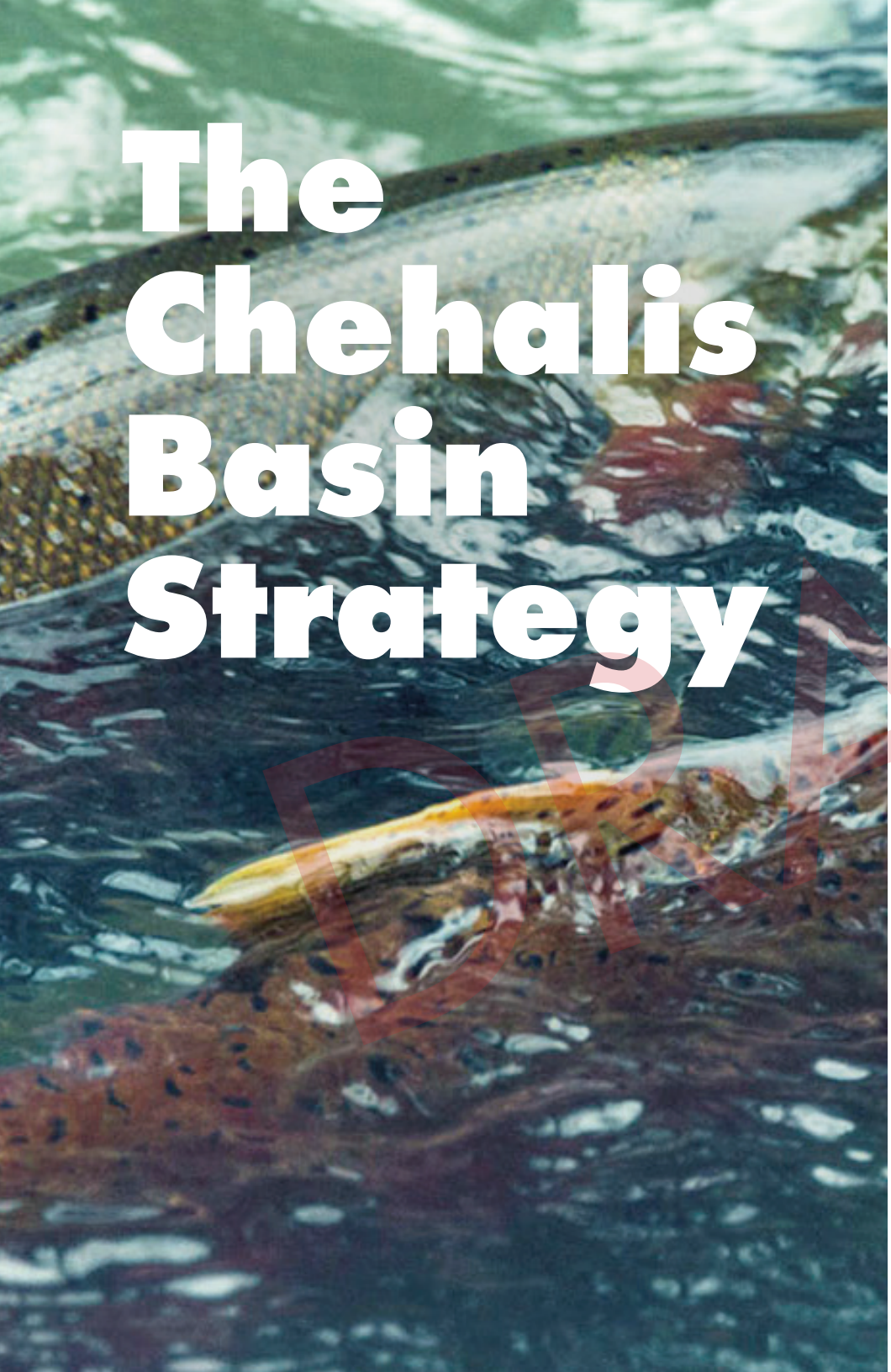

The Chehalis Basin Strategy

A Decade of Collaboration

The Chehalis Basin Strategy was launched in 2010 to meet two of the Basin's greatest challenges—the precipitous decline of salmon and other aquatic species and the certainty that catastrophic flooding will once again devastate the Basin.

With climate change, disaster is no longer an isolated incident. One-hundred year floods in the Basin will occur more frequently and at higher volumes by the latter part of this century. Salmon, whose existing habitat has degraded to alarming levels, will find the temperature of their waters uninhabitable.

