



Oregon Department of Environmental Quality

Drinking Water Assessment for the Upper Willamette and Siuslaw Water Quality Management Area

January 2023

Overview

- Public drinking water systems in the Upper Willamette and Siuslaw Agricultural Water Quality Management Area utilize groundwater and surface water sources to serve approximately 21,664 persons regularly.
- Recent alerts for *E. coli* bacteria exist for four Water Systems with four MCL violations. 21 systems have recent alerts for Total Coliform bacteria with no violations.
- Four water systems have alerts for elevated nitrate concentrations with one MCL violation.
- 119 of 736 private domestic wells sample results in the area have elevated (≥ 3 mg/L) nitrate concentrations.
- This management area includes the Southern Willamette Valley Groundwater Management Area. Many resources have been developed to address the groundwater contamination issues.

Water Use

68 public water systems obtain domestic drinking water from groundwater and surface water sources in the Upper Willamette and Siuslaw Agricultural Water Quality Management Area (Map 1). Drinking water is an important beneficial use under the federal Clean Water Act. When CWA standards are met in source waters, a drinking water treatment plant using standard technology can generate water meeting the Safe Drinking Water Act maximum contaminant limits (MCLs). There are 14 Community public water systems in the plan area using groundwater or/and surface water wells to serve approximately 11,369 people on a regular basis, in addition to visitors at recreation sites. There are 14 Non-Transient, Non-Community workplace or school public water systems using groundwater, serving 3,479 persons regularly. The remaining 40 public water systems are Transient Non-Community systems and Non-Public (also called Oregon Very Small systems or OVS), state-regulated systems with an estimated service population of 6,816. See **Table 1** below for a list of public water systems, their classifications, sources and activity status, and populations served.

Note that while the city of Eugene is partially within the management area boundary, its drinking water source area is not. Eugene's drinking water, supplied by Eugene Water and Electric, comes from an intake on the McKenzie River that is located in the Southern Willamette Valley management area. Therefore, the population of Eugene is not included in the totals in this report.

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Agricultural land uses (e.g. grass seed, row crops, sheep, cattle, horses, other livestock, Christmas trees, vineyards, orchards, and nurseries) are present near many of the public water system wells in the area (see Maps 2 - 4).

Bacteria

Four public water systems in the management area have recent alerts (last 10 years) for detections of *E. coli* bacteria. There are recent MCL violations at BLM Clay Creek Shelter #1, Grandview Mobile Home Park, Kountry Village, and Lutheran Retreat. 92 public water systems have recent alerts for Total Coliform and no violations.

Nitrates

Nitrate alerts (generated when nitrate exceeds 5 mg/L) exist for four public water systems with one recent MCL violation at Hilltop Market. The drinking water MCL for nitrates is 10 mg/L. These contaminants are often related to animal and cropland agriculture.

Of the soils assessed in the management area, most have high nitrate leaching potential, according to the National Cooperative Soil Survey, based on slope, precipitation, and land use (See **Map 2**). Nitrate from fertilizers and septic systems can readily penetrate to the aquifers used for drinking water when leaching potential is high, and bacteria removal through soil filtration can be less effective in sandy soils.

The Southern Willamette Valley Groundwater Management Area (GWMA) is partially included in the Upper Willamette and Siuslaw Ag. WQMA. The GWMA is an area that experiences elevated nitrate levels in groundwater. Concerned stakeholders have been working for years to reduce nitrate levels. See the DEQ website for more information: <https://www.oregon.gov/deq/wq/programs/Pages/GWP-Management-Areas.aspx>

DEQ recommends ODA and the SWCDs include a task in the area plan to coordinate with ongoing GWMA efforts and further evaluate agricultural land uses in and around the GWMA as there are recent elevated levels of nitrate in public drinking water in the GWMA area. Implementation of best management practices in these areas may reduce the potential for agricultural sources to impact these groundwater sources of drinking water. In particular, improved fertilizer use practices (e.g. timing adjustments and use of multiple, smaller applications) and planting of nitrogen-scavenging cover crops can be analyzed for current implementation rates and bolstered as needed to reduce nitrate movement into aquifers used for drinking water. In addition, any surface water-related best management practices implemented within the management area (such as livestock exclusion from surface water and off-channel watering) will likely benefit water quality.

