Sound recovery and give generously of their time for our
11 collective efforts to protect this place. Many standing subcommittees and advisory groups also support
12 the development and implementation of the Action Agenda. Members and participants are drawn from
13 state and federal agencies and leadership bodies, as well as key partners with subject expertise and
14 interest in Puget Sound recovery. Contributors with explicit roles are described below.
15

16 Strategic Initiative Leads and Advisory Teams

17 In 2012, the Puget Sound Partnership’s Leadership Council established three initiatives to tackle multiple
18 issues critical to Puget Sound recovery – Stormwater, Habitat, and Shellfish. To manage this effort,
19 agency and institutional partners assembled into three Strategic Initiative Lead teams, charged with
20 bringing people and ideas together to improve water, habitat, and communities. Strategic Initiatives are
21 a way of categorizing priority topics for recovery: stormwater, habitat, and shellfish (all discussed in the
22 Implementation Plan). The Strategic Initiatives direct action and resources toward the most significant
23 scope of problems facing Puget Sound. Strategic Initiatives are increasingly informed by more focused
24 and detailed Implementation Strategies.
25

- 26 • **Strategic Initiative Leads** provide technical and programmatic leadership to help implement the
27 Action Agenda through strategy development and subaward investments of Puget Sound
28 Geographic funding appropriated by Congress to EPA. Strategic Initiative Leads are selected by
29 the EPA through a competitive grant process and are currently led by:
 - 30 ○ Stormwater lead – Washington Department of Ecology
 - 31 ○ Habitat lead – Washington Department of Natural Resources and Department of Fish
32 and Wildlife
 - 33 ○ Shellfish lead – Washington Department of Health
- 34 • **Strategic Initiative Advisory Teams** are an opportunity for partners representing diverse
35 organizations and perspectives to provide technical and policy input to the Strategic Initiative
36 Leads on priorities and funding. Team members are technical and policy experts that represent a
37 range of local, regional, and tribal nations experience and perspectives. The Advisory Teams
38 were first established in 2016 and members serve for two-year terms. The Strategic Initiative
39 Leads and Puget Sound Partnership jointly coordinate the Strategic Initiative Advisory Teams,
40 with the Strategic Initiative Leads providing technical and policy leadership and the Partnership
41 providing process support.
42

43 Together, the Strategic Initiative Leads and Strategic Initiative Advisory Teams are essential to the
44 development and implementation of the Action Agenda and have the following responsibilities:

- 1 • Propose regional recovery and protection priorities to the Puget Sound management
2 community.
- 3 • Coordinate with regional, tribal nations, and local partners to improve and adaptively manage
4 Puget Sound strategic planning
- 5 • processes.
- 6 • Collaborate to address issues that affect all three Strategic Initiatives, such as climate change.
- 7 • Develop, manage, and implement Implementation Strategies.
- 8 • Establish the key sequences of actions to lead from present conditions to long term goals.
- 9 • Solicit, identify, review, and prioritize local and regional funding requests.
- 10 • Manage grants which implement priority Puget Sound recovery work from the Action Agenda
11 Implementation Plan.
- 12

13 Local Integrating Organizations

14 Local Integrating Organizations are local forums that collaboratively work to develop, coordinate, and
15 implement strategies and actions that contribute to the protection and recovery of the local ecosystem.
16 LIOs provide a venue for local stakeholders and partners to identify and develop locally driven recovery
17 strategies. Elected officials, local government staff, tribal nations members and natural resources staff,
18 non-profit organizations, watersheds, marine resources committees, salmon recovery groups, interest
19 groups, agriculture, businesses and industry members, educational organizations, and residents
20 participate in LIOs to collaboratively develop and foster implementation of their local Ecosystem
21 Recovery Plans and the Puget Sound Action Agenda. LIOs meet regularly to coordinate projects, discuss
22 how to obtain and allocate funds, exchange and synthesize research, and identify priority ecosystem
23 recovery strategies and actions that are science-based and that incorporate community needs and
24 values.

25 As of December 2018, the Leadership Council has recognized LIOs in ten geographic areas (Figure 5-1).
26 Each organization receives capacity funding to support planning and coordination efforts. The newest
27 LIO, the Puyallup-White River LIO, formed in 2020 and completed its recovery plan in 2021. The lack of a
28 LIO in the Samish/Skagit watershed has been identified as an important gap in the planning process.

29 In 2020, LIOs began co-hosting local forums with the Partnership Boards to address the intersection of
30 local and regional recovery priorities. The Leadership Council and Ecosystem Coordination Boards now
31 meet twice a year with different LIOs around the Sound to support action to address the gaps and
32 barriers related to shared priorities.

33 LIOs adaptively manage locally focused Ecosystem Recovery Plans and identify priority actions that align
34 with their recovery plans and best serve their communities. LIOs provide several substantial
35 contributions to the development and implementation of the Action Agenda:

- 36 • Identifying near-term ecosystem recovery priorities and providing local context
- 37 • Developing collaboration and co-production principles with the Partnership and the Strategic
38 Initiative Leads

- 1 • Reviewing and elaborating on strategies and actions to identify key opportunities for
2 implementation
- 3 • Suggesting revisions to actions
- 4 • Recommending LIO-supported actions to receive National Estuary Program (NEP) Puget Sound
5 geographic funds
- 6 • Supporting ongoing programs
- 7 • Coordinating across government jurisdictions, tribal nations, and community groups to elevate
8 and act on Puget Sound recovery issues

9
10 Detailed information about these organizations is available on the [Local Integrating Organizations](#)
11 [website](#) and [PS Info](#).

12 Puget Sound Salmon Recovery Council and Subcommittees

13 Described in the Management Conference section above, the Puget Sound Salmon Recovery Council
14 (PSSRC) predates the Puget Sound Partnership and remains in place to advise the Leadership Council in
15 carrying out its salmon recovery responsibilities as the designated regional organization for salmon
16 recovery in Puget Sound ([RCW 77.85.090](#)). The PSSRC developed the Chinook Implementation Strategy,
17 with assistance from the Partnership, and oversees adaptive management and regional implementation
18 of the Puget Sound Salmon Recovery Plan.

19
20 The PSSRC currently has several subcommittees and advisory groups. For example, the Salmon Science
21 Advisory Group—a joint workgroup of the Science Panel and PSSRC—provides scientific support to the
22 PSSRC to assist with implementing and updating the Puget Sound Salmon Recovery Plan, Action Agenda,
23 and Science Work Plan. The PSSRC also has a Funding Subcommittee working to mobilize new sources of
24 funding for the salmon recovery effort, and a Regulatory & Incentives Subcommittee working to
25 improve both voluntary and regulatory mechanisms to protect freshwater, estuarine, and marine
26 habitats on which Chinook salmon rely. The Puget Sound Salmon Recovery Plan, Chinook
27 Implementation Strategy, and the forthcoming Puget Sound Steelhead Recovery Plan serve as important
28 foundations for the Habitat Strategic Initiative. The PSSRC’s recovery planning priorities, which can be
29 found *on the Partnership’s website*, provide more information about these plans and current update and
30 development efforts.

31 32 Salmon Recovery and Watershed Groups

33 State, federal, and local agencies, tribal nations, community groups, businesses, and nonprofit
34 organizations work together to implement the Puget Sound Salmon Recovery Plan at both the
35 watershed and regional scales. The plan outlines strategies and actions for achieving recovery of
36 threatened salmon stocks in Puget Sound.

