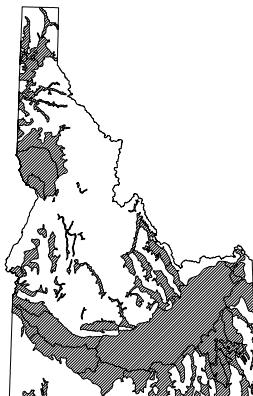


## IDAHO GROUND WATER CONDITIONS

**How Important Is Ground Water?** The state of Idaho has an abundant ground water resource that is used for drinking, agriculture, and industrial processing. Idaho presently ranks within the top ten in the nation for ground water usage. Around six billion gallons of ground water are withdrawn every day. The largest use of Idaho's ground water resource is for irrigating agricultural land.

Ground water is the sole source of drinking water for about 95 percent of Idaho residents. Public drinking water systems use ground water sources to supply water to nearly one million Idaho residents (over 82 percent of the state's population). The largest population regions are centered around the: Boise Valley (about 40 percent); Coeur d'Alene - Rathdrum Prairie (about 9 percent); Idaho Falls (about 8 percent); Pocatello (about 7 percent); and Twin Falls (about 6 percent) areas.

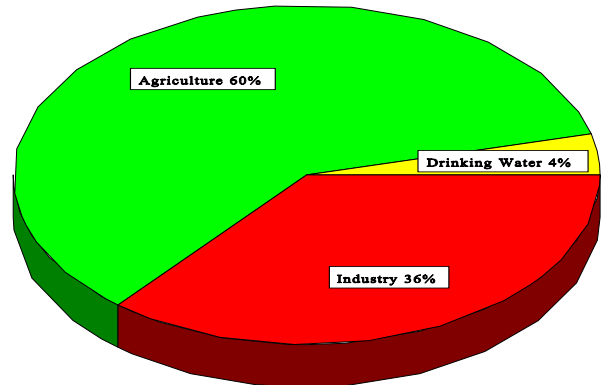
**Where is it?** In Idaho, about 2,000 of the 2,100 public water systems rely on over 2,900 wells and springs as their primary source of drinking water. Public drinking water is pumped from all 70 hydrogeologic provinces (See map inset) in Idaho. Some of these hydrogeologic provinces contain multiple aquifers. In addition, about 90 ground water and spring sources for drinking water exist in four additional hydrogeologic mountainous terrain settings. Because much of the State's ground water requires little or no treatment prior to being used as drinking water, its use is very economical for small towns and rural areas, as well as for larger cities.



### Idaho Ground Water Locations

**Cost of Contamination:** Idaho has spent millions of dollars assessing and cleaning up contaminated ground water. This money is a mixture of state, federal, private, and commercial funds. In general,

### General Ground Water Usage in Idaho



**How Safe is it to Drink?** In Idaho, ground water quality is generally good. Most of the ground water is suitable for domestic, agriculture, aquaculture, commercial, and industrial uses with minimal treatment.

However, there are threats to ground water quality statewide. Idaho's 1996 §305(b) report identified the ten highest priority pollutant source categories. These include, in no particular order, animal feedlots, fertilizer applications (including land application of manure), pesticide applications, land application of wastewater, sludge, etc., underground storage tanks, waste tailings, landfills, septic systems, shallow injection wells/urban runoff, and industrial facilities. Other high priority pollutant source categories of ground water contamination in Idaho, listed in no particular order, include agricultural chemical facilities, agricultural drain wells, above ground storage tanks, surface impoundments, waste piles, deep injection wells, mining and mine drainage, and spills (including spills relating to on-farm agricultural mixing and loading procedures).

contamination in Idaho has been localized with much of the cost of clean up being borne by the industry that caused the contamination.

