Groundwater Investigations

One of the most frequent requests that local planners make of Oregon's natural resource agencies is for better groundwater information, including: Where is it located? How much is available for use? Is it hydraulically connected to surface water? And, is it safe for human consumption?

Quite a bit of work remains to characterize Oregon's water resources and our future needs.

Much of the work will be led by agencies that already have established protocols and responsibilities in these areas. However, much of the desired information will be gathered by partners through surveys, literature reviews, and local data gathering. Look for the "Research" symbol, signaling actions that may need additional research assistance from partners.

Oregon has a need for additional groundwater investigations to further understand the relationship between groundwater and surface water, and the availability of both. Conducting groundwater investigations is a priority for the state, which typically evaluates groundwater resources at the basin scale through a cooperative, cost-share science program with the U.S. Geological Survey (USGS). This allows the Oregon Water Resources Department to develop a broad understanding of the groundwater system and to assist state and local planning efforts for future economic development.

A groundwater investigation begins with a "first pass" that develops a water budget for each basin, showing overall volumes of groundwater recharge, discharge, and available water. The Department has completed a "first pass" in three basins in Oregon: the Deschutes Basin, the sedimentary aquifers of the Willamette Basin, and the Upper Klamath Basin. The State has prioritized additional basins for subsequent groundwater studies. These include the Umatilla and its Walla Walla sub-basin (a high priority due to the desire to appropriate additional winter water from the Columbia), and the Hood, Sandy, Grande Ronde, and Powder Basins. Basin studies can take approximately 5-6 years to complete.

Recommended Action 1.A
Conduct Additional Groundwater Investigations

How to implement this action:

- Test water quality in private drinking water wells
- Maintain and install additional monitoring wells
- Partner with USGS to conduct and cost-share additional groundwater investigations
- Assess groundwater administrative areas
- Locate and document exempt use wells 🕮
- Locate and document UICs 🕮

As more questions arise or trends emerge (e.g., a focus on climate change), the Department plans to update studies and conduct a "second pass," asking and answering new sets of questions about groundwater in each basin. Future investigations should be performed in ways that make the most of data collection and cost efficiency. This can be done through continued partnerships among agencies to gather information on both the quality and quantity of the resource, and should include assessments of groundwater administrative areas, private drinking water wells, and underground injection control systems.

Groundwater Administrative Areas

The State of Oregon has more than 20 groundwater administrative areas, designated because water levels were declining at unsustainable levels. These areas should be periodically re-evaluated to assess water level trends, boundary accuracy, and whether these designated areas are meeting the goals of groundwater stabilization, groundwater recovery, and protection of existing water users. In addition, the State needs to dedicate resources to determine whether other areas of the state require groundwater designations, and if so, to what degree.

Locating and Documenting Wells

Oregon needs better information about its wells, both drinking water and stormwater and wastewater systems. Valuable information would include the number and location of such wells, as well as their volume of use.