Oregon Department of Agriculture
Water Quality Program

Johnson Creek: Water Quality Status & Trend Reports

Johnson Creek Science Symposium
October 22, 2019

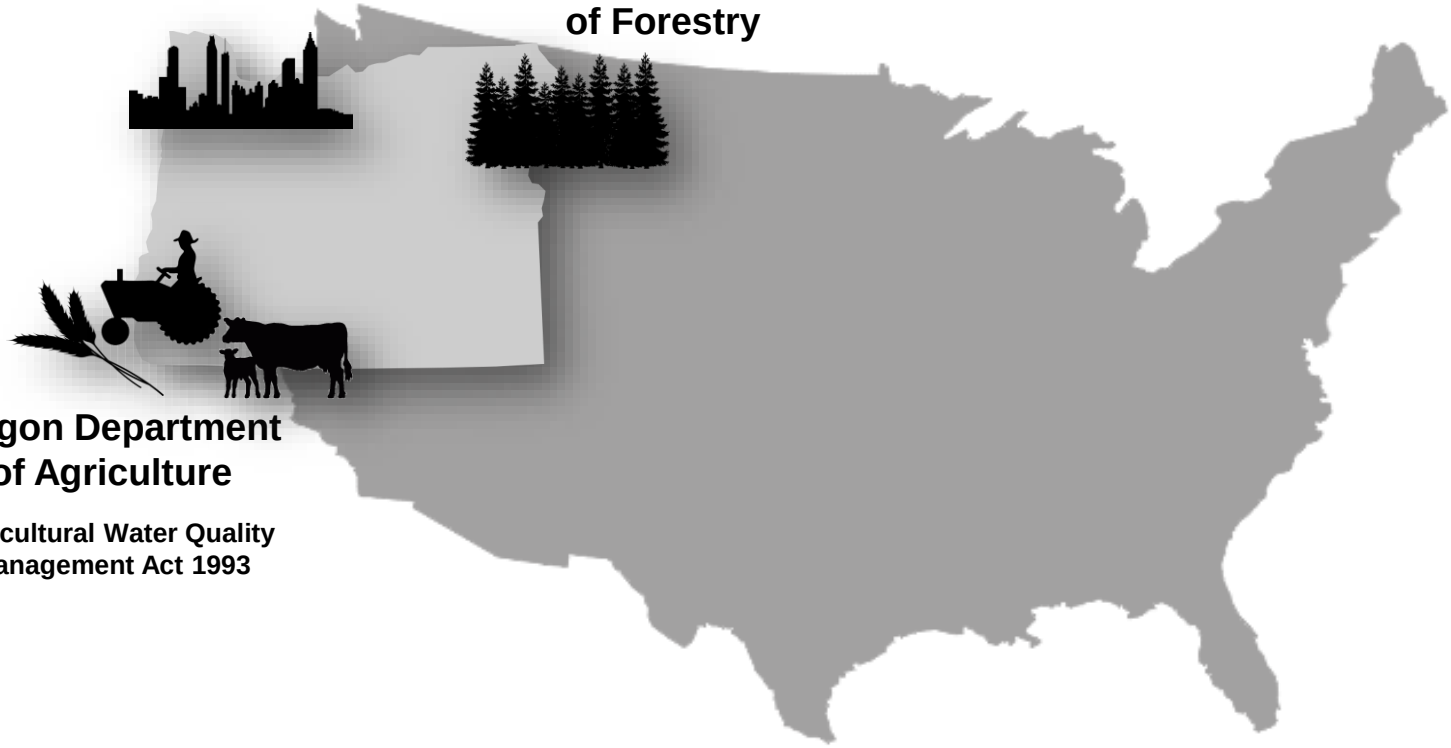
Brenda Sanchez, Water Quality Policy Specialist ODA

Oregon Department of Agriculture

A Division of Responsibility

Oregon Department of Environmental Quality

Oregon Department of Forestry



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Agricultural Water Quality Management Act 1993

1972 CWA

Senate Bill 502 Clarified:

- **ODA has lead authority to regulate farming practices for water quality**
- **Must meet water quality standards set by Environmental Quality Commission**

