Oregon Water Quality Index Data Summary

Water Years 2016-2025

March 2026

State of Oregon
DEQ Department of Environmental Quality

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Introduction

This report provides a general statistical overview of water quality status and trends across Oregon using the Oregon Water Quality Index. The OWQI, which DEQ has calculated for more than three decades, analyzes a defined set of discrete water quality variables and produces scores describing the general water quality of a network of locations on Oregon's rivers and streams. This report does not include lakes, wetlands, estuaries, marine waters or groundwater resources. Parameters included in the Index are dissolved oxygen (percent saturation and concentration), biochemical oxygen demand, pH, total solids, ammonia and nitrate nitrogen, total phosphorus, temperature and bacteria (*E. coli*). Index scores range from 10 (worst case) to 100 (ideal water quality). DEQ uses the Index to communicate information on the overall water quality of Oregon's rivers in an easy-to-understand, non-technical manner to the public, agency managers and the Oregon Legislature.

For this report, DEQ calculated Water Quality Index results on all samples meeting data quality and quantity requirements collected from Oct. 1, 2016, through Sept. 30, 2025. The agency calculated seasonal averages for the summer seasons (June through September) and fall-winter-spring seasons (October through May) and used the minimum of these seasonal 10-year averages for scoring purposes. Once scored, sites were given a status designation varying from Excellent to Very Poor. Sites with sufficient data, i.e., 30 or more samples, were analyzed for significantly improving or declining 10-year trends using the nonparametric Seasonal-Kendall test, which factors in normal seasonal variation. DEQ reports the magnitude and direction of significant trends at the 80 percent or greater confidence level. For more information on the reporting methods and uses of the Index, as well as an interactive map showing site locations, status and trends visit the Oregon Water Quality Index web page.

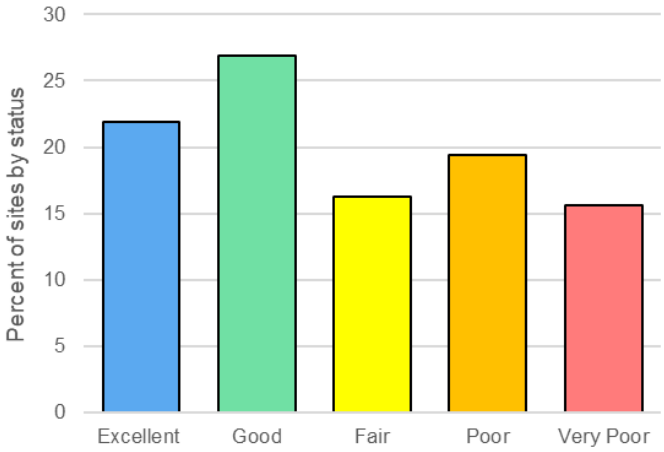
The Water Quality Index is not compared to water quality standards. It does not evaluate if beneficial uses are supported and it does not have regulatory standing, nor does it attempt to identify pollutant sources contributing to water quality impairments. These points are included in the Integrated Report, a biennial assessment of Oregon's surface waters required by the Clean Water Act; the Total Maximum Daily Load reports, which are science-based plans to clean up polluted water so that the waterbody meets state water quality standards; and the Oregon Statewide Water Quality Status and Trends Report, an assessment of Oregon's surface water that includes more parameters and is not calculated as an index. While the Integrated Report, TMDL reports and the Status and Trends Report may incorporate the raw data used in the Water Quality Index, the analyses are different and, under certain circumstances, may identify results that appear to be inconsistent with the Water Quality Index. Links to these reports are included at the end of this document.

2025 Water Quality Index Status and Trends

Status

Oregon Water Quality Index results for water years 2016-2025 show 49 percent of sites in excellent or good status, 16 percent in fair and 35 percent in poor or very poor status for the statewide ambient monitoring network of 160 sites (Figure 1). Three sites reported in 2016 were part of a special study and were dropped from the ambient network at the completion of the study. These three sites were Willow Creek at Heppner Junction (10708), Fifteenmile Creek at Boyd Market Rd (12550) and John Day River at Clyde Park (31990).