From the headwaters to the coast, and every community in between, we must come together around a set of actions that meets the impacts of climate change head-on.

Based on more than a decade of public engagement, scientific analysis, and collaboration with local leaders, the Chehalis Basin Strategy will employ a combination of natural and engineered solutions at every scale to build resilience across the Basin and implement a new path forward.

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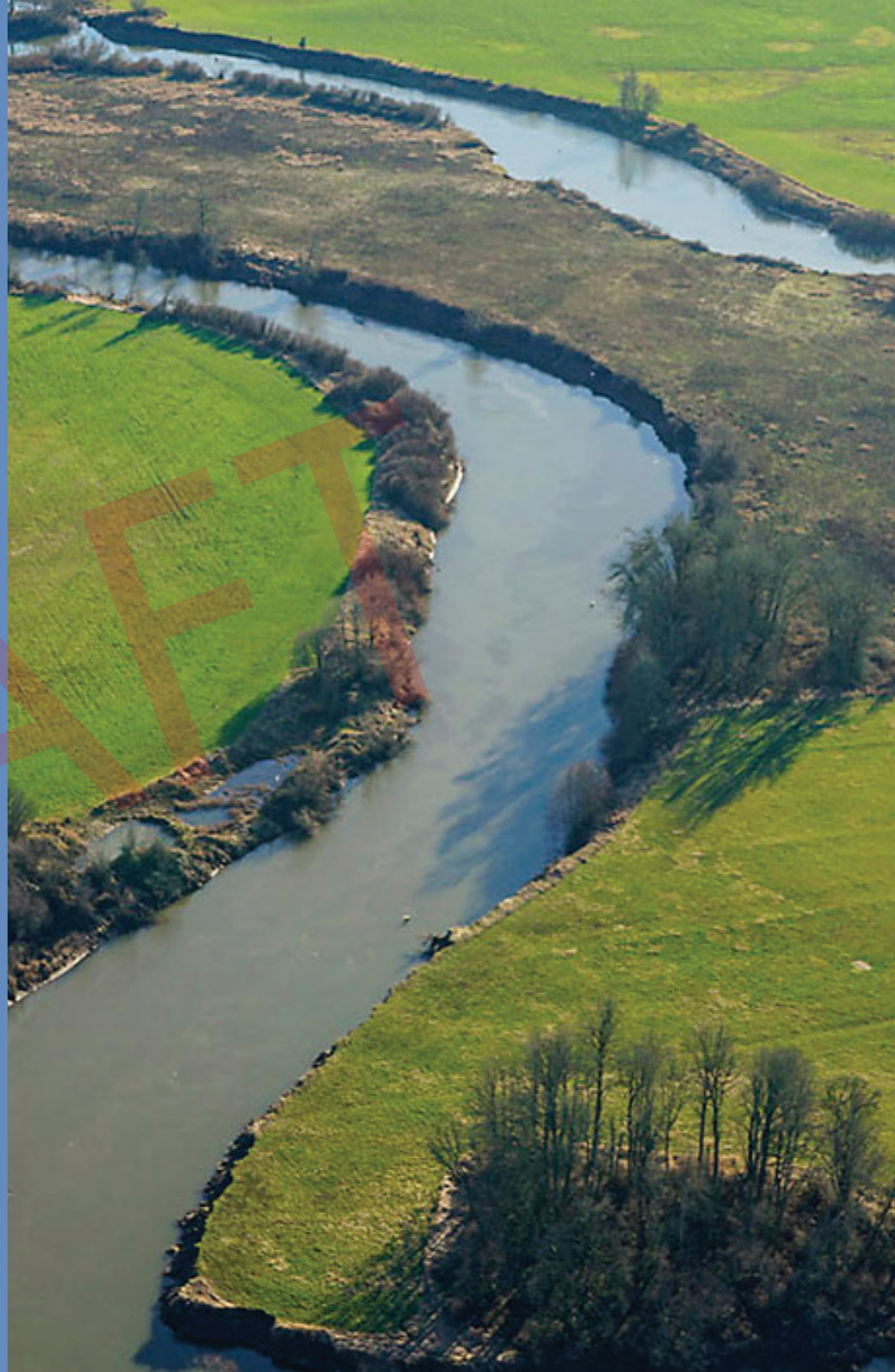


What's at Stake

Distinct Communities and Vast Landscapes

The Basin is a mosaic of distinct communities, including commercial and recreational fishers, farmers, foresters, and many more.

