

MIDDLE DESCHUTES WATERSHED COUNCIL

Annual Report July 1, 2019 - June 30, 2020

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625 SE Salmon Ave., #6
Redmond, OR 97756
(541) 604-9444
middledeschuteswc@gmail.com
www.middledeschuteswatershedcouncil.org

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Background

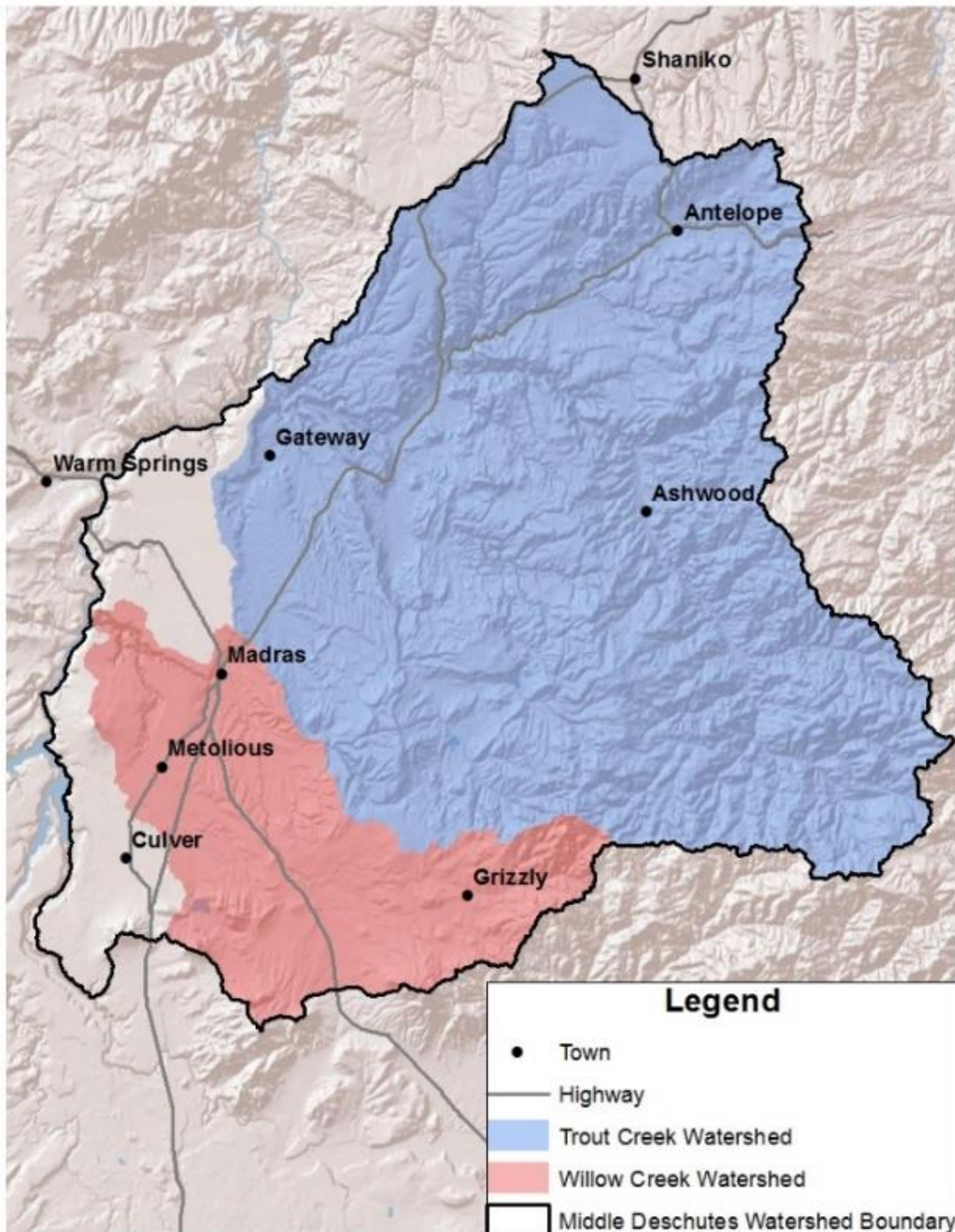
Middle Deschutes Watershed Geography and Climate

