



Oregon Department of Environmental Quality

# Drinking Water Assessment for the Clackamas Water Quality Management Area

## August 2024

### Overview

- There are 105 public drinking water systems in the Clackamas Agricultural Water Quality Management Area which utilize groundwater and surface water sources to serve approximately 273,259 persons regularly.
- Recent alerts for coliform bacteria are common with 70 community water systems receiving alerts within the past 10 years.
- A total of six public water systems within the past ten years received one or more alerts for exceeding the maximum contaminant level goal for *E. coli* bacteria. One public water system had a maximum contaminant level violation within the past five years.
- There are three public water systems which received an alert within the past ten years or a violation within the past five years for nitrate levels that exceed 5 milligrams per liter.
- There are 1,435 records of private domestic well sample results submitted to Oregon Health Authority's Real Estate Transaction program in the area. Of these, 20 measured nitrate concentrations  $\geq 5$  mg/L. Four measured nitrate concentrations above the maximum contaminant level of  $\geq 10$  mg/L.
- Contaminants in water supplies potentially related to agriculture co-occur with human populations, agricultural land uses, and aquifers susceptible to contaminant infiltration.
- DEQ acknowledges that small water systems may have limited capacity and resources to deal with potential contamination issues. The Drinking Water Protection program is available for technical assistance and is developing outreach materials to better coordinate with water systems in disadvantaged communities.

### Water use

There are 105 public water systems within the Clackamas Agricultural Water Quality Management Area which obtain drinking water from a combination of surface and groundwater sources. Drinking water is an important beneficial use under the [Clean Water Act](#). When Clean Water Act standards are met in source waters, a drinking water treatment plant using standard technology can generate water meeting the [Safe Drinking Water Act](#) standards. **Figure 1** shows the drinking water source areas of the public water systems within the Clackamas Agricultural Water Quality Management Area. A drinking water source area is defined as the area of land which contributes water to the drinking water supply and where potential contamination from human activities or natural sources may pose a threat to the water quality. There are 38 active community public water systems which serve approximately 263,154 people on a regular basis, in addition to visitors at recreation sites. Of these water systems, seven water systems use primarily surface water to serve 250,573 people regularly. There are 15 active non-transient, non-community workplace or school public water systems using groundwater, serving 2,724 persons regularly. The remaining 30 active public water systems are transient non-community systems

### Translation or other formats

[Español](#) | [한국어](#) | [繁體中文](#) | [Русский](#) | [Tiếng Việt](#) | [العربية](#)

800-452-4011 | TTY: 711 | [deqinfo@deq.oregon.gov](mailto:deqinfo@deq.oregon.gov)

and non-public, State-regulated systems with an estimated service population of 5,865. See **Table 1** below for a list of public water systems, their classifications, sources and activity status, and populations served.

Agricultural land uses (berries, orchards, nurseries, grains, filberts, dairies, livestock, etc.) are present near many of the public water system wells and springs in the management area. The agricultural lands are concentrated in the western portion of the management area.

## Bacteria

Total coliform bacteria alerts for public water systems are generated by the Oregon Health Authority when their presence is detected in sample results. There are 70 public water systems in the Clackamas Agricultural Water Quality Management Area which received one or more alerts for exceeding the maximum contaminant level goal for total coliform bacteria. The MCLG for total coliforms is zero. None of the public water systems received violations for exceeding the maximum contaminant level for total coliform bacteria within the past five years. A public water system will receive an MCL violation if total coliform is present in more than 5% of their routine samples taken each month. Additionally, a public water system will receive an MCL violation for total coliform bacteria if they fail to resample following a routine positive sample.

*E. coli* bacteria alerts for public water systems are generated by the Oregon Health Authority when their presence is detected in sample results. Within the Clackamas Agricultural Water Quality Management Area, six public water systems had alerts for detections of *E. coli* bacteria in the past ten years: USFS Lockaby Campground Hand Pump, Currinsville Mobile Home Park, Canby Regency, Clackamas Co Pks-Barton Park, Clackamas River RV Park, and the City of Wilsonville (**Figure 1, Table 1**). One public water system had a violation with the Oregon Health Authority for *E. coli* bacteria in the past five years, Clackamas River RV Park. A public water system will receive an MCL violation for *E. coli* bacteria if they collect a sample indicating total coliforms are present and the resample is also positive for either fecal coliform or *E. coli* bacteria.