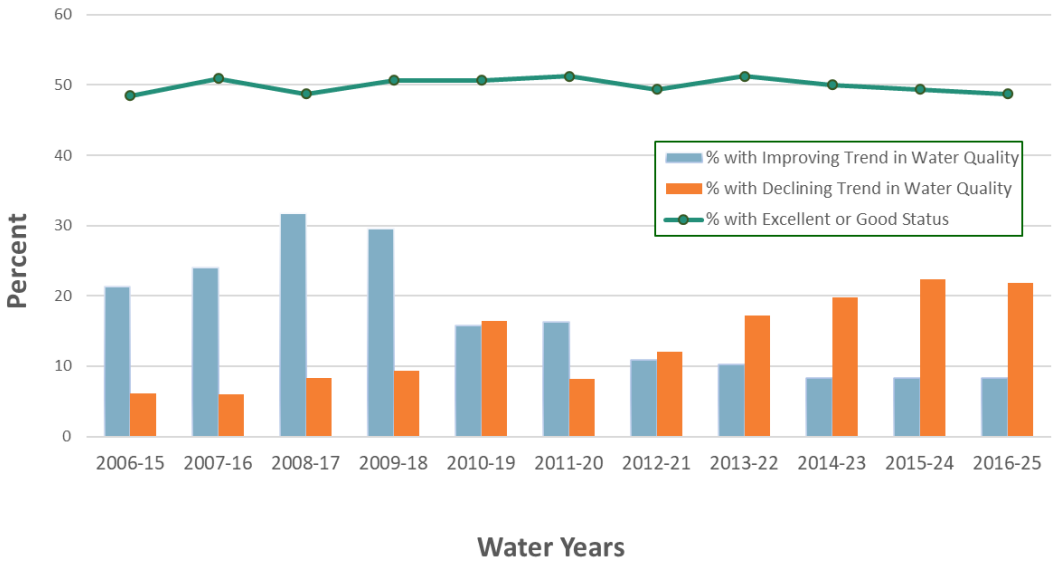
Figure 1. Percent of sites with scores in each Oregon Water Quality Index status.



Trends

A trend analysis was completed for 156 of the 160 sites. Of the locations where a trend analysis could be completed, 8 percent showed an improving trend in water quality, while 22 percent had a declining trend in water quality (Figure 2). The remaining 70 percent of sites have no statistically significant trend. Of the sites with improving trends, 77 percent are categorized as Fair to Very Poor status. This is down from 85 percent last year. On the other hand, 59 percent of the sites identified with declining water quality remain categorized as Excellent or Good status, which has increased from 54 percent in 2024. These locations should be evaluated further to avoid a continued decline in water quality status. The Skipanon River at Highway 101, Crooked Creek at Kiger Road, South Fork Blitzen River at Blitzen Crossing, and Whitehorse Creek at Whitehorse Ranch Road monitoring locations did not have the required 30 or more scores in this data window to calculate a trend. Specifically, the Skipanon River site is tidally influenced, and high conductivity samples are not included in the analysis because they do not accurately reflect ambient water quality as this study is intended. The Blitzen River and Crooked Creek sites are two of the most remote locations in the ambient network. They were difficult to access during large portions of the year.

Figure 2. Percentages of sites with improving or declining trends and the percentage of sites with Excellent or Good status by OWQI reporting period, over the last ten years. Sites determined to have no trend in a reporting period are not shown.



Where are we seeing improving and declining water quality?