Oregon Health Authority rated some of the public water system wells in the Ag WQMA for contaminant susceptibility for land use impacts to drinking water sources based on Source Water Assessments, aquifer characteristics, and well locations and construction. The majority of evaluated PWS wells rate as high or medium susceptibility. The nitrate and other contamination issues described above and the ready movement of nitrogen into aquifers in the area verify this susceptibility.

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 27 private domestic water rights in the Upper Willamette and Siuslaw WQMA. There are also numerous private groundwater wells for domestic use. The Domestic Well Testing Act database (real estate transaction testing data) for 1989-2019 indicates 119 results are ≥ 3 mg/L, 79 results are ≥ 5 mg/L, 58 results are 7mg/L, and 29 are ≥ 10 mg/L out of 736 total results included in the database.

Other Contaminants

There are recent alerts (2022, 2021) for xylenes, ethylbenzene, tetrachlorethylene. These compounds are typically associated with industrial uses. Other alerts were reported for arsenic, lead, copper, sodium, total haloacetic acids (HAA5), and total trihalomethanes (TTHM) at several PWS. 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. The City of Monroe had one violation for TTHM in 2022.

Drinking Water Protection staff are happy to provide additional details, maps, and recommendations upon request.

Contact

For more information, please contact the [Drinking Water Protection Program](#) or send an email to 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 Upper Willamette and Siuslaw Ag WQMA

Note: Table 1 does not include public water systems that purchase drinking water from these water systems but does include the population served by wholesale customers in the Total Population.

Bold text indicates PWSs w/ recent *E. coli* alerts.

PWS ID	Public Water System Name	Drinking Water Source	System Type	Population
Surface Water Systems				
4100540	City of Monroe	Long Tom R., 2 wells (inactive)	C	615
92152	Cascade Pacific Pulp LLC*	Willamette River	NTNC	800
Groundwater Systems				
4100284	Lakeshore Water District	2 wells (1 active, 1 inactive)	C	135
4100286	Orchard Point Mobile Homes	2 wells	C	99
4100418	Junction City Water Utilities	7 wells (4 active, 3 inactive)	C	3,011
4100419	Shadow Hills Park Water Co-Op	1 well	C	45
4100421	Fernridge Mobile Estates	3 wells	C	250
4100422	Harwoods Mobile Manor	1 well	C	65
4100423	Prairie Winds of Junction City	2 wells (1 active, 1 inactive)	C	60
4100919	Fern Ridge Shores	1 well	C	275
4100920	City of Veneta	5 wells (3 active, 2 inactive), purchase from EWEB (#00287)	C	4,755
4100986	Sustellos Country Acres MHP	1 well	NP	24
410099 1	Grandview MHP	2 wells (1 active, 1 inactive)	C	99
410100 2	Kountry Village	2 wells (1 active, 1 inactive)	C	60
4101003	Tivoli MHP	2 wells	C	135
4101018	Roseboro LLC Vaughn	2 wells (1 active, 1 inactive)	NTNC	99
4101063	Eugene Mobile Village	1 well, purchase from Springfield (#00837)	C	5385
4105191	Tri Pass Ski Club	1 well	NC	45
4105275	Havenroot Camp & Venue	1 well	NC	250
4106047	Skyridge HOA	3 wells (2 active, 1 inactive)	C	65
4190620	BLM Whittaker Creek CG South	1 well (inactive system)	NC	60
419062 2	BLM Clay Creek Shelter #1	1 well	NC	275
4190894	Applegate Elem. SD66	1 well	NTNC	4840
4191051	Washburne Wayside (OPRD)	1 well	NC	24
4191782	Camp Lutherwood	1 well	NP	99
4191790	Central Elementary	1 well (inactive system)	NTNC	60
4191793	Abbi's Rosebud Cafe	1 well (inactive system)	NC	95
4191804	Elmira Church of Christ	1 well	NC	93
4191805	Elmira High/Elementary SD28J	2 wells (1 active, 1 inactive)	NTNC	260
4191810	Fern Ridge Middle Sch. SD28J	1 well	NTNC	50
4191825	Kingdom Hall Jehovah Witnesses	1 well (inactive system)	NC	25

