



Applying knowledge to improve water quality

Pacific Northwest

Regional Water Program

A Partnership of USDA CSREES
& Land Grant Colleges and Universities

Spring 2004
PNWATER 038

Residents Give Groundwater Quality Mixed Grades

Groundwater is a significant source of our fresh water supply in many areas of the Pacific Northwest. In fact, groundwater provides over 90 percent of the drinking water consumed in Idaho. Groundwater is also a significant source of irrigation water in eastern Washington, eastern Oregon, and southern Idaho.

Over 50 percent of residents of the Pacific Northwest consider groundwater quality to be good or better (Table 1); however, there is some concern that the quality of this resource is slipping. Less than 4 percent of survey respondents rated groundwater quality poor. Almost a quarter of the public surveyed did not have enough information to state an opinion.

Table 1. The grading of groundwater quality by residents of Alaska, Idaho, Oregon and Washington.

Groundwater quality grade	Percent
Good or excellent	26.0
Good and improving	11.9
Good, but deteriorating	18.8
Fair	16.0
Poor, but improving	0.9
Poor	3.0
No opinion	23.4

Males were much more likely than females to rate groundwater quality as good or better (Table 2). Females were less likely to have an opinion about groundwater quality than males.

Age of survey respondent had a significant impact on the rating of groundwater quality (Table 3). Older respondents (age 40+) were more likely to rate groundwater quality as good or excellent than younger residents. Younger respondents (< 40) were less likely to express an opinion about groundwater quality.

The PNW Water Survey

A 50-question survey was developed by the Pacific Northwest water quality team to document public awareness, aptitudes, attitudes and actions toward water quality in Alaska, Idaho, Oregon and Washington. Demographic data about the survey respondents were also collected. This statistically designed survey was completed by over 50 percent of the 1,800 residents who were solicited for this study in 2002. Several questions in this survey dealt with drinking water quality. The sampling error of this survey question was +/- 3 percent.

Table 2. The influence of gender on grading groundwater quality by residents of Alaska, Idaho, Oregon and Washington.

Groundwater quality	Female %	Male %
Good +	30	43
Good -	19	19
Fair	17	15
Poor	5	3
No opinion	29	20



Pacific Northwest Regional Water Quality Coordination Project Partners

Land Grant Universities

Alaska

Cooperative Extension Service

Contact Fred Sorensen:

907-786-6311

<http://www.uaf.edu/ces/water/index.html>

University Publications:

<http://www.alaska.edu/uaf/ces/publications/>

Idaho

University of Idaho

Cooperative Extension System

Contact Bob Mahler: 208-885-7025

<http://www.uidaho.edu/wq/wqhome.html>

University Publications:

<http://info.ag.uidaho.edu/Catalog/catalog.html>

Oregon

Oregon State University

Extension Service

Contact Mike Gamroth: 541-737-3316

<http://extension.oregonstate.edu/>

University Publications:

<http://extension.oregonstate.edu/catalog/>

Washington

Washington State University

WSU Extension

Contact Bob Simmons:

360-427-9670 ext. 690

<http://wawater.wsu.edu/>

University Publications:

<http://pubs.wsu.edu/>

Northwest Indian College

Contact: Michael Cochrane:

360-392-4299

mcochrane@nwic.edu or

<http://www.nwic.edu/>

Water Resource Research Institutes

Water and Environmental Research

Center (Alaska)

<http://www.uaf.edu/water/>

Idaho Water Resources

Research Institute

<http://www.boise.uidaho.edu/>

Institute for Water and

Watersheds (Oregon)

<http://water.oregonstate.edu/>

State of Washington

Water Research Center

<http://www.swwrc.wsu.edu/>

Environmental Protection Agency

EPA, Region 10

The Pacific Northwest

<http://www.epa.gov/r10earth/>

Office of Research and Development,

Corvallis Laboratory

<http://www.epa.gov/wed/>

For more information contact

Jan Seago at 206-553-0038 or

seago.jan@epa.gov

Table 3. The influence of respondent's age in Alaska, Idaho, Oregon and Washington on grading groundwater quality.

Water quality	Age in years		
	< 40(%)	40-59(%)	> 59(%)
Good +	26	40	46
Good -	16	23	15
Fair	23	15	11
Poor	4	4	3
No opinion	31	18	25

Community size also had a significant impact on the rating of groundwater quality (Table 4). Residents from smaller communities (< 7,000) were more likely to rate groundwater quality as good or excellent compared to survey respondents from larger cities (> 25,000). Community size did not impact the percentages of respondents rating groundwater quality as fair or poor. The data also show a trend that people from larger communities are less likely to have an opinion about groundwater quality.

Table 4. The influence of community size in Alaska, Idaho, Oregon and Washington on grading groundwater quality.

Water quality	Population in 1000's				
	100+(%)	25-100(%)	7-25(%)	3.5-7(%)	< 3.5(%)
Good +	28	37	41	51	52
Good -	25	17	21	9	12
Fair	14	17	18	12	16
Poor	4	4	3	5	5
No opinion	29	25	17	23	15

State of residence had an impact on the groundwater quality rating (Table 5). Probably the most important information in Table 5 is that residents of Washington and Oregon were almost three times as likely to have no opinion about groundwater quality than residents of Alaska and Idaho. This indicates that a larger percentage of residents of Idaho and Alaska have probably been exposed to information about groundwater. Residents of Alaska were the most likely to rate groundwater quality as good or excellent. When the two "good" categories in Table 5 are added together, almost 70 percent of Alaska and Idaho residents considered groundwater quality good or better. Conversely, only about half of Oregon and Washington residents rated groundwater quality good.

Table 5. The influence of state of residence (Alaska, Idaho, Oregon and Washington) on groundwater quality grades.

Groundwater quality	State			
	AK(%)	ID(%)	OR(%)	WA(%)
Good +	51	40	32	36
Good -	16	29	17	16
Fair	17	15	19	15
Poor	5	5	5	3
No opinion	11	11	27	30

The data from this survey indicate that residents generally consider groundwater quality to be good. However, residents know much less about groundwater than surface water quality. The high rates of no opinion by Washington and Oregon respondents suggests that educational programming about groundwater is needed.

CSREES is the Cooperative States Research, Education, and Extension Service, a sub-agency of the United States Department of Agriculture, and is the federal partner in this water quality program.