

Drinking Water Information in the Owyhee River Agricultural
Water Quality Management Area

Oregon Department of Environmental Quality, Drinking Water Protection Program

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- Public Drinking Water Systems in the Owyhee River Agricultural Water Quality Management Area utilize surface water and groundwater sources to serve approximately 18,230 persons regularly.
- There are recent alerts for *E. coli* bacteria at three Public Water Systems. One system has violations of the *E. coli* maximum contaminant limit (MCL).
- Two Public Water Systems have recent alerts for elevated nitrate concentration with no MCL violations. Of the 228 private wells tested in the area, 68 had elevated nitrate concentrations (\geq 5 mg/L).
- Contaminants in water supplies potentially related to agriculture co-occur with human populations, agricultural land uses, and aquifers susceptible to contaminant infiltration. Resources for addressing risks to drinking water supplies can be found in the [Groundwater Resource Guide](#)
- This management area includes the [Northern Malheur County Groundwater Management Area](#). Many resources have been developed to address the groundwater contamination issues.

Nine Public Water Systems obtain domestic drinking water from groundwater and surface water sources in the Owyhee River Agricultural Water Quality Management Area. 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 seven Community Public Water Systems in the plan area using only groundwater wells to serve approximately 3,765 people on a regular basis, in addition to visitors at recreation sites. There is one Community Public Water System using surface water and groundwater under the direct influence of surface water to serve 14,465 persons regularly. There are four transient non-community Public Water Systems with an estimated service population of 440. See Table 1 below for a list of public water systems, their classifications, sources and activity status, and populations served.

Agricultural land uses (e.g. mostly rangeland with some irrigated crops) are present near many of the public water system wells, concentrated in the lower part of the basin near the town of Ontario. This is also the location of the Northern Malheur County Groundwater Management Area (GWMA). Much of the rest of the management area is federal land.

Bacteria

Three community public water systems in the management area have recent alerts for detections of *E. coli* bacteria: OPRD McCormack Campground, Fischers Mobile Home Park, and the Adrian Municipal Water System. Additionally, the city of Jordan Valley has many recent alerts for total coliform bacteria.

These PWSs with bacterial detections are marked in **Bold** text in Table 1. Only the Adrian Municipal Water System had a violation of the contaminant limit for *E. coli*.

Nitrates

Nitrate alerts (generated when nitrate exceeds 5 mg/L) exist for the Adrian Municipal Water District and the City of Nyssa. Neither had MCL violations. The drinking water MCL for nitrates is 10 mg/L. These contaminants are often related to animal and cropland agriculture. The locations of nitrate contamination of private domestic wells (see below) and public drinking water sources is near to agricultural land use such as row crops, near Ontario.

The nitrate leaching potential for most of the management area is not reported, but the area near Ontario shows a mixture of low, moderate, and high leaching potential, according to the Natural Resources Conservation Service. Many of the private wells with elevated nitrate (see below) are in high 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.

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 most of the evaluated PWS wells rate as high 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 two private domestic water rights in the area. Also, there are numerous private groundwater wells for domestic use. The Domestic Well Testing Act database (real estate transaction testing data) for 1989-2018 indicates 68 significant detections of nitrate (>5mg/L) in private wells out of 228 total wells included in the database for this area. Of those private wells, 31 had nitrate concentrations ≥ 10 mg/L.

Other

There are additional contaminants identified for public water supply wells that are not likely related to agriculture in the management area, including: arsenic and xylenes and total trihalomethanes, both disinfectant byproduct. Rome Station has an ongoing Water Advisory due to arsenic levels.

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

Table 1. Public Water Systems in the Owyhee 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	System Type	Population
Groundwater Systems				
4191056	OPRD McCormack Campground	1 GW spring, 1 inactive emergency spring	NC	250
4193645	Rome Station	1 GW well	NC	60
4195094	OPRD Indian Creek CG	1 GW well	NC	100
4101144	Fischers Mobile Home Park	2 GW wells	C	125
4100579	City of Nyssa	5 GW wells	C	3,285
4100002	Adrian Municipal Water System	2 active GW wells, 2 inactive emergency wells	C	180
4100411	City of Jordan Valley	1 GW well	C	175
4194281	3 JS Burn Junction Cafe	INACTIVE	NC	
Surface Water System				
4100587	City of Ontario	1 SW well, 5 GU wells (Snake River)	C	14,465

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.