The Middle Deschutes Watershed Council service area includes Trout Creek, Willow Creek, and Campbell Creek watersheds, as well as other contributing streams. The combined watersheds encompass over 600,000 acres and include over 1,000 miles of streams and associated riparian and upland habitats. The Trout Creek and Willow Creek watersheds are important areas where maintaining and restoring the Deschutes River Basin's fish and wildlife populations, water quality, and stream and upland habitats is desired.

The lands within the watersheds support agriculture, grazing, timber harvest, recreation, and other businesses that sustain the local economy. The Watershed Council service area includes the entire North Unit Irrigation District (NUID), which provides water to 58,860 acres. The NUID irrigated lands drain primarily into the Crooked River, Deschutes River, Mud Springs Creek, and Willow Creek.

The headwaters of Willow Creek and Trout Creek both begin in the Ochoco Mountains and generally flow westward to their confluence with the Deschutes River. Elevations in these watersheds range from 1,280 feet, where Trout Creek enters the Deschutes River, to 5,940 feet at the headwaters. Typical summers are dry and hot, with average temperatures near 87F in July and August. Winters are wet and cold, with minimum temperatures averaging 33F in December. Stream flows are influenced by precipitation (9 inches/year near the city of Madras, to 30+ inches in the Ochoco Mountains), topography, and historical and current land management actions. The watersheds' relatively low elevations result in limited mountain snowpack to sustain stream flows into the summer months.

Changes in the watershed from past management include channelizing streams and berm constructions which limit floodplain access during high flows. In addition, the draining of wetland areas, compaction of soils from historical grazing practices, and changes in rangeland vegetation, have resulted in less water storage in upland areas. These combinations of characteristics result in "flashy" stream flows, rapid runoff, and larger flood events during periods of intense precipitation, and lower flows during summer and fall months.



Map of Middle Deschutes Watershed region outlined in black. Trout Creek watershed is highlighted in blue and Willow Creek is highlighted in red. Towns are noted by black circles.

Middle Deschutes Watershed Council

The Willow Creek and Trout Creek Watershed Councils were formed as separate watershed councils in the 1990s. Each council engaged watershed landowners, agencies, and other organizations in studies to understand the factors contributing to declining fish populations, degraded stream and upland habitats, and poor water quality. Based on each Watershed Council's watershed assessment and through gathering other information, the Watershed Councils prioritized restoration projects and developed strong partnerships with landowners, agencies, and funding source. Over time, each Watershed Council has completed a large number of projects through voluntary actions with landowners to improve the ecological health of the Willow Creek and Trout Creek watersheds.

In 2015, the Willow Creek and Trout Creek Watershed Councils officially joined to create the Middle Deschutes Watershed Council. Combining the two councils provides an efficient organizational framework and coordinated approach for supporting recreation and other activities within the broader Trout Creek and Willow Creek Watersheds. The Watershed Coordinator is a professional staff member who coordinates restoration and education actions in the Middle Deschutes Watershed through gaining project funding, communicating with landowner and partner organizations, planning and executing restoration projects and education programming, and communicating with the community on priority conservation concerns. This position is funded through capacity grants from the Oregon Watershed Enhancement Board.

Council Staff

Andy Neary served as the Middle Deschutes Watershed Council Coordinator from September 2018 - August 2019. Prior to working with the Watershed Council, Andy completed a Master of Science (M.S.) degree in Rangeland Ecology at Oregon State University. Andy brings over 11 years of experience in ecological restoration, land conservation, monitoring, environmental education, and project management.