PWS ID	Public Water System Name	Drinking Water Source	System Type	Population
4191832	Lorane Elem/Grange SD66	2 wells (inactive system)	NTNC	40
4191834	Lutheran Retreat	1 well	NC	80
4191843	Noti Elementary SD28J	1 well (inactive system)	NTNC	25
4191845	Orchard Point Park (Lane Co Parks)	3 wells (2 active, 1 inactive)	NC	120
4191853	Noti Pub	1 well	NC	200
4191854	Richardson Park (Lane Co Parks)	1 well (inactive system)	NC	14
4191860	Shadow Hills Golf/Country Club	1 well	NC	110
4191872	Territorial Elementary SD69	1 well	NTNC	25
4191879	Twin Oaks Elementary SD4J	1 well (w/ purchase at need)	NTNC	50
4191897	Crow High School SD66	1 well	NTNC	735
4192016	Delta Sand & Gravel Company	1 well (inactive system)	NTNC	430
4193974	Stockman's Café/ Eugene Livestock	1 well	NC	80
4194211	Dixie's Cafe	1 well	NC	80
4194226	BLM Clay Creek Shelter #2	1 well (inactive system)	NC	35
4194227	BLM Clay Creek Shelter #3	1 well (inactive system)	NC	220
4194228	BLM Whittaker Creek CG North	1 well	NC	600
4194237	Eugene Yacht Club	2 wells	NC	150
4194335	Dari Mart #33	1 well	NC	520
4194444	D's Market	1 well (inactive system)	NC	72
4194484	Jerry Brown Investment Co.	2 wells	NP	200
4194584	CLC Investments Veneta Shell	1 well (inactive system)	NC	285
4194635	Noti Market	1 well	NC	144
4194643	Hilltop Market	1 well	NC	50
4194682	Blue Barn Child Development Program	1 well (inactive system)	NP	150
4194749	Halfway Café Walton	1 well	NC	250
4194757	Spec Industries	1 well	NP	100
4194768	Fern Ridge Market	1 well	NC	100
4194837	Alvadore Gas & Store	1 well	NC	80
4194958	Fiddler's Green	3 wells	NTNC	50
4195009	Roseburg Forest Products JCR	1 well	NP	300
4195015	Veterans' Legacy Camp Alma	4 wells (inactive system)	NP	300
4195026	Diamond Woods CG	2 wells	NC	3011
4195053	Lone Pine Farms	1 well (inactive system)	NC	425
4195060	Oregon Horse Center	1 well	NC	350
4195085	Diamond Woods Maintenance	1 well (inactive system)	NP	150
4195320	Morning Glory Farms	1 well	NC	24
4195354	Y Cook	1 well	NC	50

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.

