Drinking Water Information Lower Willamette

Agricultural Water Quality Management Area

Oregon Department of Environmental Quality, Drinking Water Protection Program

8/1/2020

- Public drinking water systems in the Lower Willamette Agricultural Water Quality Management Area utilize groundwater sources to serve approximately 764,000 persons regularly.
- Recent alerts for fecal coliform bacteria are common, including many of the community water systems. The following public water systems had violations for the *E. coli* or total coliform maximum contaminant limit (MCL): Manna House Church and Wapato Moorage Association.
- Six public water systems had alerts for elevated nitrate concentration with no MCL violations. The Central Church of the Nazarene had violations for the nitrate MCL.
- Three of the 172 tested private wells in the area had slightly elevated nitrate concentrations. None of the wells had nitrate concentrations over the MCL.
- Contaminants in water supplies potentially related to agriculture co-occur with human populations, agricultural land uses, and aquifers susceptible to contaminant infiltration.

Thirty-nine active public water systems obtain domestic drinking water from groundwater sources in the Lower Willamette Agricultural Water Quality Management Area. Drinking water is an important beneficial use under the federal 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 maximum contaminant limits (MCLs).

Agricultural land uses (orchards, nurseries, irrigated crops, hay/pasture, and livestock) are present near many of the public water system wells and springs in the management area. The agricultural lands are dispersed throughout the management area and tend to be smaller farms and parcels.

There are 20 active Community public water systems in the plan area using only groundwater wells to serve approximately 760,017 people on a regular basis, in addition to visitors at recreation sites. There are seven active Non-transient, Non-community workplace or school public water systems using groundwater, serving 2,430 persons regularly. The remaining 12 active public water systems are Transient Non-community systems and Non-public, State-regulated systems with an estimated service population of 1,500. See Table 1 below for a list of public water systems, their classifications, sources and activity status, and populations served.

Several of the community public water systems in the management area have recent alerts for detections of bacteria. These public water systems with *E. coli* alert or violations or total coliform violations are marked in **Bold** text in Table 1. Manna House Church, Schmidt Nursery, Eastmont Water Company, and Wapato Moorage Association had violations of the contaminant limit for *E. coli* or total coliform as well as detections in their distribution systems.

Nitrate alerts (generated when nitrate exceeds 5 mg/L) exist for Central Church of the Nazarene, Manna House Church, Townsend Farms Fairview, and City of Milwaukie. There are no recent nitrate violations.

The drinking water MCL for nitrates is 10 mg/L. Nitrate contamination is often related to animal and cropland agriculture. The soils through most of the Ag WQMA have high or very high nitrate leaching potential, according to the Natural Resources Conservation Service; data are not available for much of the area.

The private wells for which data are available in the Lower Willamette area showed slightly elevated nitrate levels, three exceeding the alert level of 5 mg/L. No wells exceeded the nitrate MCL for drinking water standards. Many of the wells are in high and medium leaching potential soils. 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 found in public water systems that are not related to agriculture include: arsenic, sodium, lead, and tetrachloroethylene.

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 management area has a mix of low, moderate, and high susceptibility wells. 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 15 private domestic water rights in the Lower Willamette River WQMA. 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 172 wells included in the database for this area, 3 wells had nitrate concentrations above 5 mg/L. There were no significant detections of nitrate (>7mg/) recorded for the area.