Kate Wellons served as Program Assistant from October 2018 – April 2019 to support the Watershed Council's education program and increase capacity for outreach, community engagement and monitoring. Kate holds a M.S. in Horticulture and has a background in botany and wetland ecology.

Victoria Fischella served as a Program Assistant from April 2019 – October 2019 to support the Council Coordinator with education programming and restoration activities. Victoria has a Bachelor's degree in Forest Ecosystems and Society from Oregon State University and has a background in Forestry and Watershed Ecology as former employee with USFS Deschutes National Forest and Opal Creek Ancient Forest Center.

Jenna Keeton is the current Council Coordinator and started her position in October 2019. Jenna earned a M.S. in Aquatic Ecology from Utah State University in 2019 and a B.S. in Aquatic and Fishery Sciences from the University of Washington in 2014. A Northwest native, Jenna focused her past work on evaluating salmonid habitat restoration practices in the Columbia River Basin and understanding the economic importance of commercial fishing in Southeast Alaska.

Additional expertise is provided through established partners and our Board of Directors.

Board of Directors

The Middle Deschutes Watershed Council is organized and governed by local landowners, residents, government agencies, and other stakeholders. The Watershed Council strives to convene a broad representation of the watershed's community and interests through its board membership and partnerships.

Officers of the Watershed Council are elected biannually and consist of a chair and vice chair elected from within the Watershed Council. The Watershed Council meets every other month to report on activities, discuss broader issues, plan project proposals, and coordinate actions.

The Middle Deschutes Watershed Council partners with local, state, and federal agencies and non-governmental organizations to promote watershed health, education, and outreach. Our partners are composed of funding organizations, collaborative partners, and organizations that assist the Watershed Council achieve its mission.

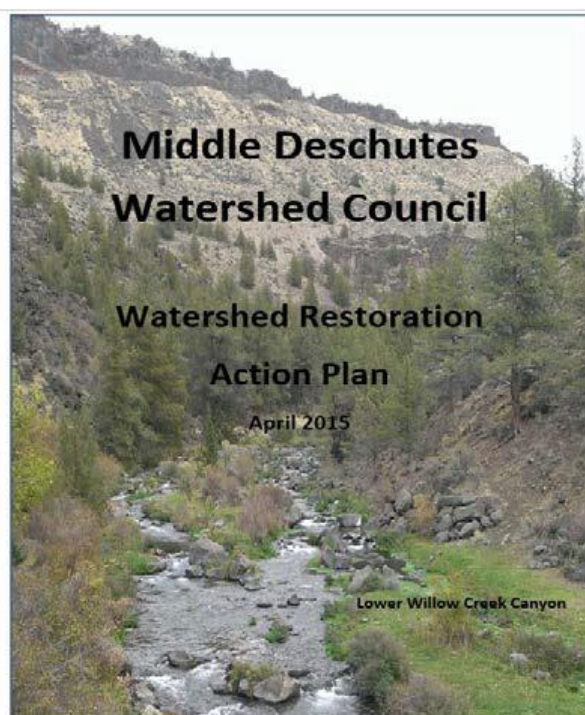
<i>Director</i>	<i>Representing</i>
Jon Burchell	City of Madras
Guy Chittenden	509-J School District
Theresa DeBardelaben	Oregon Department of Agriculture
Lloyd Forman	Trout Creek Landowner
Robert Marheine	Portland General Electric
Jennifer Mickelson	U.S. Forest Service
Tom Norton	Willow Creek Landowner
Jeff Rasmussen	Jefferson County
Scott Samsel	Willow Creek Landowner
Lisa Windom	North Unit Irrigation District

Action Plan

The Middle Deschutes Watershed Council's Restoration Action Plan was completed in 2015. This document advances the Watershed Council's mission to improve the health of the Willow Creek and Trout Creek watersheds while supporting a sustainable economy. The Watershed Council applied for and received grant funding from the Oregon Watershed Enhancement Board to develop a Restoration Action Plan to describe restoration goals and strategies for the later watershed areas, as well as actions focused on Willow Creek and Trout Creek.

