



Oregon Department of Environmental Quality

# Drinking Water Assessment for the Upper Mainstem and South Fork John Day River Water Quality Management Area

January 2025

## Overview

- There are eight public drinking water systems in the Upper Mainstem and South Fork John Day River Agricultural Water Quality Management Area which utilize groundwater and surface water sources to serve approximately 4,480 persons regularly.
- A total of six public water systems received one or more alerts for exceeding the Maximum Contaminant Level Goal for total coliform bacteria within the past ten years.
- One public water system received an alert for *E. coli* within the past ten years.
- No public water systems received an alert within the past ten years or a violation within the past five years for nitrate levels that exceed 5 milligrams per liter.
- There are five records of private domestic well sample results submitted to Oregon Health Authority's Real Estate Transaction program in the area. Of these, one measured nitrate concentrations  $\geq 5$  mg/L.
- 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 eight public water systems within the Upper Mainstem and South Fork John Day River Water Quality Management Plan that obtain domestic drinking water from a combination of groundwater and surface water 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 Upper Mainstem and South Fork John Day River 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 eight public water systems in the area, five are community public water systems using groundwater wells and springs to serve approximately 3,954 people on a regular basis, in addition to visitors at recreation sites. Three public water systems are transient non-community systems with an estimated service population of 526. See **Table 1** for a list of public water systems, their classifications, sources, activity status, and populations served.

### Translation or other formats

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800-452-4011 | TTY: 711 | [deqinfo@deq.oregon.gov](mailto:deqinfo@deq.oregon.gov)

Land use in the Upper Mainstem and South Fork John Day River Agricultural Water Quality Management Area is primarily a combination of private rural lands and federal United States Forest Service property. Agricultural land uses are dispersed throughout the management area and are present near public water system wells and springs in the area. Other land use and ownership within the Management Area includes private industrial forests, private urban lands, Bureau of Land Management, and Oregon state lands (**Figure 3**).

## Bacteria

Total coliform bacteria alerts for public water systems are generated by Oregon Health Authority when their presence is detected in sample results. There are six public water systems within the past ten years which received one or more alerts for exceeding the Maximum Contaminant Level Goal for total coliform bacteria. The MCLG for total coliforms is zero. None of the public water systems received violations for exceeding the Maximum Contaminant Level 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 the Oregon Health Authority when their presence is detected in sample results. Canyon City Water Department has one recent alert from 2019 for E. coli (**Figure 1, Table 1**). There were no violations for E. coli in the last 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.

## 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 Upper Mainstem and South Fork John Day River Agricultural Water Quality Management Area, none of the public water systems had an alert for elevated nitrate results in the past ten years or 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 management area. The Domestic Well Testing Act database includes submitted records of real estate transaction testing data from 1989 to 2018. There is one elevated detection of nitrate (>5mg/L) in private wells out of 5 total well results included in the database for this area (**Figure 1**).

Nitrate contamination is often related to animal and cropland agriculture. The soils through most of the management area have not been assessed by the Natural Resources Conservation Service's (NRCS) National Cooperative Soil Survey (**Figure 2**). 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' 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 74 private domestic water rights in the area (**Figure 1**).

## Other contaminants

Water quality samples from public water systems within the Upper Mainstem and South Fork John Day River Agricultural Water Quality Management Area have also detected several other chemicals, including styrene, sodium, toluene, total haloacetic acids (HAA5), and total trihalomethanes (TTHM). Specifically, Prairie City has experienced alerts for TTHM and HAA5 over the past ten years. Both HAA5 and TTHM are disinfection byproducts that form when chlorine compounds used to disinfect water react with naturally occurring chemicals in the water. While disinfection is necessary to prevent illness from waterborne disease-causing bacteria, the source of these bacteria can be residential, industrial, or agricultural. However, these particular contaminants are unlikely to be linked to agricultural activities.

The Oregon Health Authority has published bulletins addressing [chemical contaminants](#) in drinking water. These bulletins provide information on potential contaminants, their health risks, allowable limits, and guidelines for monitoring, testing, and mitigation.

