Oregon Department of Environmental Quality

Drinking Water Assessment for the Middle John Day Agricultural Water Quality Management Area

February 2024

Overview

- Public drinking water systems in the Middle John Day Agricultural Water Quality Management Area (AgWQMA) utilize groundwater and surface water sources to serve approximately 1,557 persons regularly.
- Five public water systems had an alert within the past ten years for exceeding the Maximum Contaminant Level Goal (MCLG) for total coliform bacteria (MCLG for total coliforms is zero). None of the public water systems had Maximum Contaminant Level (MCL) violations within the past five years.
- Resources for addressing risks to drinking water supplies from agricultural and urban sources can be found in either the Groundwater Resource Guide or Surface Water Resource Guide. In the management area, private wells and aquifers could be at risk of contamination.

Water Use

There are seven active public water systems which obtain drinking water from a combination of surface and groundwater sources in the Middle John Day Agricultural Water Quality Management Area (AgWQMA). Drinking water is an important beneficial use under the federal Clean Water Act (CWA). 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 standards. **Figure 1** demonstrates the drinking water source areas of the public water systems within the Middle John Day Ag WQMA. 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.

A public water system provides water for human consumption through pipes or other constructed conveyances to at least 15 service connections or serves an average of at least 25 people for at least 60 days a year. A public water system may be publicly or privately owned. There are four community public water systems in the plan area using groundwater wells and surface water intakes to serve approximately 1,244 people on a regular basis, in addition to visitors at recreation sites. There are no non-transient, non-community workplace or school public water systems. Four public water systems are transient non-community systems and non-public, state-regulated systems with an estimated service population of 310. See **Table 1** below for a list of public water systems, their classifications, primary source, activity status, and populations served.

Agricultural land uses (e.g. hay/forage and rangeland) are present near public water system wells and springs in the area. The agricultural areas are dispersed throughout the management area.

Bacteria

Total coliform bacteria alerts for public water systems are generated by Oregon Health Authority (OHA) when their presence is detected in sample results. Five public water systems had an alert within the past ten years for exceeding the Maximum Contaminant Level Goal (MCLG) for total coliform bacteria (MCLG for total coliforms is zero). None of the public water systems received violations for exceeding the Maximum Contaminant Level (MCL) 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 OHA when their presence is detected in sample results. None of the public water systems within the Middle John Day AgWQMA had an alert for detections of *E. coli* bacteria in the past ten 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.

Nitrates

An alert for elevated nitrate concentrations is generated by OHA when nitrate sample results for public water systems exceed 5 mg/L. None of the public water systems within the Middle John Day AgWQMA had an alert for elevated nitrate results in the past ten years. Nitrate contamination is often related to animal and cropland agriculture. The soils through most of the AgWQMA have not been assessed by the National Cooperative Soil Survey. The areas that have been rated show mostly low or moderate nitrate leaching potential, based on slope, precipitation, and land use. Unfortunately, most of the management area is not rated and appears gray in **Figure 2**.

In addition, there are numerous private groundwater wells for domestic use within the Middle John Day AgWQMA. The Domestic Well Testing Act database includes submitted records of real estate transaction testing data from 1989 to 2018. There are 16 records of private domestic well samples within the Middle John Day AgWQMA. Of these 16 records, one measured the nitrate concentration at ≥5 mg/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 (**Figure 3**).

DEQ specifically addresses drinking water issues identified for public water systems. A query of Oregon Water Resources Department's (OWRD'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 21 private domestic surface water rights in the Middle John Day AgWQMA (**Figure 1**).

Other Contaminants

Young Life has had recent alerts for haloacetic acid (HAA5) and total trihalomethanes (TTHM). Young Life has two recent violations for TTHM. HAA5 and TTHM are disinfectant byproducts that sometimes show up in finished drinking water. Disinfection in water supplies is necessary to prevent illness from waterborne disease-causing bacteria. The source of these bacteria in drinking water source areas can be residential, industrial, or agricultural.

Other contaminants found recently in public water systems include sodium and fluoride. Please review OHA's list of chemical contaminants found in water for more information.