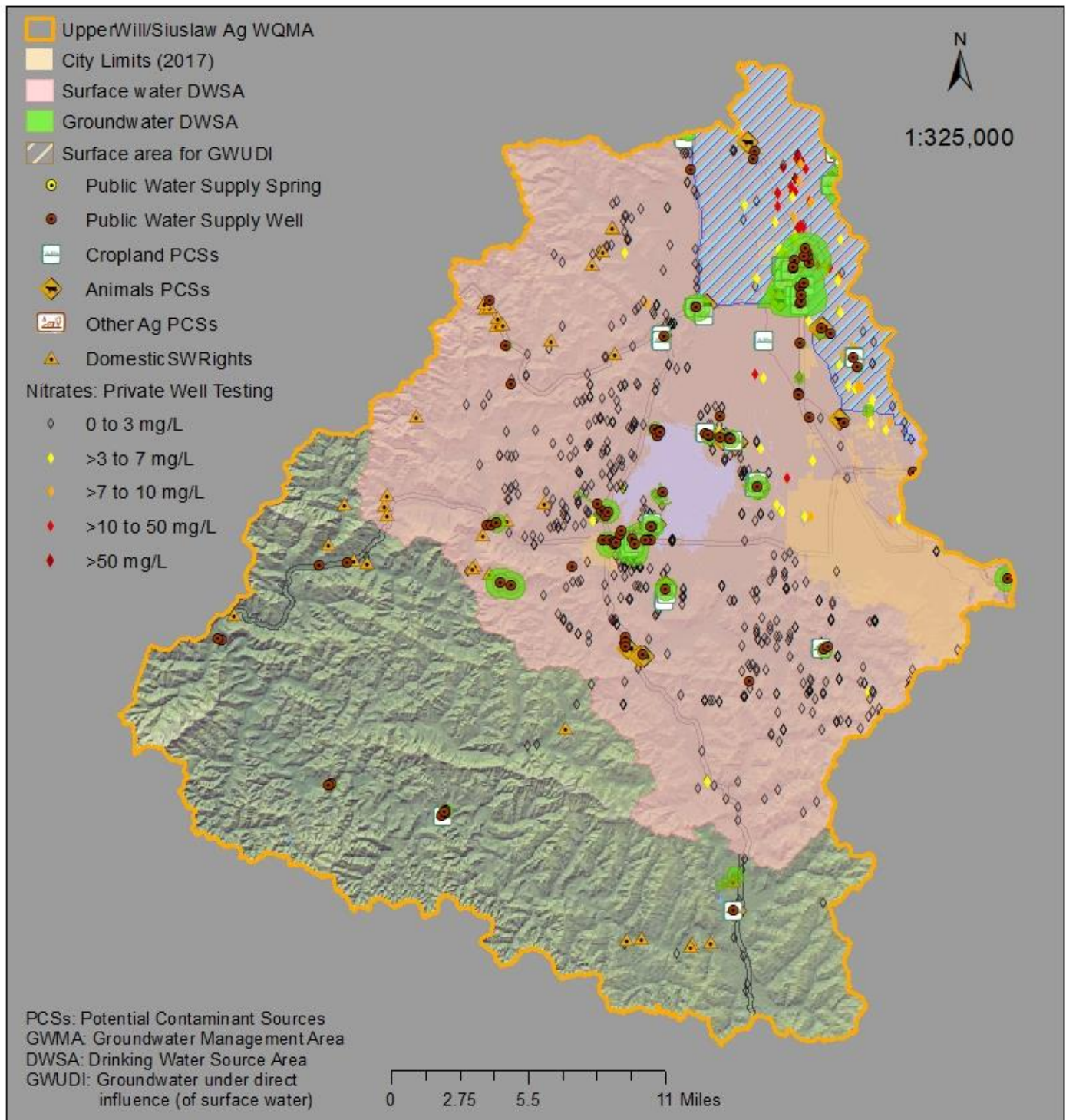
NTNC - "Non-Transient Non-Community Water System (NTNC)" means a public water system that is not a Community Water System and that regularly serves at least 25 of the same persons over 6 months per year.

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.

* Note that part of the drinking water source area for Cascade Pacific Pulp is inside the management area boundary, thus, its populations is included in the total.