The locations of public water systems with *E. coli* bacteria alerts occur near areas designated for land use as private rural land, private industrial forests, Bureau of Land Management, and United States Forest Service (**Figure 3**). Refer to DEQ's [Surface Water Resource Guide](#) > Section 3.0 – Surface Water Characterization and Risks > Using Oregon Data to Identify Priorities > Bacteria Data and Susceptibility, to learn more about preventing bacterial contamination in surface water bodies from various land uses.

## Nitrates

An alert for elevated nitrate concentrations is generated by the Oregon Health Authority when nitrate sample results for public water systems exceed 5 mg/L. Nitrate alerts for public water systems in the Clackamas Agricultural Water Quality Management Area occurred in the last 10 years at Mountainview CO-OP, Riverview MFGD Home Court, and Canby Regency. None of the public water systems had an MCL violation for nitrate in the last five years (the MCL for nitrate is 10 mg/L). These contaminants are often related to animal and cropland agriculture. The locations of nitrate contamination of public drinking water sources and private domestic wells is near to agricultural land uses (**Figure 3**).

Nitrate contamination is often related to animal and cropland agriculture. The soils through most of the management area have moderately high or high nitrate leaching potential, according to the National Cooperative Soil Survey, based on slope, precipitation, and land use though data are not available for much of the eastern side of the area (**Figure 2**). Measures to reduce leachable nitrate in soils would reduce risk to groundwater sources of drinking water.

DEQ only addresses drinking water issues identified for public water systems. A query of Oregon Water Resources' water rights database for private domestic points of diversion (using a threshold of 0.005 cfs for

domestic surface water rights that are household use only, not irrigation identified 39 private domestic water rights in the area. There are also numerous private groundwater wells for domestic use. The Domestic Well Testing Act database (real estate transaction testing data for 1989-2018 indicates that out of the 1,435 well results included in the database for this area, 20 wells had nitrate concentrations above 5 mg/L. Twelve wells had significant detections of nitrate: eight wells  $\geq 7$ mg/L and four wells recorded  $\geq 10$ mg/L for the area. Nitrate from fertilizers and septic systems can readily penetrate to the aquifers used for drinking water when leaching potential is high or very high, and bacteria removal through soil filtration can be less effective in sandy soils.

## **Other contaminants**

Water quality samples from public water systems within the Clackamas Agricultural Water Quality Management Area also detected other contaminants that may be related to agricultural activity. These include pentachlorophenol, xylenes, toluene, di(2-ethylhexyl phthalate, dichloromethane, simazine, and atrazine. Other contaminants detected in water quality samples from public water systems in the area include copper, fluoride, arsenic, toluene, sodium, lead, 1,1-dichloroethylene, 1,1,1-trichloroethane, total haloacetic acids (also known as HAA5 and total trihalomethanes (also known as TTHM. These are unlikely to be related to agricultural activities. HAA5 and TTHM are disinfection byproducts that form when chlorine compounds that are used to disinfect water react with other naturally occurring chemicals in the water.

## **Contact**

For more information, please contact the [Drinking Water Protection Program](#) or send an email to [drinkingwater.protection@deq.oregon.gov](mailto:drinkingwater.protection@deq.oregon.gov).

## **Non-discrimination statement**

DEQ does not discriminate on the basis of race, color, national origin, disability, age or sex in administration of its programs or activities. Visit DEQ's [Civil Rights and Environmental Justice page](#).

**Table 1. Public Water Systems in the Clackamas Ag WQMA**

Note: Table 1 does not include public water systems that purchase drinking water from these water systems.