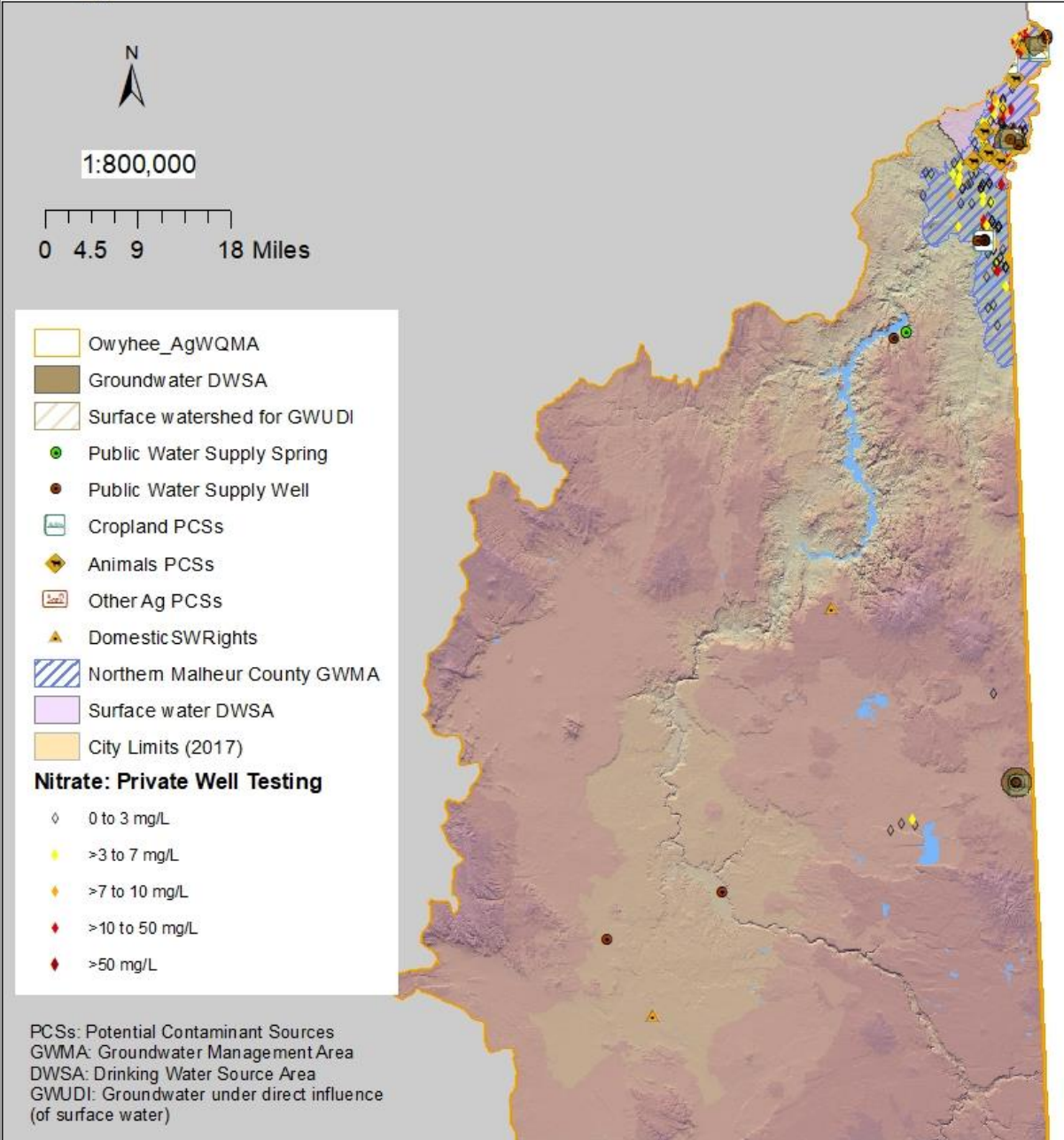
NTNC - "Non-Transient Non-Community Water System (NTNC)" means a public water system that is not a Community Water System and that regularly serves at least 25 of the same persons over 6 months per year.

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.