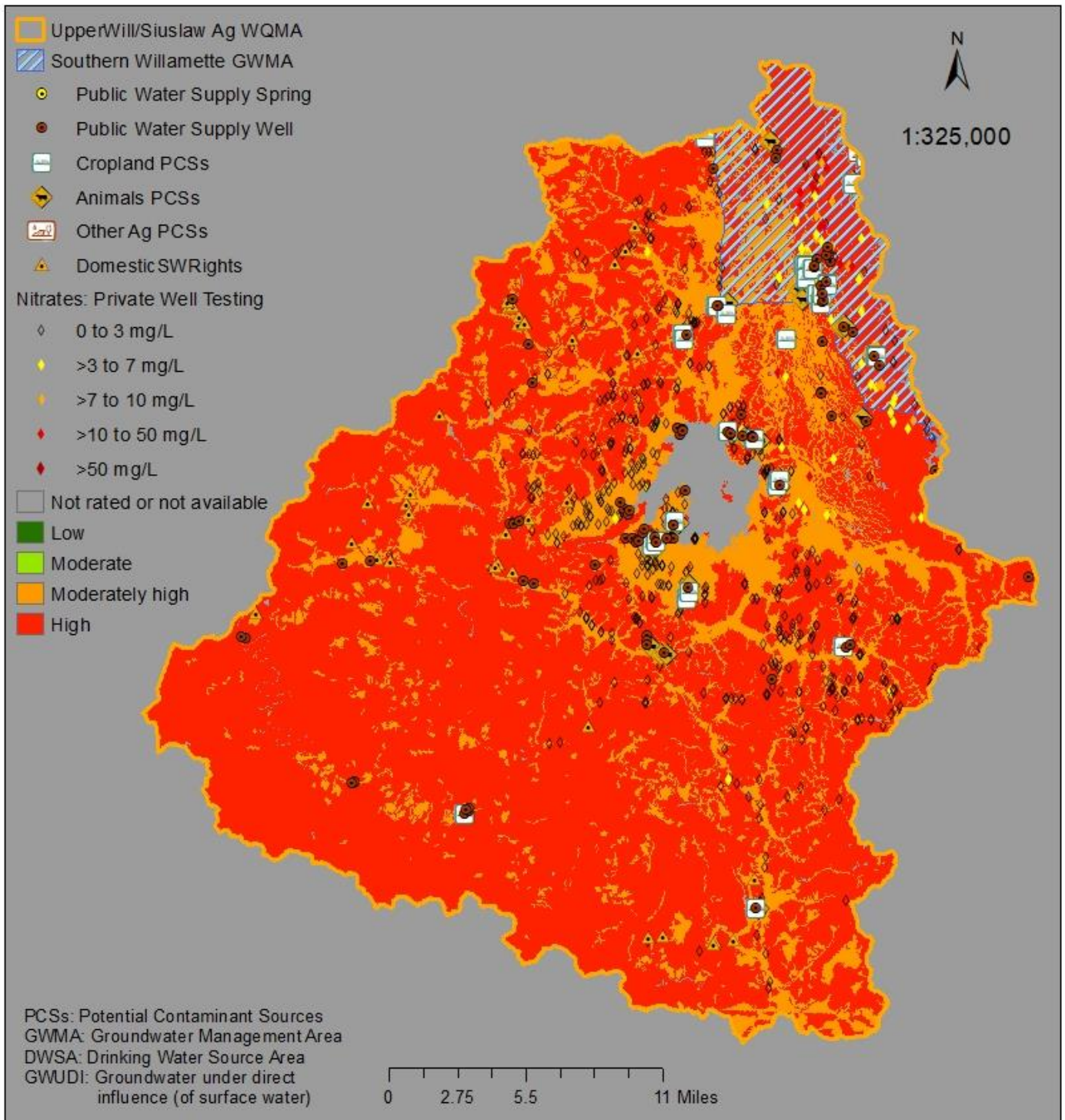
Drinking Water Source Areas for Public Water Systems in the Upper Willamette Siuslaw Agricultural Water Quality Management Area



The Drinking Water Source Area (DWSA) delineations define areas that supply the drinking water system. For groundwater this is defined as the area on the surface that overlies that portion of the aquifer that supplies water to a well or spring. DWSAs for wells typically show the 1-, 2-, 5-, and 10- or 15-yr time of travel zones that indicate the amount of time it takes groundwater to move to the wellhead. DWSAs for springs typically show area of short-, intermediate-, and long-term groundwater flow to the spring.

Map 1: Drinking Water Source Area for Public Water Systems in the Upper Willamette and Siuslaw Agricultural Water Quality Management Area