Its geography is made of vast landscapes—from the upper reaches of the Chehalis River in forested, rolling hills, to fertile farmland and valleys, to the Pacific coast and marshlands.

The Basin is home to two sovereign nations—**the Quinault Indian Nation** and **Confederated Tribes of the Chehalis Reservation**—whose connection to the land and its resources spans thousands of years.

The Chehalis River and its tributaries are home to some of the most culturally and ecologically important species in our region, including steelhead and Chinook, coho, and chum salmon. These waters also provide important habitat for the largest array of amphibians in the state.

What's at Stake

Unique Ecosystems and Nature-Based Economies

Ecosystems

2,700 square mile watershed (second-largest in Washington state)

10 distinct **ecological zones**

125 mile **Chehalis River**

3,400+ miles of streams

Seven species of salmonids and numerous native fish species

Only remaining river basin in Washington where **no salmon species are listed** as threatened or endangered

Most diverse array of amphibians in the state

Communities

Four urban centers – Aberdeen, Centralia, Chehalis, and Hoquiam

220,000 total residents (estimate for 2025)

Home to the **Quinault Indian Nation** and **Confederated Tribes of the Chehalis Reservation**

Economy

Washington's **sportfishing capital** – Grays Harbor

$650 million annual revenue from **agriculture**

Working lands in Basin: 87% for forestry, 8% for agriculture, 3% urban/commercial

What's at Stake

I-5 and an International Transportation Corridor

I-5 is the region's key commercial corridor on which commerce, our food supply, and public health and safety depend, from Canada to Mexico.

The imminent threat of major flooding to the I-5 corridor, including the state's main north-south rail line, forged new alliances and brought new sources of creativity and funding to meet the challenges faced by all of the Basin's communities.

The need to protect this critical infrastructure is a key element that will inform the suite of actions that make up the Chehalis Basin Strategy.

"This stretch of I-5 is the midpoint between Seattle and Portland, connecting two of the West Coast's major population and industrial centers. Floods closed I-5 at Chehalis and Centralia for six days between the 2007 and 2009 floods. The closures and delays alone cost tens of millions of dollars."

– Washington State Department of Transportation

Climate scientists predict that the next catastrophic flood could inundate I-5 for days – costing the region $20 million each day.

Climate Change Demands Bold Action

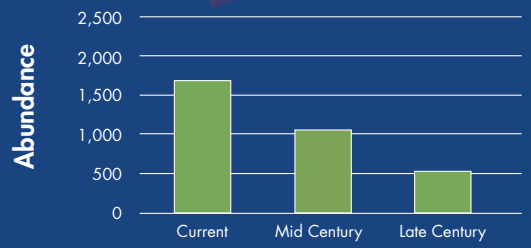
Fisheries on the Brink

Migrating fish will be subject to increased flooding and droughts when they are the most vulnerable, will see more of their vital spawning habitats erased, and will not be able to withstand the temperatures of a warming Chehalis River.

In the Upper Basin, salmon and steelhead populations are predicted to **drop by 70 percent** from current levels without aggressive protection and restoration. From Rainbow Falls to Crim Creek, spring-run Chinook, Coho, and steelhead **could disappear entirely** by late-century.

Further declines are likely to result in future threatened or endangered species listings, which heightens federal oversight and regulations.

Predicted Spring Chinook Declines



Source: Chehalis Basin Strategy, Aquatic Species Restoration Plan, Phase I, 2019

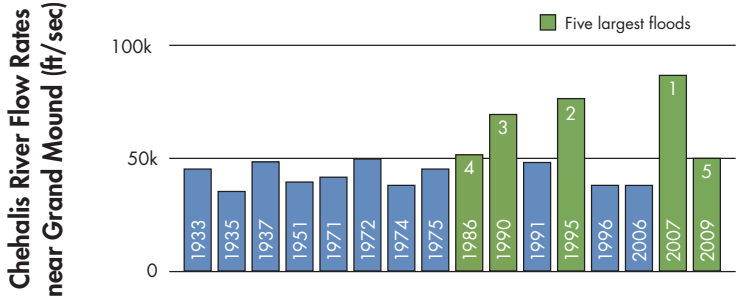
Aquatic species habitat degradation and seasonal flooding have been long-standing issues throughout the Chehalis Basin. Climate change is intensifying these issues at an unprecedented pace, and we must meet this acceleration with bold, long-term action.

