Conservation in Washington:
Powered by People

Stories from Washington State's conservation districts of successful natural resource restoration and recovery due to private landowner participation.

Washington State
Conservation Districts

WSCC Celebrates 75 Years
1939 - 2014

Washington State
Conservation Commission

February 2014

Foreword

President Franklin D. Roosevelt famously wrote, "The Nation that destroys its soil destroys itself."[1] It was the era of the Dust Bowl, when a combination of drought, excessive cultivation, and wind triggered dust storms that uprooted thousands and caused widespread illness. Roosevelt knew the success of soil conservation efforts depended on the willing participation of private landowners. That's why, in his 1937 letter to all US governors, he urged states to adopt legislation allowing local landowners to form conservation districts that would carry out erosion control projects. He referred to this legislation as "imperative to enable farmers to take the necessary cooperative action."[2] Two years after Roosevelt sent that letter, the Washington State Conservation Commission (SCC) was established.

Today the SCC and our 45 partner conservation districts are celebrating 75 years of cooperative conservation with Washington State landowners. During that time the most pressing conservation issues have changed. The threat of massive dust storms has been replaced by other concerns, such as degraded water quality and climate change. But, the philosophy behind our work remains the same—landowner participation still is imperative to conservation success.

In this report, *Conservation in Washington: Powered by People*, the SCC proudly presents a collection of natural resource success stories from conservation districts across the state—stories that were made possible because of landowner participation.

1. Franklin D. Roosevelt: "Letter to all State Governors on a Uniform Soil Conservation Law.," February 26, 1937. Online by Gerhard Peters and John T. Woolley, The American Presidency Project. http://www.presidency.ucsb.edu/ws/?pid=15373.

2. Ibid.

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Introduction

The Washington State Conservation Commission (SCC) and conservation districts represent the voluntary, incentive-based arm of Washington State's system for conservation. Our programs empower landowners to become wise resource stewards. Over the last 75 years, this voluntary approach has earned the SCC a reputation as the "go-to" agency for conservation on private lands.

The mission of the Washington State Conservation Commission is to lead the citizens of the state in the wise stewardship, conservation, and protection of soil, water, and other related natural resources.

The SCC provides financial and technical assistance to conservation districts who implement on-the-ground projects at the local-level. Together our work addresses two forms of conservation directives:

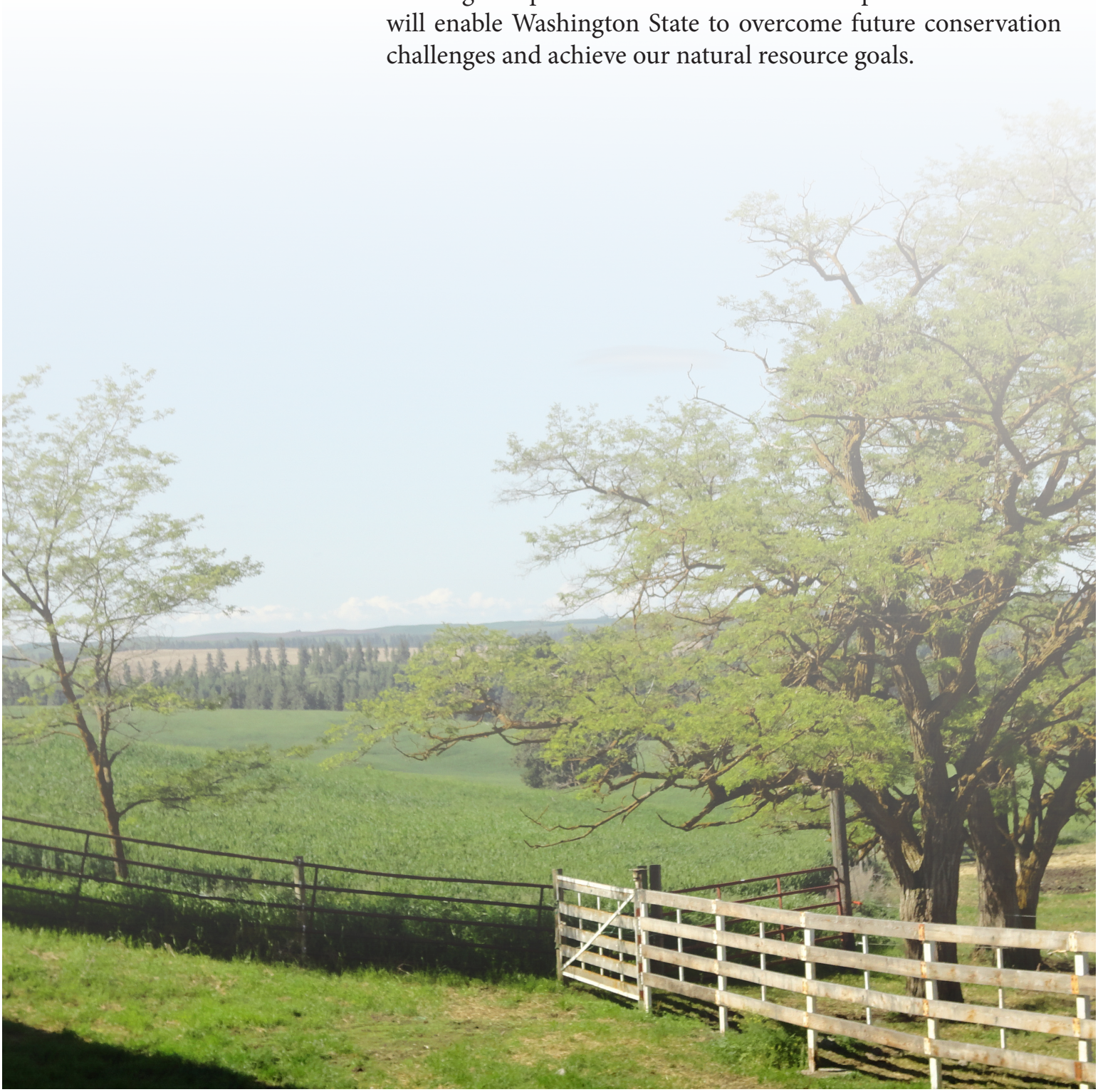
1. **Landowner-Driven Projects.** Conservation districts maintain an "open door" policy for the communities they serve. Landowners can contact their local conservation district to request free help with conservation planning and project implementation on their property.