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

Table 1. Public Water Systems in the Lower Willamette River Ag WQMA

Note: Table 1 does not include public water systems which 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 bacteria alerts.**

PWS ID	Public Water System Name	Drinking Water Source	Type	Population
4191928	**Metro Parks - Blue Lake**	1 active well, 2 inactive	NC	600
4191931	**Club Paesano Cedarville Park**	1 active well	NC	43
4191935	**Golden Spike Motel**	1 active well	NC	30
4193542	Bomber Motel	2 active wells	NC	50
4194308	Clear Creek Church	1 active well	NC	200
4194453	**Ash Grove Cement West-Rvrgate**	1 active well	NC	32
4194817	Big Eddy Marina	1 active well	NC	75
4195013	**Central Church of the Nazarene**	1 active well	NC	200
4195217	Pleasant Valley Market	1 active well	NC	50
4100296	**City of Fairview**	3 active wells, 2 inactive	C	9,176
4101460	**Sigler Cove Marina**	1 active, 3 inactive	C	150
4101251	Rocky Pointe Marina	1 active well	C	125
4194448	Reynolds Metal Company	8 wells (system inactive)	NTNC	850
4101267	**Manna House Church**	1 active well, 1 inactive	C	300
4100902	**Interlachen Water PUD**	4 active wells, 1 inactive	C	360
4195002	**Portland Habilitation Center**	1 well (system inactive)	NTNC	100
4194866	**Townsend Farms Fairview**	1 active, 1 inactive	NTNC	250
4101157	Terrand Mobile Terrace	1 active well	C	71
4100984	Mobile Village Inc	1 active well, 1 inactive	C	100
4100904	**City of Wood Village**	3 active wells, 1 inactive	C	3,907
4100657	**Portland Water Bureau**	27 active, 5 inactive	C	614,059
4191947	Pleasant Valley School SD 28J	1 active well	NTNC	650
4194763	**Schmidt Nursery**	1 active well	NTNC	30
4100358	Kingswood Heights Water Co-Op	1 active well	C	138
4190528	Cottrell Elem SD #107	1 active well	NTNC	300
4100528	**City of Milwaukie**	6 active wells, 4 inactive	C	20,500
4100138	**Eastmont Water Company**	1 active well	C	250
4100135	**Boring Water District No 24**	4 active wells, 1 inactive	C	2,500
4100142	Pioneer Mobile Home Park	1 active well, 1 inactive	C	300
4101177	Steeves Mobile City	1 active well	C	80
4100192	Johnson City Water System	1 well (system inactive)	C	600
4194991	Hillsview Covenant Church	1 active well	NC	50
4195347	Burnside Rocket	1 active well	NC	75
4194638	Top O The Mornin	1 well (system inactive)	NC	100
4100901	City of Troutdale	7 active wells	C	16,020
4101510	**Wapato Moorage Association**	1 active well, 1 inactive	C	74
4100668	Rockwood People's Utility District	4 active wells	C	61,082
4101262	Sandy Boulevard Mobile Villa	1 active well	C	225
4191953	Skyline Elementary SD 1J	1 active well	NTNC	250