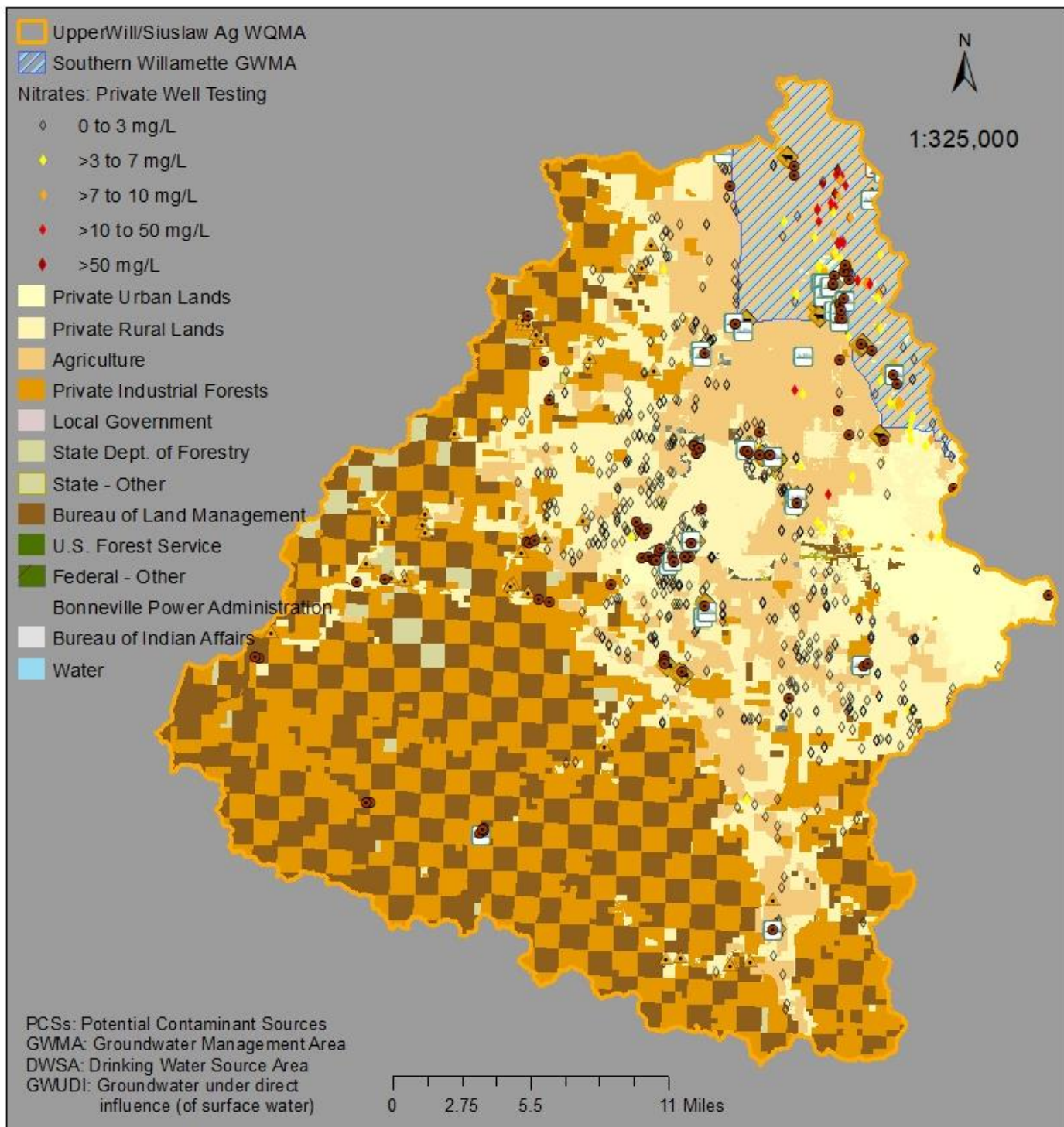
Drinking Water Source Areas for Public Water Systems in the Upper Willamette Siuslaw Agricultural WQMA: Nitrate Leaching



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Map 2: Drinking Water Source Area for Public Water Systems in the Upper Willamette and Siuslaw Agricultural Water Quality Management Area, Nitrate Leaching

Drinking Water Source Areas for Public Water Systems in the Upper Willamette Siuslaw Agricultural WQMA: Land Use / Ownership