The Action Plan is the strategic framework and roadmap to guide Watershed Council activities through 2020. These activities include voluntary restoration project planning and implementation, Watershed Council organizational development, building partnerships, community and landowner education and involvement, collecting information on watershed conditions, and evaluating the effectiveness of restoration actions.

Action Plan development and planning began in 2014 with hiring a contractor and executing site tours and Watershed Council meetings where participants discussed watershed issues and opportunities, partnerships, past restoration projects, and other accomplishments in the area. Participants also explored future restoration goals and priorities, and described current and future partnerships to advance the Watershed Council's mission. After extensive Watershed Council discussion, organizations and individuals submitted project ideas to incorporate into the Action Plan. Participants also outlined a process for broader public and stakeholder outreach and review of the Action Plan.



Accomplishments

Administrative Activities

The Middle Deschutes Watershed Council (MDWC) ended the 2017-2019 biennium in July 2019 and expended nearly all funds. MDWC was awarded full funding from the Oregon Watershed Enhancement Board for a Council Capacity grant for the 2019-2021 biennium which funds the coordinator position and council activities for two years. Andy Neary served as Council Coordinator through August, 2019. Victoria Fischella served as a Program Assistant through August, 2019. The MDWC Council Coordinator position was separated from the CREP position, creating two full time positions out of each title. The Program Assistant position was dissolved. Jenna Keeton has served as Council Coordinator since October, 2019. MDWC responded to the COVID-19 pandemic by working remotely and applying for a diversity of funding sources intending to diversify funding streams.

Outreach

The MDWC participated in 7 avenues of outreach between July 2019 and June 2020. 1) We hosted 1 trail and 1 highway clean-up in and around the city of Madras. 2) We met with multiple landowners in Upper Willow Creek to communicate about in restoration projects. A landowner meeting was held in June 2019 and two landowners signed on for future projects as a result of this outreach. 3) MDWC attended multiple farmers market events in Bend to extend volunteer outreach and meet with producers of the central Oregon region. 4) We hosted an informational table at *Nature Night*, a Deschutes River Conservancy event and *Wild Rivers Night*, a Coalition for the Deschutes event. 5) Andy Neary presented the progress of MDWC projects at the PGE fisheries workshop. 6) We are working with Coalition for the Deschutes and North Unit Irrigation District on *Plotting for Pollinators* project. 7) The MDWC has been co-host & informational “plugs” during live web lectures hosted by Coalition for the Deschutes and BeaverWorks Oregon. The COVID-19 Pandemic limited our outreach abilities this year due to avoiding public gatherings.

Education Program

The MDWC Environmental Education Program was funded in part through a grant from the Gray Family Foundation in 2019-2020. The work this grant supported allowed the MDWC to focus on 3rd-8th grade curriculum at Madras, Buff, and Metolius Elementary Schools, and Warm Springs K-8 Academy. Students received multiple in-class presentations and several field trips and learned about stream ecology, water quality, the importance of upland habitat management. The MDWC was also funded through a Youth Engagement Strategy grant from the Children's Forest of Central Oregon. The goal of this project was to deliver classroom and field trips to students in Central Oregon over two years.

During Summer of 2019, MDWC attended 1 week at 509-J school districts STEM Summer Camp, teaching environmental education and watershed science. MDWC attended one week of Culture Camp at Warm Springs Academy.

In the Fall of 2019, MDWC hosted 5 field trips at Mecca Flats with 3rd and 4th graders from Buff and Madras Elementary in late October and engaged with 115 students. After-school programming was held at the 21st Century Community Learning Center at Warm Springs K-8 academy and was successful in early Spring until the academy was closed due to COVID-



19. MDWC received a Ticket2Ride grant from Oregon State Parks through the Children's Forest of Central Oregon (CFCO) and planned a Cove Palisades State Park field trip with partners: Trout Unlimited, PGE scientists, and an Oregon State Park Ranger. Unfortunately, these field trips are postponed until 2021. To adapt to 5th-6th grade teachers needs for virtual programming due to COVID-19, MDWC and CFCO created a virtual learning lesson entitled, "Stream Sampling 101".