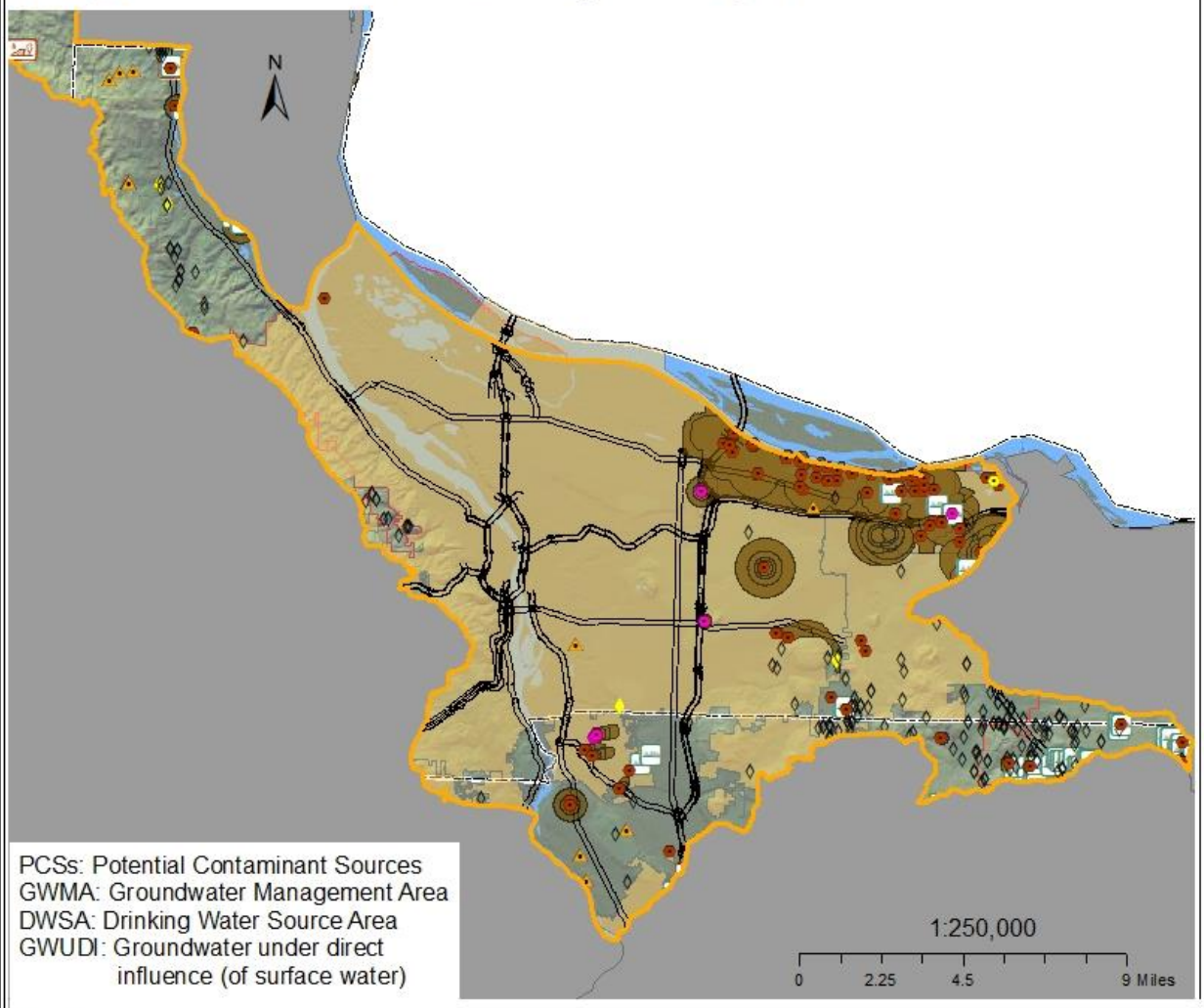
System Type: C - "Community Water System (C)" means a public water system that has 15 or more service connections used by year-round residents or that regularly serves 25 or more year-round residents.

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 - "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.

Drinking Water Source Areas for Public Water Systems in Lower Willamette Agricultural Water Quality Management Area



PCSs: Potential Contaminant Sources
GWMA: Groundwater Management Area
DWSA: Drinking Water Source Area
GWUDI: Groundwater under direct influence (of surface water)

