

Reducing Nitrate Contamination in the Lower Umatilla Basin



OREGON
DEPARTMENT OF
AGRICULTURE

Lower Umatilla Basin Groundwater Management Area (LUBGWMA) Strategic Implementation Area (SIA)

Focused Efforts of Outreach and Assistance

In cooperation with local producers and partners, the Oregon Department of Agriculture (ODA) is taking steps to mitigate nitrate contributions in the Lower Umatilla Basin and ultimately strengthen irrigation practices to improve groundwater.

ODA is committed to:

Learn from local irrigators and partners about specific agricultural data, including crops, crop rotation, irrigation type, and livestock.

Listen to local irrigators and partners about what irrigation and nutrient management practices that are being utilized.

Demonstrate and document agricultural producers utilizing effective irrigation and nutrient management practices and showcase growers using such practices with demonstration projects.

Verify the effectiveness of irrigation and nutrient management plans to limit leaching by reviewing irrigation management and monitoring surface water concerning water quality rules.



Irrigation: Know the Science

- Irrigation water will carry nitrate to groundwater if overapplied.
- Fertilizer pushed below the crop's root zone is wasted money, will eventually end up in groundwater, and violates water quality rules.
- Only apply enough water to fill the active root zone. The soil within the LUBGWMA region is very coarse and cannot hold much water, ranging from 2.3 to 6 inches in the top 3 feet.
- Water application rates must vary throughout the season according to crop water use or evapotranspiration.
- Only apply water at the rate at which the crop is utilizing the water.
- If irrigation water flows over land, then the irrigation application rate is too high, and nutrients are being lost.



Keep irrigation water and nutrients within the field without runoff

Have Irrigation and Nutrient Management Plans

Water carries nutrients through the soil. Effective irrigation and nutrient plans ensure that water and nutrients are applied at the right rate, time, and place.

IRRIGATION MANAGEMENT PLAN

- Know your soil moisture status through the season.
- Know your expected irrigation requirements for the season/crops.
- Irrigate according to weather and crop evapotranspiration conditions using publicly available crop water use calculations.
- Monitor flow, soil moisture, and any overland flow conditions for adjustments.
- Keep records of irrigation quantity and timing.

NUTRIENT MANAGEMENT PLAN

- Know your expected nutrient requirements for the season/crops.
- Know your soil and plant nutrient status through the season.
- Apply nutrients according to when the crop can utilize the nutrients.
- Know your costs and potential: Will the application's cost be returned in crop value?
- Keep records of nutrient application quantity and timing.

Where to get help

Oregon Department of Agriculture: Shiloh Simrell, 541.969.6282, shiloh.simrell@oda.oregon.gov
Rob Hibbs, 971.719.1576, rob.hibbs@oda.oregon.gov

Morrow Soil and Water Conservation District: 541.676.5452, www.morrowswcd.org

Umatilla County Soil and Water Conservation District: 541.278.8049, www.umatillacountywcd.com

Natural Resources Conservation Service (NRCS): Heppner Service Center, 541.676.5021; Pendleton Service Center, 541.278.8049; <https://oda.fyi/NRCSAssistance>

Funding potential

- NRCS for irrigation improvements
- ODA Agricultural Water Quality Support Grants

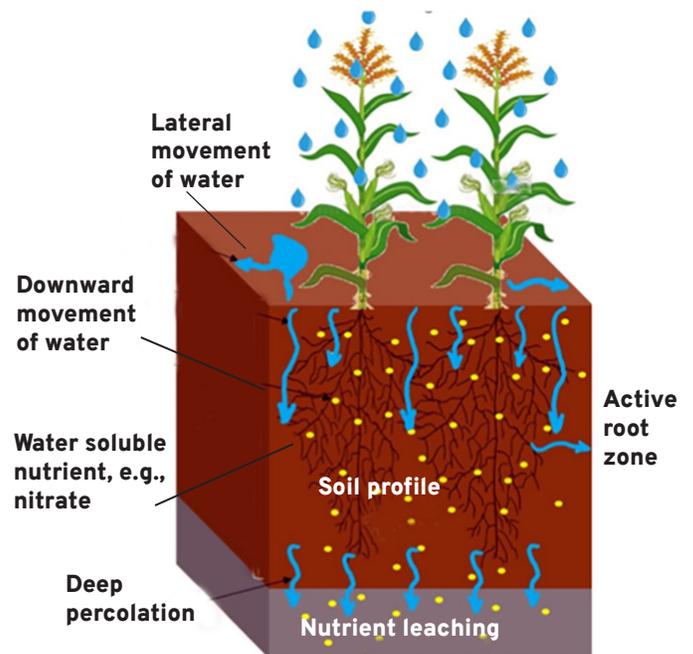
Rules for Irrigated Agriculture

ODA Water Quality Program regulates all water quality concerns on agricultural lands.

WASTE RULE ORS 468B.025

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.
- Waters of the state can include rivers, ponds, groundwater, canals, and ditches.



Leaching of nutrients to groundwater is a violation of the Waste Rule