PWS ID	Public Water System Name	System Type	Population	MCLG/MCL Alerts
<b>Surface Water Systems</b>				
4100157	CANBY UTILITY	Community	18754	
4100187	CLACKAMAS RIVER WATER	Community	29918	
4100279	ESTACADA, CITY OF	Community	5373	
4100580	NORTH CLACKAMAS COUNTY WC	Community	92124	
4100789	SANDY, CITY OF	Community	12991	
4100591	SOUTH FORK WATER BOARD	Community	65498	
4100954	WILSONVILLE, CITY OF	Community	25915	E. coli
<b>Groundwater Systems</b>				
4194621	BACKROADS PUB & GRUB	Non-Community	200	
4100140	BARLOW TRAIL ESTATES	Community	180	
4194371	BARTON COMMUNITY BAPTIST ANNEX	Non-Community	75	
4195169	BEAVERCREEK UNITED CHURCH OF CHRIST	Non-Community	70	
4101068	BIG VALLEY WOODS WATER CORP	Community	550	
4100135	BORING WATER DISTRICT NO 24	Community	2500	
4193564	CAMP KURATLI AT TRESTLE GLEN	Non-Community	250	
4100163	CANBY REGENCY	Community	265	E. coli, Nitrate
4195064	CANBY UNITED METHODIST CHURCH Inactive System	Non-Community	150	
4193970	CARUS ELEMENTARY	Non-Transient Non-Community	415	
4100189	CARVER MOBILE RANCH	Community	110	
4100188	CARVER WATER CO-OP ASSOC Inactive System	Community	85	
4100280	CEDARHURST IMPROVEMENT CLUB	Community	60	
4190516	CEDARS LUTHERAN OUTDOOR MINISTRY Inactive System	Non-Community	30	
4195452	CLACKAMAS CO PKS - BOONES FERRY MARINA	Non-Community	50	
4190041	CLACKAMAS CO PKS-BARTON PARK	Non-Community	300	E. coli
4195121	CLACKAMAS CO PKS-BARTON RV PARK	Non-Community	90	
4190053	CLACKAMAS CO PKS-EAGLE FERN	Non-Community	150	
4190760	CLACKAMAS CO PKS-HEBB PARK	Non-Community	100	
4190452	CLACKAMAS CO PKS-METZLER PK #1	Non-Community	400	
4194973	CLACKAMAS CO PKS-METZLER PK #2	Non-Community	400	
4194761	CLACKAMAS RIVER RV PARK	Community	100	E. coli
4193700	COLLINS RETREAT CENTER	Non-Community	30	
4100266	CURRINSVILLE MOBILE HOME PARK	Community	90	E. coli
4194639	EAGLE CREEK FOOD MART	Non-Community	140	
4101419	EAGLE CREEK MOBILE ESTATES	Community	35	
4193548	EAGLE CREEK SALOON	Non-Community	50	
4193715	EAGLE CREEK SCHOOL SD 108	Non-Transient Non-Community	150	
4101222	EAGLE CREST MOBILE HOME PARK	Community	300	
4193549	EAGLE FERN CAMP	Non-Community	100	
4195517	ESTACADA LDS - WELL #1 (NEW) Inactive System	Non-Community	150	
4195518	ESTACADA LDS - WELL #2 (OLD) Inactive System	Non-Community	150	

4101252	ESTACADA MOBILE VILLAGE	Community	150	
4105587	EVER FRESH FRUIT COMPANY	Non-Transient Non-Community	49	
4100599	EXCALIBUR VILLAGE	Community	180	
4101207	FOREST PARK MOBILE VILLAGE	Community	75	
4194946	GUIDE DOGS FOR THE BLIND INC	Non-Transient Non-Community	75	
4194669	HOOD VIEW ADVENTIST SCHOOL	Non-Transient Non-Community	200	
4194922	IFA NURSERY	Non-Community	50	
4194706	KELLYS CORNER MARKET	Non-Community	200	
4100134	KELSO WATER ASSN	Community	300	
4195464	LEKAROZ WS Inactive System	Oregon Very Small	6	
4193721	MOLALLA ALTERNATIVE OPTIONS SCHOOL Inactive System	Non-Transient Non-Community	80	
4101125	MOUNTAIN VIEW CO-OP	Community	95	Nitrate
4100547	MULINO WATER DISTRICT	Community	700	
4194503	OPRD CHAMPOEG OVERNIGHT ST PK	Non-Community	885	
4193594	OPRD MILO MCIVER STATE PARK	Non-Community	850	
4191006	OPRD MOLALLA RIVER STATE PARK	Non-Community	75	
4195024	OREGON GOLF COURSE	Non-Transient Non-Community	35	
4193720	OREGON TRAIL SD - KELSO ELEM	Non-Transient Non-Community	450	
4194670	OREGON TRAIL SD - BORING MID SCH	Non-Transient Non-Community	400	
4190528	OREGON TRAIL SD - COTTRELL ELEM	Non-Transient Non-Community	300	
4100141	ORIENT DRIVE MOBILE ESTATES	Community	75	
4193569	PAR 3 INVESTMENTS WS	Non-Community	125	
4100264	PARADISE COMMUNITY ASSOC	Community	75	
4100161	PETES MOUNTAIN WATER CO	Community	250	
4193957	PGE FARADAY DAM	Non-Transient Non-Community	35	
4100281	PGE THREE LYNX (OAK GROVE) Inactive System	Oregon Very Small	5	
4190504	PGE TIMOTHY LAKE LODGE	Non-Community	25	
4194833	PHEASANT RIDGE RV PARK	Non-Community	190	
4100142	PIONEER MOBILE HOME PARK	Community	400	
4105086	POLEHN HEIGHTS WATER ASSN	Community	150	
4194739	PORKYS DELI & PIT Inactive System	Non-Community	50	
4100139	RANCHERO PETITE IMPROV DIST	Community	40	
4101053	RIVERBEND MOBILE HOME PARK	Community	550	
4100458	RIVERBEND-RIVERBANK COMMUNITY	Community	225	
4100461	RIVERGROVE WATER DISTRICT	Community	4200	
4101145	RIVERVIEW MFGD HOME COURT	Community	400	Nitrate
4193565	SANDELIE GOLF COURSE Inactive System	Oregon Very Small	20	
4194992	SANDY RIDGE HEADSTART	Non-Transient Non-Community	60	
4190091	SHADADO INC-BENT SHOVEL BREWING PUB	Non-Community	90	
4101264	SPAR TREE MHP	Community	26	
4194043	SPRINGWATER ACADEMY	Non-Transient Non-Community	175	