37
38 At the local scale, Lead Entities are the watershed-based organizations that oversee implementation of
39 watershed chapters of the Puget Sound Salmon Recovery Plan and develop lists of salmon habitat
40 recovery projects for funding every year. Salmon recovery Lead Entities and watershed groups
41 participate in Local Integrating Organizations, ensuring that the Local Integrating Organizations’
42 Ecosystem Recovery Plans incorporate salmon recovery priorities.

1 Lead Entities are established in law ([RCW 77.85](#)). Primary among their responsibilities is management of
2 an annual process to identify and prioritize habitat protection and restoration projects that will make
3 the largest contribution to salmon recovery within their watersheds. These projects undergo significant
4 technical and policy review at the local scale before being forwarded to the statewide Salmon Recovery
5 Funding Board for further technical review and approval. Some of these projects may also be
6 incorporated in the Action Agenda as implementation activities in the Implementation Plan. More
7 information on Lead Entities’ roles and work is available on the [Partnership’s Salmon Recovery website](#).
8

9 Northwest Straits Commission and Marine Resources Committees

10 The Northwest Straits Commission is a regional coordinating body of community volunteers and
11 scientists. The commission provides funding, training, and support to seven county-based Marine
12 Resources Committees. The Northwest Straits Commission facilitates regional coordination and
13 connects the committees’ work to regional planning processes such as the Action Agenda and Puget
14 Sound Nearshore Estuary Restoration Program.
15

16 Environmental Caucus

17 The Environmental Caucus is represented on both the Ecosystem Coordination Board and the Puget
18 Sound Salmon Recovery Council. The Environmental Caucus—which includes but is not limited to
19 nongovernmental environmental organizations—brings an important perspective to the Ecosystem
20 Coordination Board and Salmon Recovery Council in their advisory roles to the Leadership Council on
21 funding and implementation of the Action Agenda and the Puget Sound Salmon Recovery Plan.
22

23 Academic and Research Institutions

24 Several programs from regional academic institutions contribute to Puget Sound recovery. For example,
25 the Puget Sound Institute was established by the University of Washington, the Environmental
26 Protection Agency, and the Puget Sound Partnership to support the Partnership as the bridge between
27 the scientific community and the groups tasked with protecting and restoring Puget Sound. Likewise, the
28 Washington State University Stormwater Center brings significant expertise to the Stormwater Strategic
29 Initiative. In addition, the following organizations contribute to reporting on indicators, including:

- 30 • ECO Resource Group
- 31 • Greene Economics LLC
- 32 • King County
- 33 • National Oceanic and Atmospheric Administration
- 34 • Oregon State University
- 35 • Puget Sound Partnership
- 36 • United States Geological Survey
- 37 • Washington Department of Ecology
- 38 • Washington Department of Fish and Wildlife
- 39 • Washington Department of Health
- 40 • Washington Department of Natural Resources

1 **Governmental Entities**

2 Federal, state, and local agencies, intergovernmental bodies, and Tribal nations collaborate with the
3 Puget Sound Partnership and are important agents of leadership, funding, and regulatory support. These
4 groups are described below.

5
6 **Tribal Nations**

7 As sovereign nations, tribes co-manage the natural resources they share with other residents of
8 Washington State as agreed under treaties negotiated with the Federal Government in 1854 and
9 1855. Treaties are the “Supreme Law of the Land” under the U.S. Constitution. When tribes ceded their
10 land under the treaties, they reserved their right to fish, hunt, and gather at all usual and accustomed
11 grounds and stations. U.S. v. Washington (Boldt decision) and related cases affirmed the tribes’ role as
12 co-managers of treaty-protected resources and their right to half of the sustainably harvestable salmon
13 and shellfish. As affirmed by the U.S. Supreme Court, implicit in this treaty right is the responsibility of
14 the State to protect and restore salmon and the habitats that they need to thrive.

15 Tribes work closely with state agencies and local organizations on recovery efforts, including the Puget
16 Sound Partnership. The Partnership is committed to supporting the principles of the [Centennial Accord](#)
17 [\(1989\)](#), which recognizes the sovereign status of tribes and institutionalizes government-to-government
18 relationships. Tribal representatives serve on the Leadership Council, Ecosystem Recovery Board,
19 Science Panel, and Salmon Recovery Council. The Partnership Tribal Co-Management Council, and the
20 Tribal Management Conference provide forums that the tribes use to engage in guiding Puget Sound
21 Partnership activities, including policy development and project prioritization.

22
23 **Federal**

24 Federal agencies contribute to Puget Sound recovery by promoting information sharing, developing joint
25 work priorities, participating in the Management Conference Boards and advisory committees, and by
26 collaborating across agencies to support the development and implementation of the Action Agenda.
27 Nine federal agencies have signed a Memorandum of Understanding to form a Federal Task Force
28 committed to these working principles, and to affirm that federal agencies with Puget Sound interests
29 are actively participating. Partner agencies include those with environment and natural resource
30 responsibilities—such as the U.S. Environmental Protection Agency, National Oceanic and Atmospheric
31 Administration, U.S. Fish and Wildlife Service, U.S. Geological Survey, Natural Resources Conservation
32 Service, and U.S. Army Corps of Engineers—as well as those with local defense and security
33 responsibilities such as the U.S. Coast Guard, U.S. Army, and U.S. Navy. To guide its engagement with
34 Puget Sound recovery, the federal task force has developed an Action Plan that supports
35 implementation of priority recovery strategies and actions, including science and reporting. In addition,
36 governmental partners coordinate with tribal nations and the state on other plans relevant to Puget
37 Sound recovery, such as the U.S. Coast Guard’s Northwest Area Contingency Plan, the Corps of
38 Engineers’ Puget Sound Master Plan, and The Recovery Plan for Southern Resident Killer Whales.

39
40 ***Environmental Protection Agency (EPA)***

41 The EPA works alongside the Partnership, state agencies, tribes, and others to collaborate in regional
42 planning efforts including transboundary collaboration with Canada, leverage funding for recovery, and
43 support scientific research. Additionally, the EPA administers important federal programs supporting
44 Puget Sound recovery including the National Estuary Program (NEP). NEP supports on-the-ground

1 improvements for clean and safe water, protected and restored habitat, thriving species, and a vibrant
2 quality of life for all.
3 As an important federal partner in Puget Sound recovery, the EPA establishes the NEP Puget Sound
4 Funding Model and works closely with the Partnership, Strategic Initiative Leads, and other partners in
5 recovery. This work includes establishing regional priorities for Puget Sound protection including
6 developing Implementation Strategies; coordinating and collaborating with others to adaptively manage
7 recovery work; and managing sub-awards to local, tribal, state, county, non-governmental
8 organizations, and academic institutions to carry out a wide variety of projects, assessments, and
9 monitoring.

10 *National Oceanic and Atmospheric Administration (NOAA)*

11 NOAA leads the steelhead recovery planning effort and reviews the status of listed salmon and
12 steelhead under the Endangered Species Act (ESA) every 5 years. NOAA works closely with the
13 Partnership to manage Chinook and steelhead recovery plans for the Puget Sound.

14 **State**

15 State agencies with natural resource and human health responsibilities promote coordination,
16 communication, and program alignment. Agencies working toward Puget Sound recovery include the
17 departments of Ecology, Natural Resources, Fish and Wildlife, Commerce, Transportation, Health, and
18 Agriculture; the State Conservation Commission; the Recreation and Conservation Office; the Governor's
19 Office; and the Office of Financial Management. Additional leadership roles are taken on by the
20 Departments of Ecology, Fish and Wildlife, Health, and Natural Resources, which serve as Strategic
21 Initiative Leads. The Department of Commerce and Washington State University's Stormwater Center
22 also contribute to the Stormwater Strategic Initiative.