2. **Targeted Resource Initiatives.** The SCC and conservation districts also lead large-scale projects, such as improving water quality within a specific watershed. These targeted resource initiatives require landowner outreach and recruitment, but they are still completed using a voluntary, incentive-based approach. For example, a conservation district that is leading an effort to improve salmon returns may launch a cost-share program that is only available to streamside landowners who are willing to remove fish barriers on their property.

Celebrating Conservation on Private Lands

More than half of the land in Washington State is privately owned. Without a doubt, the success of conservation efforts depends on private landowner participation.

The following success stories—organized geographically by Washington's western, central, and eastern regions—demonstrate the positive, natural resource impacts that can be achieved by working with private landowners. It is this cooperative action that will enable Washington State to overcome future conservation challenges and achieve our natural resource goals.



CLALLAM CONSERVATION DISTRICT: LEADING SUCCESSFUL WATER CONSERVATION IN DUNGENESS VALLEY

Making an Impact:

- ***Nearly 50 miles of irrigation ditch have been piped in Dungeness Valley resulting in water savings in excess of 14 cubic feet per second.***
- ***In 2013, salmon returned to the Dungeness River to spawn in numbers not seen in 50 years.***
- ***500 acres of Dungeness Bay were upgraded from "Closed" to "Conditionally Approved" for shellfish harvest.***

In 1999, Puget Sound Chinook salmon and Hood Canal summer chum—two salmonids found in the Dungeness River—were listed as a threatened species. In 2000, Dungeness Bay was closed to shellfish harvesting due to high fecal coliform bacteria counts. The network of irrigation ditches in the valley contributed to habitat problems in the river and pollution problems in the bay.

FINDING A COMMON PATH As a first step towards addressing pollution problems, Clallam Conservation District worked with irrigation districts and companies to upgrade their open ditch irrigation systems to pipeline systems. This led to larger, more comprehensive ditch piping projects that not only eliminated pollution, but also conserved substantial amounts of water that was leaking from the inefficient ditches.

RESULTS ON THE GROUND In 2001 and 2002, Clallam Conservation District helped pipe three irrigation ditches that had been identified as contributing to pollution in Dungeness Bay. With the implementation of additional projects, water quality steadily improved, and in 2011, 500 acres of Dungeness Bay were upgraded from "Closed" to "Conditionally Approved" for shellfish harvest. Since 2000, nearly 50 miles of irrigation ditch have been piped in the Dungeness Valley, resulting in water savings in excess of 14 cubic feet per second—that's over 9 million gallons of water per day. This is a 25 percent reduction in irrigation water withdrawals over the past 13 years. In 2013, salmon returned to the Dungeness River to spawn in numbers not seen in half a century.

The piping of 50 miles of irrigation ditch has required patience and perseverance. Some people didn't believe it needed to or could be done. It has taken over 40 grants from 15 sources, investments in quality design work, and good project oversight to achieve this success.

"The Clallam Conservation District has taken the major part in the leadership and funding of water conservation and water quality in the Dungeness Valley over the past 15 years," said Gary Smith, Sequim Prairie Tri Irrigation Association member. "Without the District's leadership and commitment to water issues, the reduction of irrigation water outtake from the Dungeness would be a small fraction of what has been accomplished to-date."

Irrigation ditch before (left) and after piping (right)

LEWIS COUNTY CONSERVATION DISTRICT: REMOVING FISH BARRIERS IN THE CHEHALIS BASIN

Fish passage barriers became a large-scale concern in the late 1990's due to the miles of habitat that was no longer accessible to salmon. The Lewis County Conservation District (LCCD) began assessing culverts in the Chehalis Basin to inventory the barriers and prioritize efforts to replace blockages.

MAKING AN IMPACT:

- ***Worked with coalition of partners to assess and inventory fish barriers in the Chehalis Basin—over 2,000 fish barriers were identified.***
- ***Replaced 31 blockages opening up 87.21 miles of habitat.***
- ***Replaced culverts allowing streams to sustain larger numbers of salmon.***

FINDING A COMMON PATH LCCD worked in conjunction with several state and local agencies and timber companies to address fish barrier concerns. The solution was to get the fish passage barriers assessed so separate entities throughout the basin could begin installing larger culverts and/or bridges to allow fish of all ages to migrate up and down stream. Over 2,000 barriers were identified in the Chehalis Basin. The assessment was and is still used to apply for grants and rank applications to get the barriers replaced.

RESULTS ON THE GROUND LCCD and their partners began replacing fish barriers in 2000. To date, the District has replaced 31 blockages, which opened up 87.21 miles of habitat. The pictures below show one barrier that was replaced in 2007. The outfall drop on the culvert made the pipe a complete barrier to all fish from migrating upstream. In the fall of 2007, adult Coho salmon were observed spawning above this project. While adult Coho salmon could access some of the sites, juvenile Coho were blocked from migrating up and down stream during rearing time in the streams. Replacing culverts allowed the stream to sustain larger numbers of salmon. Several other blockages have been removed and/or replaced in the basin by other partner agencies.

The LCCD worked closely with partners to implement consistent surveys of the barriers. The Washington Department of Fish and Wildlife provided training to ensure all assessments accurately determined the culverts as blockages and the sites as having fish usage, including the species of fish present.

"This has been a very rewarding endeavor for the LCCD and our cooperators," said Bob Amrine, LCCD Manager. "The ability to apply for grants and to replace the barriers with larger culverts or bridges has been very successful."

