

Keeping the Willamette River Cool and Healthy



Photo credit: Gary Halvorson, Oregon State Archives

How Farmers Can be Part of the Solution

What's the Problem

Streams and rivers are getting warmer. This happens because:

- Air temperatures are rising
- Less rain and snowpack and lower flows
- Trees and plants that shade streams have been removed

Warm water causes many problems:

- Stress on fish and other animals
- Harmful algae grows, creating toxins that hurt people, pets, and livestock
- There's less oxygen in the water for fish and other animals to breathe

Why is the Water Getting Warm?

Water warms up when:

- Trees and plants near streams are cut down
- Streams are made wider or straighter
- Dams and reservoirs change water flow
- People use too much water for farming or other needs

Nature also plays a part, like hotter summers and less rain.

Good news: Farmers can help keep water cool by using land and water wisely.



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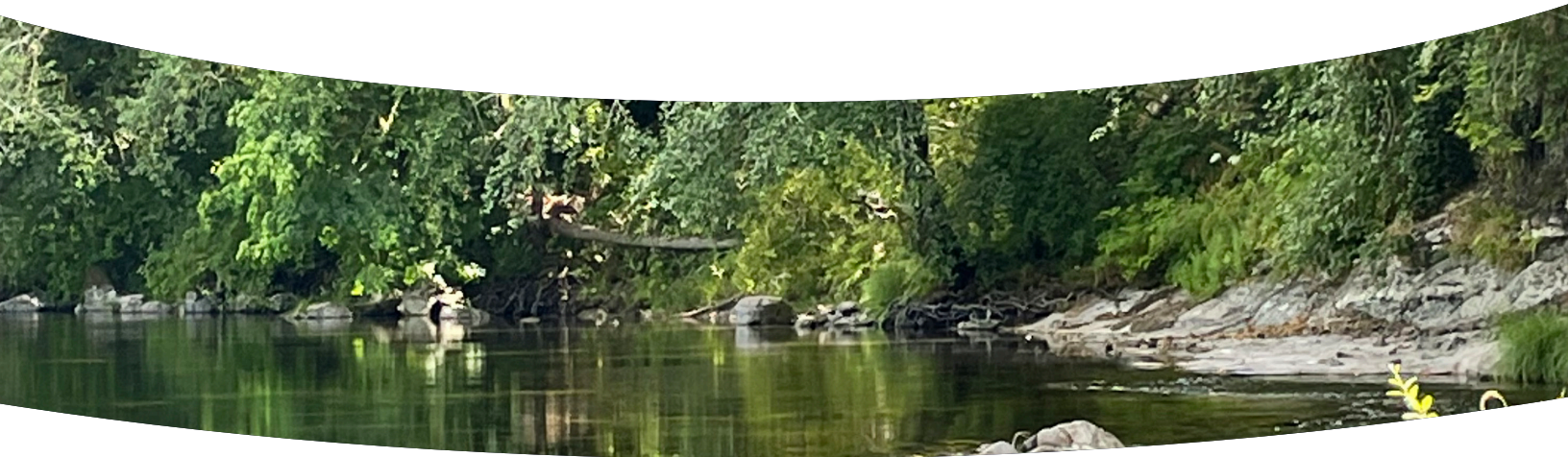
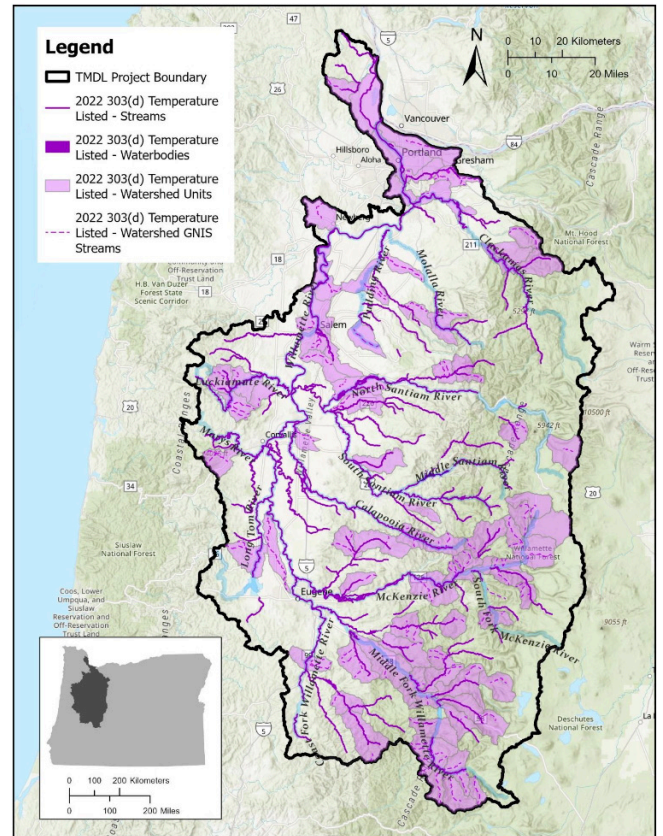
How Do We Fix It?