23

24 **Cities, Counties, and Special-Purpose Districts**

25 Much of the effort and some of the most important decisions to recover Puget Sound occurs at the local
26 level. Cities and counties are at the frontline for addressing impacts—they develop and implement
27 growth management plans and development regulations, manage surface water runoff, treat
28 wastewater, and provide numerous services to residents. Many elected officials and staff from counties
29 and cities participate in Local Integrating Organizations and Lead Entities. Working cooperatively with
30 cities and counties is essential for federal and state agencies, tribal nations, and nongovernmental
31 interests. In addition to participating as individual jurisdictions, counties work together through the
32 Washington State Association of Counties and the County Coastal Caucus, and cities work together
33 through the Association of Washington Cities.

34

35 **Transboundary Partners and Forums**

36 As part of the greater Salish Sea ecosystem, Puget Sound is influenced and affected by events and
37 activities in Canada. To facilitate coordinated and complementary action for long-term protection and
38 restoration, a number of established regional mechanisms currently promote cooperation on
39 transboundary issues on local and Sound-wide scales. In 2022, to promote additional transboundary
40 information sharing across the Management Conference and identify whether any emerging issues
41 would benefit from heightened attention or development of a new forum, the Environmental Protection
42 Agency, Ecology, the Puget Sound Partnership, and leaders from the Partnership's Boards plan to launch
43 an informal Ad Hoc transboundary caucus.

44

- 1 Key transboundary issues include:
- 2 • Southern Resident orca recovery
 - 3 • Vessel safety and risk management
 - 4 • Oil spill prevention, preparedness, and response
 - 5 • Marine debris
 - 6 • Marine survival of salmonid species
 - 7 • Marine and freshwater quality
 - 8 • Stream flows
 - 9 • Flooding
 - 10 • Marine species at risk (e.g., Chinook salmon)
 - 11 • Toxics in the food web
 - 12 • Shellfish beds
 - 13 • Underwater noise and vessel disturbance
 - 14 • Invasive European Green Crab management

15
16 Transboundary coordination mechanisms include:

- 17 • Southern Resident Orca Task Force and the Governor’s Salmon Recovery Office
- 18 • Participation of Canadian representatives on the Partnership’s boards
- 19 • Biennial Salish Sea Ecosystem Conference
- 20 • The U.S. Environmental Protection Agency and Environment and Climate Change Canada
- 21 Statement of Cooperation, and Working Group
- 22 • The Washington State/British Columbia Environmental Cooperation Council Regional Joint
- 23 Response Teams co-chaired by Canadian and U.S. federal agencies. The teams implement joint
- 24 Canada-U.S. inland and marine pollution contingency plans that provide for an international
- 25 coordination mechanism to ensure an appropriate and effective cooperative response between
- 26 Canada and the United States in the event of an oil release or hazardous substances emergency
- 27 along the shared inland boundaries and in marine waters, including in the Puget Sound/Georgia
- 28 Basin region.
- 29 • Pacific States - British Columbia Oil Spill Task Force
- 30 • Joint meetings of the Puget Sound Harbor Safety Committee and Pacific Coast Marine Advisory
- 31 Review Panel
- 32 • Southern Resident Killer Whale Technical Working Groups and Indigenous and Multi-
- 33 Stakeholder Advisory Group
- 34 • Be Whale Wise
- 35 • The International Airshed Strategy
- 36 • Participation in U.S.-Canada workshops convened by the Commission for Environmental
- 37 Cooperation
- 38 • First Nation coordinating mechanisms including the Coast Salish Gathering and the
- 39 Transboundary Indigenous Caucus of the Canada-U.S. Joint Marine Pollution Contingency Plan
- 40 Pacific—Geographical Annex
- 41 • Quiet Sound and Enhancing Cetacean Habitat and Observation (ECHO)
- 42 • Pacific States—British Columbia: Oil Spill Task Force

43

1 Appendix III: Funding Recovery

2 As a region, we must commit to address the lack of sufficient funding to achieve protection and recovery
3 of Puget Sound by increasing the efficient and effective use of existing sources, identifying, and securing
4 additional dedicated funding sources, and building a portfolio of private funding and financing
5 programs—including innovative, market-based programs.

6 Important to achieving our vision, we must also ensure local partners have the capacity to quickly scale
7 their recovery work with increased investment. To that end, we need to build supporting infrastructure
8 capable of moving important recovery projects quickly from concept to implementation and to facilitate
9 streamlined matchmaking between fund sources and restoration projects.

10 The costs of protecting Puget Sound will become increasingly expensive over time if human population,
11 climate change, and other ecosystem pressures increase as currently projected. We need to accelerate
12 funding for our large capital programs and fully fund the Action Agenda for Puget Sound if we are to
13 recover Puget Sound.

14 The funding strategy for Puget Sound recovery

15 An effective funding strategy for Puget Sound recovery aims to define the full range of funding needs for
16 Puget Sound recovery, to maintain and efficiently use existing funding, to invite local voices to the table
17 to help determine how and where to best spend funding with clarity and impact, and to secure
18 additional funding to fully implement critical Action Agenda priorities. Funding approaches must also
19 center Tribal Treaty Rights and environmental justice to begin dismantling the disproportionate impacts
20 felt by some communities.

21 The funding strategy for Puget Sound recovery includes six key components:

- 22 1. Establish a clear picture of the size and nature of the funding need for Puget Sound recovery
- 23 2. Maintain and increase funding from existing Puget Sound recovery sources, including developing
24 a major new source of state funding
- 25 3. Increase the effectiveness of investment decisions for existing sources of funding
- 26 4. Build a portfolio of new private funding sources
- 27 5. Enhance capacity for rapid funding response

28 These components are described in more detail below.

29 Establish a clear picture of the size and nature of the funding need for Puget Sound recovery

30 There are multiple funding needs for Puget Sound—for agency operations, for capital projects, for
31 ongoing programs, for science and monitoring, and for other key aspects of Puget Sound recovery. As
32 described in the 2021 State of the Sound, priority Puget Sound recovery programs are consistently – and
33 severely – underfunded.

34 A compelling case for resources rests on determining the resources necessary to implement this Action
35 Agenda. Understanding what resources are necessary will require further analysis, which is why the
36 Partnership endorses the State–Tribal Riparian Work Group’s recommendation to characterize the

1 resources needed to implement salmon recovery habitat restoration and acquisition projects, including
2 near-term costs (4-year project list) and the full costs to restore and revegetate riparian buffers.

3 The recovery community also recognizes that a great deal of capacity is contained in ongoing
4 programmatic work at federal, state, local, and tribal nations levels. Funds for programs and activities
5 the Partnership is not able to calculate or account for bring great benefit to Puget Sound. Understanding
6 this universe of work and its financial sustainability is critical to more comprehensively defining the
7 funding gap. To that end, the Partnership collects available financial information on state, federal,
8 private, and local funds budgeted by ongoing programs – managed by state agencies with benefits to
9 Puget Sound – with each cycle of the Washington State biennial budget. This accounting helps us to
10 better understand where funding is coming from, the types of activities it supports, and to understand
11 funding trends over time.