Watch the lesson: <https://www.youtube.com/watch?v=tKgmjWloJBQ&feature=youtu.be>.

Photo: Elementary school students during a field trip to Mecca Flats to study aquatic and riparian habitat.

Restoration Projects

The MDWC was involved in 9 restoration projects between June 2019 and July 2020. The intent of these restoration projects is to help us accomplish our mission of enhancing and protecting the natural resources of the Middle Deschutes watershed.

- 1) The Scabby Hollow riparian planting project was completed in Summer 2019 which focused on planting riparian vegetation along the banks of Upper Willow Creek to promote bank stability.
- 2) The Upper Trout Creek Tributary Rehabilitation project was approved for funding by OWEB in Fall 2019. The goal of this project is to increase large wood and realign the stream channel along ~ 18 miles of Trout Creek headwater tributaries. This project has supplemental funding from Pelton Round Butte. Some work has been completed already, and the rest will be implemented Summer 2020.
- 3) The Newbill Creek Headwater Enhancement project was completed in Winter 2019. The purpose of this project was to create a wet meadow at headwaters of Newbill Creek, a tributary to Upper Willow Creek.
- 4) The Upper Trout Creek Fencing project is under development as a partnership between USFS and Crook County SWCD to build fencing in tributaries of Upper Trout Creek to keep cattle on private land and prevent trespass cattle from entering forested land.
- 5) The Warm Springs Riparian Planting project is under development on the Confederated Tribes of Warm Springs Reservation. The purpose of this project is improving the riparian vegetation community health along the Deschutes River where a large wildfire burned through in 2017-2018. We are partnered with members of the Tribal nation and the Coalition for the Deschutes.
- 6) The Trout Creek Hydrologic Restoration Conservation Implementation Strategy (CIS) intends to address Juniper encroachment in the Trout Creek watershed through cutting and burning Juniper. MDWC wrote the majority of the CIS with partners JSWCD and NRCS.
- 7) The Middle Deschutes Pacific Lamprey Distribution project proposal was submitted by MDWC with partners from the Confederated Tribes of Warm Springs and Cramer Fish Sciences. This project will use eDNA technology to detect whether Pacific Lamprey

are present in the lower 3 miles of Trout Creek and mainstem Deschutes as well as Warm Springs tributaries.

8) The Upper and Lower Trout Creek National Water Quality Initiative (NWQI) intends to address water quality concerns in areas of Trout Creek that may be remedied through restoration actions such as riparian fencing, channel re-meander, large wood placement. Partners on this project include JSWCD, NRCS, and Oregon Department of Environmental Quality (DEQ). The first step, if approved by NRCS, is to update the Trout Creek Watershed Assessment from 2002 and identify areas of restoration need. The second step, requiring an additional proposal, is to implement restoration actions.

9) The Campbell Creek Watershed Enhancement project was first proposed by JSWCD and is now MDWC's responsibility. The goal of this project is to decrease erosion and filter pesticides and nutrients from nearby agricultural areas. The MDWC is working with a contractor to install a series of beaver dam analogues in Campbell Creek canyon in Fall and Winter 2020/21.

The MDWC is proud of the restoration projects and progress achieved 2019-2020 and look forward to continuing progress and creating new projects in the near future.