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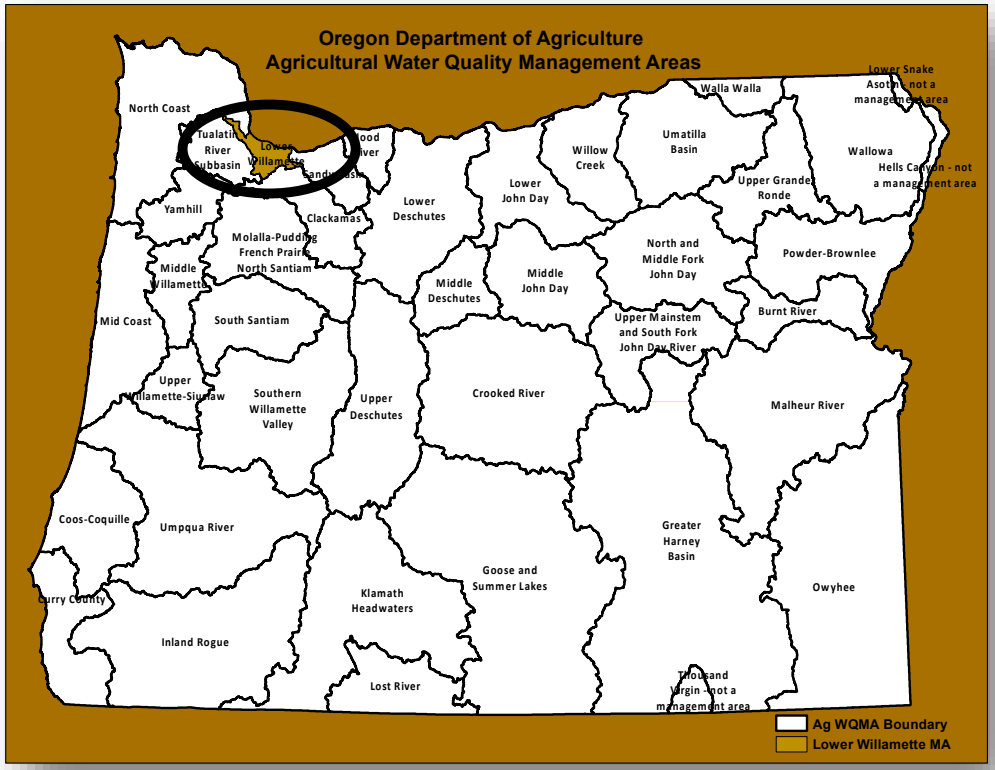
ODA Designated 38 Agricultural Water Quality Management Areas

- ✓ Established Local Advisory Committees
- ✓ Drafted and Adopted Ag WQ Area Rules for Each MA
- ✓ Prepared 38 Watershed-Based Area Work Plans (Reviewed Biannually)

ODA works with SWCDs to Implement Area Plans

- ➢ Local Expert & Non-Regulatory Technical Assistance and Outreach.
- ➢ Voluntary First.



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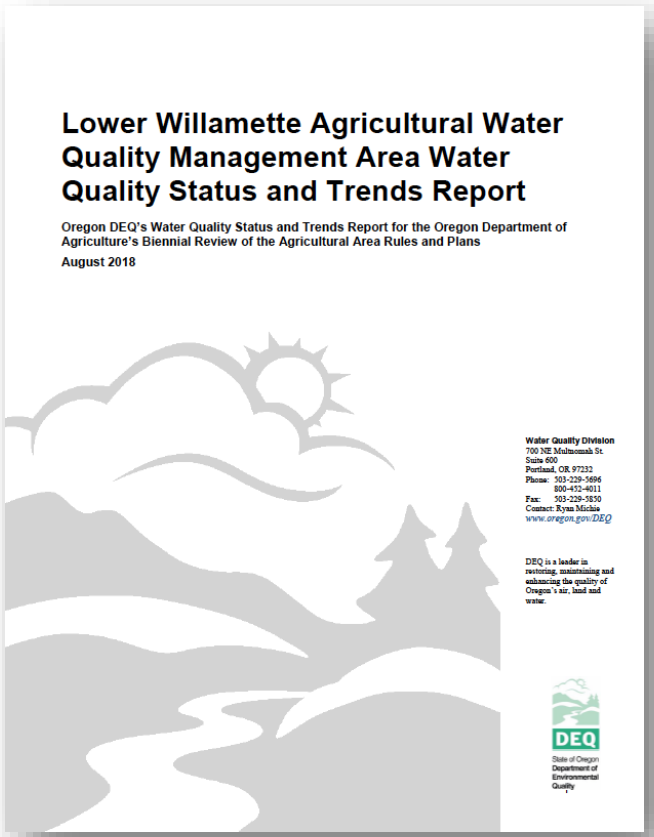
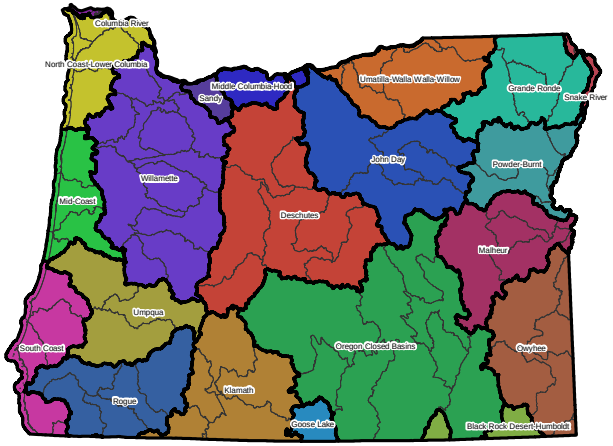