12 *Maintain and increase funding from existing Puget Sound recovery sources*

13 The large community of partners working towards recovering Puget Sound are committed and effective
14 advocates for the federal, state, and local funding available for Puget Sound recovery. Advocacy from
15 the Partnership and others – and the good work of that supportive congressional delegation – appears
16 to be paying off. Recent federal budget proposals have increased – rather than eliminated – funding for
17 the EPA Geographic Program and the National Estuary Program, and additional funding may become
18 available through the Infrastructure Investment and Jobs Act of 2021.

19 The Partnership will continue to educate the public and decision-makers on the scale and urgency of
20 funding need. Mechanisms for doing so include this Action Agenda, State of the Sound reports, Puget
21 Sound Days on the Hill and Salmon Day on the Hill events, and our state budget rankings. In particular,
22 the Partnership urges support for ongoing funding for the three Strategic Initiatives, with emphasis on
23 the Habitat Strategic Initiative (where the relative funding gap is largest). In anticipation of additional
24 funding through the Infrastructure Investment and Jobs Act of 2021, the Partnership will work to
25 advance strategic prioritization and alignment of federal and state infrastructure funding based on
26 restoration priorities, economies of scale, science advancement, equity and social justice, agriculture
27 and resource land protection, and workforce development.

28 Elsewhere at the state and local level, the recovery community advocates for maintaining and enhancing
29 other existing recovery funding sources, such as ongoing grant programs, local utility fees, state funding
30 to support coordination of the recovery effort, and more. In particular, fully funding high-priority state
31 capital budget requests – including the Puget Sound Acquisition and Restoration (PSAR) Program, the
32 Estuary and Salmon Restoration Program (ESRP), the Floodplains by Design (FbD) Program, and the
33 Stormwater Financial Assistance Program—are recognized as essential components of Puget Sound
34 recovery.

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 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 Near-Term Action 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.

1

2 Increase the Effectiveness of Investment Decisions for Existing Sources of Funding

3 An already compelling case for Puget Sound recovery funding will be strengthened by ensuring
4 accountability and effectiveness in how investments meant to fund Puget Sound recovery are
5 implemented. State and federal agency partners are working to improve the implementation of Puget
6 Sound recovery actions through coordinated funding and investment. Coordinated investments are
7 investments that pool resources from multiple groups to deliver multiple benefits to the environment
8 and communities. By coordinating investments, partners can align financial resources and regulatory
9 authorities to reduce administrative costs and delays to project implementation caused by the
10 requirements and schedules of state and federal grant programs. Coordinated investment may also
11 result in the implementation of several multi-benefit recovery projects in a single geographic area,
12 through which benefits to the environment and community are magnified.

13 The Puget Sound Institute (PSI) supports this work by looking at previous investments made by SILs and
14 others (including more than 200 NEP-funded recovery projects) to analyze the effectiveness of previous
15 investments, identify challenges and barriers, and recommend next steps. These syntheses identify and
16 communicate outcomes and lessons learned to support recovery planning and funding decisions by the
17 Puget Sound recovery community. Synthesis products provide a knowledge base that supports the
18 development and adaptive management of Implementation Strategies. These syntheses are scoped and
19 developed in coordination with the Lead Organizations (LO) but are independent products produced by
20 PSI. Previous synthesis products include the Pathogens LO, Watershed LO, Marine and Nearshore LO
21 syntheses and a comparative analysis of integrated floodplain management efforts in Puget Sound.

1 The Partnership and its boards are using this information to integrate and maximize Puget Sound
2 recovery potential of existing funding sources, such as the county-level Conservation Futures program.
3 This work will better integrate salmon recovery into existing programs. Combined with parallel
4 legislative efforts to raise the effective levy lid level, this ensures that more dollars spent on
5 Conservation Futures will go even further for Puget Sound recovery. Likewise, the Partnership’s recently
6 launched accountability initiative seeks to ensure existing programs are effectively advancing the
7 desired outcomes articulated in the Action Agenda.

8 Build a portfolio of new private funding sources

9 To date, Action Agenda implementation has relied heavily on public funds. As illustrated above, this
10 state and federal funding—although critical—has proven neither reliable nor adequate to meet recovery
11 partners’ needs. Thus, it will be essential to diversify the sources of funding for Puget Sound.

12 Private and nongovernmental sectors present an excellent opportunity to expand available funding;
13 moreover, recent investments from private and philanthropic organizations suggest that this approach
14 holds promise. The Partnership – and the recovery community more broadly – continues to explore
15 strategies to more fully engage academia, foundations, and for-profit and non-profit sectors to increase
16 funding available for Puget Sound recovery. In the coming years, Partnership Boards and other key
17 partners within the Puget Sound recovery community will work to identify potential funders, understand
18 how potential funders make investment decisions, and tailor communication and investment-grade
19 performance measures to motivate and enable their participation in funding Action Agenda
20 implementation.

21 In particular, the agency on behalf of the State—[Tribal Riparian Protection and Restoration Work](#)
22 [Group](#)—has undertaken an effort to assess whether and how private public partnerships may be able to
23 deliver riparian protection and restoration. The Partnership also supports the implementation of the
24 Water 100 program and exploring Puget Sound recovery as a vehicle for investments into blue carbon
25 and other ecosystem service markets. Meanwhile, the Partnership will continue to steward and expand
26 the [Puget Sound Partnership Nearshore Credits Program](#), including through upfront capital investments.

27 Enhance capacity for rapid funding response

28 Aligning the pipeline of recovery projects – and the personnel to identify, plan, and implement them –
29 with the available funding will facilitate the rapid implementation of restoration work needed to
30 accelerate Puget Sound recovery. Most fundamentally this involves ensuring local partners have the
31 resources to quickly scale their recovery work with increased investment. The urgency of robust and
32 responsive institutions becomes more pronounced with the likelihood of increased federal investments.

33 Likewise, state and federal agency partners are working to improve the implementation of Puget Sound
34 recovery actions through coordinated funding and investment. Coordinated investments are
35 investments that pool resources from multiple groups to deliver multiple benefits to the environment
36 and communities. By coordinating investments, partners can align financial resources and regulatory
37 authorities to reduce administrative costs and delays to project implementation caused by the
38 requirements and schedules of state and federal grant programs. Coordinated investment may also
39 result in the implementation of several multi-benefit recovery projects in a single geographic area,

1 through which benefits to the environment and community are magnified. To support coordinated
2 investments, the Partnership continues to explore opportunities to facilitate streamlined bundling and
3 matchmaking between fund sources and restoration projects, thereby providing a temporal and
4 geographic bridge between funding and project implementation.

5 Existing Funding Sources for Puget Sound Recovery

6 Federal, state, local, and tribal nations currently provide much of the funding for Puget Sound recovery
7 actions. Nongovernmental agencies, private foundations, businesses, and individuals also provide
8 funding. Major sources of federal, state, and local funding are described in the next sections.

9 Federal Programs

10 The federal government provides funding for actions in the Action Agenda. Some federal agencies are
11 funded to engage in protection and restoration activities, while others award grants to support and
12 match the work of nonfederal partners. For example, the U.S. Environmental Protection Agency's (EPA)
13 National Estuary Program Funds support that Partnership's backbone role. EPA's Puget Sound
14 Geographic Funds provide support to other Washington State agencies to develop and implement the
15 Action Agenda and manage programs advancing the three Strategic Initiatives (Habitat, Shellfish,
16 Stormwater). The U. S. Environmental Protection Agency also awards grants to a Tribal Implementation
17 Lead to advance tribal nations treaty rights and Puget Sound protection and restoration, and to tribal
18 nations and tribal consortia for capacity purposes.