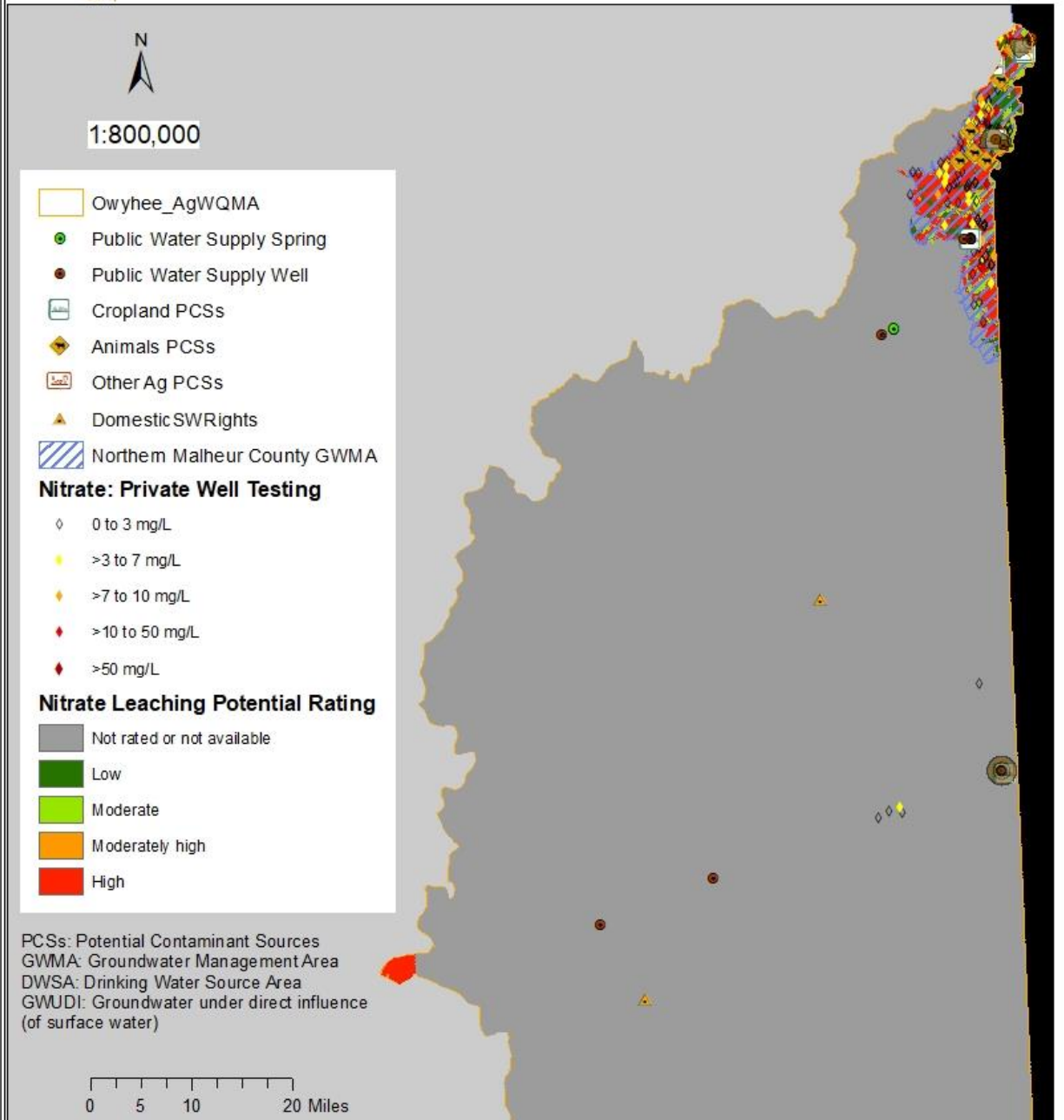
Drinking Water Source Areas for Public Water Systems in Owyhee River Agricultural Water Quality Management Area



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.
 DWSAs for surface water represents the watershed that supplies the waterbody where the intake is located.