Improving Trends

Sites with significantly improving Water Quality Index trends in 2025 were spread across the state (Table 1). The site showing the greatest improvement, based on the magnitude of the trend, was the Klamath River downstream of the Big Bend Powerhouse. This site was just below the JC Boyle Dam, which was completely removed in October 2024 as part of the Klamath Dam Removal Project. The sub-index scores for pH, BOD, and Phosphorous all improved between 2024 and 2025. Bully Creek at Highway 20 in the Malheur Basin continued to show significant improvement in 2025. This is the second year in a row that this location has shown one of the greatest magnitudes of improvement in the Water Quality Index. McKenzie River at Hendricks Bridge in the Upper Willamette Basin is showing an improving trend in its Water Quality Index for the first time in at least ten years. Eight sites have shown improving trends for the last two years. Trout Creek downstream of Mud Springs Creek in the Deschutes Basin has shown improving OWQI scores over the last four years. Last year, the site at Johnson Creek at Southeast 17th Ave. in the Lower Willamette Basin had significant improving trends for four years in a row. This trend did not continue into 2025, although the overall Water Quality Index at this site did not decrease.

Out of thirteen sites with improving trends during this reporting period, only three, or 23 percent, were at sites in Good or Excellent status. In addition, the average improving trend magnitude was higher at sites in Fair to Very Poor status than at sites in Good or Excellent status, indicating the largest gains in water quality occurred at sites most in need of improvement (Excellent or Good, n = 3, $\bar{x}$ = 1.9, Fair to Very Poor n = 11, $\bar{x}$ = 3.5).

Table 1. Sites monitored by DEQ, showing significant improving trends in water quality for water years 2016-2025. Sites are listed by Administrative Basin. Magnitude indicates the rate of change (i.e., higher numbers equal more rapid change). For the ten-year trend, blue or red squares indicate improving or declining trends. For sub-index status, blue indicates Excellent, green indicates Good, yellow indicates Fair, orange indicates Poor, and red indicates Very Poor status. Sub-index codes: T = Temperature, D = Dissolved Oxygen, B = BOD, TS = Total Solids, N = Nitrogen, P = Phosphorous and E = *E. coli.* Arrows in the sub-index status boxes indicate whether the sub-index trend is improving (↑) or declining (↓).

Station	Location Description	Land Use	Score	Status	Trend	Magnitude	T	pH	D	B	TS	N	P	E
DESCHUTES BASIN														
10690	Metolius R at Bridge 99 (Camp Sherman)	Forest	93	Excellent	↑	0.5		↑	↑	↓	↑			
36776	Trout Creek ds of Mud Springs Creek	Agriculture	51	Very Poor	↑	3.8		↑	↓	↓	↑	↑	↑	
KLAMATH BASIN														
10759	Lost R at HWY 39 (us Merrill)	Agriculture	39	Very Poor	↑	3.6		↑			↑		↑	
10764	Klamath R ds Big Bend Powerhouse	Forest	65	Poor	↑	10.7		↑		↑			↑	
MALHEUR BASIN														
10728	Willow Creek at RR Xing east of Vale	Agriculture	25	Very Poor	↑	0.1		↑			↑	↑		
11043	Bully Creek at HWY 20 (Vale)	Agriculture	34	Very Poor	↑	5.8				↓	↑	↑	↑	
ROGUE BASIN														
10423	Rogue R at Dodge Park	Mixed	92	Excellent	↑	3.7	↑	↑	↑		↑	↓		
SOUTH COAST BASIN														
11486	S Fk Coquille R at Broadbent	Forest	83	Fair	↑	6.7					↑	↑	↑	
13570	Millicoma R at Rooke Higgins Boat Ramp	Forest	75	Poor	↑	1.0		↑			↑	↑		
MID COAST BASIN														
33644	North Beaver at Ona Grange	Forest	82	Fair	↑	2.4		↑	↑	↓		↑		
NORTH COAST BASIN														
10523	Nestucca R at Cloverdale	Forest	86	Good	↑	1.6	↑					↑	↑	↑
WILLAMETTE BASIN - LOWER														
10469	Fanno Creek at Bonita Rd (Tigard)	Urban	49	Very Poor	↑	1.9							↑	
WILLAMETTE BASIN - MIDDLE														
10948	McKenzie R at Hendricks Bridge	Forest	81	Fair	↑	2.8					↑	↓		