19 Federal agencies can also direct existing funds for national programs in this region. The following federal
20 programs make important contributions to Puget Sound recovery programs. A full list of programs is
21 provided in the supporting materials, including the Puget Sound Federal Task Force Action Plan.

- 22 1. U.S. Environmental Protection Agency's Puget Sound National Estuary Program Funds
- 23 2. U.S. Environmental Protection Agency's Puget Sound Geographic Funds
- 24 3. U.S. Environmental Protection Agency's Puget Sound Bipartisan Infrastructure Funds
- 25 4. National Oceanic and Atmospheric Administration's Restoration Center
- 26 5. National Oceanic and Atmospheric Administration's Pacific Coastal Salmon Recovery Fund grant
27 programs
- 28 6. Environmental Protection Agency's Clean Water Act section 319 federal grants and Clean Water
29 State Revolving Fund Loans (administered by the Washington State Department of Ecology, with
30 state match requirements)
- 31 7. Various programs administered by the U.S. Fish and Wildlife Service, U.S. Geological Survey,
32 National Park Service, U.S. Coast Guard, U.S. Department of Defense, U.S. Army Corps of
33 Engineers, U.S. Forest Service, National Resources Conservation Service, Federal Emergency
34 Management Administration, Federal Housing Administration, Federal Transit Administration,
35 and other federal agencies that lead work related to Puget Sound recovery

36 State Programs

37 Washington State invests in a variety of programs and projects that contribute to Puget Sound recovery.
38 For example, the state funds capital projects, such as wastewater treatment plants, stormwater

1 retrofits, and nearshore habitat protection and restoration. The state also funds the operating budgets
2 for several state agencies that manage and protect natural resources. The following state programs
3 make important contributions to Puget Sound recovery.

- 4 1. Puget Sound Acquisition and Restoration Fund
- 5 2. Estuary and Salmon Restoration Program
- 6 3. Floodplains by Design
- 7 4. Salmon Recovery Funding Board grant programs
- 8 5. Washington State Department of Ecology’s water quality grants and loan programs, including
9 the Centennial Clean Water Fund and Stormwater Financial Assistance Program
- 10 6. Fish Passage Barrier Removal Board
- 11 7. Washington Wildlife and Recreation Program

12 [Local Government](#)

13 Cities, counties, and special purpose districts also contribute funding for actions that advance Puget
14 Sound recovery. Local entities invest in wastewater treatment, septic tank management, stormwater
15 management, infrastructure, shellfish and habitat protection, and restoration. Special-purpose districts
16 exist separately from local governments and provide services such as water, electricity, and drainage.
17 Conservation Districts also contribute resources through their work with private landowners on a
18 voluntary basis. The Shore Friendly program, for example, is administered by conservation districts in
19 collaboration with local government and non-profit organizations and provides education, technical
20 assistance, and incentives supporting the removal and replacement of shoreline armoring on private
21 property. Local funds can be generated through a variety of mechanisms authorized by Washington
22 State, including utility fees, permit fees, and assessments on local properties such as conservation
23 futures programs. As with state operating budgets, well-funded local programs, both regulatory and
24 voluntary – such as SMA, GMA, stormwater enforcement, and incentive-based conservation help – play
25 a critical role in preventing additional habitat degradation and decline in Puget Sound health.
26 Unfortunately, local programs are too often not adequately funded to perform critical implementation
27 and enforcement work.

28
29 [Nongovernmental and Private Organizations](#)

30 Restoring Puget Sound cannot be a public sector effort alone. The scale of resources required is simply
31 too large, and the solutions too dispersed, to rely solely on government funding. The historical track
32 record bears this out: as noted in the call out box above, state appropriations for Puget Sound recovery
33 have - consistently for almost a decade - fallen dramatically short of what is needed. At the same time, a
34 healthy Puget Sound will deliver countless direct and indirect benefits to individuals and businesses.
35 Thus, everyone has a role to play in supporting Puget Sound recovery.

36
37 Fortunately, many parts of the private sector—including individuals, businesses, and philanthropic
38 organizations—increasingly recognize the direct connection between a healthy Puget Sound and a
39 healthy economy. Private sector contributions to Puget Sound recovery can take a variety of forms;
40 indeed, that flexibility and innovation is one part of what makes their engagement so critical. Corporate

1 Environmental, Social, and Governance initiatives for many large local companies tackle carbon
2 pollution, water quantity and quality impacts, and habitat protection and restoration. These efforts are
3 most effective when they account for and address not only the direct, day-to-day operations of the
4 business but also the supply chains in which their businesses are embedded.
5

6 Investments in Puget Sound recovery projects can help companies achieve their sustainability goals.
7 Matchmaking between those complementary efforts is and will continue to be a key component of
8 directing investment towards projects that will deliver the greatest impact. The Water 100 Project – a
9 joint project of The Nature Conservancy and Puget Sound Partnership that maps 100-plus solutions for
10 clean and abundant water identified by scientific experts, engineers, and conservation practitioners –
11 connects businesses to solutions that mitigate their water risks and support a clean Puget Sound.
12 Likewise, Maritime Blue – an alliance of Washington maritime stakeholders committed to the
13 development of maritime business, technology, and practices that promote a sustainable future
14 contributing to economic growth, ecological health, and thriving communities – will be a key vehicle for
15 driving best practices and standards for ecosystem recovery across the maritime industry.
16 In addition to direct funding, nongovernmental and private organizations are well-positioned to deploy
17 financial tools and mechanisms for the benefit of Puget Sound recovery—tools that have been
18 traditionally inaccessible to the public sector. Pay-for-performance arrangements— such as those utilized
19 by Ecosystem Investment Partners – can deliver specified environmental outcomes at scale and price
20 point that public sector project processes typically cannot. Similarly, tools such as the resilience bond
21 developed by Blue Forest Conservation bundle funding from a wide - and sometimes unconventional –
22 cross-section of stakeholders to accelerate implementation of large-scale, multi-benefit ecosystem
23 recovery projects. at These types of public-private partnerships can address priority issues. For example,
24 the National Fish and Wildlife Foundation’s Community Salmon Fund leverages federal funds to raise
25 private dollars for two of the Strategic Initiatives: Habitat and Shellfish.
26

27 Finally, private sector and other nongovernmental entities can reduce financial burdens for landowners
28 through cost-sharing opportunities that incentivize conservation actions on private property. For
29 example, land trusts negotiate with (and compensate) private landowners to secure conservation
30 easements to protect terrestrial and aquatic habitat function. Likewise, low-interest financing, such as
31 the clean water loans administered by Craft3 to finance septic system repair and replacement offer
32 private landowners’ easy access to the capital necessary to implement important conservation measures
33 on their property. That model could feasibly be employed for other conservation projects in other
34 habitat types, including to support expansion of the Shore Friendly program and accelerated removal of
35 fish passage barriers on private land.
36
37

1 Appendix IV: Glossary

2

3 **Action Agenda**

4 The Action Agenda for Puget Sound charts the course to recovery of our nation's largest estuary by
5 volume. It complements and incorporates the work of many partners to describe strategies and actions
6 needed to recover a healthy and resilient Puget Sound. These strategies and provide opportunities for
7 federal, tribal, state, local, and private entities to better invest resources and coordinate action.