## Contact

For more information, please contact the [Drinking Water Protection Program](#) or send an email to [drinkingwater.protection@deq.oregon.gov](mailto: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 Mainstem and South Fork  
John Day River Agricultural 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
<b>Surface water/ Groundwater under direct influence of surface water</b>					
4100165	CANYON CITY WATER DEPARTMENT	Groundwater under direct influence of surface water	Community	666	E. coli
4100673	PRAIRIE CITY	Groundwater under direct influence of surface water	Community	841	
<b>Groundwater</b>					
4100253	DAYVILLE, CITY OF	Groundwater	Community	155	
4100410	JOHN DAY, CITY OF	Groundwater	Community	1767	
4100546	MOUNT VERNON, CITY OF	Groundwater	Community	525	
4191027	OPRD CLYDE HOLLIDAY WAYSIDE	Groundwater	Transient Non-Community	450	
4192585	USFS MAGONE LAKE CG	Groundwater	Transient Non-Community	26	
4195352	SNAFFLE BIT DINNER HOUSE	Groundwater	Transient Non-Community	50	

*System Type:*

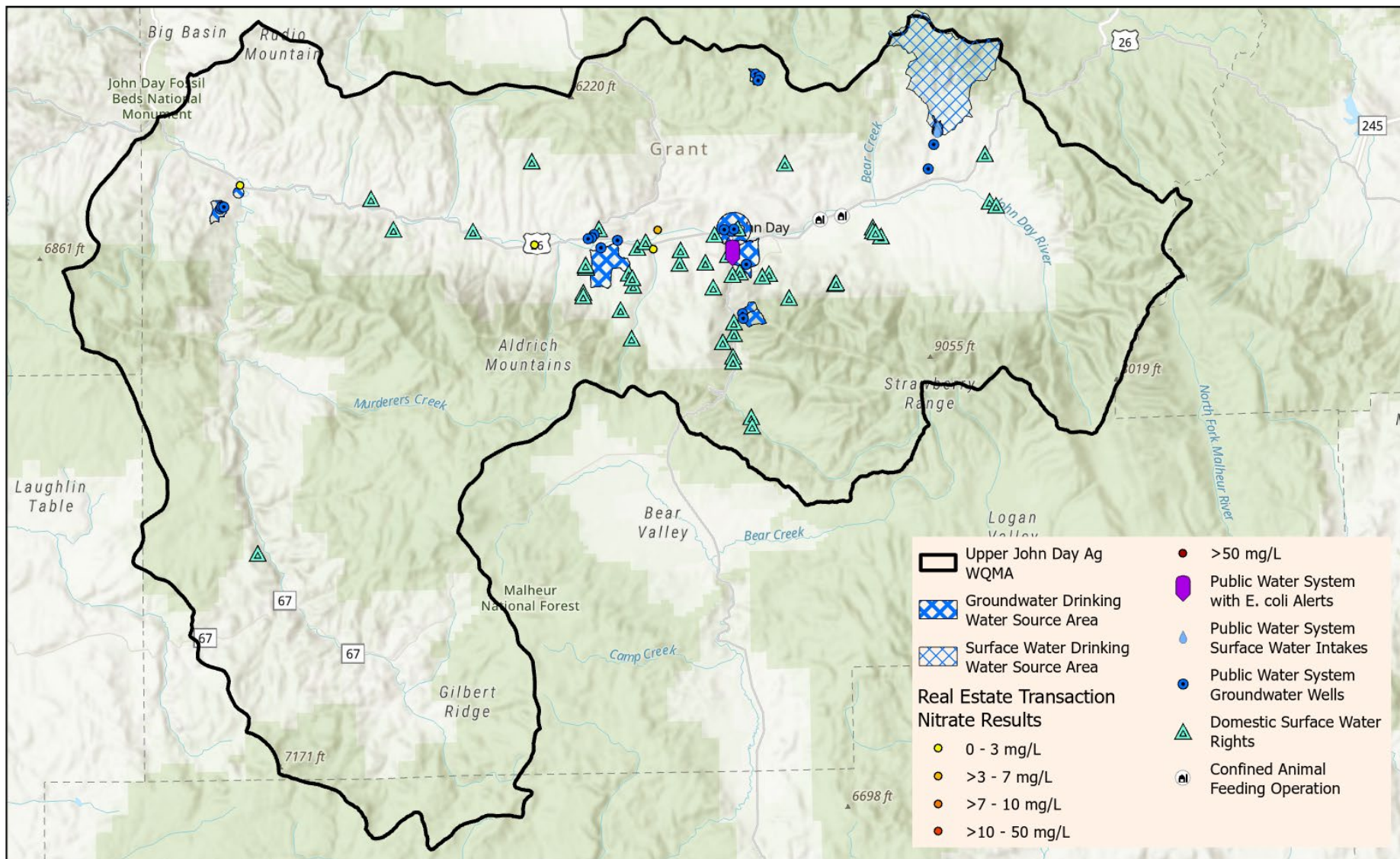
*C - "Community Water System (C)" means a public water system that has 15 or more service connections used by year-round residents, or that regularly serves 25 or more year-round residents.*