Culvert replaced by the Lewis County Conservation District in the Chehalis Basin before (left) and after project implementation (right)

PIERCE CONSERVATION DISTRICT:
LIVESTOCK OWNERS IMPROVE SHELLFISH HARVEST AREA

Making an Impact:

- ***Completed 16 water quality projects with participation from 11 landowners.***
- ***WA Department of Health upgraded or reclassified 278 commercial and recreational acres for shellfish harvest following project implementation.***
- ***Farmers who installed practices or utilized district technical assistance are seeing increased production, improved animal health, and greater farm management flexibility.***

In 2009, freshwater streams in Key Peninsula were showing downward water quality trends due to impacts from bacteria and sediment. Shellfish harvest areas downstream were downgraded due to bacteria pollution. Following a windshield survey, Pierce Conservation District (PCD) noted areas where potential impacts may have been due in part to poor farming management or livestock keeping practices.

FINDING A COMMON PATH Partners first identified channels for communication and feedback between District and regulatory partners. Together, the partners then focused outreach, education, and cost-share into areas with the highest likelihood of direct impact. Beginning in 2010, PCD leveraged funds to install best management practices (BMPs) in selected sub-watersheds identified by threatened harvest areas and upland freshwater quality links. Eleven landowners implemented 16 projects that installed 4,500 square feet of heavy use area; 700' of cross fence; 5,763' of exclusion fence; 1,600' of pipeline; 40 yards of manure removal; 3 off stream watering units; and 1 critical area buffer planting that was completed by 35 volunteers.

RESULTS ON THE GROUND This concerted effort included several partners including agencies, non profits, a university, and citizen partners. Multiple strategies were employed to address behavior changes and values, replace failing septic systems, implement farm BMPs, improve farm management, and reduce impacts and quantity of stormwater runoff. Following these projects, significant declines in bacteria levels have been realized. As a result, the WA Department of Health has upgraded or reclassified 278 commercial and recreational acres for shellfish harvest. Pierce County has also measured an upward trend in stream health around focus areas in the watershed. Farmers who installed practices or utilized district technical assistance are seeing increased production, improved animal health, and greater farm management flexibility.

PCD's ability to provide landowners with a suite of options, as well as the opportunity to address their farm priority first, was key for project ownership and buy-in.

"I can't believe there's help like this available," said Jerry Kersting of Wildberry Farm. "I wish I would have called sooner."

Upland water quality project site before (left) and after implementation (right)

SNOHOMISH CONSERVATION DISTRICT: WORKING WITH LANDOWNERS TO RESTORE WOODS CREEK

Woods Creek was listed as part of the Lower Snohomish River Tributaries TMDL (total maximum daily load) for fecal coliform in 2003. Agricultural practices were identified as one of the potential contributors to this pollution. The Snohomish Conservation District was enlisted by partners to work with agricultural landowners to responsibly manage manure and fence livestock from the stream.

FINDING A COMMON PATH The Snohomish Conservation District, Snohomish County, Department of Ecology, and several nonprofits put effort into addressing the sources of fecal contamination in the basin by working on a voluntary basis with private landowners. The watershed is zoned primarily rural residential with small farms being the focus of these efforts. Practices installed by the Conservation District included: over 25,000 feet of fencing; 90 acres of riparian (streamside) planting; 66 waste storage/compost structures; and 57 heavy use areas for livestock.

RESULTS ON THE GROUND Due to this focused effort on manure management and control of fecal coliform contamination, the percent of time fecal counts exceed summer standards has reduced dramatically. As such, Snohomish County has proposed to the Department of Ecology that two segments of Woods Creek be removed from the 303(d) list (Britsch, personal communication, 2014). The Department of Ecology is now turning its focus from fecal contamination to high summer water temperatures and has encouraged the District to focus future efforts on planting the riparian zone. The District developed a Woods Creek Riparian Action Plan to identify priority areas for planting and received a $250,000 grant from Ecology to plant 20 acres in the next three years.

Snohomish Conservation District learned the importance of building trust and positive relationships with private landowners within a watershed. Now a network of community members is willing to participate in the District's continuing efforts to shade the stream to reduce water temperatures.

"In 17 years having Woods Creek in our back yard, we have had stunningly supportive help…[to] reduce erosion, improve the riparian zone, and plant native trees and bushes," said Joel Selling, Woods Creek landowner. "The result is not only better land values for us, but a sense of being truly good stewards of this valley. Thanks to the Conservation District and Surface Water Management for sharing our vision for our watershed."

Making an Impact:

- ***Snohomish County proposed to Department of Ecology that two segments of Woods Creek be removed from 303(d) list.***
- ***District planting 20 acres in riparian zone in next three years.***
- ***Established network of community members willing to participate in efforts to shade Woods Creek and reduce water temperatures.***

Woods Creek property before (left) and after Snohomish Conservation District helped the landowner install fencing and plants (right)

THURSTON CONSERVATION DISTRICT: LANDOWNERS WORK TO REOPEN SHELLFISH BEDS

MAKING AN IMPACT:

- ***Fecal pollution in Henderson Shellfish Protection District decreased at several water quality monitoring stations from HIGH in 2001 to LOW in 2009.***
- ***340 acres of degraded shellfish beds upgraded to Approved or Conditionally Approved.***
- ***Cost-share provided to 12 landowners, resulting in 36 conservation practices.***

Declining water quality in heavily developed areas of Thurston County led to several shellfish classification downgrades. This triggered the formation of a Shellfish Protection District (SPD) in 2001. Soon after, Thurston Conservation District agreed to dedicate 28 percent of the District's county assessment funding to improving water quality in the Henderson and Nisqually SPDs.