A Rise in Flooding Disasters

Climate scientists predict that major flooding will happen more frequently, and at a greater scale, with more intense rainfall and sea level rise. It will become increasingly difficult for Basin communities to rebuild between disasters, especially for residents with limited recovery resources.

The floods of 2007 and 2009 **caused nearly one billion dollars in damages**, shut down entire segments of I-5, put communities' health and safety at risk, and overwhelmed fish and wildlife habitat.

Past Floods



Source: Washington State Department of Ecology, Chehalis Basin Strategy, Final Programmatic Environmental Impact Statement, 2017

Creating New Paths Forward: The Chehalis Basin Strategy

The Chehalis Basin Strategy was launched shortly after the devastating floods of 2007 and 2009 as a long-term plan designed to both restore aquatic species habitat and protect communities from major flood damage.

The Office of the Chehalis Basin and Chehalis Basin Board were created in 2016 by the Washington State Legislature. The Office of the Chehalis Basin operates within the Washington State Department of Ecology, and works with the board to oversee the development and implementation of the Chehalis Basin Strategy.

There is no single, simple solution to meet the dual goals of improving our fisheries and protecting against major flooding disasters. **The Chehalis Basin Strategy must employ multiple reinforcing actions** to meet the needs of our communities and the natural environment.

"Every Chehalis Basin community, including every town and county, the Confederated Tribes of the Chehalis Reservation, and the Quinault Indian Nation, is participating in the Chehalis Basin Strategy process. I'm optimistic that we can create a comprehensive fish and flood plan that benefits every community."

– J. Vander Stoep, Chehalis community member, Chehalis Basin Board member

"The Chehalis Tribe and Quinault Indian Nation have participated and supported the Strategy since its inception because of its inclusive, collaborative, and science-based approach."

– Tyson Johnston, Vice-President, Quinault Indian Nation, and Harry Pickernell Sr., Chairman, Confederated Tribes of the Chehalis Reservation, Chehalis Basin Board members

Solutions at Every Scale

From the upper reaches of the Willapa Hills to the Pacific coast, and every community in between, people across the Chehalis Basin are coming together to form solutions at every scale.

Meeting Immediate Safety Needs

Immediately after the floods of 2007 and 2009, the Chehalis Basin Flood Authority improved the Chehalis Basin Flood Warning System for residents and first responders, and developed new evacuation routes ahead of the next disaster.

Investing in Local Habitat and Flood Projects

Next, the Chehalis Basin Board worked with local partners and government agencies to invest in small to mid-size community-driven projects. **Since 2012, over $75 million has been invested across nearly 100 projects that benefit both people and aquatic species.**

These have included:

- Installing 26 farm pads–elevated surfaces that protect livestock and farm equipment from rising water.
- Floodproofing homes, wells, wastewater treatment plants, and other public infrastructure.
- Correcting 54 fish passage barriers.
- Opening 162+ miles of stream to migrating salmon and steelhead.
- Restoring riparian function, improving water quality, and reconnecting one river channel.
- Initiating five reach-scale habitat restoration projects.

Launching the Community Flood Assistance and Resilience Program

In 2020, the Office of Chehalis Basin launched its Community Flood Assistance and Resilience (CFAR) program. During its initial phase, the program is providing free technical support to residents, communities, and local and tribal governments who are interested in flood protection for their homes, businesses, and property.

Examples of early projects include installing flood vents, providing flood elevation certificates, and advising homeowners on cost-effective options for specific flooding issues.

Solutions at Every Scale

Reach-Scale Restoration for Aquatic Species

While critical local projects continue, analyses show that small to mid-size projects on *their own* will not be enough to protect against a catastrophic flood, protect I-5, nor improve aquatic species habitat to the degree needed to keep pace with ongoing deterioration.

That's why the Office of Chehalis Basin has continued to research large-scale solutions for both habitat improvement and flood damage reduction.

Strong Support from Residents and Local Leadership

In 2013, scientists and local leaders began charting a course toward broad-scale aquatic species restoration. The result is the **Aquatic Species Restoration Plan (ASRP)**—a detailed roadmap for restoring habitat and protecting ecosystems along the rivers and streams of the Chehalis Basin.