8

9 **Action Agenda Progress Indicators**

10 Action Agenda Progress Indicators (“Progress Indicators”) track the successful implementation of Action
11 Agenda strategies and assess progress toward managing human pressures on the ecosystem. They
12 provide feedback on the collective performance of recovery efforts and help the recovery community
13 invest more efficiently in issues that need the most attention.

14

15 **Adaptive Management Framework**

16 The Adaptive Management Framework describes the Partnership’s approach to results-based
17 management. The Framework is applied by the Partnership and by partners who implement the Action
18 Agenda with the goal of improving the practice of science-based recovery of the Puget Sound
19 ecosystem. This approach helps to ensure that decisions about ecosystem recovery priorities are based
20 on the best available information about the effectiveness of management investments.

21

22 **Backbone Organization**

23 A backbone organization mobilizes, coordinates and facilitates the process of collective impact. Key
24 functions include guiding vision and strategy, supporting aligned activities, establishing shared
25 measurement systems, building public will, and mobilizing funding to support the initiative. The
26 Partnership defines itself as a backbone organization for guiding collective impact in recovering Puget
27 Sound.

28

29 **Blue Carbon**

30 Blue carbon is the carbon stored and sequestered in coastal ecosystems such as mangrove forests,
31 seagrass meadows or intertidal salt marshes.

32

33 **Climate Adaptation**

34 The process of adjusting to actual or expected climate and its effects, in order to moderate harm or
35 exploit beneficial opportunities. (IPCC)

36

37 **Climate Migrant**

38 A climate migrant is a person who migrates from an area where the environment has been severely
39 damaged by climate change or who has to leave their home because they have become uninhabitable.
40 Can be any person who is moving or has moved across an international border or within a State away

1 from his/her habitual place of residence, regardless of (1) the person’s legal status; (2) whether the
2 movement is voluntary or involuntary; (3) what the causes for the movement are; or (4) what the length
3 of the stay is. (IPCC)

4

5 **Climate Resilience**

6 The capacity of social, economic, and environmental systems to cope with a hazardous event to
7 maintain essential function, identity, and structure, while also maintaining the capacity for adaptation,
8 learning, and transformation. (IPCC)

9

10 **Collective Impact**

11 Collective impact is an approach to large-scale change in which groups of people commit to a common
12 agenda to solve a specific problem.

13

14 **Community Land Use**

15 The term used to describe the human use of land. It represents the economic and cultural activities
16 (e.g., agricultural, residential, industrial, mining, and recreational uses) that are practiced at a given
17 place.

18

19 **Community Resilience**

20 The term used to describe the interconnected network of systems that directly impact human society at
21 a grassroots community level, including the socioeconomic, ecological, and built environments.

22

23 **Comprehensive Plan**

24 One of two components of the Action Agenda (See Implementation Plan); the Comprehensive Plan
25 charts the longer-term vision for recovery and explains the recovery framework.

26

27 **Cultural Wellbeing**

28 As defined by the Cultural Wellbeing Vital Sign, the extent to which people feel able to maintain their
29 cultural traditions and measured by the level of satisfaction with participation in cultural practices,
30 including spiritual or religious practices related to the environment, native practices, and
31 environmentally related social activities.

32

33 **Desired Outcomes**

34 Desired outcomes are statements that describe what we intend to accomplish—the positive change we
35 want to see in Puget Sound. The desired outcomes focus on reducing adverse effects on the ecosystem
36 (e.g., toxic pollution in stormwater runoff) and managing the human activities that create them (e.g.,
37 impervious surfaces from development), while maintaining healthy, vibrant, and equitable communities.

38

39

40

41

1 [Disproportionate Impacts](#)

2 In the context of environmental justice, this refers to when one group or population bears an
3 environmental or health impact that is substantially higher than the average distribution. This impact is
4 usually compounded by existing inequities due to historic discrimination against certain groups.
5

6 [Diversity](#)

7 Describes the presence of differences within a given setting, collective, or group. An individual is not
8 diverse – a person is unique. Diversity is about a collective or a group and exists in relationship to others.
9 A team, an organization, a family, a neighborhood, and a community can be diverse. A person can bring
10 diversity of thought, experience, and trait, (seen and unseen) to a team — and the person is still an
11 individual.
12

13 [Drivers](#)

14 Drivers are the human actions that give rise to stress on the ecosystem, but also may provide benefits to
15 humans. In some cases, related drivers are grouped for ease of analysis.
16

17 [Equity](#)

18 The act of developing, strengthening, and supporting procedural and outcome fairness in systems,
19 procedures, and resource distribution mechanisms to create equitable (not equal) opportunity for all
20 people. Equity is distinct from equality which refers to everyone having the same treatment without
21 accounting for differing needs or circumstances. Equity has a focus on eliminating barriers that have
22 prevented the full participation of historically and currently oppressed groups.
23

24 [Ecosystem Coordination Board](#)

25 The purpose of the Ecosystem Coordination Board is to advise and assist the Puget Sound Partnership
26 Leadership Council in carrying out its responsibilities in implementing chapter 90.71 RCW including
27 development and implementation of the Action Agenda.
28

29 [LIO Ecosystem Recovery Plan](#)

30 Action-based recovery plan developed by a Local Integrating Organization (LIO). Each LIO regularly
31 updates their 5-year Ecosystem Recovery Plan that outlines specific strategies and actions that guide
32 local ecosystem recovery and advises regional scale recovery.
33

34 [Effectiveness Assessment](#)

35 The Partnership uses an effectiveness monitoring framework with two parts. First, the actions to restore
36 the ecosystem must be evaluated. Second, the results must be communicated to decision makers as
37 they plan their next round of recovery actions. By directly connecting effectiveness data to recovery
38 actions, the Partnership intends to highlight successes and improve strategies by funding actions that
39 are the most effective.
40
41
42

1 **Environmental Justice**

2 The fair treatment and meaningful involvement of all people regardless of race, color, national origin or
3 income with respect to development, implementation, and enforcement of environmental laws,
4 regulations and policies. This includes using an intersectional lens to address disproportionate
5 environmental and health impacts by prioritizing highly impacted populations, equitably distributing
6 resources and benefits, and eliminating harm.

7

8 **Guiding Principles for Ecosystem Management**

9 Rules or frameworks for decisions in ecosystem management that set the priorities for ecosystem
10 recovery.

11

12 **Health Disparities**

13 Refers to a higher burden of illness, injury, disability, or death experienced by one group or population
14 relative to another.

15

16 **Historically Marginalized Communities**

17 In the context of the Action Agenda, communities who experience disproportionate environmental
18 harms and risks due to exposures, greater vulnerability to environmental hazards, or cumulative impacts
19 from multiple stressors.

20

21 **Human Wellbeing**

22 Human wellbeing refers to everything that allows humans to thrive. It includes familiar topics such as
23 physical and psychological health, as well as governance, social, cultural and economic well-being. For
24 the purposes of Puget Sound recovery, the focus is on human well-being as it relates to human
25 engagement with the natural environment of Puget Sound.

26

27 **Implementation Plan**

28 One of two components of the Action Agenda (see Comprehensive Plan); outlines the strategies,
29 actions, and funding necessary for Puget Sound recovery.

30

31 **[Implementation Strategy](#)**

32 Recovery plans for achieving specific ecosystem targets for the Puget Sound Vital Sign indicators. They
33 describe the sequence of steps, activities, and results needed to move closer to a recovery goal.

34

35 **Implementation Considerations**

36 Implementation considerations on climate change and human wellbeing for each strategy help guide the
37 recovery community toward multi-benefit projects and programs that will stand up to a changing
38 climate overtime.

