

Drinking Water Assessment for the Greater Harney Basin Water Quality Management Area February 2026

Overview

- There are 15 public drinking water systems in the Greater Harney Basin Agricultural Water Quality Management Area which utilize groundwater sources to serve approximately 5,416 people regularly.
- No public water systems have received alerts within the past ten years for exceeding the Maximum Contaminant Level Goal for *E. coli* bacteria. No public water systems had a Maximum Contaminant Level violation within the past five years.
- One public water system received an alert within the past ten years for nitrate levels that exceed 5 milligrams per liter.
- There are 217 records of private domestic well sample results submitted to Oregon Health Authority's Real Estate Transaction program in the area. Of these, 38 measured nitrate concentrations ≥ 3 mg/L.
- Contaminants in water supplies potentially related to agriculture occur near human populations, agricultural land uses, and aquifers susceptible to contaminant infiltration.
- DEQ recommends public water systems utilize [Source Water Protection Practices](#) to prevent potential contamination and increase resiliency.
- Resources for addressing risks to drinking water supplies can be found in either the [Groundwater Resource Guide](#) or [Surface Water Resource Guide](#).

Water use

There are 15 public water systems within the Greater Harney Basin Agricultural Water Quality Management Area which obtain drinking water from 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 Greater Harney Basin 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.

Of the 15 public water systems in the Greater Harney Basin Agricultural Water Quality Management Area, four are active community public water systems which use groundwater sources to serve approximately 4,613 people on a regular basis, in addition to visitors at recreation sites. There are two active non-transient, non-community workplace or school public water systems which use groundwater to serve 410 people regularly. The remaining nine public water systems are transient non-community systems and state-regulated systems with an estimated service population of 393. See **Table 1** for a list of the public water systems, their classifications, primary source and activity status, and populations served.

The Greater Harney Basin Agricultural Water Quality Management Area is primarily managed by the Bureau of Land Management in the southern portion of the area with agricultural land use and U.S. Forest Service

ownership in the north. Other land use and ownership within the Management Area includes private industrial forests, private rural lands, private urban lands, local government, state and federal lands, and the Bureau of Indian Affairs (**Figure 2**).

Bacteria

Total coliform bacteria alerts and *E. coli* bacteria alerts for public water systems are generated by Oregon Health Authority when their presence is detected in sample results. Water systems sample for total coliform bacteria and confirmed detections trigger additional sampling for other pathogens (*E. coli*). Within the Greater Harney Basin Agricultural Water Quality Management Area, no public water systems had alerts for detections of *E. coli* bacteria in the past ten years (**Figure 1, Table 1**). No public water systems had a violation with the Oregon Health Authority for *E. coli* bacteria in the past five years.

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. When *E. coli* is detected, additional site-specific review is typically needed to evaluate the source of *E. coli*, which may not be related to impacts to groundwater quality.

Public water systems with *E. coli* detections are not present in the study area indicating regional aquifer contamination issues are not likely. Refer to DEQ's [Surface Water Resource Guide](#) section 2.4.2 Bacteria Data and Surface Water 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. Within the Greater Harney Basin Agricultural Water Quality Management Area, one of the public water systems had an alert for elevated nitrate results in the past ten years. No public water systems had an MCL violation in the past five years (the MCL for nitrate is 10 mg/L).

There are numerous private groundwater wells for domestic use within the Greater Harney Basin Agricultural Water Quality Management Area. The Domestic Well Testing Act database includes submitted records of real estate transaction testing data from 1989 to 2018. There are 217 records of private domestic well samples within the Management Area. Of these 217 records, 179 measured nitrate concentrations 0 - 3 mg/L, 15 measured nitrate concentrations 3.01 - 5 mg/L, 12 measured nitrate concentrations 5.01 - 7mg/L, seven measured nitrate concentrations 7.01 - 10 mg/L, and four of the records measured nitrate concentrations >10mg/L (**Figure 1**). For wells testing at elevated concentrations, attention to well depth, well construction, nitrate leaching potential of local soils, and proximity to nutrient sources such as septic systems, fertilizer use areas, and high concentrations of livestock should be considered when investigating the cause of nitrate contamination.