*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.*





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

0 5 10 Mi

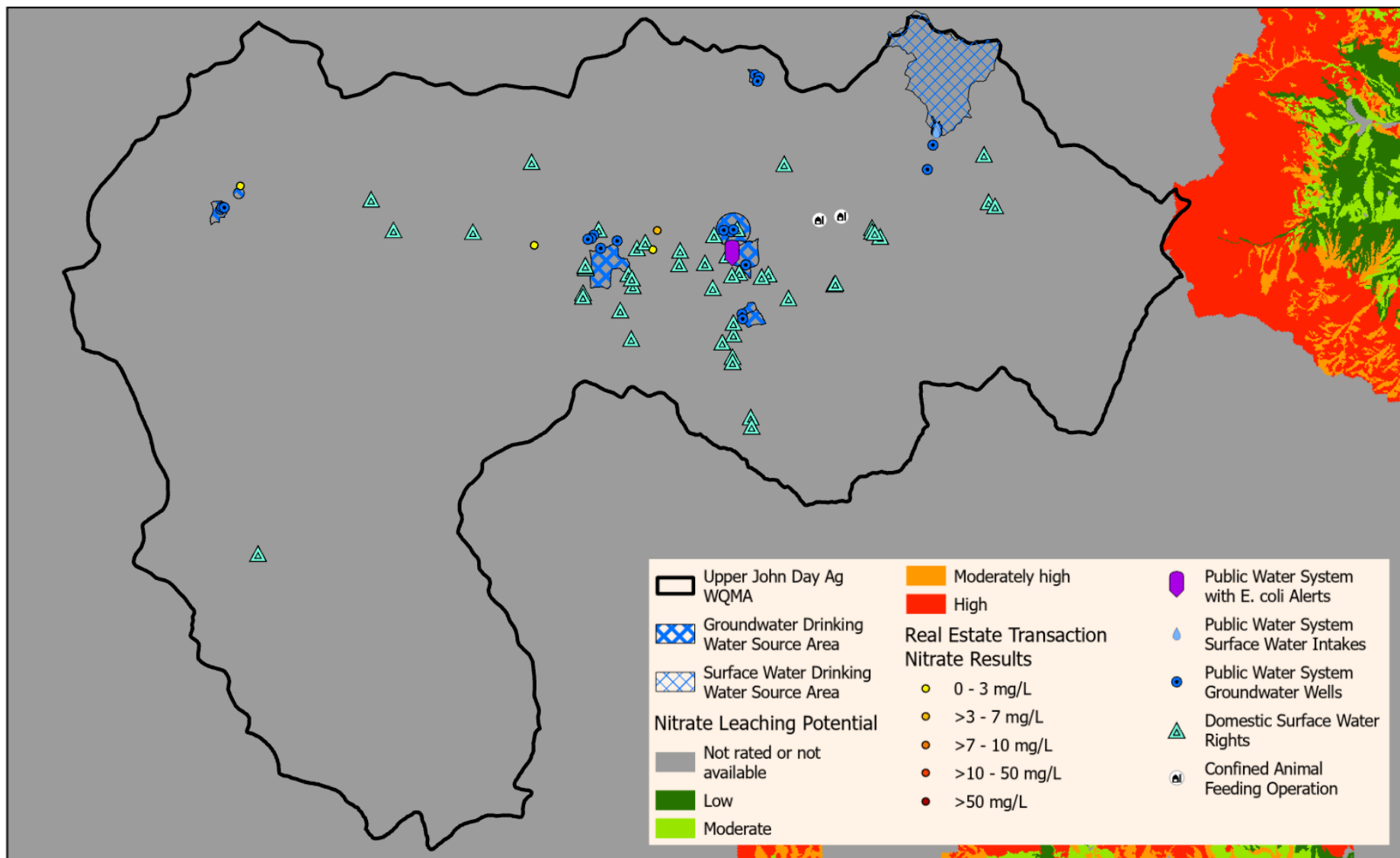
Figure 1



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

0 5 10 Mi