The Oregon Department of Environmental Quality has set a regulatory limit and created a plan, called a Total Maximum Daily Load (TMDL), for stream temperatures. This sets a limit on how much heat streams can get from the sun. The goal is to keep water cool for:

- Drinking water
- Irrigation and livestock
- Fish and other aquatic life

Farmers are important partners in this plan. Sometimes farming removes trees and shade plants from stream banks or allows cattle and livestock to graze shade-providing plants along the water. Producers may also use too much water by not irrigating efficiently. But farmers can make important changes to help stream temperatures and their farming operation.

Willamette Temperature TMDL Boundary



AG SOLUTIONS FOR WATER QUALITY

What Can Farmers Do?

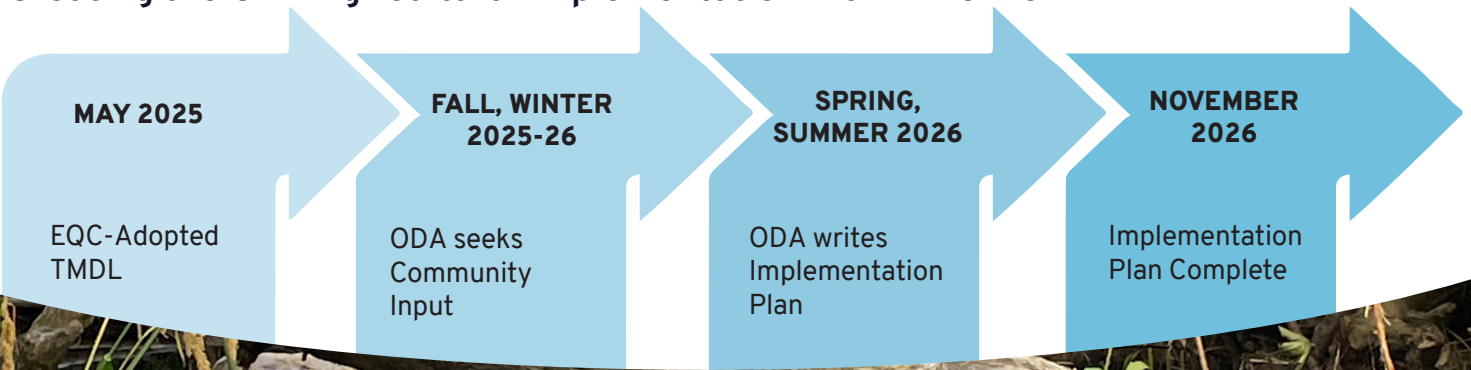
Plant and Protect Streamside Vegetation

- Leave space between crops and the stream - Don't plant crops right up to the bank
- Give livestock water away from streams so they don't damage shade-providing plants
- Plant trees and shrubs along streams for shade, stability, and filtration, and to reduce erosion and flooding
- Let plants grow naturally along waterways without harvesting or mowing
 - Bonus: This provides a natural refuge for wildlife along waterways