39

40 **Inclusive Knowledge Network**

41 The Partnership’s [Science Work Plan for 2020-2024](#) introduces the concept of an **inclusive knowledge**
42 **network (IKN)** that will link various forms of knowledge (i.e., Indigenous, local, and scientific) and the

1 people and organizations who develop, hold, and share knowledge and understandings. This concept
2 will focus on collaborations among tribal nations, others who work and know the land, managers, and
3 scientists to develop linkages to put knowledge to use in service of tribes, communities overburdened
4 with environmental impacts, and all people who are connected to the future of Salish Sea ecosystems.
5

6 [Inclusion](#)

7 A state of being valued, respected and supported. Inclusion focuses on the needs of every individual and
8 ensuring the right conditions are in place for each person to achieve their full potential.
9

10 [Indicator](#)

11 Indicators are a type of progress measure and along with Vital Signs, are intended to (1) describe
12 ecosystem conditions; (2) help track progress towards recovery goals and objectives and understand if
13 progress is being made and management actions are working; and (3) inspire focused action. Taken
14 together, Vital Signs and their indicators describe what ecosystem recovery should “look like” by
15 describing what the Puget Sound recovery community wants to protect and restore.
16

17 **Institutional Infrastructure**

18 Institutional Infrastructure consists of processes, procedures, and physical tools. Whether public or
19 private, large or small, elements of institutional infrastructure can enable, motivate, or impede desired
20 actions or behaviors.
21

22 [Integrated River Basin Management Planning](#)

23 Integrated floodplain management is an emerging form of planning, action, and management where
24 partners from a wide variety of sectors, including local jurisdictions, conservation districts, and
25 representatives from agricultural industry, agree on a set of shared visions, strategies, and actions to
26 improve floodplain health.
27

28 **Just Transition**

29 Is a principle, a process and a practice. The principle of just transition is that a healthy economy and a
30 clean environment can and should co-exist. The process for achieving this vision should be a fair one
31 that should not cost workers or community residents their health, environment, jobs, or economic
32 assets. Any losses should be fairly compensated. And the practice of just transition means that the
33 people who are most affected by pollution – the frontline workers and the fenceline communities –
34 should be in the leadership of crafting policy solutions. ([Just Transition Alliance](#))
35

36 [Lead Entity](#)

37 Watershed-based organization that oversees implementation of watershed chapters of the [Puget Sound](#)
38 [Salmon Recovery Plan](#).
39
40
41

1 [Leadership Council](#)

2 The Leadership Council is the governing body of the Puget Sound Partnership. Its seven members are
3 leading citizens chosen from around the Sound. Members are appointed by the Governor to serve four-
4 year terms but may continue to serve until being officially reappointed or replaced by a new member.
5

6 [Local Integrating Organization](#)

7 A consortium of local and tribal organizations that guides the planning and implementation of actions at
8 the ecosystem scale and prioritizes local actions for investment in one of nine geographical areas around
9 Puget Sound.
10

11 [Management Conference](#)

12 The Puget Sound Management Conference includes: the statutorily-described Partnership including the
13 Puget Sound Partnership state agency, Leadership Council, Ecosystem Coordination Board, and Science
14 Panel; and the broader partnership coalition that includes tribal governments, the Puget Sound caucuses
15 affiliated with the Ecosystem Coordination Board, the Salmon Recovery Council, Northwest Straits
16 Commission, implementing networks, formal and informal interest groups, watershed groups, individual
17 local governments, and representatives from Canadian agencies.
18

19 **Multi-Benefit Outcomes**

20 The Partnership, as well as the Puget Sound recovery community at large, have limited resources to
21 address numerous very challenging and complex problems, including climate change. Therefore, as the
22 Partnership works to address climate change more thoroughly within the context of Puget Sound
23 recovery, the Partnership seeks to advance high-leverage, multi-benefit, and systems-based solutions
24 which provide a multiplicity of benefits (directly to Puget Sound ecosystems and species, as well as
25 indirectly to Puget Sound residents), address pervasive issues, utilize an understanding of the larger
26 context, and leverage available resources efficiently and effectively. Doing so will optimize resources,
27 funding, and capacity to effectively and efficiently decrease the vulnerability of Puget Sound to climate
28 stressors and simultaneously advance Puget Sound recovery.
29

30 [Ongoing Programs](#)

31 Continuing efforts—regulatory, oversight, technical support, guidance—that provide the foundation for
32 Puget Sound ecosystem protection and recovery and align with the Action Agenda priorities.
33

34 **Open Standards (or [Conservation Standards](#))**

35 The Open Standards for the Practice of Conservation link science, policy, and performance management,
36 and are the foundation of the adaptive management framework for the recovery efforts coordinated by
37 the Puget Sound Partnership.
38

39 **Overburdened Communities**

40 Communities who experience disproportionate environmental harms and risks due to exposures,
41 greater vulnerability to environmental hazards, or cumulative impacts from multiple stressors.
42

1 **Partnership Tribal Co-Management Council**

2 A monthly forum that provides opportunities for early and frequent involvement of the tribes in Puget
3 Sound Partnership activities.

4
5 **Pressures**

6 Human activities that stress the ecosystem but may benefit humans. As reported in the [Puget Sound](#)
7 [Pressures Assessment](#), there are 41 critical ecosystem pressures (species and habitats).

8
9 **Pressure Source**

10 A source is a human activity that may affect the physical, structural, and ecological processes and
11 functions in the Puget Sound ecosystem. Sources give rise to stressors. While contributing to ecosystem
12 degradation, sources may also be beneficial to humans.

13
14 **Pressure Stressor**

15 A stressor is the human-caused or biophysical factor that forces destructive change on the Puget Sound
16 ecosystem. A total of 48 stressors identify the change to the ecosystem contributed by one or more
17 sources. Examples of stressors include habitat conversion, pollution from legacy toxics, and shoreline
18 hardening. Stressors generally are distinct from sources (also known as pressures) which are the human
19 actions or natural processes that contribute to stressors. Generally, a single source of pressure will
20 contribute to multiple stressors.

21
22 **[Puget Sound Ecosystem Monitoring Program](#)**

23 A collaborative network of subject matter experts from many monitoring organizations and different
24 parts of the region. Together, they generate, organize, synthesize, and communicate scientific
25 information, across political and organizational boundaries, to track ecosystem conditions that directly
26 address management and science questions critical to Puget Sound recovery.

27
28 **[Puget Sound Partnership](#)**

29 The Puget Sound Partnership is the state agency leading the region’s collective effort to restore and
30 protect Puget Sound. The Puget Sound Partnership brings together hundreds of partners to mobilize
31 partner action around a common agenda, advance Sound investments, and advance priority actions by
32 supporting partners.

33
34 **[Puget Sound Pressures Assessment](#)**

35 Summarizes pressures on specific endpoints in Puget Sound ecosystems and identifies ecosystem
36 vulnerabilities.

37
38 **[Puget Sound Recovery Atlas](#)**

39 Provides online updates on project implementation and ongoing programs.

40
41
42

1 [Puget Sound Salmon Recovery Council](#)

2 The Puget Sound Salmon Recovery Council advises the Puget Sound Partnership’s Leadership Council on
3 decisions relating to salmon recovery and the implementation of the Puget Sound Salmon Recovery
4 Plan. The Puget Sound Salmon Recovery Council’s recommendations help set priorities for the types of
5 recovery work to conduct, determine what issues to focus on, and provide recommendations for future
6 projects and funding.