4100282	SPRINGWATER ESTATES	Community	130	
4193568	SPRINGWATER GOLF COURSE Inactive System	Oregon Very Small	15	
4190485	SQUAW MOUNTAIN RANCH INC	Non-Community	35	
4105094	THE MARYLHURST SCHOOL	Non-Transient Non-Community	140	
4101120	THUNDERBIRD MOBILE CLUB Inactive System	Community	150	
4194638	TOP O THE MORNIN Inactive System	Non-Community	100	
4194941	TUALATIN VALLEY REGIONAL TRNG CTR	Non-Community	300	
4100265	TWIN ISLAND COMMUNITY	Community	70	
4192623	USFS ARMSTRONG CAMPGROUND Inactive System	Non-Community	40	
4192597	USFS CLACKAMAS LAKE WS	Non-Community	60	
4192622	USFS FISH CREEK CG HP Inactive System	Non-Community	75	
4194206	USFS HARRIET LAKE CG	Non-Community	45	
4192878	USFS HOODVIEW PINE PT	Non-Community	500	
4192890	USFS INDIAN HENRY CG Inactive System	Non-Community	50	
4192887	USFS KINGFISHER CG Inactive System	Non-Community	60	
4192619	USFS LAZY BEND CG Inactive System	Non-Community	100	
4192880	USFS LITTLE CRATER LAKE CG	Non-Community	30	
4192625	USFS LOCKABY CG HP Inactive System	Non-Community	90	E.coli
4192606	USFS RIVERSIDE CAMPGRND (HP3) Inactive System	Non-Community	40	
4192621	USFS ROARING RIVER CAMPGROUND Inactive System	Non-Community	45	
4192624	USFS SUNSTRIP CAMPGROUND HP Inactive System	Non-Community	25	
4101093	USFS TIMBER LAKE JCC	Non-Transient Non-Community	200	
4101223	WALNUT MOBILE HOME PARK	Community	200	
4194063	WEST LINN/WILSONVILLE	Non-Transient Non-Community	40	
4100791	WUNDER MOBILE PARK	Community	100	