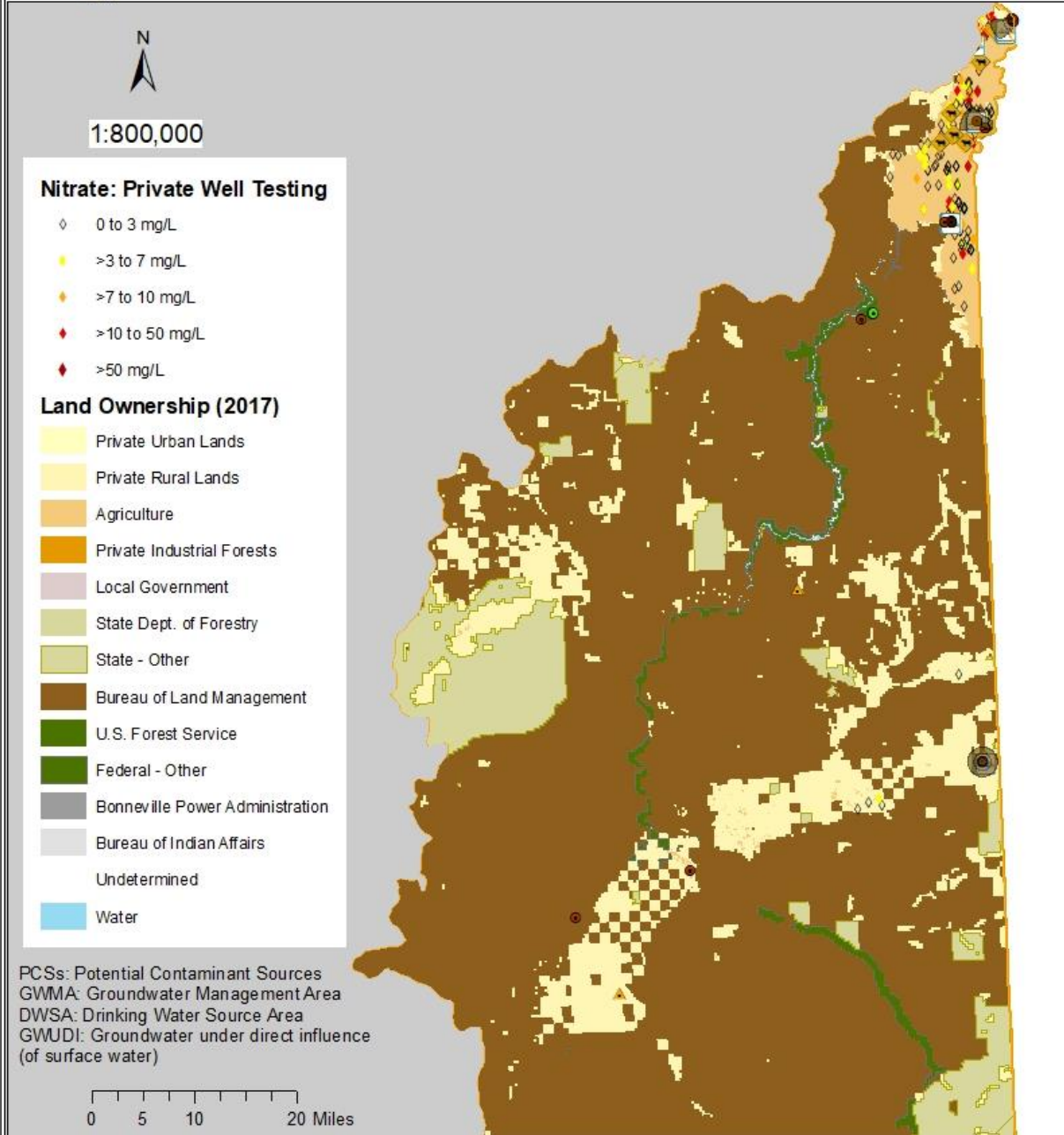
Drinking Water Source Areas for Public Water Systems in Owyhee River Agricultural WQMA: Nitrate Leaching Potential



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Drinking Water Source Areas for Public Water Systems in Owyhee River Agricultural WQMA: Land Use/Ownership