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 Middle John Day 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	Drinking Water Primary Source	System Type	Population	MCLG/MCL Exceedance
Groundwater and Surface Water Systems					
4100307	FOSSIL, CITY OF	Groundwater	Community	470	
4100533	MITCHELL CITY WATER	Groundwater	Community	138	
4194134	NPS JOHN DAY NM/CLARNO	Groundwater	Transient Non-Community	70	
4194136	NPS JOHN DAY NM/FOREE *Inactive System*	Groundwater	Oregon Very Small	3	
4194135	NPS JOHN DAY NM/PAINTED HILLS	Groundwater	Transient Non-Community	125	
4190182	NPS JOHN DAY NM/SHEEP ROCK	Groundwater	Transient Non-Community	115	
4100832	SPRAY, CITY OF	Groundwater	Community	139	
4101246	YOUNG LIFE	Surface water	Community	497	

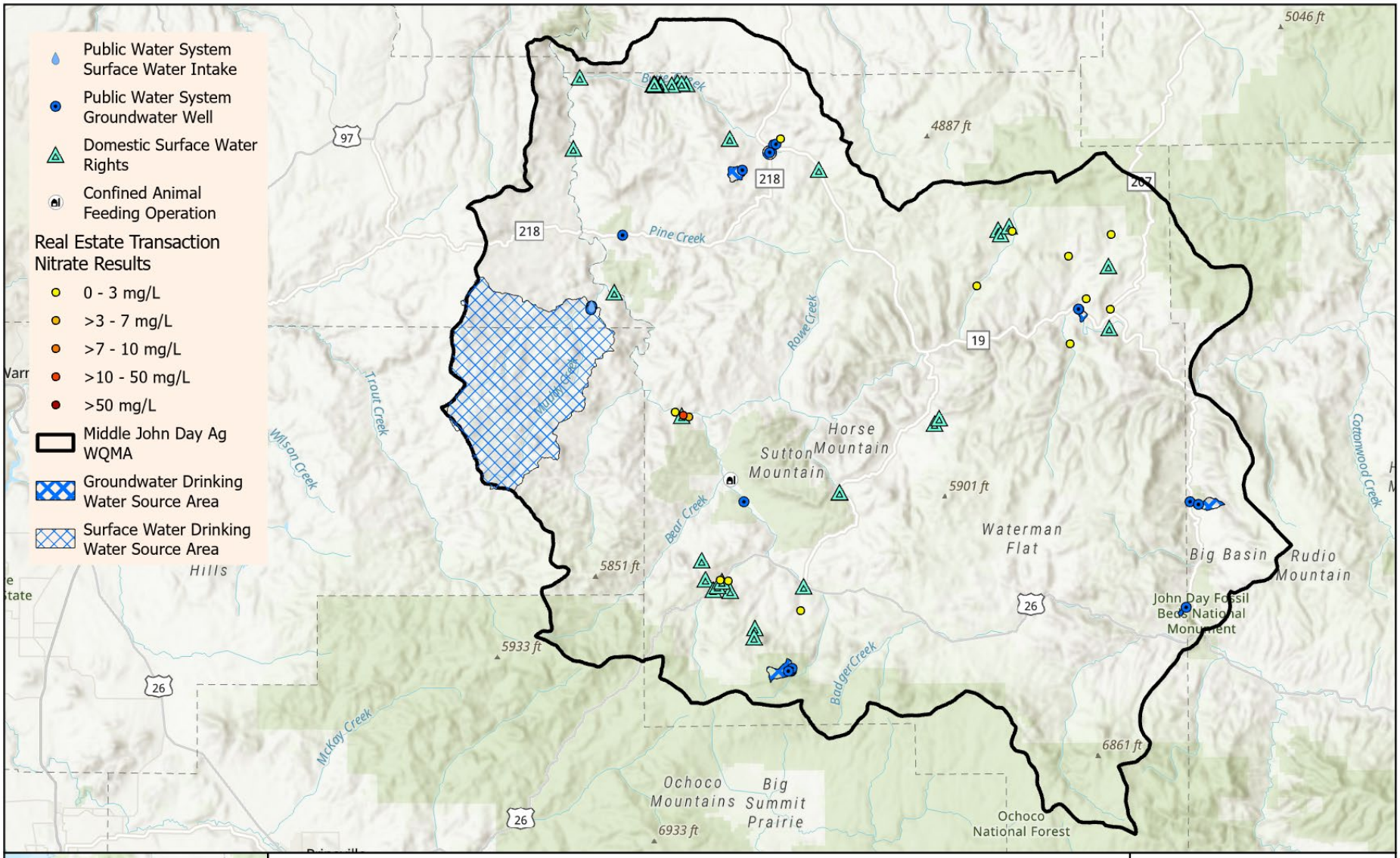
System Type

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.

