



Overview of Monitoring Programs & Volunteer Opportunities

Monitoring Program

The Alpine Watershed Group (AWG) has utilized volunteers to conduct environmental health monitoring in the watersheds of Alpine County for over a decade. Our monitoring programs are aiding in creating an important baseline dataset that measures the health of Alpine County's upper watersheds. This document describes the individual monitoring programs and time commitments of volunteers.



Program Summary & Volunteer Commitment Table					
Type of Monitoring	Parameters Assessed	Frequency	Period	# Sites	Time Commitment
Ambient	water temp, dissolved oxygen, pH, conductivity, turbidity, stream walk	Quarterly	March, June, August, September	8	4 hours per visit
Bacteria	coliform and E. coli	Bi-weekly	March - October	7	2 hours per session
Stream Discharge	stream discharge, data logger download	5 times per year	April – July	4	5 hours per session
Bioassessment	aquatic insect, discharge, stream side habitat	1 time per year	Early Summer	3	3 hours per site

Program Descriptions

Ambient Monitoring Program

The parameters sampled for during ambient monitoring are considered vital signs of stream health. These parameters include: water temperature, dissolved oxygen, pH, conductivity and turbidity. These water quality measures and physical attributes of streams give very specific information on the health of waters systems and their ability to support wildlife and vegetation. Your efforts could help identify pollution sources and assess widespread problems.

Volunteers who conduct ambient monitoring will collect samples four times a year. Once a year they will also conduct a Stream Walk survey, which includes photo monitoring and visual surveys of riparian habitat. Each sampling takes approximately three hours, while the Stream Walk takes two for a total of an eighteen hour commitment per a year.



Bacteria Sampling

Through a partnership with the Lahontan Regional Water Quality Control Board, AWG volunteers collect water samples bi-weekly from March through October. Samples are analyzed for total coliform and E. coli (Escherichia). These bacteria live in the intestines of people and animals. They are not generally harmful at low levels; however they can point to more harmful pathogens being present in the water. High counts of bacteria can point to sewage contamination and sanitation leaks.



The AWG tries to sustain two sampling teams; having each team switch off every other sampling event. During a usual year from March to October an individual volunteer will attend six to eight sampling events. Each event takes approximately two hours, for a total of a sixteen hours commitment per a year. It's critical that bacteria monitoring volunteers follow quality control procedures to avoid sample contamination.

Stream Discharge

Through a partnership with American Rivers, AWG volunteers download data loggers and measure stream discharge along the upper reaches of the West Carson River. Volunteer have also helped collect measurements at other sites as well. The intent is to develop a stream discharge curve for that reach of the watershed, allowing for the quick assessment of available water at any river stage.

During a usual year from April to July volunteers will conduct four discharge measurements, six times a year. Twice a year during discharge measurements volunteers will also download data loggers. Each event takes approximately five hours, for a total of a thirty hours commitment per a year. This monitoring requires volunteers to wade into streams and manage fairly technical equipment.



Bioassessment

Bioassessments are conducted annually to assess a stream's ability to support its dependent ecologies. Surveys include collecting aquatic insects (macroinvertebrates), stream discharge measurements, and assessing bank cover and in-stream habitat characteristics. Certain macro invertebrate species are intolerant of poor water quality conditions. Their scarcity can indicate water quality issues. This ratio of tolerant to non-tolerant macroinvertebrates is known as the Benthic Macroinvertebrate Index (BMI) and can correlate to stream impacts.



Volunteers conducting bioassessment surveys commit to 1-3 days per year within a one week period during ideal flow conditions. Ideal flow conditions usually occur in June.

***Become a Volunteer Water Quality Monitor
for the Alpine Watershed Group today!***

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