It focuses on taking targeted action where the greatest potential gains for aquatic species exist. Draft one of the ASRP was released in November 2019 and received over 500 public comments and wide support from Basin residents, scientists, and local leadership. Initial funding and implementation for early action projects began in 2020.

The Quinault Indian Nation, Confederated Tribes of the Chehalis Reservation, and the Washington Department of Fish and Wildlife have been key co-authors of the plan.

"The ambitious scale and generational perspective of the ASRP truly matches the uphill battle we face in rebuilding our sacred salmon runs."

– Tyson Johnston, Vice-President, Quinault Indian Nation, Chehalis Basin Board member

Solutions at Every Scale

Exploring Large-Scale Flood Protection

Since 2010, working groups have evaluated dozens of ecological and infrastructure projects designed to protect Basin communities against major flood damage, while also supporting salmon and other aquatic species. Ideas have included:

- The Twin Cities project (11 miles of levees)
- Floodwater bypass routes
- Bridge replacements
- I-5 levees and walls
- Raising, widening, or redesigning I-5
- Raising and extending the North Shore Levee in Aberdeen and Hoquiam
- Relocating residents and farms
- Restorative flood protection
- A flood protection dam on the upper Chehalis River

An initial examination of a large-scale restorative flood protection approach explored actions that would allow Chehalis River floodwaters to move more naturally over larger floodplain areas restored to their historic conditions.

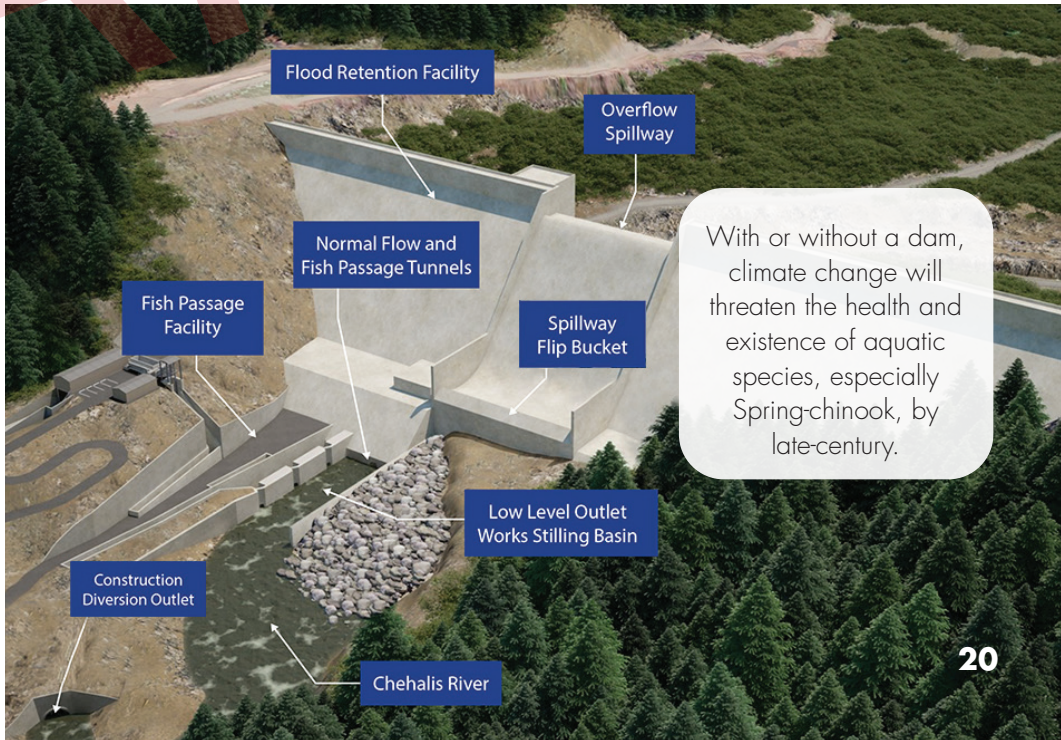
The study concluded that this approach would not significantly slow down or reduce the depth of major flooding downstream in the populated areas of Centralia or Chehalis, nor protect major infrastructure like I-5. It also identified habitat benefits from restoring floodplains, and found potential flood damage benefits on a smaller scale.

Flood Protection Dam

The Chehalis River Basin Flood Control Zone District proposed a flood retention facility that differs from a historic or conventional dam. Engineers spent years researching the latest technology used to manage extreme flooding events and preserve aquatic species.