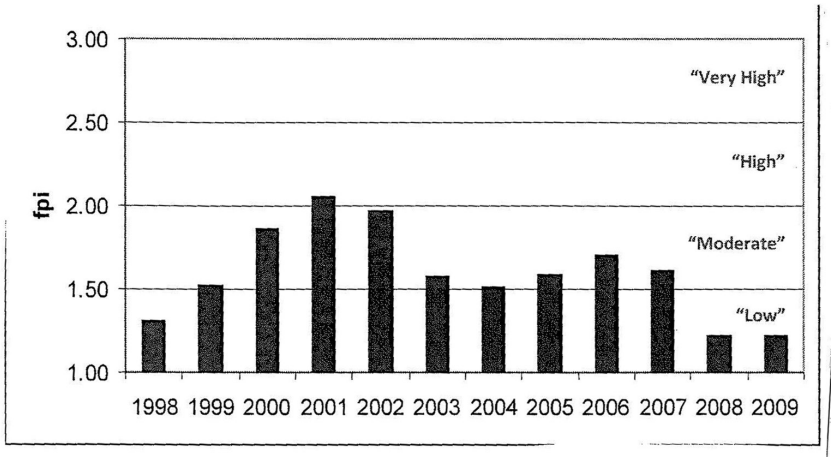
FINDING A COMMON PATH Thurston Conservation District developed 26 conservation plans (85 percent of which are fully implemented) in areas of high fecal counts. Cost-share was provided to 12 landowners, resulting in the implementation of 36 conservation practices. These practices included installation of five waste storage structures; 11,462 feet of gutters and downspouts; 942 acres of nutrient management; and construction of eight livestock confinement areas.

RESULTS ON THE GROUND In the areas where landowners implemented conservation practices, fecal pollution in Henderson SPD decreased from HIGH in 2001 to LOW in 2009 (Washington Department of Health). In all, Thurston Conservation District recorded 213 implemented agricultural practices throughout the SPD. Of the 650 acres of degraded shellfish beds in Henderson SPD, 340 acres were upgraded to Approved or Conditionally Approved. The District continues to focus on and dedicate funding to these areas.

Direct quantitative measurement of remediation is complex. It requires extensive, standardized record-keeping and regular reporting by local agencies, which is rudimentary in most jurisdictions. However, the reopening of shellfish beds in SPDs following the implementation of practices by the Thurston Conservation District is a clear sign of success.

"Without the dedicated funding provided through the Conservation District assessment and combined efforts with our partners, we would not have seen such success in the Henderson Inlet," said Kathleen Whalen, Thurston Conservation District Administrator. "Our partners recognize our unique ability to get onto private land because of our non-regulatory nature."

Livestock stable before (top) and after Thurston Conservation District worked with landowners to install confinement area (bottom)



Graph showing decreasing fecal pollution levels in Henderson SPD following the implementation of 36 conservation practices by the Thurston Conservation District and participating landowners

UNDERWOOD CONSERVATION DISTRICT:
LANDOWNERS IMPROVE HABITAT IN WIND RIVER WATERSHED

Lower Columbia River Steelhead are listed as threatened in the Wind River watershed of Skamania County. The Little Wind River is the first major tributary in the watershed, and habitat in this stream had been degraded through a history of intensive logging, road building, and landslides. Fish habitat consisted of a continuous riffle with very little refuge or spawning area.

FINDING A COMMON PATH Underwood Conservation District (UCD) works with several major partners on restoring steelhead habitat in the Wind River watershed. The District's role is to engage private landowners in this effort. UCD contracted two renowned restoration designers to plan and engineer habitat restoration work in the Little Wind River, and in 2012-2013 the project was constructed. A participating landowner contributed logs and rootwads that were used to construct engineered log jams. Pools, riffles, and spawning glides were also constructed in the stream.

MAKING AN IMPACT:

- ***Adult Coho returns jumped from a historic average of 4 to 33 after first construction season in 2012.***
- ***Coho redd counts went from historic average of 4.6 to 17.***
- ***Constructed five engineered log jams and installed innumerous additional large wood pieces.***

RESULTS ON THE GROUND Five engineered log jams were constructed and innumerous additional large wood pieces were installed along the stream. In addition, nine pools were excavated for fish holding; ten riffles were constructed to help maintain stream grade and retain gravels; and three glides were constructed to provide materials and space for fish spawning. The Little Wind's confluence with the Wind River was modified slightly to allow easier fish passage from the mainstem. One off-channel alcove was constructed for fish refuge, and the entire site was restored and replanted.

While this project was aimed at improving steelhead habitat, benefits were observed for Coho salmon as well. After the first construction season in 2012, live adult Coho returns jumped from a historic average of 4 to 33! Additionally, Coho redd counts went from a historic average of 4.6 to 17! Fish population monitoring in this tributary is limited, but even more increases in fish use of this significant little stream are anticipated over the coming years.

Dan Gundersen, a participating landowner, said of the project: "As the landowners, we are impressed by the professionalism and commitment shown by the UCD staff and volunteers that worked on the site and your concern for our satisfaction with the end result."

Little Wind River, pre-construction (left) and post-construction (right)

WHATCOM CONSERVATION DISTRICT: COMMUNITY OF LANDOWNERS RESTORE TENMILE CREEK

Making an Impact:

- ***27 contiguous landowners planted riparian buffers.***
- ***Summer water temperatures in Tenmile Creek dropped and are consistently below the threshold for salmon.***
- ***Tenmile Creek is now the only lowland Nooksack River tributary that regularly meets goals for fecal bacteria set to protect the Portage Bay shellfish beds downstream.***

Tenmile Creek in Whatcom County was typical of many westside streams in agricultural areas: no buffers, high fecal bacteria levels, and water temperatures high enough to kill salmon. The Whatcom Conservation District (WCD) started working in the watershed ten years ago by establishing an advisory group of locals and a voluntary stewardship program to enlist landowners to improve the streams.

FINDING A COMMON PATH WCD secured funding, hired a watershed resident as project manager, and put together a diverse group of residents and other stakeholders to find solutions for long standing water quality problems. Landowners identified three goals for their watershed: improve drainage in agricultural areas, improve riparian (streamside) buffers by planting native trees or shrubs, and monitor water quality for improvements.