Declining Trends

Statewide, thirty-four out of 160 sites demonstrated a declining trend in the overall Water Quality Index. Of these sites, six showed a declining trend for the first time and twenty-three sites had a declining trend for two or more years in a row (Table 2). Twenty-one sites with declining trends had improving trends in the last five to ten years. The site that showed the greatest drop in water quality, based on the magnitude of the trend, was Owyhee River at Highway 201 in the Owyhee Basin (Table 2). This decline may have been caused by winter floods in early 2025, and higher than usual amounts of nutrient runoff from agricultural fields or low flow and higher water temperatures exacerbated by drought conditions in the region during the Summer. Three sites had a decline in the Water Quality Index for the last five years in a row: Umatilla River at Yoakum, McKenzie River at Coburg Road, and the Willamette River at Highway 99E in Harrisburg. The station located on the Willamette River at Highway 99E maintains an Excellent status, even though it has shown a declining trend for

the last six years. The Forest Land Use type saw twelve more declining sub-index trends than during the 2024 OWQI reporting period. Declining dissolved oxygen and BOD sub-index scores continue to be a significant contributor to declines in the overall Water Quality Index scores, especially at sites in either the Forest or Agricultural Land Use types. The average declining trend magnitude was higher at sites in Fair to Very Poor status than at sites in Good or Excellent status. This indicates the largest drops in water quality occurred at sites most in need of improvement (Excellent or Good, n = 20, $\bar{x}$ = -2.5, Fair to Very Poor n = 14, $\bar{x}$ = -6.5).

Table 2. Sites monitored by DEQ showing significant declining trends in water quality for water years 2016-2025. Sites are listed by Administrative Basin. Magnitude indicates the rate of change (i.e., higher numbers equal more rapid change). For the five-year trend, blue or red squares indicate improving or declining trends. For sub-index status, blue indicates Excellent, green indicates Good, yellow indicates Fair, orange indicates Poor, and red indicates Very Poor status. Sub-index codes: T = Temperature, D = Dissolved Oxygen, B = BOD, TS = Total Solids, N = Nitrogen, P = Phosphorous and E = *E. coli.* Arrows in the sub-index status boxes indicate whether the sub-index trend is improving (↑) or declining (↓).

Station	Location Description	Land Use	Score	Status	Trend	Magnitude	T	pH	D	B	TS	N	P	E
DESCHUTES BASIN														
10506	Deschutes R at Warm Springs	Range	86	Good	↓	-0.5	↑		↓					
10511	Deschutes R at Mirror Pond (Bend)	Mixed	92	Excellent	↓	-2.1			↓			↑		
10411	Deschutes R at Deschutes R Park (Mouth)	Range	81	Fair	↓	-4.4	↑	↑	↓	↓		↑	↑	
10688	Deschutes R at Pringle Falls	Forest	89	Good	↓	-2.8	↑	↑	↓			↑	↑	
10696	Little Deschutes R at HWY 42	Forest	91	Excellent	↓	-1.7	↑	↑						
OREGON CLOSED LAKES BASIN														
10741	Honey Creek at Plush, OR	Range	61	Poor	↓	-2.5					↑	↑	↓	
33930	Chewaucan River 2.4 miles u/s of Paisley, OR	Range	83	Good	↓	-4.4	↑		↓			↓		
GRANDE RONDE BASIN														
10719	Grande Ronde R at HWY 82 (Elgin)	Mixed	82	Fair	↓	-2.6	↑			↓				
10720	Grande Ronde R at Hilgard St Park	Forest	92	Excellent	↓	-2.0				↓				
KLAMATH BASIN														
10763	Klamath Strait at USBR Pump Station F	Agriculture	23	Very Poor	↓	-3.3		↓		↓		↑	↑	↑