*System Type:*

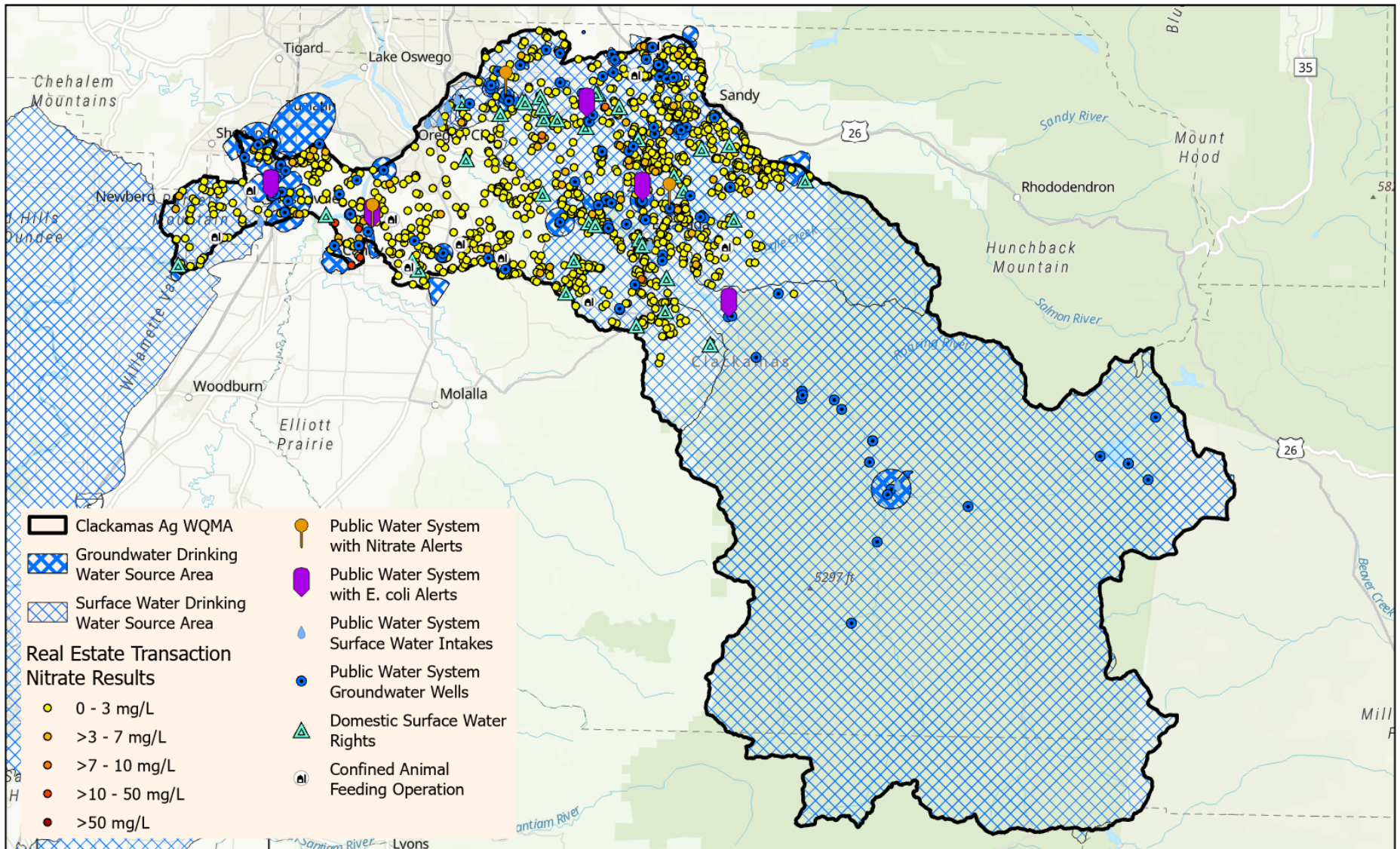
*C - "Community Water System (C)" means a public water system that has 15 or more service connections used by year-round residents, or that regularly serves 25 or more year-round residents.*

*NTNC - "Non-Transient Non-Community Water System (NTNC)" means a public water system that is not a Community Water System and that regularly serves at least 25 of the same persons over 6 months per year.*

*NC - "Transient Non-Community Water System (NC)" means a public water system that serves a transient population of 25 or more persons.*

*NP or OVS - "State Regulated Water System (NP)" means a public water system, which serves 4 to 14 service connections or serves 10 to 24 people. Monitoring requirements for these systems are the same as those for Transient Non-Community water systems. This designation was recently changed to OVS for Oregon Very Small systems. Both designations are still used.*