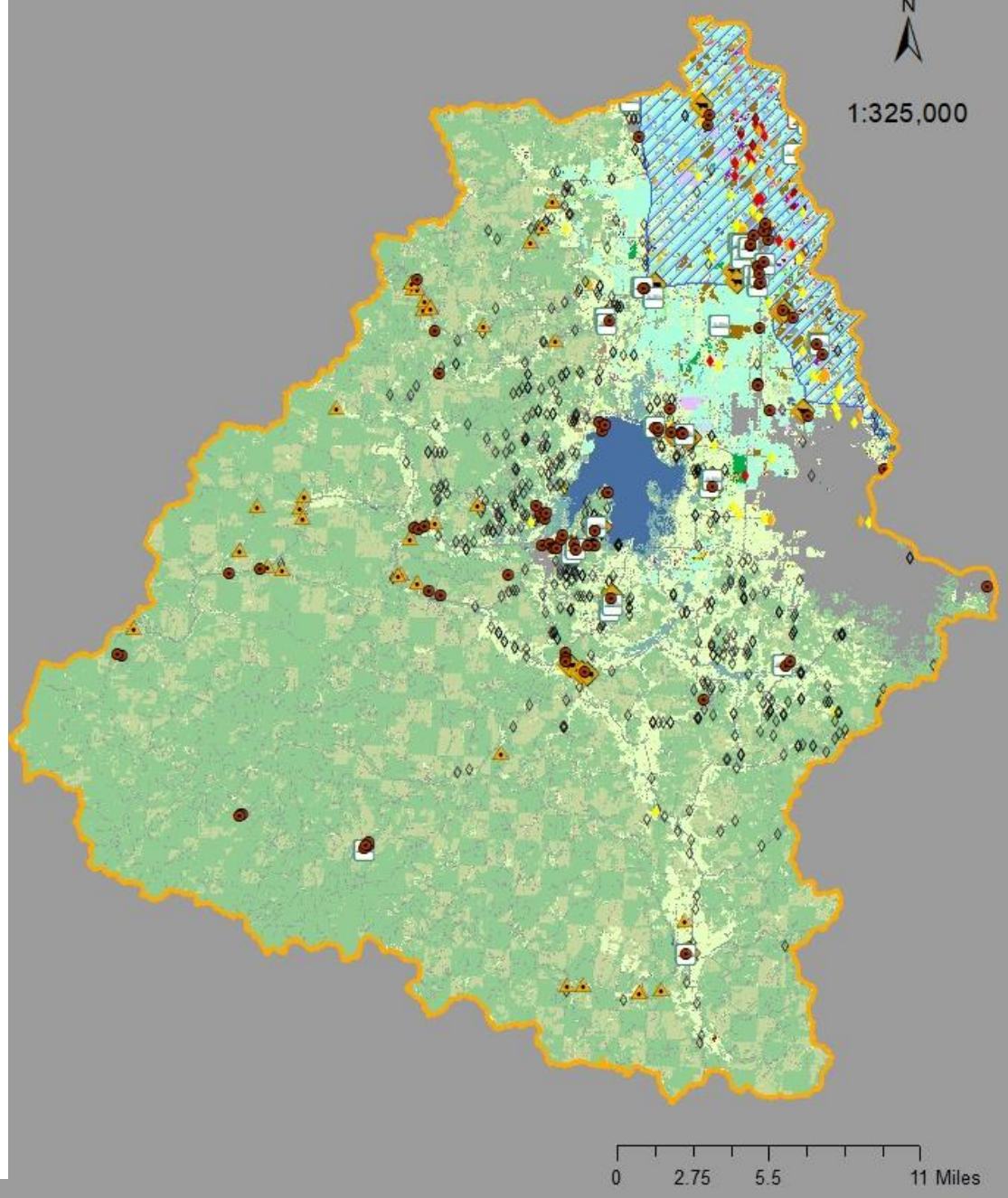
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Map 3: Drinking Water Source Area for Public Water Systems in the Upper Willamette and Siuslaw Agricultural Water Quality Management Area, Land Use/Land Ownership



Drinking Water Source Areas for Public Water Systems in the Upper Willamette Siuslaw Agricultural WQMA: Crops (NASS 2019)

- Public Water Supply Spring
 - Public Water Supply Well
 - ▲ Domestic SW Rights
 - Alfalfa
 - Barley
 - Barren
 - Buckwheat
 - Clover/Wildflowers
 - Corn
 - Deciduous Forest
 - Developed/Low Intensity
 - Developed/Med Intensity
 - Developed/Open Space
 - Dry Beans
 - Durum Wheat
 - Evergreen Forest
 - Fallow/Idle Cropland
 - Forest
 - Grass/Pasture
 - Herbaceous Wetlands
 - Millet
 - Mixed Forest
 - Oats
 - Onions
 - Potatoes
 - Rye
 - Safflower
 - Shrubland
 - Sod/Grass Seed
 - Spring Wheat
 - Water
 - Wetlands
 - Winter Wheat
 - Woody Wetlands
- Nitrate: Private Well Testing
- ◇ 0 to 3 mg/L
 - ◇ >3 to 7 mg/L
 - ◇ >7 to 10 mg/L
 - ◇ >10 to 50 mg/L
 - ◇ >50 mg/L



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Map 4: Drinking Water Source Area for Public Water Systems in the Upper Willamette and Siuslaw Agricultural Water Quality Management Area, Crops