



Groundwater Protection

Subjects

Groundwater protection, aquifer protection, land use control, source control, waste reduction

Audience

Legislators, governmental officials, environmental organizations, industry, general public

Background

Groundwater is a vast resource that underlies the Earth's surface. About a quarter of all U.S. rainfall becomes groundwater. Groundwater provides much of the flow of many streams; many lakes and streams are "windows" to the water table. In large part, the flow in a stream represents water that has flowed from the ground into the stream channel. It is estimated by the U.S. Geological Survey that about 30 percent of U.S. stream flow is from groundwater, although it is higher in some locations, and less in others.

About 90 percent of our freshwater supplies lie underground, but less than 24 percent of the water Americans use comes from underground sources.

About 46 percent of the U.S. population uses groundwater for their drinking water source, including virtually all rural residents.

In most cases, groundwater needs little or no treatment prior to use. However, in many instances, natural groundwater quality is unsuitable without treatment. Groundwater occurrence, including its vulnerability to contamination and its value and use as a resource, varies from place to place.

Groundwater contamination has been documented in every state and region of the United States. It is recognized that a wide variety of human activities can adversely impact groundwater quality. Once contaminated, it is often very costly, time-consuming, and sometimes technically infeasible to restore aquifers to their original potential.

Issue

How do we protect the nation's groundwater from contamination for present and future use?

The goal of groundwater quality protection programs should be protection of the resource for existing or potential beneficial uses.

Position

It is the position of the National Ground Water Association that the fresh water aquifers of the United States should be protected from degradation. It is understood that a goal of nondegradation is economically and technically impractical in many circumstances. The goal of groundwater quality protection programs should be protection of the resource for existing or potential beneficial uses.

NGWA believes that no single method is available to address groundwater quality protection.

Among the methods available are land-use controls and containment or isolation of contaminant sources.

Waste reduction, education, and technology transfer are important features of the effort to protect our valuable groundwater. A combination of measures is needed for an adequate protection program. NGWA recommends an increased level of scientific research that can be used to provide the basis for land-use control decisions.

Appropriations and program priorities should emphasize resource protection efforts. Control of potential and active sources of contamination should be a national objective, thereby reducing the need for remediation of groundwater.

Contact

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References

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Ground Water Use for America, National Ground Water Association, August 2009.

Sustainability of Ground-water Resources, U.S. Geological Survey Circular 1186, 1999.

Dates

Originally adopted by the NGWA Board of Directors May 4, 1990, NGWA issue briefs are updated as needed to reflect changes in information, as noted here: technical amendment made February 4, 1992; brief reformatted August 2009; contacts updated April 19, 2012; technical update June 19, 2013; technical update July 21, 2014; technical update March 26, 2015; technical update February 24, 2016.

The National Ground Water Association is a not-for-profit professional society and trade association for the global groundwater industry. Our members around the world include leading public and private sector groundwater scientists, engineers, water well system professionals, manufacturers, and suppliers of groundwater-related products and services. The Association's vision is to be the leading groundwater association advocating for responsible development, management, and use of water.



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