RESULTS ON THE GROUND Twenty-seven contiguous landowners agreed to plant riparian buffers following drainage maintenance. Eventually, 12.5 miles of stream bank was restored with native tree and shrub plantings, large wood was placed in the stream for fish habitat, and culverts that blocked fish passage were repaired. Once the major stream was totally shaded, water quality improved rapidly. Summer water temperatures dropped markedly and are now consistently below the threshold required by salmon. Fecal bacteria levels also dropped dramatically due to buffer installation and better stewardship. Tenmile Creek is now the only lowland Nooksack River tributary that regularly meets goals for fecal bacteria set to protect the Portage Bay shellfish beds downstream. The "Tenmile model" is now frequently used as a template for positive change on a watershed scale. Landowners there know what watershed they live in and understand the importance of stewardship for their downstream neighbors.

A prerequisite of asking landowners for change is to listen to their needs. In this case landowners were interested and willing to improve their water but first needed to address drainage. Once their needs were addressed, a sense of community was created and real lasting changes were initiated.

"We knew as landowners that this would not be a project with a BEGINNING and END! We understand the stream needs to be a maintained system," said Dorie Belisle, Project Coordinator and landowner. "This is true for every stream running through productive agricultural land. Protecting fish and farming is an ongoing project using adaptive management to meet the needs of both farmers and the natural resource."

Tenmile Creek before (left) and after landowners worked together to restore stream bank (right)

CENTRAL KLICKITAT CONSERVATION DISTRICT:
LIVESTOCK OWNERS MANAGE POLLUTION IN LITTLE KLICKITAT RIVER

After learning about possible pollution issues on their properties, many livestock owners in the Little Klickitat River watershed have implemented practices that alleviate pollution. One such landowner approached the Central Klickitat Conservation District (CKCD) to find a solution to a runoff problem from his winter feedlot. Runoff typically occurs following rain or snow melts when excess surface water carries pollutants, such as animal waste and fertilizer, into streams. This landowner's project was one of many similar projects CKCD undertook in the Little Klickitat River watershed.

FINDING A COMMON PATH Working with the Natural Resources Conservation Service (NRCS) through the Environmental Quality Incentive Program (EQIP), CKCD and the landowner worked together to implement pollution management practices. Nearly 45,000 square feet of the feedlot were sloped, hardened with shale, and underlayed with fabric. They also installed livestock exclusion fencing, re-routed water management from barns and the creek, set up water troughs, and implemented manure management.

MAKING AN IMPACT:

- ***Cattle no longer have access to seasonal tributary of the Little Klickitat River.***
- ***Landowner's property no longer source of mud and manure runoff.***
- ***Landowner now can remove manure and apply it to his fields instead of potentially contributing to nonpoint pollution.***

RESULTS ON THE GROUND As a result of this project, cattle no longer have access to a seasonal tributary to the Little Klickitat River, which is used by steelhead as a migration corridor and spawning habitat. Mud and manure were eliminated from this source. The exact tons of manure and mud removed has not been calculated, but the impact on this stream is dramatic. The landowner now can effectively remove manure and apply it to his fields.

The biggest challenge to this project was coordinating between CKCD, the Washington State Conservation Commission Livestock Cost Share program, and NRCS, with the landowner having final say in the end product. Results from projects like this are hard to quantify, but the end result is clean water flowing into the Little Klickitat River from this tributary.

Sergio Paredes, NRCS Resource Conservationist said, "This is a great project. The landowner now has the opportunity to collect, store, and apply the manure, and clean water drains into the creek from the roof. The cooperation between NRCS and the District shows how teamwork can get great projects on the ground."

Landowner's winter feedlot before (left) and after project implementation (right)

EASTERN KLICKITAT CONSERVATION DISTRICT: LIVESTOCK OWNERS PROTECT WATER QUALITY IN ROCK CREEK

Making an Impact:

- ***Livestock trough spillage eliminated and mud reduced.***
- ***Water from uphill runoff piped under access road instead of flowing through feedlot.***
- ***Success of the project motivated landowner to seek Conservation District assistance with more work on his ranch.***

Rock Creek in Eastern Klickitat Conservation District is on the 303(d) list as a Category 5 stream and is critical habitat for Mid-Columbia Steelhead and Coho and Chinook salmon. Streams placed on the 303(d) list have pollution levels high enough to impair their use as drinking water, habitat, recreation, and industrial use.

FINDING A COMMON PATH Livestock owners along Rock Creek asked the Eastern Klickitat Conservation District to help them implement best management practices that would improve water quality in the creek while still allowing them to continue livestock operations. One landowner requested that the District help alleviate the mud and manure flow from his water trough in the winter feed area, adjacent to Rock Creek. This mud flow had the potential to reach the creek, and the landowner wanted it fixed. District engineers designed a new system for a trough and overflow. The trough is spring fed and has a constant flow.

RESULTS ON THE GROUND As a result of the practices installed, the mud and manure accumulation and transport around the trough has been eliminated. By re-designing the trough overflow mechanism and installing adequately sized pipe, the spillage from the tank has been eliminated. In addition, the hardened area around the trough has stopped the mud created by the livestock when they visit the trough for water. The inflow is a constantly flowing spring which runs through the trough. That water is piped away from the tank and flows through a filter strip before entering the creek. Water from uphill runoff also was piped under the access road instead of being allowed to flow through the feedlot. The District continues to implement projects in the Rock Creek watershed knowing that the cumulative effect of such sediment reduction projects can impact water temperature and flow.

The landowner initially was not convinced that the District's plan would work. As they began construction, he eventually could see the design had merit and allowed them to continue. Eastern Klickitat Conservation District now has an advocate in this landowner, who wants to the District to do more work on his ranch.

District Manager Jim Hill said, "Projects like this are exciting because they are easy to implement and produce dramatic and obvious results. When they work as well as this one did, we also get a friend who trusts the District and is willing to work with us in other endeavors."

Water trough project before (left) and after landowner received assistance from Eastern Klickitat Conservation District (right)

OKANOGAN CONSERVATION DISTRICT:
IMPROVING WATER QUALITY IN THE OKANOGAN WATERSHED

When the Okanogan Conservation District began developing a water quality plan for the Okanogan Watershed (WRIA 49) in 1995, they found many challenges. Some streams exhibited excess sediment or had been rechanneled. Water quality monitoring revealed high levels of dissolved oxygen and fecal coliform. In response, the Okanogan Conservation District launched a series of projects to protect and restore the watershed.