7
8 [Puget Sound Salmon Recovery Plan](#)

9 The [Puget Sound Salmon Recovery Plan](#) was developed in 2005 by regional experts and adopted by
10 NOAA Fisheries in 2007 to meet obligations under the Endangered Species Act. Subsequently, local
11 experts in each watershed worked together to craft 16 individual chapters of the Recovery Plan to
12 specify local recovery goals, priority recovery actions, and monitoring needs.

13
14 **Reach-Scale Planning**

15 Reaches are sections of rivers and estuaries defined for planning purposes, based on natural
16 characteristics and existing land uses. See examples from Snohomish County [Sustainable Lands Strategy](#).

17
18 **Recovery**

19 Encompasses the protection and restoration of essential resources and functions. The Partnership builds
20 a shared vision for recovery through the Action Agenda, which identifies the top priority actions or
21 programs to stay on course to recovery.

22
23 **Recovery Community**

24 Individuals, groups, organizations, agencies who identify or are identified as helping the effort to protect
25 and restore the Puget Sound ecosystem or have taken part in planning and action that supports this
26 effort.

27
28 [Recovery Goals](#)

29 The [Washington State statute](#) that created the Puget Sound Partnership defines the following recovery
30 [goals](#): Healthy human population, Vibrant quality of life, Thriving species and food web, Functioning
31 habitat, and Healthy water quality. The Puget Sound Partnership is the state agency leading the region’s
32 collective effort to restore and protect Puget Sound in order to meet these goals.

33
34 [Recovery Targets](#)

35 Recovery Targets are policy statements that express desired future conditions for human health and
36 quality of life, species and food webs, habitats, water quantity, and water quality.

37
38 [Salish Sea](#)

39 A bioregion encompassing the inland marine waterways of British Columbia and Washington and their
40 watersheds.

41
42

1 **Salish Sea Ecosystem Conference**

2 Every two years, the Salish Sea recovery community—including scientists, First Nations and tribal
3 government representatives, resource managers, community and business leaders, policy makers,
4 educators, and students—gets together to present and share the latest research on the state of the
5 ecosystem, and to guide future actions for protecting and restoring the Salish Sea ecosystem. SSEC
6 provides a forum for sharing ecosystem information and fosters collaboration between the Puget Sound
7 and Canadian recovery community.

8
9 **Settler Colonialism**

10 A complex social process in which at least one society seeks to move permanently onto the terrestrial,
11 aquatic, and aerial places lived in by one or more other societies who already derive economic vitality,
12 cultural flourishing, and political self-determination from the relationships they have established with
13 the plants, animals, physical entities, and ecosystems of those places.

14
15 **Science-informed Decision-making**

16 Structured approach to deciding on actions and strategies for Puget Sound recovery that are informed
17 by scientific information.

18
19 **Science Panel**

20 The Science Panel's expertise and advice are critical to the Puget Sound Partnership's efforts to develop
21 a comprehensive, science-based plan to restore Puget Sound. The members, appointed by the
22 Leadership Council, are chosen from the top scientists in Washington State.

23
24 **Science Work Plan**

25 The Science Panel developed a Science Work Plan for 2020-2024, which describes strategies to improve
26 our collective understanding of Puget Sound. Implementing this Science Work Plan will generate
27 information that the Puget Sound recovery community uses to improve decision-making and accelerate
28 recovery across Puget Sound for the benefit of the people and communities in the region and the
29 ecosystems on which they depend.

30
31 **Sense of Place/Place Attachment**

32 Place attachment refers to a bond or connection between people and place, including the natural
33 environment. Place attachment is considered a dimension of sense of place. Sense of place is defined as
34 the extent to which people identify with and feel positively attached to a specific place.

35
36 **Sensitive Populations (Vulnerable Populations)**

37 The [HEAL Act](#) defines vulnerable populations as population groups that are more likely to be at higher
38 risk for poor health outcomes in response to environmental harms, due to: (i) Adverse socioeconomic
39 factors, such as unemployment, high housing and transportation costs relative to income, limited access
40 to nutritious food and adequate healthcare, linguistic isolation, and other factors that negatively affect6

1 health outcomes and increase vulnerability to the effects of environmental harms; and (ii) sensitivity
2 factors, such as low birthweight and higher rates of hospitalization.

3

4 **Social Infrastructure**

5 Social Infrastructure consists of the social connections and frameworks that enable society to function
6 and consists of the bonds that connect individuals within groups, and the bridges that connect those
7 groups to each other. Social infrastructure consists of the social networks upon which people rely.

8

9 **Socio-Ecological System**

10 A concept that emphasizes humans as an integrated part of nature, and stresses that the delineation
11 between social systems and ecological systems is artificial and arbitrary.

12

13 **State of the Sound**

14 Summarizes recovery progress, challenges, and investment in Puget Sound ecosystem protection and
15 recovery every two years.

16

17 **Strategic Initiative**

18 Strategic Initiatives highlight important focal areas that help prioritize implementation and funding of
19 Near-Term Actions.

20

21 **Strategic Initiative Lead**

22 An organization with technical expertise that supports development of the Action Agenda and
23 Implementation Strategies in support of a Strategic Initiative. Leads are charged with taking input from
24 advisory teams, developing investment plans, making funding recommendations, and administering
25 funds for Near Term Actions.

26

27 **Strategic Initiative Advisory Team**

28 Committee of technical experts who advise the Strategic Initiative Lead in identifying priority
29 approaches to recover Puget Sound and selecting projects to receive funding.

30

31 **Strategic Science Plan**

32 Framework for coordinating the science required for Puget Sound recovery as outlined in the Action
33 Agenda.

34

35 **Strategy**

36 The Implementation Plan is organized around 31 collaboratively developed and science-informed
37 strategies that identify the specific lines of work (for example, growth management, pollution
38 prevention, invasive species) and key cross-cutting efforts (for example, climate change adaptation and
39 resilience, cultural practices for local foods, funding) that are critical to recovery of Puget Sound.

40

41 **Supporting Organizations**

42 Key agencies, organizations, and advisory bodies that support the work of the Puget Sound Partnership.

1 **[Vital Signs](#)**

2 The Vital Signs and their indicators are types of progress measures. They are the measures of “ultimate
3 outcomes” that reflect the condition of the Puget Sound ecosystem, including human wellbeing, relative
4 to the goals established in the Puget Sound Partnership statute. Vital Signs and their indicators have
5 three uses: (1) describe ecosystem conditions; (2) help track progress towards recovery goals and
6 objectives and understand if progress is being made and management actions are working; and (3)
7 inspire focused action. Taken together, Vital Signs and their indicators describe what ecosystem
8 recovery should “look like” by describing what the Puget Sound recovery community wants to protect
9 and restore. The Vital Signs measure parts of the ecosystem that the Puget Sound recovery community
10 has determined are important to know about and diagnose.

11
12 **Vulnerable Populations**

13 The [HEAL Act](#) defines vulnerable populations as population groups that are more likely to be at higher
14 risk for poor health outcomes in response to environmental harms, due to: (i) Adverse socioeconomic
15 factors, such as unemployment, high housing and transportation costs relative to income, limited access
16 to nutritious food and adequate healthcare, linguistic isolation, and other factors that negatively affect
17 health outcomes and increase vulnerability to the effects of environmental harms; and (ii) sensitivity
18 factors, such as low birthweight and higher rates of hospitalization.

19