## Drinking Water Source Areas in the Clackamas Agricultural Water Quality Management Area

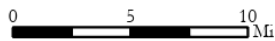


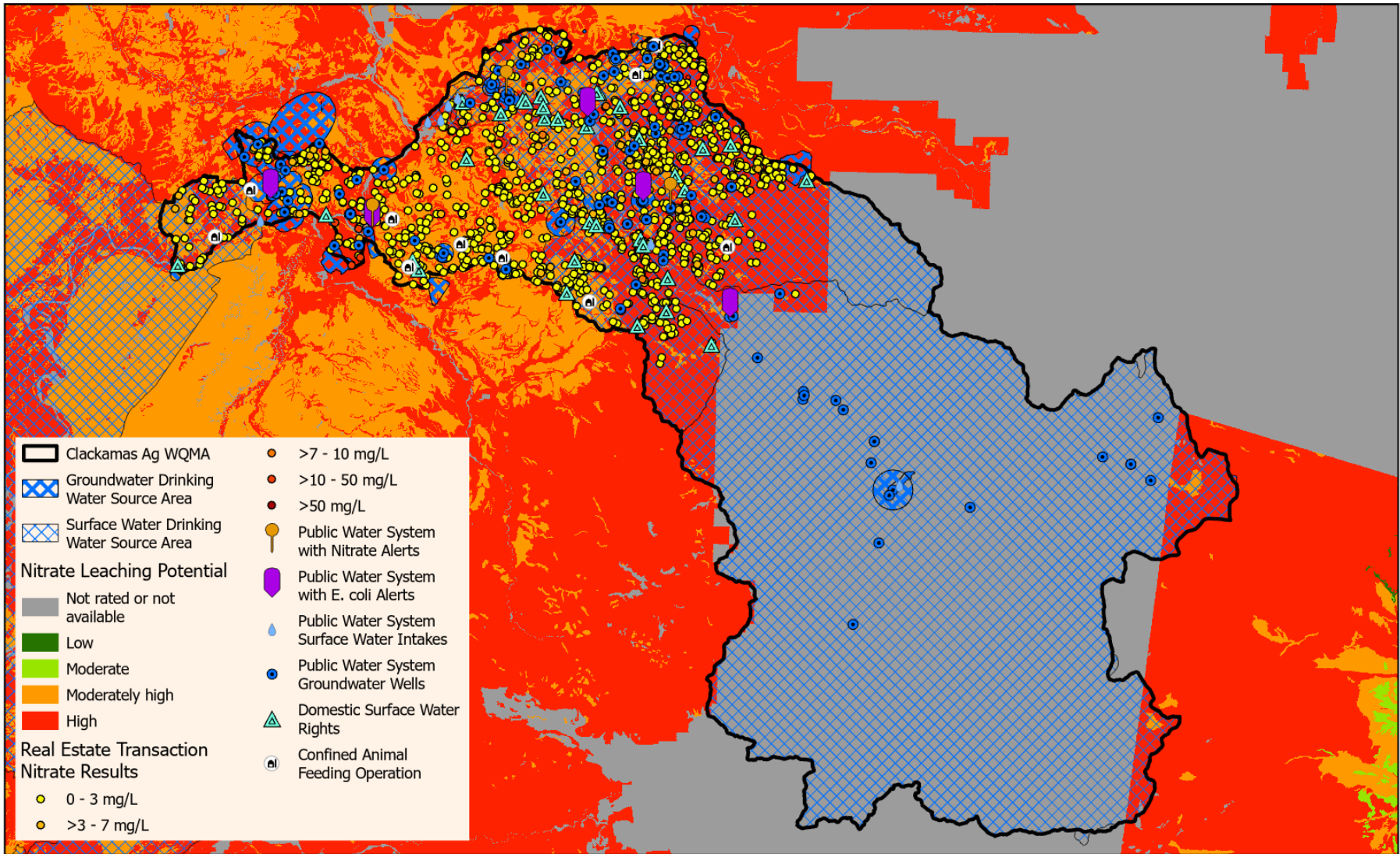
Figure 1



Esri, TomTom, Garmin, FAO, NOAA, USGS, EPA, USFWS, Esri, NASA, NGA, USGS, Oregon Metro, Oregon State Parks, State of Oregon GEO, Esri, TomTom, Garmin, SafeGraph, FAO, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, USFWS, Esri, USGS

Coordinate System: NAD 1983 Lambert Conformal Conic





Drinking Water Source Areas in the Clackamas Agricultural Water Quality Management Area  
 NRCS Nitrate Leaching Potential - Irrigated