Making an Impact:

- ***Working with irrigators to replace 136 non-compliant fish screens in Okanogan River.***
- ***Developed water quality plan for Okanogan Watershed.***
- ***Restored stretch of Bonaparte Creek to its historic channel.***

FINDING A COMMON PATH A diversity of stakeholders are invested in the watershed. Recognizing the success of water quality projects depends on collaboration, the Okanogan Conservation District worked hard to bridge the interests of private landowners with the goals of the Colville Tribes and several federal, state, and local government entities. The resulting watershed projects balance water quality and land use goals.

ACTION ON THE GROUND In 2000-2003 the District surveyed Bonaparte Creek and found septic pipes draining directly into the creek. The associated homes were outside Tonasket city limits, but the District proposed a deal between homeowners and the City to grandfather-in the failing wells and sewer the area. Years later, the District worked with a landowner to move a stretch of Bonaparte Creek away from Highway 20 and back to its historic stream channel. The stretch of stream increased by over 1,000 feet and has been planted with native vegetation. The District also currently offers an incentive-based program with a goal of replacing 136 non-compliant fish screens along the Okanogan River. Fish screens protect juvenile fish from water diversions, such as irrigation pump intakes. As a result of the District's program—which covers 100 percent of the costs to replace and install new fish screens—irrigators voluntarily have replaced 55 non-compliant screens. The District has contracted with the Colville Tribes to replace 50 more screens next year.

Okanogan Conservation District has faced some logistical hurdles. State and federal agencies rarely award grants for monitoring, so the District lacks capacity to measure impacts of installed practices. And, while landowner participation has increased over time, more outreach is needed to increase stewardship on private lands. According to District Manager Craig Nelson, the success of projects in the watershed depends on positive relationships with landowners.

"Oftentimes we get called into projects because other partners need somebody the landowner can trust," said Nelson. "We're governed by local volunteer supervisors, most of whom are farmers and ranchers themselves. I think other partners want us involved because, frankly, they know we'll get through the landowner's door before they will."

Restoring Bonaparte Creek to its natural channel, from project beginning (left) to end (right)

SOUTH YAKIMA CONSERVATION DISTRICT: FARMERS IMPLEMENT PRACTICES TO CLEAN UP YAKIMA RIVER

MAKING AN IMPACT:

- ***Yakima River water quality improved by about 80%.***
- ***Discharge of suspended solids from Sulphur Creek Drain decreased by 93 tons per day.***
- ***30 landowners participated.***
- ***Implemented 10 rill-to-sprinkler conversion projects benefitting over 600 acres.***

The Lower Yakima River Basin in south central Washington is known as one of the most intensively irrigated areas in the United States. In 1974, a study conducted for the Washington State Department of Ecology identified Sulphur Creek sub-basin as having the greatest irrigation water quality problems of any sub-basin in the Yakima River Basin. In the 1994 irrigation season, 110 tons per day of total suspended solids were discharged to the Yakima River (equivalent to 14 dump truck loads), and 31.9% of all sources of suspended solids were coming from the Sulphur Creek Drain.

FINDING A COMMON PATH In response to Sulphur Creek's widely documented water quality problems, the South Yakima Conservation District (SYCD) led a Model Implementation Project from 1977-1982 to improve irrigation practices. Then, in 1996, SYCD received funding to begin the Sulphur Creek Best Management Practices (BMP) Implementation Project. The District recruited 30 landowners to participate in the project, and they funded 10 rill-to-sprinkler conversion projects that benefitted over 600 acres.

RESULTS ON THE GROUND In 2000, SYCD began evaluating the success of the BMPs landowners implemented in sub-basins 5 and 10 in collaboration with the Roza-Sunnyside Board of Joint Control. Water quality samples were collected at three sites, three days per week during the irrigation season from mid-April to mid-October. Data were collected on several water quality parameters, including discharge, turbidity, suspended solids, Kjeldahl nitrogen, phosphorous, temperature, pH, conductivity, and dissolved oxygen. The evaluation revealed that landowners had significantly improved water quality by adopting BMPs. In sub-basin 5, Total Suspended Solids (TSS) decreased by 56%, Total Phosphorous (TP) decreased by 32%, and Total Kjeldahl Nitrogen (TKN) decreased by 117%. In sub-basin 10, TSS decreased by 86%, TP decreased by 69%, and TKN decreased by 45%. By 2003, discharge from Sulphur Creek Drain averaged 17 tons per day—a decrease of 93 tons per day in less than 10 years. Landowner participation was essential to this success.

"Thanks to their extraordinary efforts, the farmers of the Yakima Valley have helped improve the river's water quality by about 80%," said Linda Hoffman, Department of Ecology Director. "Initially, many were wary of the loft goals we had set for the Yakima River, but they accepted the challenge and demonstrated amazing leadership in cleaning up the river."

Sulphur Creek draining into Yakima River before (left) and after South Yakima Conservation District worked with farmers to implement BMPs for water quality (right)

COLUMBIA CONSERVATION DISTRICT: TUCANNON RIVER RESTORATION IMPROVES SALMON RUNS

The Tucannon River system in southeast Washington supports federally listed species, including steelhead, bull trout, and Chinook salmon. In the late 1990s, local salmon recovery and natural resource groups, including the Columbia Conservation District (CCD), developed a watershed habitat restoration plan for this Snake River tributary. The plan and associated watershed assessment revealed several threats to salmon habitat, including high water temperatures (sometimes exceeding 80 degrees F), stream bank instability, lack of cover for rearing pools, and high levels of bacteria.

FINDING A COMMON PATH The CCD has partnered with private landowners, Bonneville Power Administration, the Snake River Salmon Recovery Board, tribes, and several state and federal agencies on Tucannon restoration projects. In the late 1990s, the CCD began to enroll Tucannon landowners in the Conservation Reserve Enhancement Program (CREP). Administered by the Farm Service Agency and the Washington State Conservation Commission (WSCC), CREP offers landowners financial incentives for restoring and protecting riparian habitat (areas in and around rivers and streams) on their property.