Of the soils assessed in the Greater Harney Basin Agricultural Water Quality Management Area there is a mix of moderate to high nitrate leaching potential in the areas where data is available, through much of the area with agricultural land use has moderate to low leaching potential, according to the Natural Resources Conservation Service's National Cooperative Soil Survey (**Figure 3**). Nitrate leaching potential is based on the area's slope, precipitation, and land use. Nitrate from fertilizers and septic systems can readily penetrate aquifers used for drinking water when leaching potential is high. Additionally, bacteria removal through soil filtration can be less effective in sandy soils. Measures to reduce leachable nitrate in soils reduce risk to

groundwater sources of drinking water. Refer to section 5.0 - Pollutant Reduction Tools in the [Groundwater Resource Guide](#) to learn more about nitrate leachability and potential reduction strategies.

DEQ specifically addresses drinking water issues identified for public water systems. A query of Oregon Water Resources Department's water rights database for private domestic points of diversion (using a threshold of 0.005 cubic feet per second for domestic surface water rights that are household use only, not irrigation) identified 404 private domestic surface water rights in the Greater Harney Basin Agricultural Water Quality Management Area (see **Figure 1**).

Other contaminants

Water quality samples from public water systems within the Greater Harney Basin Agricultural Water Quality Management Area also detected other contaminants including sodium, arsenic, and tetrachloroethylene that are unlikely to be related to agricultural activities.

Contact

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

Table 1. Public Water Systems in the Greater Harney Basin 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 | Primary Drinking Water Source | System Type | Population | MCL Alerts |
|---------------|-----------------------------------|--------------------------------------|-----------------------------|-------------------|-------------------|
| 4100153 | BURNS WATER DEPARTMENT | Groundwater | Community | 2730 | n/a |
| 4105730 | GH2O INC | Groundwater | Community | 120 | n/a |
| 4100382 | HINES WATER DEPARTMENT | Groundwater | Community | 1563 | n/a |
| 4100807 | SENECA, CITY OF | Groundwater | Community | 200 | n/a |
| 4193602 | BLM PAGE SPRINGS REC SITE | Groundwater | Transient Non-Community | 30 | Nitrate |
| 4195132 | NARROWS, THE | Groundwater | Transient Non-Community | 40 | n/a |
| 4191105 | ODOT HD SAGE HEN HILL REST AREA | Groundwater | Transient Non-Community | 200 | n/a |
| 4191161 | STEENS MOUNTAIN WILDERNESS RESORT | Groundwater | Transient Non-Community | 30 | n/a |
| 4195040 | BLM BURNS DISTRICT OFFICE | Groundwater | Non-Transient Non-Community | 70 | n/a |
| 4190548 | CRANE UNION HIGH/ELEM SD 1J | Groundwater | Non-Transient Non-Community | 340 | n/a |
| 4195062 | CRANE STORE & CAFE | Groundwater | Oregon Very Small | 15 | n/a |
| 4191159 | HORSESHOE INN | Groundwater | Oregon Very Small | 15 | n/a |
| 4191028 | OPRD FRENCHGLEN HOTEL | Groundwater | Oregon Very Small | 24 | n/a |
| 4194298 | USFS DELINTMENT LAKE EAST HP | Groundwater | Oregon Very Small | 24 | n/a |
| 4105483 | USFS PARISH CABIN CG | Groundwater | Oregon Very Small | 15 | n/a |

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.