Table 2, Continued. Sites monitored by DEQ showing significant declining trends in water quality for water years 2016-2025. Sites are listed by basin. Magnitude indicates the rate of change (i.e., higher numbers equal more rapid change). For the five-year trend, blue or red squares indicate improving or declining trends. For sub-index status, blue indicates Excellent, Green indicates Good, yellow indicates Fair, orange indicates Poor, and red indicates Very Poor status. Sub-index codes: T = Temperature, D = Dissolved Oxygen, B = BOD, TS = Total Solids, N = Nitrogen, P = Phosphorous and E = *E. coli.* Arrows in the sub-index status boxes indicate whether the sub-index trend is improving (↑) or declining (↓).

Station	Location Description	Land Use	Score	Status	Trend	Magnitude	T	pH	D	B	TS	N	P	E
OWYHEE BASIN														
10729	Owyhee R at HWY 201	Agriculture	52	Very Poor	↓	-28.9		↑			↓	↓		
11050	Jordan Creek at Arock Rd	Agriculture	71	Poor	↓	-11.3								
12261	Jordan Creek us of Jordan Valley	Range	81	Fair	↓	-2.3			↓	↓			↓	
ROGUE BASIN														
10418	Rogue R at Robertson Bridge (Merlin)	Forest	86	Good	↓	-9.3	↑	↑	↓				↑	
11051	Bear Creek at Kirtland Rd	Mixed	61	Poor	↓	-10.6		↑	↑	↓	↓	↓	↓	
36805	Applegate River at Murphy, OR	Agriculture	89	Good	↓	-3.2	↑	↑	↓			↓		↑
UMATILLA BASIN														
10404	Umatilla R at Yoakum	Agriculture	80	Fair	↓	-4.0	↑	↓	↓					↑
11489	Umatilla R at Westland Rd (Hermiston)	Agriculture	52	Very Poor	↓	-0.7	↑	↑	↓			↓		↑
UMPQUA BASIN														
10437	Umpqua R at Elkton	Forest	84	Fair	↓	-1.2	↑				↑			
10997	Cow Creek at Mouth (Riddle)	Forest	85	Good	↓	-1.1			↓	↓	↓			↑
MID COAST														
33642	Siuslaw R at Tide Wayside	Forest	91	Excellent	↓	-2.7	↑		↓	↓		↑		↑
NORTH COAST														
11856	Nehalem R at Foley Rd	Forest	89	Good	↓	-2.7	↑					↑		
13421	Wilson R at HWY 101	Forest	88	Good	↓	-2.4			↑	↓			↑	↑
34019	Nehalem R at Birenkfeld	Forest	84	Fair	↓	-2.0			↑				↑	↓
WILLAMETTE BASIN - LOWER														
14008	Clackamas R at Memaloose Rd	Forest	95	Excellent	↓	-2.2	↑	↑	↓					
WILLAMETTE BASIN - MIDDLE														
10344	Willamette R at Wheatland Ferry	Agriculture	89	Good	↓	-3.7	↓	↑	↓			↓	↓	
12553	N Santiam R at Gates School Rd	Forest	95	Excellent	↓	-1.3			↓	↓	↑	↓		
WILLAMETTE BASIN - UPPER														
10355	Willamette R at HWY 99E (Harrisburg)	Agriculture	92	Excellent	↓	-1.7	↑		↑		↑	↓		
10376	McKenzie R at Coburg Rd	Mixed	93	Excellent	↓	-2.3	↑		↓					
10386	Middle Fk Willamette R at Jasper Bridge	Mixed	94	Excellent	↓	-1.5	↑				↑	↓	↑	
12552	McKenzie R at McKenzie Bridge	Forest	95	Excellent	↓	-1.1	↑		↓	↓	↑			
36788	Amazon Creek at High Pass Rd	Agriculture	49	Very Poor	↓	-11.2	↑	↑	↓	↑				↓
36790	Muddy creek south of Corvallis at Airport Ave	Agriculture	73	Poor	↓	-5.4	↓		↓				↓	