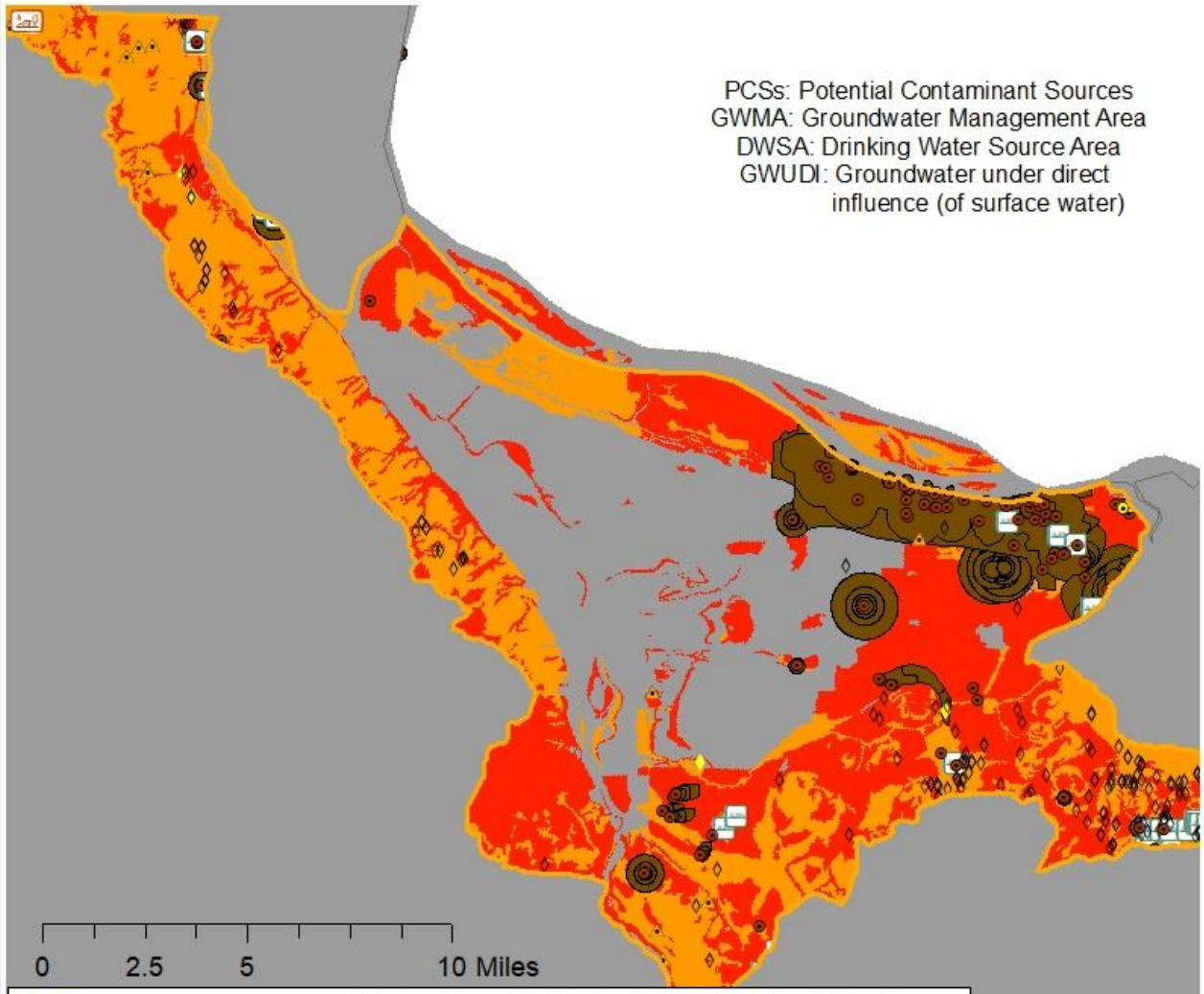
- LowerWillametteAgWQMA
- Groundwater DWSA
- Surface watershed for GWUDI
- Public Water Suppy Spring
- Public Water Suppy Well
- PWS with recent nitrate alerts
- Cropland PCSs
- Animals PCSs
- Other Ag PCSs
- Domestic Surface Water Rights
- City Limits (2017)

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

The Drinking Water Source Area (DWSA) delineations define areas that supply the drinking water system.
For groundwwater 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.
DWSAs for surface water represents the watershed that supplies the waterbody where the intake is located.