Figure 1: Drinking Water Source Area for Public Water Systems in the Greater Harney Basin Agricultural Water Quality Management Area

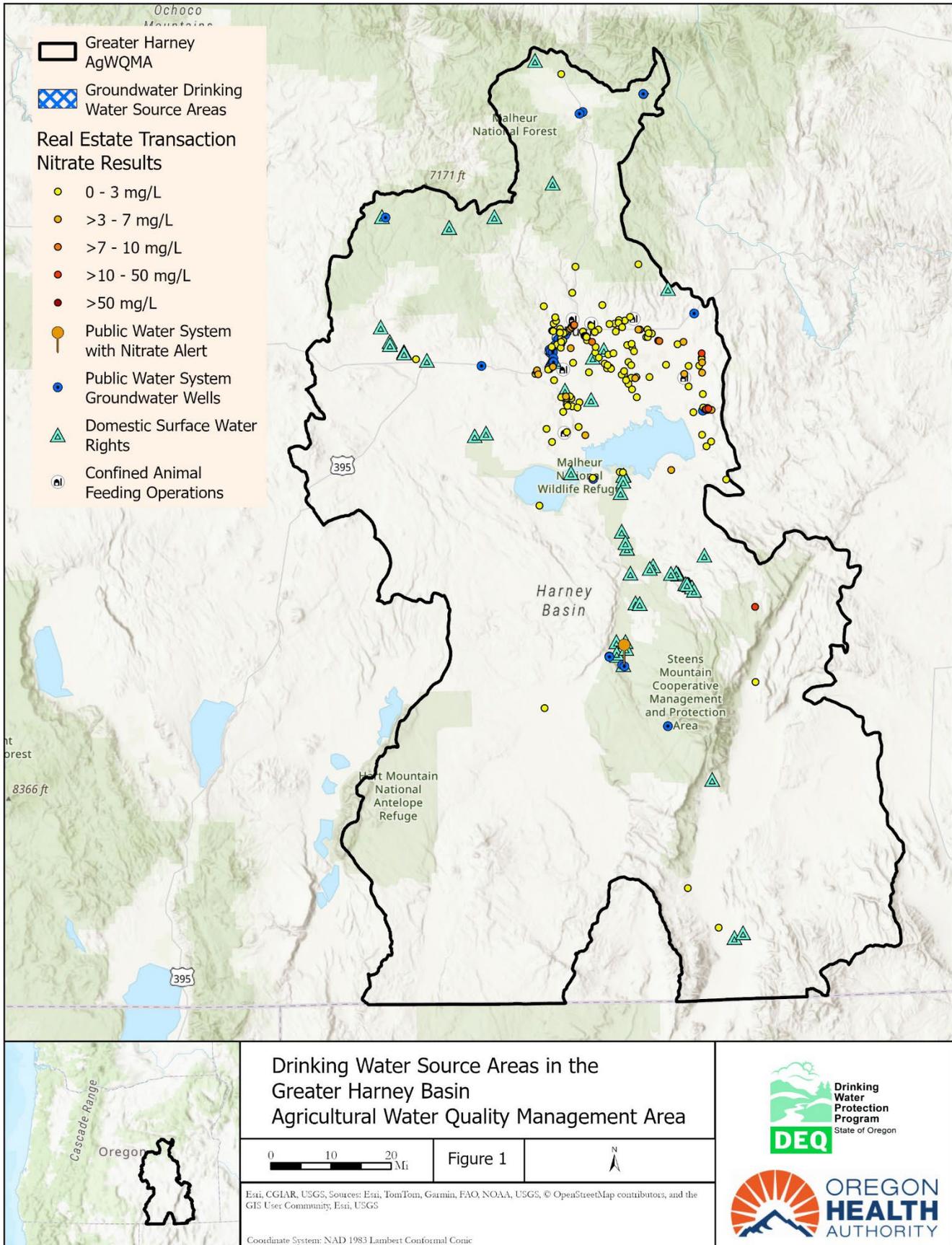


Figure 2: Drinking Water Source Area for Public Water Systems in the Greater Harney Basin Agricultural Water Quality Management Area, Land Use/Land Ownership