Use Water Wisely

- Upgrade irrigation systems to use less water with nozzles, variable frequency drives (VFDs), etc.
- Minimize tillage to conserve soil moisture and reduce water demands
- Let the water saved from irrigating more efficiently to stay in the stream

Creating the ODA Agricultural Implementation Plan Timeline



Common Questions

When is the temperature too hot?

Usually in July and August. Scientists check the 7-day average of daily maximum water temperatures.

How hot is too hot?

It depends on the animals in the water:

- Mountainous bull trout: 53.6° F
- Cold aquatic life: 60.8° F
- Rearing salmon and trout: 64.4° F
- Migrating salmon and trout: 68° F

Why is this agriculture's problem?

Agriculture is just one part of the temperature problem. Farms use land and water near streams. Farmers can help keep water cool. ODA needs to show that agriculture is doing its part to protect water quality.

Do I need a buffer zone?

ODA doesn't have a required buffer size, but recommends planting trees and shrubs. Farmers are required to protect stream temperatures, as well as provide filtration and stability.

What should farmers do?

Increase shade on the water by planting trees and shrubs along waterways. The size of tree and shrub buffer between crops or pasture and the stream varies by site. Staff from ODA, your local Soil and Water Conservation District, or Watershed Council can help determine the appropriate width and help choose the right plants.

Planting trees and shrubs can be expensive.

Where can I get financial support?

There are grants and programs to help pay for it. Contact your local SWCD, Watershed Council, or NRCS to see what is available in your area.

What if farmers do everything right and the water is still too warm?

Agriculture is not the only cause, but it's important to do our part - every part helps. Individual farmers can make a difference by providing cold water refuge for fish in an otherwise warm stream.

Are specific trees and shrubs required?

No, there are no required trees, shrubs, or specifications for planting. Landowners can get support from Soil and Water Conservation Districts, Watershed Councils, OSU Extension, and restoration/horticulture professionals to develop site-specific planting prescriptions.

The goal of any planting of trees and shrubs along a stream should be to provide shade for the stream without invasive plants, such as Himalayan blackberry.

Farmers are advised not to plant ash trees because of the introduction of the invasive Emerald Ash Borer to our state.

Agricultural Rules for Streamside Management

The Oregon Department of Agriculture (ODA) Water Quality Program regulates all water quality concerns on agricultural lands.

Waste rule

Agricultural landowners must comply with the waste rule by not polluting groundwater or surface water, discharging wastes into waters of the state, or placing any wastes in a location where they are likely to enter waters of the state.

- Wastes include excess soil, manure, fertilizer, or other substances that can pollute water.
- Water pollution includes alteration of the physical, chemical, or biological properties of any waters of the state, including change in temperature, taste, color, turbidity, silt, or odor of the waters.
- Waters of the state can include rivers, ponds, groundwater, canals, and ditches.

Streamside vegetation rule

Agricultural landowners must comply with the streamside vegetation rule by allowing vegetation to establish and grow along streams to stabilize banks, filter out pollutants from overland flow, and provide shade if the stream flows year round.

Trees and grass provide stability and filtration, and maintain soil for productive agriculture.

Bare ground along agricultural waterways results in a loss of land and sediment in the water.



Where to get help

Technical assistance is available from:

- ODA
- Soil and Water Conservation Districts
- Watershed Councils
- Natural Resources Conservation Service (NRCS)
- Oregon State University Extension

Finding funding

There are grants and incentive programs available from:

- NRCS
- Farm Service Agency
- Strategic Implementation Area Restoration Grants

Together, we can keep our rivers clean and cool for fish, farms, and families. Thank you for helping!