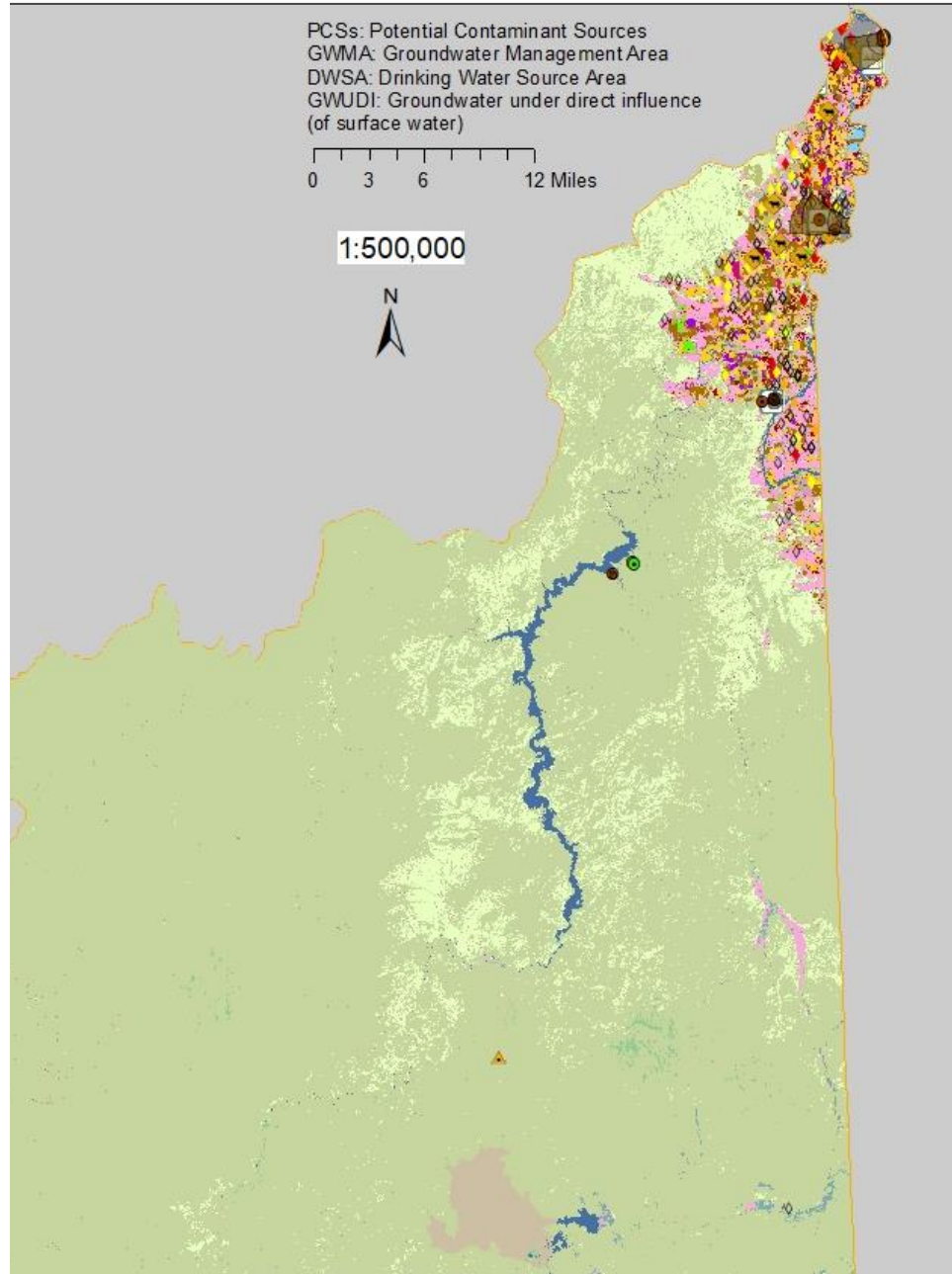


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Drinking Water Source Areas for Public Water Systems in Owyhee River Agricultural WQMA: Crops (NASS 2015)

- Corn
- Sorghum
- Sweet Corn
- Barley
- Spring Wheat
- Winter Wheat
- Rye
- Oats
- Millet
- Mustard
- Alfalfa
- Other Hay/Non Alfalfa
- Buckwheat
- Sugarbeets
- Dry Beans
- Potatoes
- Other Crops
- Onions
- Peas
- Herbs
- Clover/Wildflowers
- Sod/Grass Seed
- Fallow/Idle Cropland
- Apples
- Open Water
- Developed/Open Space
- Developed/Low Intensity
- Developed/Med Intensity
- Developed/High Intensity
- Barren
- Evergreen Forest
- Shrubland
- Grass/Pasture
- Woody Wetlands
- Herbaceous Wetlands
- Triticale
- Peppers
- Greens
- Dbl Crop WinWht/Corn
- Lettuce
- Radishes
- Turnips



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