OVS - "Oregon Very Small" 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 system.



Drinking Water Source Areas in the Middle John Day Agricultural Water Quality Management Area

0 5 10 Mi

Figure 1

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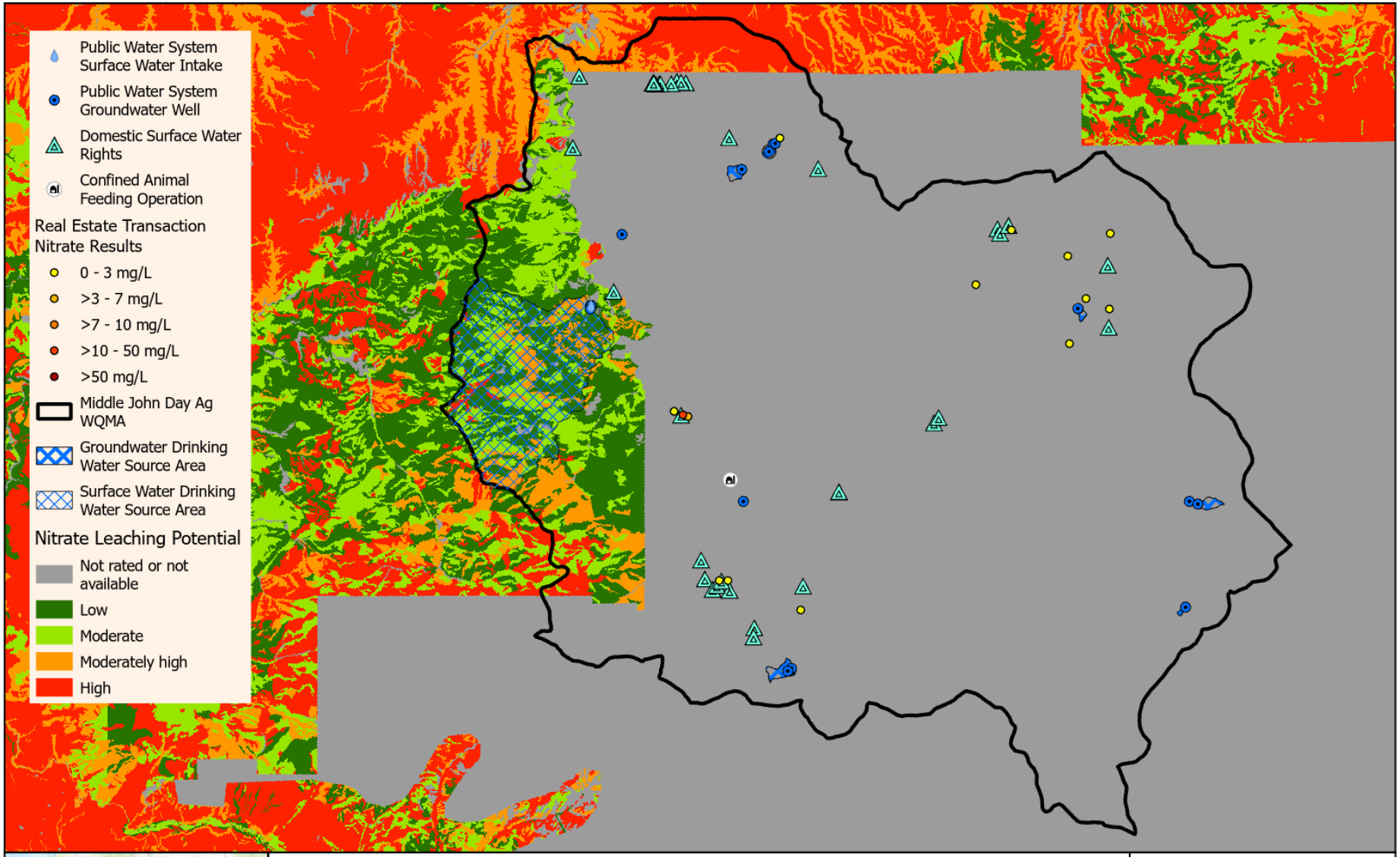
Esri, TomTom, Garmin, FAO, NOAA, USGS, EPA, USFWS, Oregon State Parks, State of Oregon GEO, Esri, TomTom, Garmin, SafeGraph, FAO, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, USFWS, Esri, NASA, NGA, USGS, Esri, USGS