The state of Idaho has recently implemented Risk Based Corrective Action (RBCA) guidance to review sites for cleanup. Application of RBCA guidance has reduced the average cost for petroleum cleanup to \$50,000. In some cases, the state allows natural attenuation as a cleanup BMP as long as there are no off site impacts. Improvements in the general understanding of cleanup methods have helped lower ground water remediation costs.

However, even if the source of petroleum contamination is removed the cost of cleanup will vary

greatly when ground water has been impacted. Cost of cleanup is determined by the amount of free product, the depth of ground water and the site conditions.

Petroleum cleanup costs fall into three general groups:

1. Shallow ground water, favorable site conditions, and no free product. Cleanup costs for these conditions range from \$25,000 to \$50,000.
2. Moderate ground water depth (50 ft.), moderate site conditions, and no free product. Cleanup costs for these conditions range from \$50,000 to \$100,000.
3. Deep ground water (100 ft or more), or poor site conditions (fractured basalt), and no free product. Cleanup costs for these conditions range from \$100,000 to over \$1 million.

Cleanup costs vary greatly and each site has its own set of issues. In general if free product needs to be removed it could double the cost of the cleanup. Human health impacts are an important factor considered in site cleanup efforts and related costs.

***How is it being protected?*** Idaho has enacted a number of initiatives which together provide a framework for ground water protection. These include broad based laws such as the 1989 Idaho Ground Water Act, 1992 Ground Water Quality Plan, and the Ground Water Quality Rule. The Idaho Department of Environmental Quality (IDEQ) is the designated agency for the protection of ground water and manages several programs that contribute to the protection of Idaho ground water, including the Safe Drinking Water, Drinking Water Protection, and Waste Water Land Application programs. Federal, state, and local partnerships are especially critical in accomplishing Idaho's protection efforts. These partnerships use regulatory and non-regulatory programs to achieve protection.

Often efforts to address water quality issues are not well coordinated among federal and state natural resource agencies. As one strategy to address this problem, Idaho is currently in the process of developing and implementing a new Integrated Watershed Management Program.

The goal of the IDEQ Integrated Watershed Management Program is to begin development of a structure to coordinate planning, development, prioritization, and implementation of on-the-ground water quality activities and projects in a watershed context. IDEQ plans to improve water quality in areas where waters do not currently meet water quality

standards or beneficial uses through coordination of water quality planning and project implementation.

Building on national efforts to integrate Clean Water Act and Safe Drinking Water Act activities, the primary focus of the Integrated Watershed Management Program will be on integration of Drinking Water Protection set-aside funds and 319/NPS funds. Through a coordinated effort, IDEQ will accomplish drinking water protection for both ground water and surface water sources and systems through application of Drinking Water Protection set-aside funds and 319 funding respectively.

In addition to traditional drinking water protection activities, the Integrated Watershed Management Program will track other water quality planning efforts and associated project implementation. Included in these efforts are Regional Drinking Water Protection Plans, Ground Water Quality Protection Plans, TMDL Implementation Plans, and Watershed Enhancement Projects (those activities generated from planning efforts).

Beyond projects conducted by agency staff, IDEQ will solicit on-the-ground water quality improvement projects for nonpoint source, drinking water, and ground water for funding through the traditional 319-project solicitation, ranking, and selection process.

Under the auspices of the Integrated Watershed Management Program, IDEQ is implementing the Drinking Water Protection Program, which facilitates and promotes community-based efforts to protect public drinking water sources that rely on ground and surface waters. Drinking Water Protection plans build on Source Water Assessments that provide public water systems, community government, and the general public with information that they can use to preserve the quality of public drinking water supplies.

***What Else is Needed?***

Additional federal and state resources are needed to fully implement the 1992 Ground Water Quality Plan and Idaho's ground water program. This includes resources for regional and local monitoring, contamination assessment, prevention and protection measures, education and community-based technical assistance, and remediation. Because ground water constitutes a significant component of every watershed, adequate funding to address ground water issues is crucial to the success of the Integrated Watershed Management Program.