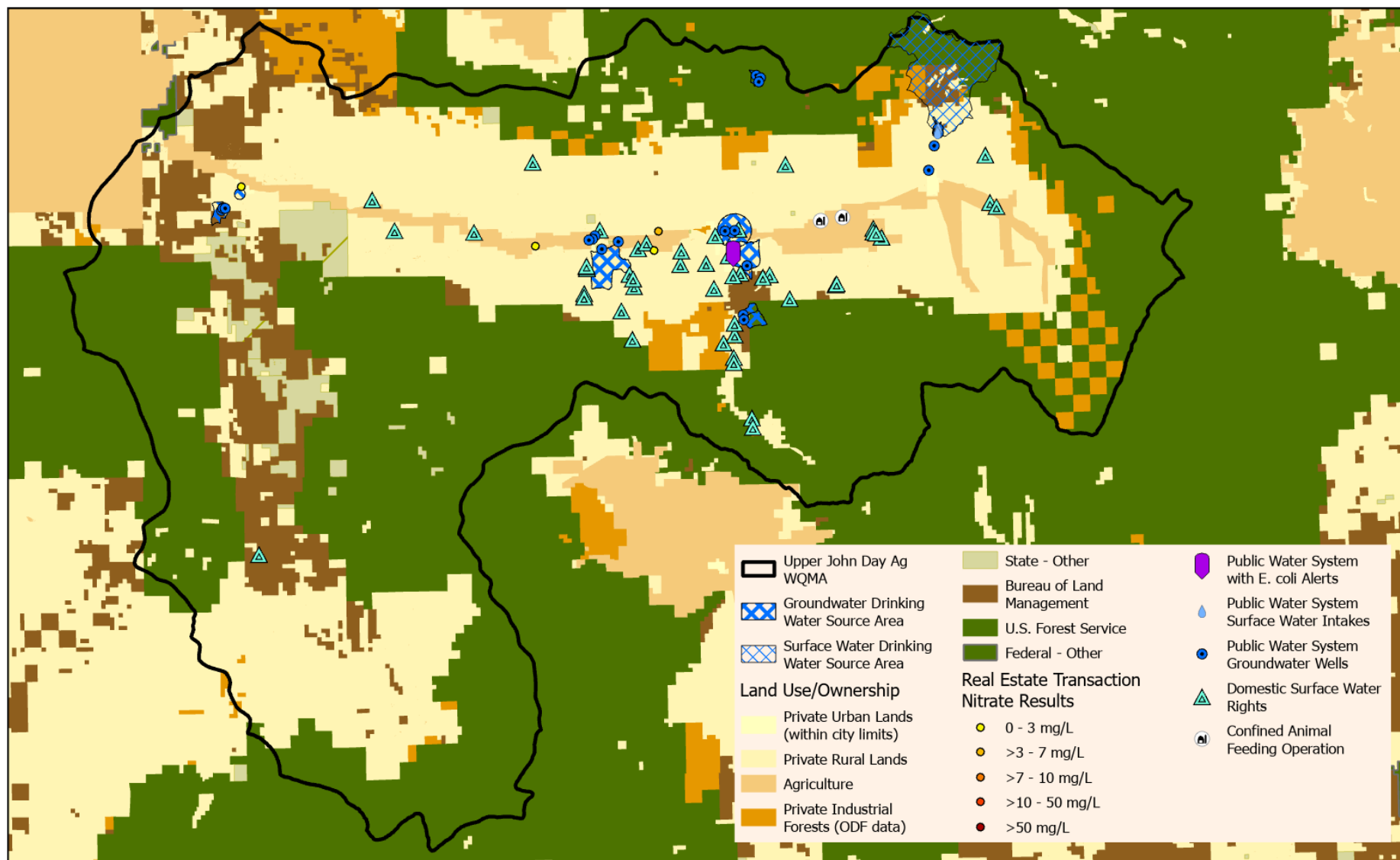
Figure 2



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 Source Areas in the Upper John Day Agricultural Water Quality Management Area - Land Use/Ownership

0 5 10 Mi

Figure 3



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