Coordinate System: NAD 1983 Lambert Conformal Conic

Drinking Water Protection Program
DEQ
State of Oregon

Oregon Health Authority



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

0 5 10 Mi

Figure 2

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

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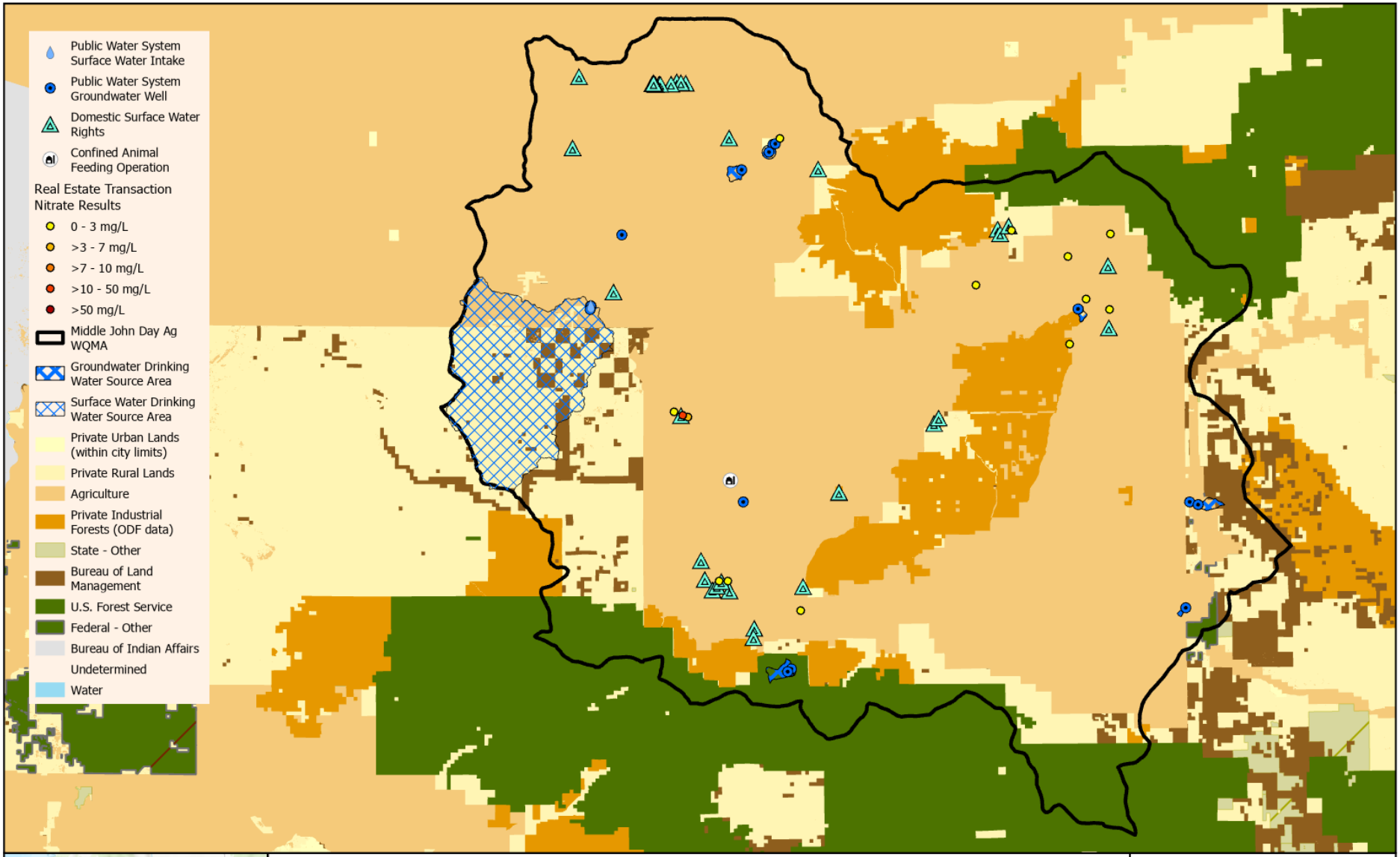

Drinking Water Source Areas in the Middle John Day Agricultural Water Quality Management Area Land Use/Ownership

0 5 10 Mi

Figure 3

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

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