Drinking Water Source Areas for Public Water Systems in Lower Willamette Agricultural WQMA: Nitrate Leaching Potential



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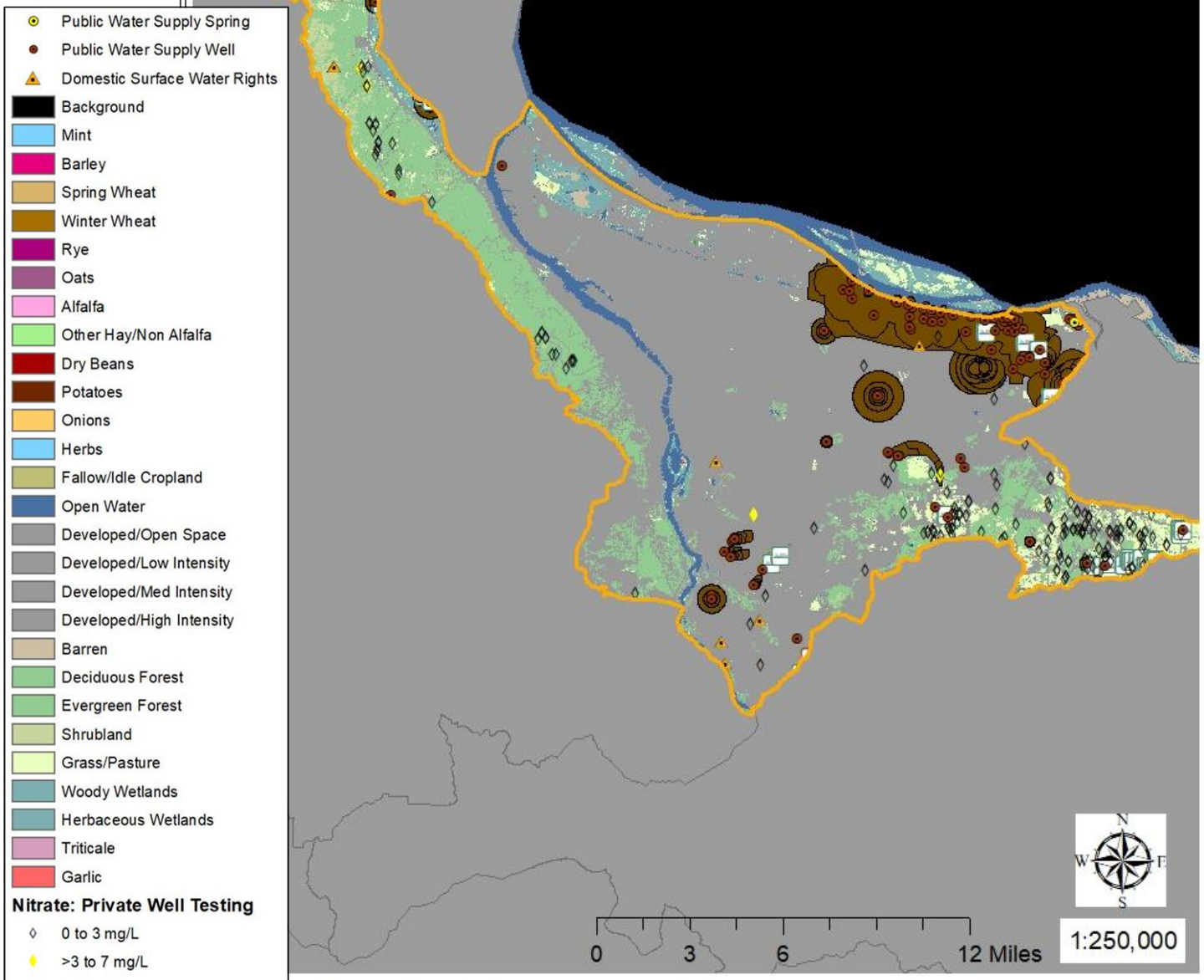
Drinking Water Source Areas for Public Water Systems in Lower Willamette Agricultural WQMA: Crops (NASS 2015)



