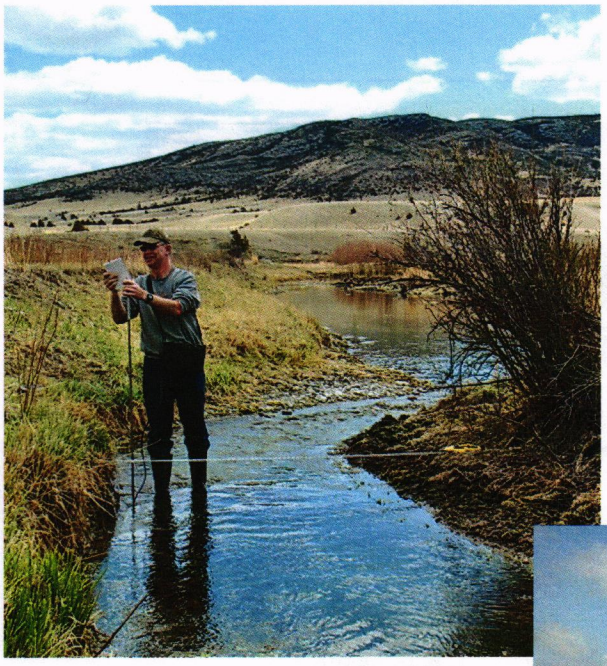
Surface Water Monitoring for Montana

The Department of Natural Resources and Conservation (DNRC) and the Montana Bureau of Mines and Geology (MBMG) are developing a joint program to collect, evaluate, and disseminate surface-water data for the tributary streams in Montana. The Surface Water Assessment and Monitoring Program (SWAMP) will serve the needs of Montana in critical areas of water management. Regulatory agencies (both State and Federal) and water user groups need steam discharge and/or water chemistry data for planning, management and response.



The 2015 State Water Plan supports expanded efforts to quantify surface water supplies and availability. The Plan recognizes the importance of monitoring and managing Montana water resources to address the physical and legal availability of surface water. Local watershed groups, fisheries, and economic growth will depend on surface water information to develop restoration, drought and fisheries management plans.

Watershed studies conducted under this program will provide opportunities for applied research and training for Montana University System students. Education and training future water managers and scientists will rely on applied, relevant 4-year and 2-year college level.

The program will target:

1) **Long-term monitoring:** The state-wide surface water gage network will monitor discharge continuously throughout the year (where appropriate). Real time surface water discharge gages will be placed at key locations on tributary streams, irrigation projects, and municipal water supplies. Monitoring sites may be co-located with monitoring wells in order to monitor groundwater and surface water.

2) **Data management and dissemination:** Requires a web portal to deliver surface water discharge and chemistry information. Components include:

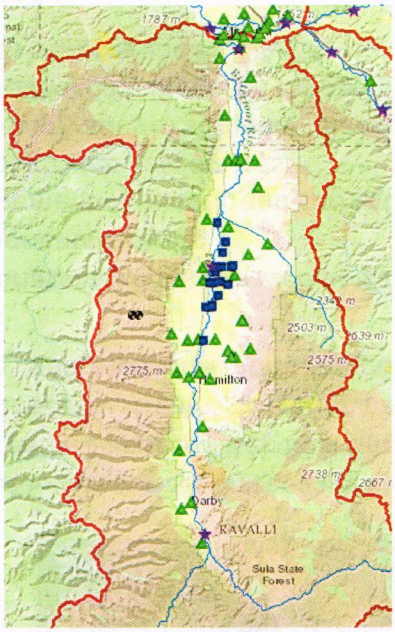
a) input and management of historic and current data
b) data output through web based access
c) maintenance and upgrades of software , hardware
d) coupling of geospatial data (geology, topography) along with groundwater
e) coordination with other agencies, QA/QC, training

3) **Watershed characterization and assessment:** Long-term monitoring will provide critical information for water availability and climate impact analysis, watershed modeling, basin sedimentation studies, TMDL, and other direct applications to water management

Program status

Data delivery through MBMG web portal

The DNRC and MBMG established a live-streaming link that delivers stream flow data. Data are updated each hour and will be available through DNRC or the MBMG web mapping page.



DNRC Gaging Stations

Gage Locations

USGS Gaging Stations

MBMG Surface Water Monitoring

MBMG Surface Water Sites

MBMG GWAAMON Network

HUC Boundary

HUCs

Streams

Streams

Historic data are being compiled and provided through the web portal. This data is coupled with groundwater data from the Ground Water Information Center (GWIC) database.

Data Summary by Dataset

Agency	Method	Disch Meas	Stage Meas	Crest Meas	Temp Meas	First Meas	Last Meas
MBMG	ACOUSTIC DOPPLER RIVER PROFILER	3	3	0	2	6/28/2012	10/4/2012
MBMG	ACOUSTIC DOPPLER VELOCITY METER	5	5	0	3	7/24/2012	4/17/2013
MBMG	DIGITAL LOGGER	0	9,279	0	9,279	3/22/2012	4/16/2013
MBMG	ELECTROMAGNETIC CURRENT METER	3	3	0	1	4/12/2012	7/11/2012
MBMG	STAFF GAUGE	1	18	0	13	3/22/2012	4/16/2013

The DNRC and MBMG are developing a work plan to conduct a pilot watershed assessment for the Lolo Creek watershed in the Bitterroot Valley.