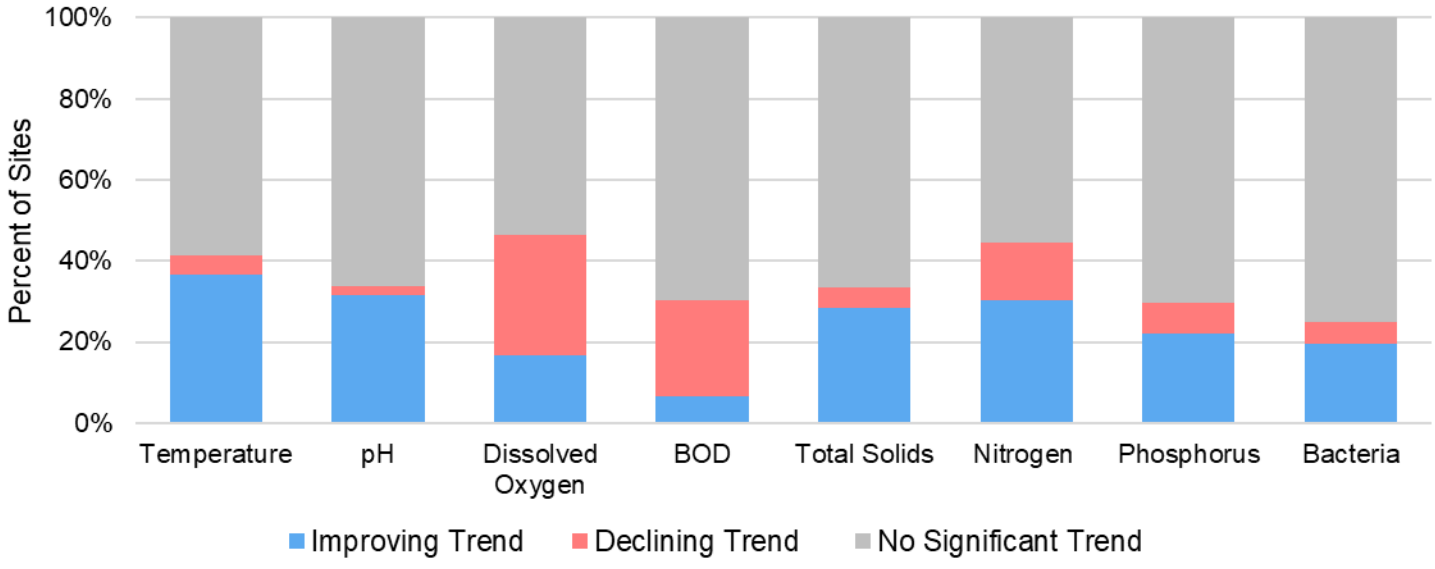
Which water quality sub-indices are improving or declining?

Trend analysis of water year 2025 data indicates temperature had the highest percentage of improving sub-index scores at 37 percent (Figure 3). This year continues last year's trend of declining sub-index scores. It is the third year in a row that over 20 percent of all ambient water quality monitoring sites have declining sub-index scores for all parameters. The analysis performed on 2025 data showed a one percent decrease in improving sub-index scores from the 2024 OWQI reporting period. This is the first time the percentage of overall improving sub-index scores has decreased since 2022.

Most of the improvements this year occurred in the Forest Land Use type, which had 25 additional improving sub-index trends than in the last reporting period. This continues a trend of improved sub-index scores observed in sites with a Forest Land Use type during the 2024 OWQI reporting period. Improvements in the Forest and Agricultural Land Use type were helped by improvements in the temperature and nitrogen sub-index scores.

Dissolved oxygen had the highest percentage of declining sub-index scores followed by BOD, nitrogen and phosphorous. There were 46 declining sub-index trends for dissolved oxygen this year, which is eleven more declining sub-index trends than in the 2024 OWQI. There were 37 declining sub-index trends for BOD this year, which was 12 fewer than in last year's report, and 18 fewer than during the 2023 OWQI reporting period. Most of the sites with declining dissolved oxygen trends in 2025 were in the Forest Land Use type, which is consistent with a trend noted in the 2024 OWQI.