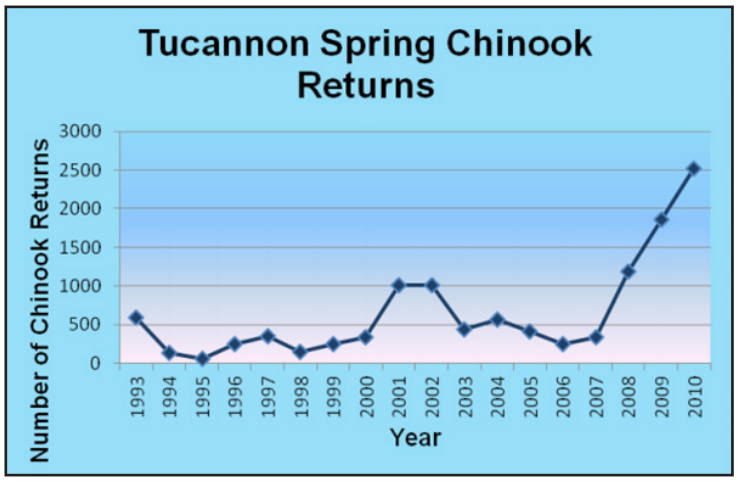
Making an Impact:

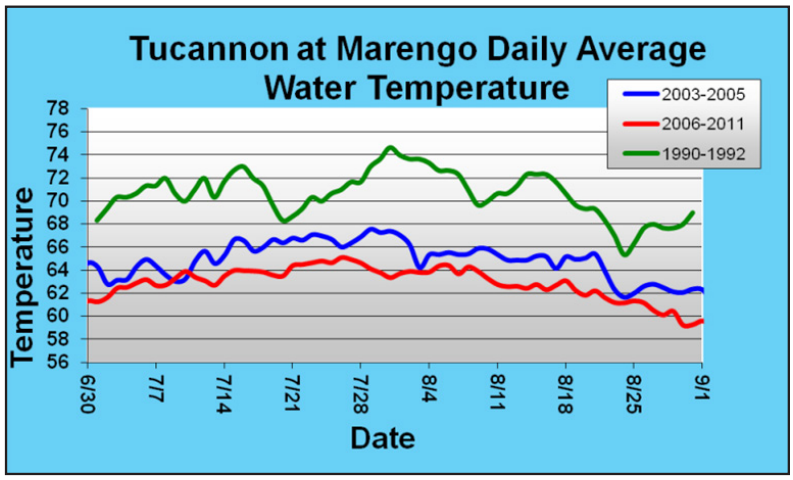
- ***Adult spring Chinook salmon returns increased from about 50 in 1995 to about 2,500 in the year 2010.***
- ***Young salmon use 20 miles of river that were previously too warm to use.***
- ***Tucannon River summer water temperatures dropped more than 10 degrees F following restoration actions.***

RESULTS ON THE GROUND The CCD worked with landowners to restore 1,100 acres of Tucannon riparian habitat using CREP. This meets 79 percent of the recovery goal for riparian restoration in that stream. The District also worked with landowners on cost-share projects that benefit the Tucannon, such as installing off-site livestock watering systems and upgrading irrigation systems to save water and enhance in-stream flow.

These efforts yielded significant results. As riparian buffers (vegetated borders along streams) increased in age and number, summer water temperatures in the Tucannon River dropped more than 10 degrees F! Spring Chinook salmon responded to this change. Prior to the year 2000, young salmon were not seen in the lower 20 miles of the Tucannon due to the warm water temperatures. In recent years, young salmon have been seen using that reach of the river, sometimes in high numbers. In addition, adult salmon returns increased from about 50 in 1995 to about 2,500 in the year 2010.

"Riparian restoration has been of significant importance in the Tucannon Basin along with improved fish passage, reduced sediment loads due to conservation tillage, and increased water flow," said Dr. Carol Smith, Habitat and Monitoring Coordinator at the WSCC. "Together these priority habitat actions are attributed with contributing to the improved salmon runs in this stream."





PEND OREILLE CONSERVATION DISTRICT: PARTNERS RESTORE BULL TROUT HABITAT IN CEDAR CREEK

MAKING AN IMPACT:

- ***Removed several fish barriers, including 95-foot wide cement dam.***
- ***Installed woody debris and boulders that created pools, riffles, and runs that fish now inhabit.***
- ***Provided a model for successful, public-private sector conservation partnerships.***

Cedar Creek in northeast Washington was historically accessed by bull trout—a threatened species under the Endangered Species Act—for spawning and rearing. The US Fish and Wildlife Service (FWS) designated Cedar Creek as "Critical Habitat" for bull trout and called for the removal of barriers from the creek's confluence with the Pend Oreille River to its head waters. The barriers not only hindered bull trout passage, they also posed a public safety concern. The Pend Oreille Conservation District (POCD) was the Salmon Recovery Fund Board (SRFB) Lead Entity Coordinator and was the logical agency to facilitate Cedar Creek restoration efforts.

FINDING A COMMON PATH POCD worked with partners to secure federal, state, and local funding to remove fish barriers. Many private landowners participated with projects on their land, and others allowed staging of equipment and supplies to take place on their property. Several fish barriers were removed, the largest being the demolition of an old, 95-foot wide cement dam in 2005. Other removals included a bridge, two water crossings, and small log crib dams. POCD and partners also installed a foot bridge and two auto bridge placements; restored log and rock structures in and along Cedar Creek; and planted several thousand trees and shrubs. POCD's project partners included US FWS, WA Department of Fish and Wildlife (WDFW), WA Recreation and Conservation Office, WA Department of Ecology, WA State Conservation Commission, Kalispel Tribe, Pend Oreille County, and other regional and local entities.