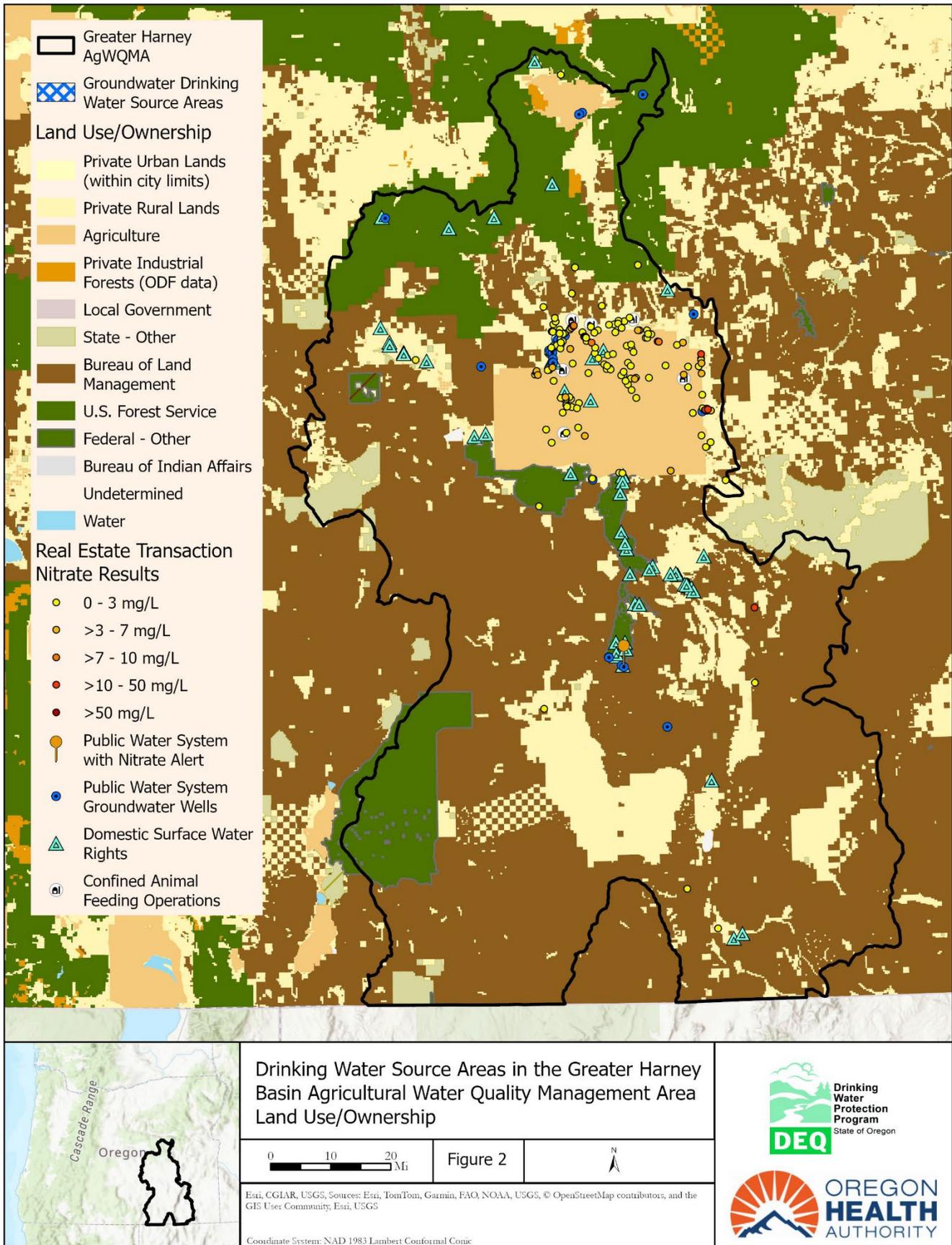
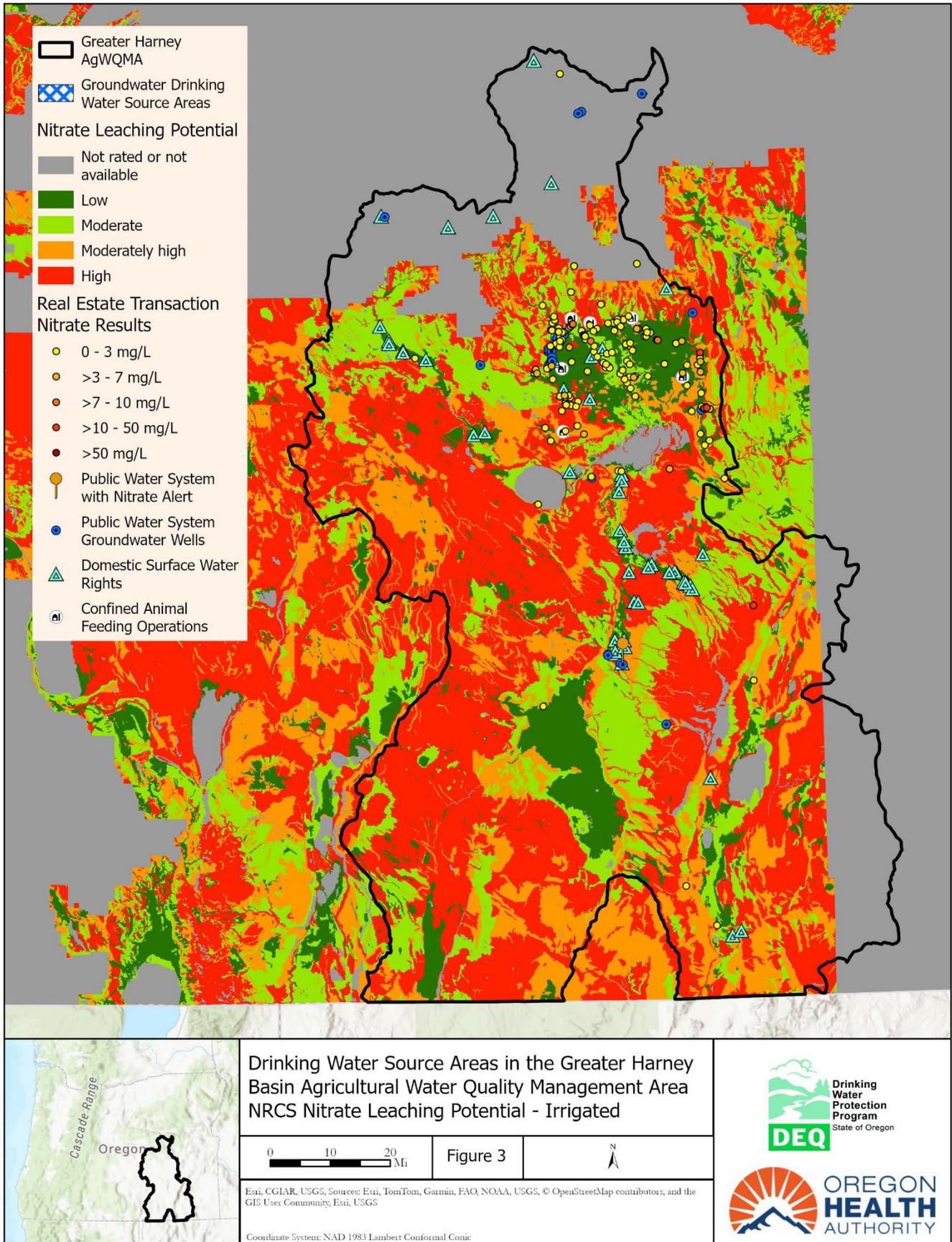


Figure 3: Drinking Water Source Area for Public Water Systems in the Greater Harney Basin Agricultural Water Quality Management Area, Nitrate Leaching Potential



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