Figure 3. Sub-index trends for the 2025 water year (Oct. 1, 2016 to Sept. 30, 2025).

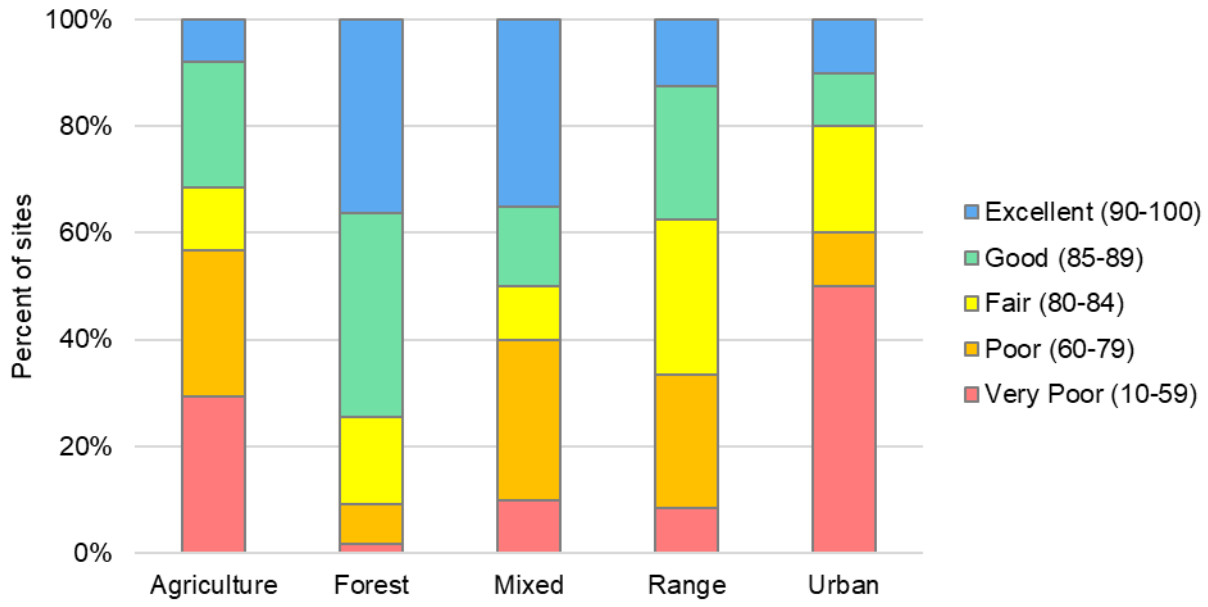


How does land use influence status?

Land use type is determined based on the dominant land use in a five-mile buffer around the stream channel above the monitoring site. The Mixed Land Use type was assigned when none of the land use designations made up more than 50 percent of the five-mile buffer. The “Forest Land Use type” for water quality monitoring purposes encompasses all lands designated under a general umbrella, which could possibly be downstream of private industrial forest lands (some harvested recently, others not), state forests (harvestable and/or non-harvestable), state parks, protected areas and federal forest lands. **The Oregon Water Quality Index is not intended to assess water quality in actively managed private timber lands.**

Although the Forest Land Use sites continued to have the largest number of declining trends, they also have the highest percentage of Excellent and Good status sites. There were few updates in the changes in status across land use type between the 2024 and 2025 reporting periods. The 2025 reporting period is the third consecutive year in which at least 40 percent of sites in the Range Land Use type had a status of excellent or good. Also, this is the seventh consecutive year that sites in the Forest Land Use type have had an increase in declining trends, with 2021 showing e greatest change from the prior reporting year.

Figure 4. Influence of land use on water quality on OWQI scores.