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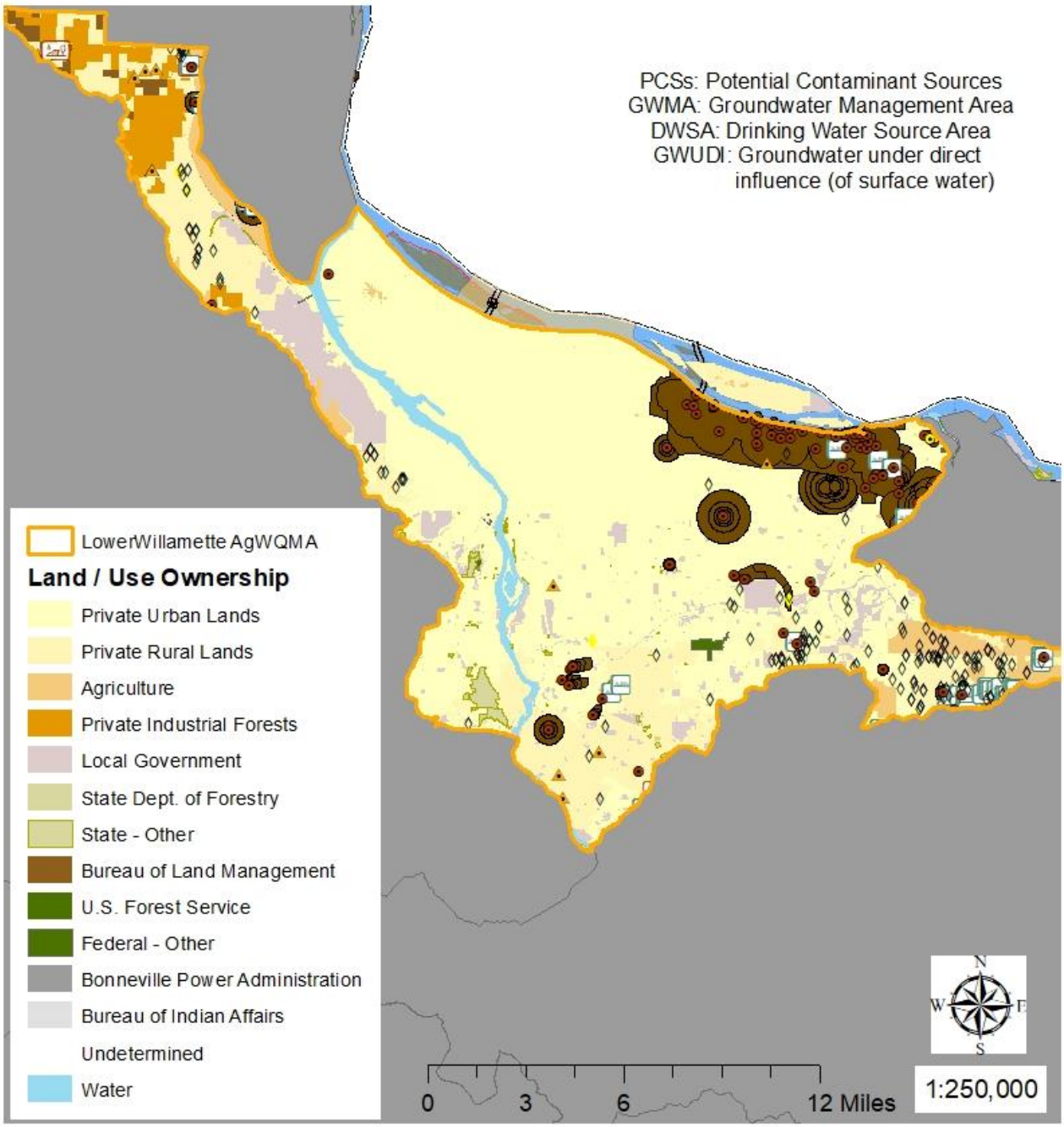
Drinking Water Source Areas for Public Water Systems in Lower Willamette Agricultural WQMA: Land Use / Ownership



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