Groundwater Management Areas and Protecting Your Water Source

By Shawn Stevenson, Source Water Technician

Our drinking water is one of our most important natural resources. We are all interdependent on the availability of clean drinking water and the benefit it affords us. OAWU has been involved in Drinking Water Protection since the early 1990's with Wellhead Protection Plans associated with the groundwater program. With the inception of the Source Water Program, the OAWU has expanded its scope of drinking water protection to extend to surface water systems as well as groundwater systems. Our mission is to aid rural water systems through a provision of services and information. Ensuring efficient water system operation and clean water sources for public water systems.

Oregon as a whole has been one of the pioneers in providing clean water for its citizens. This proactive approach has prompted state agencies to address problem areas within the state. Oregon's Groundwater Protection Act of 1989 requires the DEQ to declare a Groundwater Management Area (GWMA) if area-wide groundwater contamination, caused primarily by *non-point source pollution-(exact locations of the contaminant source cannot be derived to a specific location)*, exceeds certain trigger levels. According to Ground Water Protection Rules (OAR 340-40-90) the Maximum Measurable Limit (MML) for Nitrate is 10.0mg/L. Based on these criteria if non-point sources have contaminated groundwater to 50% of the MMLs in part, or in the case of Nitrate, levels have reached 70% of the MML which is 7mg/L. The DEQ is then compelled to declare a Ground Water Management Area. (Richerson 2003, Eldridge 2004).

Nitrates attributed to *non-point source activities* are generally associated with agricultural land uses, management of animal waste and faulty septic systems, all of which are ***potential*** contaminant sources. Nitrates are a common concern for many water systems throughout the state. If managed incorrectly these and other ***potential*** contaminants have the ability to threaten a drinking water source.

GWMAs are not new to Oregon, the Lower Umatilla Basin was declared in 1990. The latest declaration is the South Willamette Valley due to the aforementioned elevated contaminant levels. The SWGWMA encompasses portions of Lane, Linn and Benton counties (refer to map below). The focus is on the shallow sensitive Willamette Aquifer to a depth of 75 feet. The Willamette Aquifer is the combination of Older and Younger Sedimentary ***Unit****-(a layer of the same rock/sediment type that is usually of a uniform thickness)*, which is more permeable and susceptible to contamination than the other basin deposits. At depths beyond 75 feet the possibility of contamination still exists but that information is currently not available (Eldridge 2004).

The SWGWMA will have an Action Plan based upon the inputs of several subcommittees and technical advisors with the DEQ as the lead agency. The Action Plan will determine the approach needed in order to alleviate contamination issues within the declared area. With a variety of concerned parties involved, the Action Plan process will give water systems and other stakeholders the ability to participate through representation in one of several subcommittees. Although these areas are declared based on potentially harmful conditions, addressing these problem areas in an effort to protect public health should be a large scale effort. Initially if preventative measures are taken on an individual basis, the results when considered collectively will most likely help improve a widespread area reduce contamination levels.

Map courtesy of LCOG

The Source Water Program presented by the OAWU aids water systems with concerns about contamination within their source water capture zones. The Drinking Water Protection Plan offers water systems and their communities the unique ability to take ownership in the protection of their drinking water source. It also empowers the participants to take an active role in confronting the concerns and management techniques involved. Incorporating public participation within the plan process can help shed some light on the issues that water systems are faced with on a daily basis. These plans can help protect water at the source, by working with the community directly to help correct current problems and aid in avoidance of future ones.

For further information regarding the Drinking Water Protection Plans please contact:
Oregon Association of Water Utilities at 503-873-8353 or www.dialoregon.net/~oawu/
Information on the groundwater management declaration can be found at these websites:
www.deq.state.or.us/wq/groundwa/UpperWillBasin.htm or
www.groundwater.oregonstate.edu/willamette/