Several of the sites showing declining trends over the last five years are located downstream of recent major wildfires. Wildfires are a well-documented cause of declines in water quality, and it can take a decade or more for the area impacted by a major wildfire to recover. When plant matter is destroyed by wildfires, heavy metals and nutrients that have been sequestered by the plants or bound in the soil are released back into the environment and are easily washed into streams. Landslides resulting from the loss of established vegetation can increase turbidity, total solids and nutrient loads downstream of the areas impacted by wildfires. A decrease in canopy cover can increase the amount of sunlight reaching the stream, causing higher temperatures and algal blooms that can decrease dissolved oxygen. These changes in water quality in forested areas are consistent with OWQI data over the last several years. Different management strategies for

post-fire recovery areas can influence the timing and magnitude of water quality impacts. However, even in areas with light post-fire activity, it can take several years for water quality to recover to pre-fire levels.

Other possible contributing factors to continued declining trends include increased nutrient inputs and subsequent algal growth, increased ambient air temperatures, and reduced flow. Central and Southwest Oregon have experienced drought conditions over the last several years, which reduces flow and can increase stream temperatures. This could account for the decline in dissolved oxygen, BOD, and overall OWQI scores in the Deschutes Basin. Additionally, water has been drawn down to historically low elevations at multiple reservoirs located on tributaries connected to the Willamette River over the last three years. High levels of turbidity and elevated temperatures were noted downstream during and after the drawdown period. The increase in temperatures and turbidity may potentially affect BOD in the Upper Willamette Basin. Large winter storms and major flooding in the area near the Coast Fork in the Upper Willamette Basin over the last 5 years have caused surges in runoff, sediment and erosion, which are likely impacting water quality in the area.

Major flooding in the Owyhee Basin in February 2025 likely contributed to the decline in the nutrient and total solid subindices and the overall Water Quality Index for the station located in the Owyhee River at Highway 201. Other factors that may have caused a decline in the Water Quality Index at this station may be the increased price of corn in 2025, and that this was a significantly high-water appropriation year. The selling price of corn increased over the last several years, which influences how much corn is grown in the area- many people in the Owyhee Basin elected to grow corn in 2025 because of the higher profit margins. The process of growing corn requires additions of large amounts of nitrogen fertilizer and therefore may produce a high amount of nitrogen runoff. High water appropriation years can also contribute to high water use and higher amounts of runoff as conservation measures used during drought times are not implemented.

Dams in the Klamath River Basin impacted water quality by trapping nutrient rich waters in shallow reservoirs throughout the area. High temperatures and excessive nutrient loads caused regular blooms of cyanobacteria, which impact water quality further by trapping heat and depleting oxygen. As natural hydrological conditions return after dam removal, water quality parameters such as temperature, nutrient load, BOD, and dissolved oxygen are expected to improve over time. The complete removal of the JC Boyle Dam in late 2024 likely contributed to the improvement in water quality downstream of the dam, indicated by the increase in the overall Water Quality Index score and sub-index scores (pH, BOD, phosphorous) at the Klamath River station downstream of the Big Bend Powerhouse.

Want additional information on water quality in Oregon?

As previously mentioned, **the Oregon Water Quality Index does not have regulatory standing, nor does it attempt to identify pollutant sources contributing to water quality impairments.** For additional information, visit:

- Water Quality Status and Trends Analysis
- Oregon DEQ EPA-Approved Integrated Report

For more information and related resources, visit the Water Quality Index web page for links to the following:

- Interactive map showing 2016-2025 status and trends for all monitoring sites
- Downloadable data summaries for all sites organized by basin
- Document on Reporting Methods and Uses of the Oregon Water Quality Index
- Downloadable Excel file of 2025 raw data and historical status and trends
- Documentation of the development and calculation methods of the Index

For additional information on historical drought conditions in Oregon, visit:

Historical Data and Conditions | Drought.gov

For additional information on the Klamath Dam removal efforts visit:

Benefits of Klamath River Renewal- Klamath River Renewal