Photo: Potential riparian planting site on the Deschutes River, Warm Springs Reservation

Monitoring Projects



The MDWC continued work on a 20-year long-term stream temperature monitoring project at 5 locations in Upper Willow Creek. This project is part of a statewide effort to understand how management activities may improve stream temperatures. This project is funded by the Oregon Department of Agriculture and temperature loggers were installed in Spring 2019. Loggers were taken out of the stream in Fall 2019 and data was collected. Loggers were reinstalled in Spring 2020. The MDWC was also a partner in the Pesticide Stewardship Partnership, collecting water samples across agricultural areas in Madras to test for pesticides in waterways. 4) The MDWC deployed piezometers on Little Trout Creek with JSWCD/ODFW to assess whether future restoration projects have a measurable effect on the amount of groundwater in floodplain areas of Little Trout Creek.

Photo: Victoria Fischella samples water flow in Campbell Creek.

Financial Summary

July 1, 2019 – June 30, 2020

Funding Group	Grant Name	Total Funds	Total Spent	Total Left
Oregon Department of Agriculture	Stream Temperature Monitoring	\$4,849	\$1,380.22	\$3,468.78
Oregon Watershed Enhancement Board	Council Capacity	\$122,900	\$58,616.75	\$64,283.25
Natural Resources Conservation Service	Farm Bill Administrative Assistance	\$11,798.00	\$5,677.77	\$6,120.23
Gray Family Foundation	Watershed Education Program	\$6,600.00	\$6,599.71	\$0.29
Children's Forest of Central Oregon	EPA Education	\$3,300	\$1,454.72	\$1,845.28
Children's Forest of Central Oregon	Youth Engagement Strategies	\$2,900	\$2,872.62	\$27.38
Portland General Electric	Weed Treatment	\$2,500	\$65.46	\$2,434.54
Oregon Watershed Enhancement Board	Landowner Engagement	\$10,955	\$7,639.15	\$3,355.85

Goals and Priorities for 2020 - 2021

As the Middle Deschutes Watershed Council enters a new biennium, the focus will remain on the action items identified in the work plan that support the mission of the Watershed Council and improve watershed conditions.

These goals and priorities include:

- Expand community awareness of MDWC activities through newsletters, public presentations, the watershed education program, volunteer stewardship events, informational events, community tours, and workshops.
- Diversify funding sources and build staff capacity.
- Pursue restoration opportunities in upland and riparian habitats in Trout Creek, Willow Creek, Campbell Creek, and along the Middle Deschutes river with a special focus on the Upper Willow Creek watershed.

Partners and Funding Organizations

Thank you to our partners and funding organizations for continued support.

Partners:

- Bonneville Power Administration
- City of Madras
- Culver School District
- Confederated Tribes of Warm Springs
- Jefferson County
- Jefferson County 509-j School District
- Jefferson County Soil and Water Conservation District
- North Unit Irrigation District
- Oregon Dept. of Environmental Quality
- Oregon Dept. of Fish and Wildlife
- Oregon Dept. of Forestry
- Oregon State University Extension
- Trout Unlimited
- U.S. Bureau of Land Management
- U.S. Forest Service
- U.S. Natural Resource Conservation Service
- Wasco County Soil and Water Conservation District

Funding Organizations:

- Children's Forest of Central Oregon
- Gray Family Foundation
- Oregon Dept. of Agriculture
- Oregon Watershed Enhancement Board
- Portland General Electric

References

Willow Creek Watershed Analysis, 2000. Sponsored and Published by Jefferson County Soil and Water Conservation District, Natural Resource Conservation Service, and Willow Creek Watershed Council.

Trout Creek Watershed Assessment, 2002. Prepared by Watershed Professionals Network. Prepared for Bonneville Power Administration and Trout Creek Watershed Council.

Proper Functioning Assessment Report, Willow Creek Watershed, 2005. Prepared for Willow Creek Watershed Council. Prepared by Full Stream Consulting.

Middle Deschutes Watershed Council Action Plan, 2015. Prepared by Cascade Environmental Group, LLC. Prepared for Middle Deschutes Watershed Council.

Middle Deschutes Agricultural Water Quality Management Area Plan, 2020. Prepared by Oregon Department of Agriculture.