

The Stream Hydrology Technical Coordination Team (SH-TCT) of Ecology's Environmental Monitoring and Trends Section provides flow information in support of two Department of Ecology (Ecology) activities. SH-TCT provides timely and accurate instantaneous stream flow for various in-stream actions. These instantaneous stream flows are an integral element in determining the available in-stream resources (for fish) and the available out of stream resources (for people). The driving forces behind the increasing need for accurate and timely stream flow data are The Endangered Species Act (ESA), salmon recovery efforts, and an increased focus on water resource management.

SH-TCT also provides flow information to support water quality monitoring efforts within Ecology. Instantaneous flow measurements (discharge) are an important element of both the [River and Stream Water Quality Section](#) and the Watershed Assessment Section Total Maximum Daily Load (TMDL) studies. Discharge measurements are used within both of these programs to address two issues. The first issue is the variability intruded into water quality parameters that are directly influenced by seasonal and annual flow patterns. The removal of this variability (flow adjusting or normalizing the parameter with respect to flow) often enhances our ability to detect long term changes in water quality (trends). The second issue is the parameter specific relative contribution (load) or flux from a stream with respect to its receiving water. In both cases it is paramount that the discharge measurement be as accurate as possible.

Within SH-TCT, we do not measure river/stream discharge each time water quality information is collected. Instead we rely on two methods to estimate stream flow at the time of sampling. The first is to gather this information from stream gages operated by other governmental agencies, primarily the USGS, the Corps of Engineers, and the Bureau of Reclamation. The second method is to create our own rating curves that relate river stage to discharge following a formal set of procedures that are included in the [Quality Assurance Monitoring Plan](#). Where this method is used, the river stage is measured and recorded when the water quality sample is collected. In addition, at least 6 to 8 times a year, we measure stream flow and record the corresponding stage. These measurements are made at various stage heights encompassing the recorded stage during the water quality sampling. The instantaneous flow measurements are then plotted against stage height to develop a rating curve for each measurement site. Ideally, this rating curve covers the full range of the stage heights recorded during the sampling.