- Product of Oregon Department of Environmental Quality
- First Created for ODA's Biennial Review of Area Plans
- ODEQ will now produce at the Basin Level for all users.
- Available Online



Lower Willamette Agricultural Water Quality Management Area Water Quality Status & Trends Report
Johnson Creek

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Purpose of Water Quality Status and Trends Reports

Water Quality Status and Trend Reports are created to inform discussions centered around water quality topics such as:

- What's working and what's not working (to improve water quality)
- Pollution sources and solutions
- Data gaps
- Future monitoring requirements

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Status and Trends Analysis

Status: Monitoring stations which had at least 2 years of recent data
Trend: Monitoring stations which had at least 8 years of recent data.

Parameters included in S&T Reports:

- ***Temperature***
- ***pH***
- ***Dissolved oxygen***
- ***Total suspended solids***
- ***Total phosphorus***
- ***Bacteria***
- ***Other WQ parameters as available***

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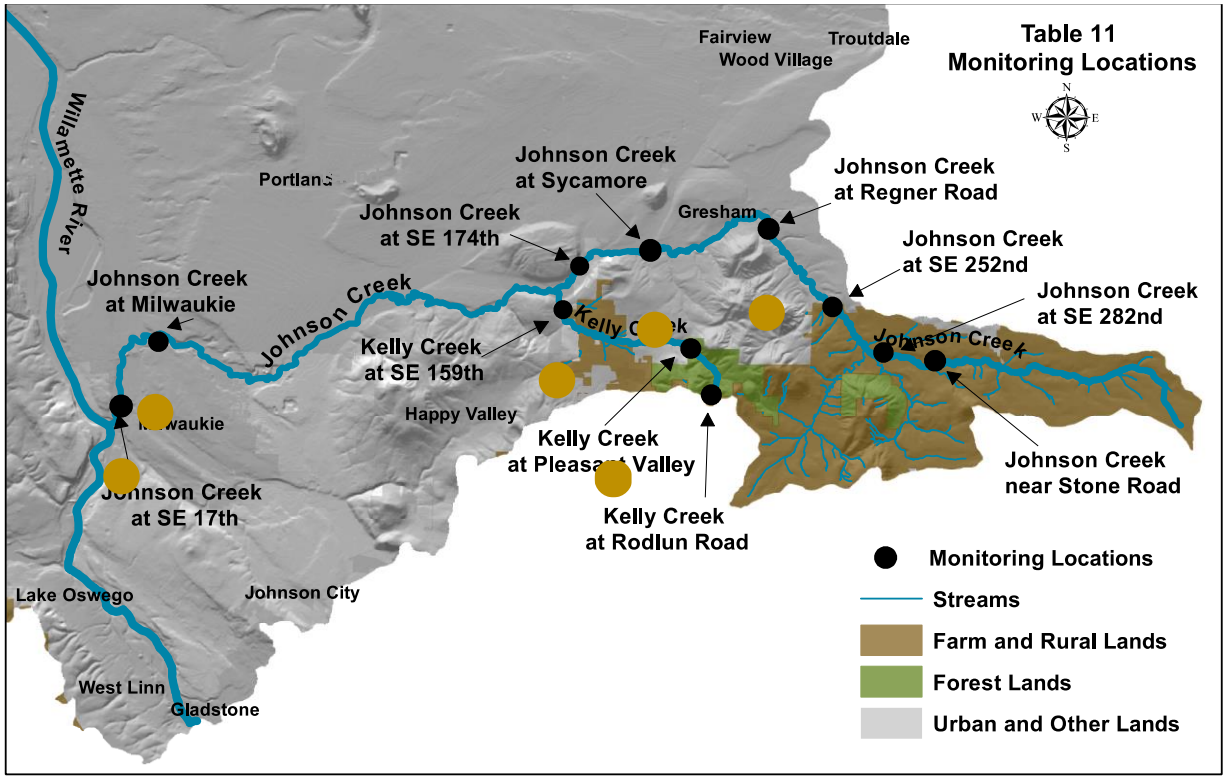