The facility would:

- Be engaged **only** during a major flood to hold back water, and would slowly release water once it is safe to do so.
- Allow the Chehalis River to flow at its normal rate, except during a major flood.
- Allow fish to pass both upstream and downstream during construction and normal river flow. During flood control operations, fish would be collected and transported around the facility.



A Suite of Solutions Takes Shape

In 2017, the Chehalis Basin Board put forth a suite of potential actions for programmatic evaluation. The Washington State Department of Ecology conducted a Programmatic Environmental Impact Statement (PEIS), which concluded that the following combination of Basin-wide actions could have positive net benefits for both people, and fish and wildlife:

- Flood protection dam on the upper Chehalis River
- Chehalis-Centralia airport levee improvements
- Levee on the Aberdeen-Hoquiam North Shore
- Local flood damage reduction actions
- Aquatic species habitat actions

A Closer Look

Following the PEIS and an early examination of the potential for restorative, "natural" large-scale flood protection, the Chehalis Basin Board approved submitting the Flood District's flood protection dam for a more detailed environmental impact review. The Washington State Department of Ecology released its state EIS in February 2020, and the U.S. Army Corps of Engineers released its federal EIS in September 2020.

The state EIS found that in a catastrophic flood, the dam could:

- Reduce the amount of flooding for residents of Chehalis and Centralia.
- Reduce flood depths in Chehalis, Centralia, and the area from Pe Ell to just upstream of the confluence of the South Fork Chehalis River.
- Eliminate flooding for 43 percent of homes, businesses, schools, and other structures that would otherwise be inundated. The majority of remaining structures could be protected via local projects.
- Eliminate flooding at key locations along I-5 and reduce expected freeway closure times.

Significant adverse environmental impacts include:

- Reductions in aquatic species, such as spring- and fall-run Chinook salmon, Coho salmon, and steelhead trout.
- Degraded habitat and river and stream water quality.
- Lost recreational opportunities.
- Impacts on tribal and cultural resources.

The EIS did not evaluate the project's net impact in combination with potential mitigation, aquatic species habitat restoration, or community-level flood resilience programs.

What's Next

2020 continues to be a significant year for the Chehalis Basin Strategy. Major updates and next steps include:

- The Chehalis Basin Board is re-examining previously proposed and potential new large-scale flooding solutions that do not include a dam.
- Governor Inslee has requested that the board establish a process by the end of September 2020 for developing and evaluating a basin-wide flood approach that does not include a dam. He also requested the board deliver consensus recommendations on what work should move forward as part of the long-term strategy by the first quarter of 2021.
- The Chehalis Basin Board will continue evaluating the issues raised regarding the flood protection dam and the potential to avoid, minimize, and mitigate the identified impacts. The project proponent, the Chehalis River Basin Flood Control Zone District, is exploring mitigation and will share information with the board in September.
- The Washington State Department of Ecology will pause further work on its environmental impact statement on the proposed dam through the end of 2020.
- The U.S. Army Corps of Engineers released its environmental impact statement on the proposed dam in September 2020.

The Chehalis Basin Board remains committed to collaborating and securing public input from everyone who experiences flooding in the Basin, and to exploring actions that could accomplish the desired large-scale flood damage reduction outcomes at a lower environmental cost.

A Suite of Integrated Solutions

This suite of actions will likely include, among many other things, scaling up the new Community Flood Assistance and Resilience (CFAR) program, more localized levees, and changing future development patterns to meet the severity of predicted catastrophic flooding events like those in 2007 and 2009 and anticipated future closures of I-5.

There is no single, simple solution to meeting the dual goals of improving fisheries and protecting against flooding disasters. The Chehalis Basin Strategy must employ multiple reinforcing actions to meet the needs of our communities and the natural environment.

At the end of March 2021, the Chehalis Basin Board will share with the governor, state legislature, and Congress, recommendations for which actions should be implemented as part of the long-term Chehalis Basin Strategy, and which actions may need further review before determining whether they should be implemented.

Climate change demands that we think and act differently, and our window for doing so is closing fast.

We have more than a decade of science, planning, collaboration, and projects underway to know what to do to protect our communities and wildlife from further degradation and risk of disaster.

The Chehalis Basin Strategy continues to be the best opportunity to have local leaders advocate for what's best for their residents, fish and wildlife, and the local economy.

Visit ChehalisBasinStrategy.com for more information, ways to engage, and to sign up to receive important email updates.

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