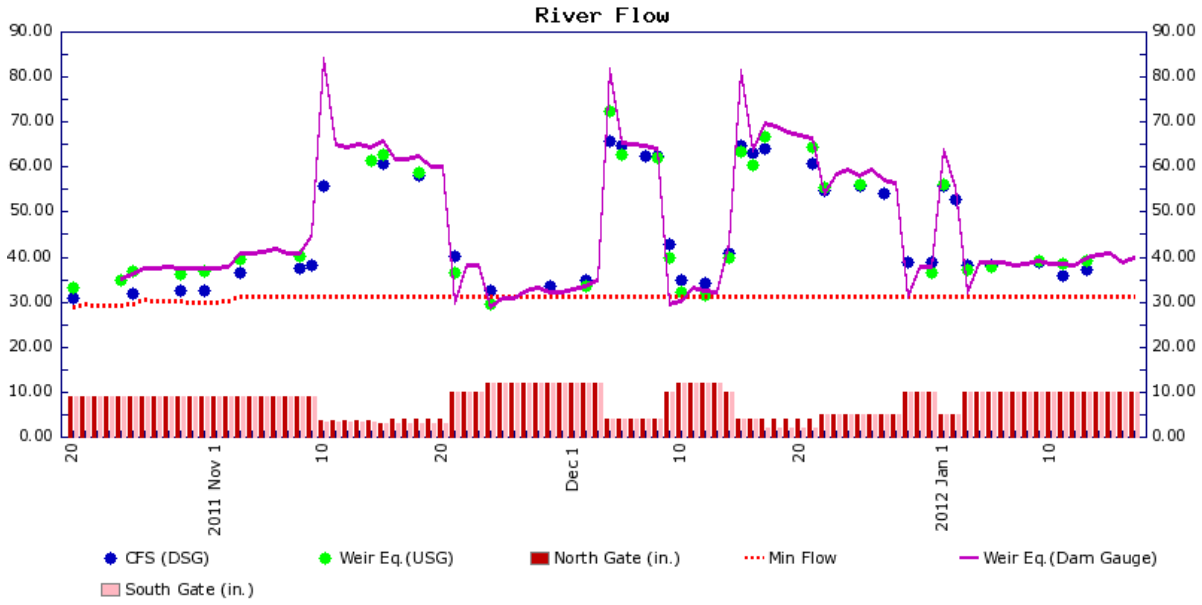
Auto-Gauge Instrumentation

We have been monitoring the Glen Lake level at the narrows bridge with a remote sensor (auto- gauge) that is tied into our web site with wireless telemetry for more than a year. This continuous lake level read out is more accurate than the manually read gauge, does not expose our volunteers to hazardous conditions during the winter, is available at all times and is the basis for our day to day lake level management decisions. We read and report the manual gauge fixed to the bridge twice a week weather and conditions permitting as this is still the official gauge.

With this success behind us, we installed a second auto-gauge upstream of the Crystal River dam to measure the river flow. The river flow has been estimated with an USGS algorithm that uses the river level downstream of the dam and a flow table provided by the USGS. The flow table is updated about six times a year to account for changes in the river bed. This measurement continues as the "official" river flow measurement.

The new auto-gauge lets us measure the Crystal River flow continuously. No corrections or adjustments are necessary other than the dam gate positions. This flow measurement uses the water upstream level and the dam gate positions and is based on the classic weir equation. This auto-gauge was activated this past fall. Data collected since the startup is shown below.



This auto-gauge is also very accurate, and operates continuously. The USGS method flow estimates are limited to a twice a week cycle plus special readings because of practicality considerations (somebody has to walk into the woods to collect data). Minor differences between the flow rates are attributed to the data collection process and offsets caused by natural changes in the river bed.

While the USGS flow estimate remains the official flow estimate, the auto-gauge flow rate is accurate, can be viewed on-line and shows changes in the river flow immediately. We are using the auto-gauge river flow measurement as the basis for day to day river management.

The Glen Lake level and the Crystal river flow rate shown on the GLA web site are updated continuously as is the Glen Lake water temperature at the Narrows.