S&T USGS and ODEQ Monitoring Sites

Table 11: Water Quality Status and Trends at Monitoring Locations in the Lower Willamette Management Area

(See Figure 4 for locations)

ODEQ's 2017 and 2018 Lower Willamette Water Quality Status and Trends Analysis.
See full report online at: https://www.oregon.gov/deq/wq/programs/Pages/wqstatustrends.aspx

Upstream **Downstream (Best Fit)**

(1) ODEQ (individual samples 2000 to 2018) and (2) USGS Data (continuous data 2000 to 2018)

Reported: Number samples exceeding the water quality standard expressed over total number of observations taken over time.

Monitoring Locations	(2) Johnson Ck. at Regner Road		(2) Johnson Ck. at Sycamore		(2) Kelley Creek at SE 159th		(2) Johnson Ck. at Milwaukie		(1) Johnson Ck. at SE 17th	
Pollutants	**2017**	**2018**	**2017**	**2018**	**2017**	**2018**	**2017**	**2018**	**2017**	**2018**
+ Temperature	744/ 3293 (22.5%)	1372/ 6543 (21%)	855/ 3331 (25.6%)	2047/ 6694 (30.5%)	461/ 3203 (14.4%)	1111/ 6367 (17.4%)	3016/ 6109 (49.4%)	2779/ 6645 (41.8%)	-	-
Bacteria: *E. coli*	-	-	-	-	-	-	-		45/103 (43.7%)	47/113 (41.6%)
pH	-	-	-	-	-	0/10	-	0/1	1/125	1/111
Dissolved Oxygen	-	-	-	-	-	-	-	-	4/114	19/111
± TSS	-	-	-	-	-	-	-	-	-	17/111

Trending Status

Trend: ↑ - Improving ↓ - Declining **ST** – Steady **NT** – No Significant Trend (-) – Data Not Available

	(2) Johnson Ck. at Regner Road		(2) Johnson Ck. at Sycamore		(2) Kelley Creek at SE 159th		(2) Johnson Ck. at Milwaukie		(1) Johnson Ck. at SE 17th	
Pollutants	**2017**	**2018**	**2017**	**2018**	**2017**	**2018**	**2017**	**2018**	**2017**	**2018**
Temperature	↓	↓	↓	↓	NT	↓	↓	NT	-	-
Bacteria: *E. coli*	-	-	-	-	-	-	-	-	↓	↑
pH	-	-	-	-	-	-	-	-	ST	NT
Dissolved Oxygen	-	-	-	-	-	-	-	-	NT	NT
∝ Total Phosphorous	-	-	-	-	-	-	-	-	-	↑
± TSS	-	-	-	-	-	-	-	-	-	NT

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Limitations

- **Sampling for some parameters are monthly grab samples.**
- **There was no data in the Status & Trend Report for agricultural lands along Johnson Creek.**
- **The report did not have Third-Party data included for the basin.**
- **Funding for monitoring can end and new funding can be challenging to acquire.**

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Benefits

- **Water Quality Monitoring is essential to managing water resources.**
- **Analyzed and compared to state water quality standards.**
  - **Is water quality meeting standards for beneficial uses such as drinking water, recreation, and aquatic habitat?**
- **Analysis can Identify data gaps**
- **Identify emergent water quality issues**
- **Establish baselines for individual water quality parameters by stream.**
  - **Baselines can be monitored for change, alert to issues, or where improvements are needed.**

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Water Quality Data: Managing Agricultural Water Quality in a Changing Climate

- The hydrologic cycle will include more frequent and intense droughts and floods in many agricultural regions.
- More frequent droughts and shifting precipitation patterns lower water levels in rivers, lakes and streams, leaving less water to dilute pollutants.
- Higher temperatures cause more frequent algal blooms and reduce dissolved oxygen levels, both of which can cause fish kills and do significant harm to ecosystems.
- Increased frequency and intensity of storm events increase soil erosion and transport of other pollutants.

Thank You

Brenda Sanchez, Oregon Department of Agriculture

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