RESULTS ON THE GROUND Results as far as temperature changes and bull trout returns are unknown at this time; however, observations of the project area indicate that fish and wildlife are benefiting from the Cedar Creek restoration. Woody debris and boulder placements have created pools, riffles, and runs—one can physically see fish inhabiting these newly structured environs.

These restoration projects on Cedar Creek underscored the importance of stakeholder collaboration. Without the many partnerships formed from the local-level all the way to the federal-level, this project would never have gained the momentum to get off the ground.

Left: Cedar Creek dam before (top) and during destruction (bottom)
Right: Same site following Cedar Creek dam removal and instream and riparian restoration efforts

STEVENS CONSERVATION DISTRICT: BRINGING STAKEHOLDERS TOGETHER TO IMPROVE WATER QUALITY

Chamokane Creek, a tributary to the Spokane River, is on the 303(d) list due to its high levels of fecal coliform and dissolved oxygen. Streams are placed on the 303(d) list when poor water quality impairs their use as drinking water, habitat, recreation, and/or industrial use. The Spokane River is also on the 303(d) list for PCBs and dissolved oxygen. Over the years the issues surrounding these waters have generated distrust and a few legal battles over water rights. As a local and trusted entity, the Stevens County Conservation District has been able to bring together diverse stakeholder groups—including private landowners—to work towards a solution.

Making an Impact:

- ***Worked with the Spokane Tribe to establish the Chamokane Watershed Council.***
- ***Installed several practices in the watershed, including riparian fencing and planting of native vegetation.***
- ***Project spurred other landowners' interest in additional conservation work.***

FINDING A COMMON PATH Chamokane Creek is bordered by private lands and the Spokane Indian Reservation on the lower portion. Stevens County Conservation District (SCCD) received a Department of Ecology (DOE) grant and worked with Spokane Tribe to establish the Chamokane Watershed Council, which is made up of private landowners and a large commercial timber ownership. Through this council the first water quality improvement project was implemented with funding from the Tribe, DOE, EPA, and a participating landowner. Several best management practices (BMPs) were installed as part of the project, including riparian (streamside) fencing, a livestock bridge, spring development, and planting of native woody vegetation. An Engineering Grant from the Washington State Conservation Commission funded the livestock bridge design. The landowner—who was active in the implementation of the entire project—provided labor and materials as in-kind.

RESULTS ON THE GROUND 1,500 feet of Chamokane Creek has been improved, and the landowners and neighbors are better informed on the importance of a healthy riparian area. One clear success is that the landowners and the watershed council are extremely pleased and look forward to the riparian area and diverse vegetation improving in the future. Many of the neighbors continue to watch the project develop and are now showing interest in working on their own property. There were some pre-project water samples collected, but SCCD has yet to find funding for post-project monitoring to further document water quality improvements.

The major challenge was finding willing landowners to participate, considering the long history of mistrust among stakeholders within the watershed. It was the landowners' trust in the local Conservation District that led them to participate in this project and implement practices to make demonstrable water quality improvements. As one SCCD Board Supervisor said, "You have to start somewhere—one successful project will spur interest in more projects."

Left: Livestock bridge constructed to keep cows out of creek
Bottom: Chamokane Creek property before (left) and after water quality improvement project (right)

WALLA WALLA COUNTY CONSERVATION DISTRICT: PARTNERS FIND SOLUTIONS THAT BENEFIT FISH AND FARMERS

Making an Impact:

- ***Saved an estimated 2,404 acre feet of water (nearly 800 million gallons) as a result of irrigation efficiencies.***
- ***Removed gravel diversion dams that previously impeded fish migration.***
- ***Provided 20 farm owners/operators with more efficient and reliable irrigation delivery systems.***

The Bergevin-Williams/Old Lowden ditch systems have been used to irrigate farms in the Walla Walla Valley for decades. Gravel diversion dams were built in the Walla Walla River that caused water to flow into these irrigation ditches. However, these dams impeded fish migration, which was a major concern of basin-wide restoration efforts. In an effort to maintain higher stream flows and improve fish passage, the Walla Walla County Conservation District worked with farmers and conservation partners to find a "win-win" solution.

FINDING A COMMON PATH The Walla Walla County Conservation District (WWCCD) secured grant funding from the Bonneville Power Administration, Confederated Tribes of the Umatilla Indian Reservation, and the Department of Ecology to remove two gravel dams and consolidate irrigation ditches into a single diversion. To further complement the aquatic improvements, WWCCD upgraded the Bergevin-Williams/Old Lowden irrigation ditches to a pipeline system. This increased irrigation efficiency and reduced water use on 1,816.5 acres. Work on this project began in 2009 and completed in 2013.

RESULTS ON THE GROUND Fish, farmers, and workers benefitted from the Bergevin-Williams/Old Lowden irrigation project. Improvements in irrigation efficiency allow farmers to save water each year that is placed into the Trust Water Rights. This results in additional water for fish. In fact, this project has saved an estimated 2,404 acre feet of water—that's nearly 800 million gallons of water that has been placed into trust. And, the yearly fish passage obstructions have been removed allowing for migration. The 20 farm owners and operators involved in this project are benefitting from an improved irrigation delivery system that is both more reliable and efficient. This complex project also provided jobs for a number of workers in various occupations.

This project demonstrates that conservation and agricultural stakeholders can work in a cooperative and collaborative manner. Water is critically important for agricultural and ecological objectives, but resources can be managed to support both "fish and farmers."

"The real story of the Bergevin-Williams/Old Lowden consolidation was the cooperation and collaborative workings of private sectors and agencies, both state and federal," said Kay Mead, WWCCD Irrigation Efficiency Coordinator.

Left: Old Bergevin-Williams gravel diversion dam ("push-up") prior to removal

Right: Bergevin-Williams/Old Lowden single diversion that was constructed to replace gravel dams

Thank you to the landowners in each of Washington's 45 Conservation Districts who have helped us protect and restore natural resources on private lands!

To learn more, visit the Washington State Conservation Commission website: www.scc.wa.gov

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