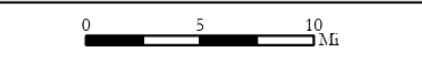


Figure 2

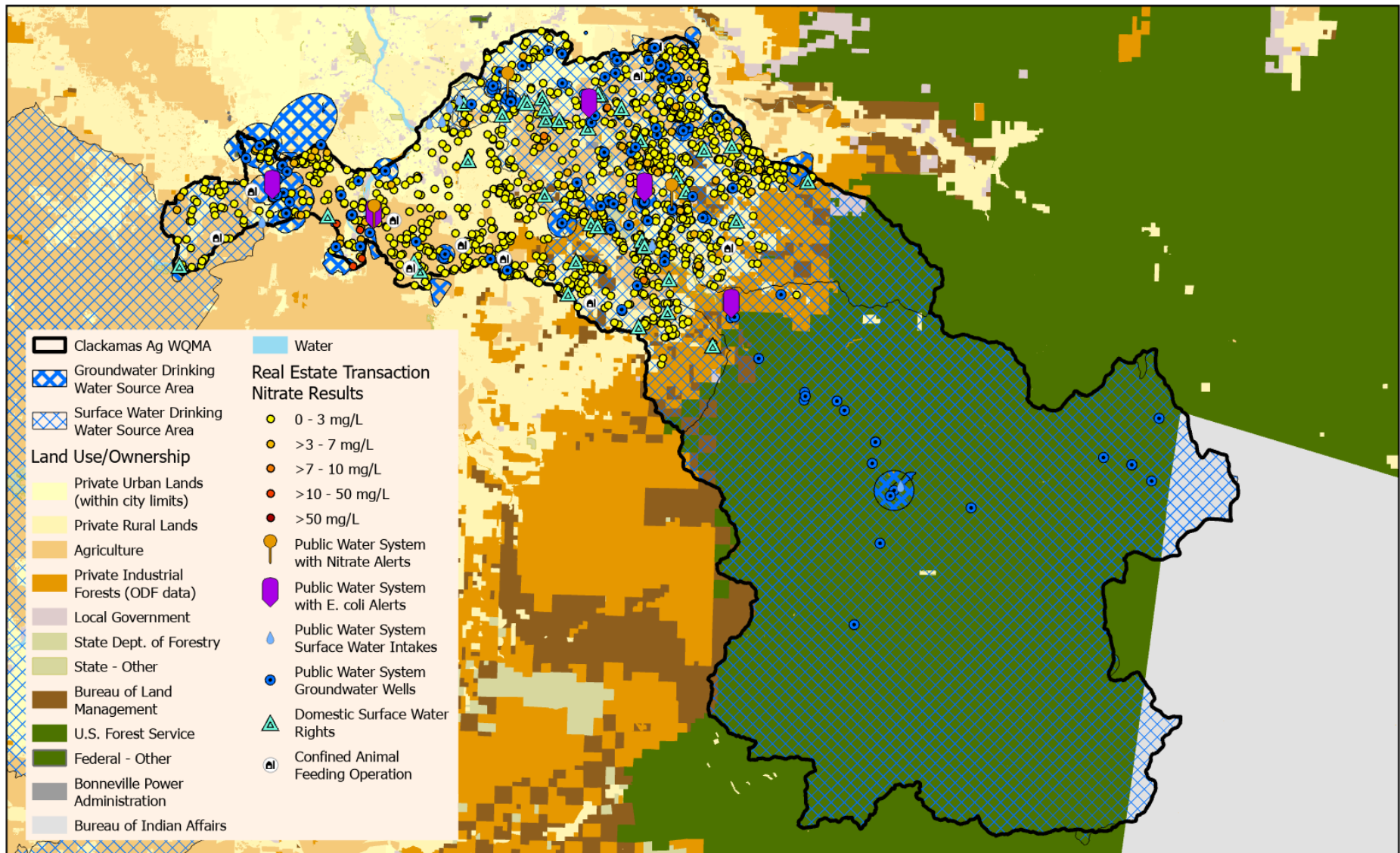


Esri, TomTom, Garmin, FAO, NOAA, USGS, EPA, USFWS, Esri, NASA, NGA, USGS, Oregon Metro, Oregon State Parks, State of Oregon GEO, Esri, TomTom, Garmin, SafeGraph, FAO, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, USFWS, Esri, USGS

Coordinate System: NAD 1983 Lambert Conformal Conic







Drinking Water Source Areas in the Clackamas Agricultural Water Quality Management Area  
Land Use/Ownership



Figure 3



Esri, TomTom, Garmin, FAO, NOAA, USGS, EPA, USFWS, Esri, NASA, NGA, USGS, Oregon Metro, Oregon State Parks, State of Oregon GEO, Esri, TomTom, Garmin, SafeGraph, FAO, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, USFWS, Esri, USGS

Coordinate System: NAD 1983 Lambert Conformal Conic

