



# Installation of sensors for year-round 'real-time' water-quality data collection at Wiswall Dam

U.S. Geological Survey  
University of New Hampshire  
Town of Durham



# Lamprey River Watershed



# Water Quality Measurements

**Grab Sample - Lab**



**Weekly / Ad Hoc**

**In Situ Sensor**



**24 hrs / 365 days**

**(15-min. interval)**

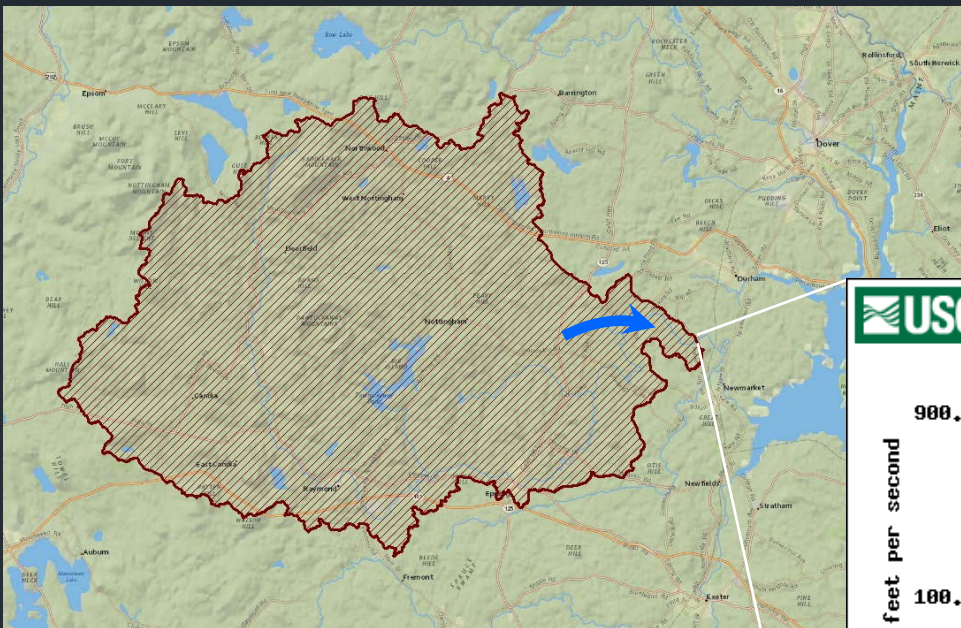


# Sampling in winter

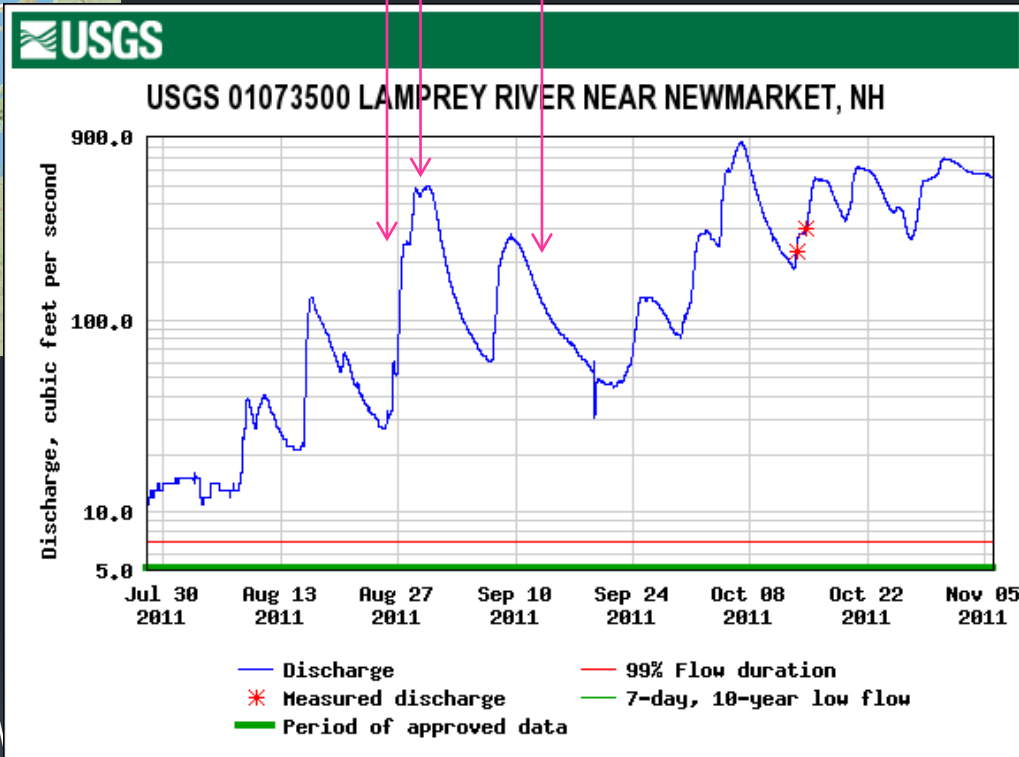
**Sample through ice**   - OR -   **Sensor deployed before ice**







collect sample when?



Lamprey River streamflow record: 1934 - present

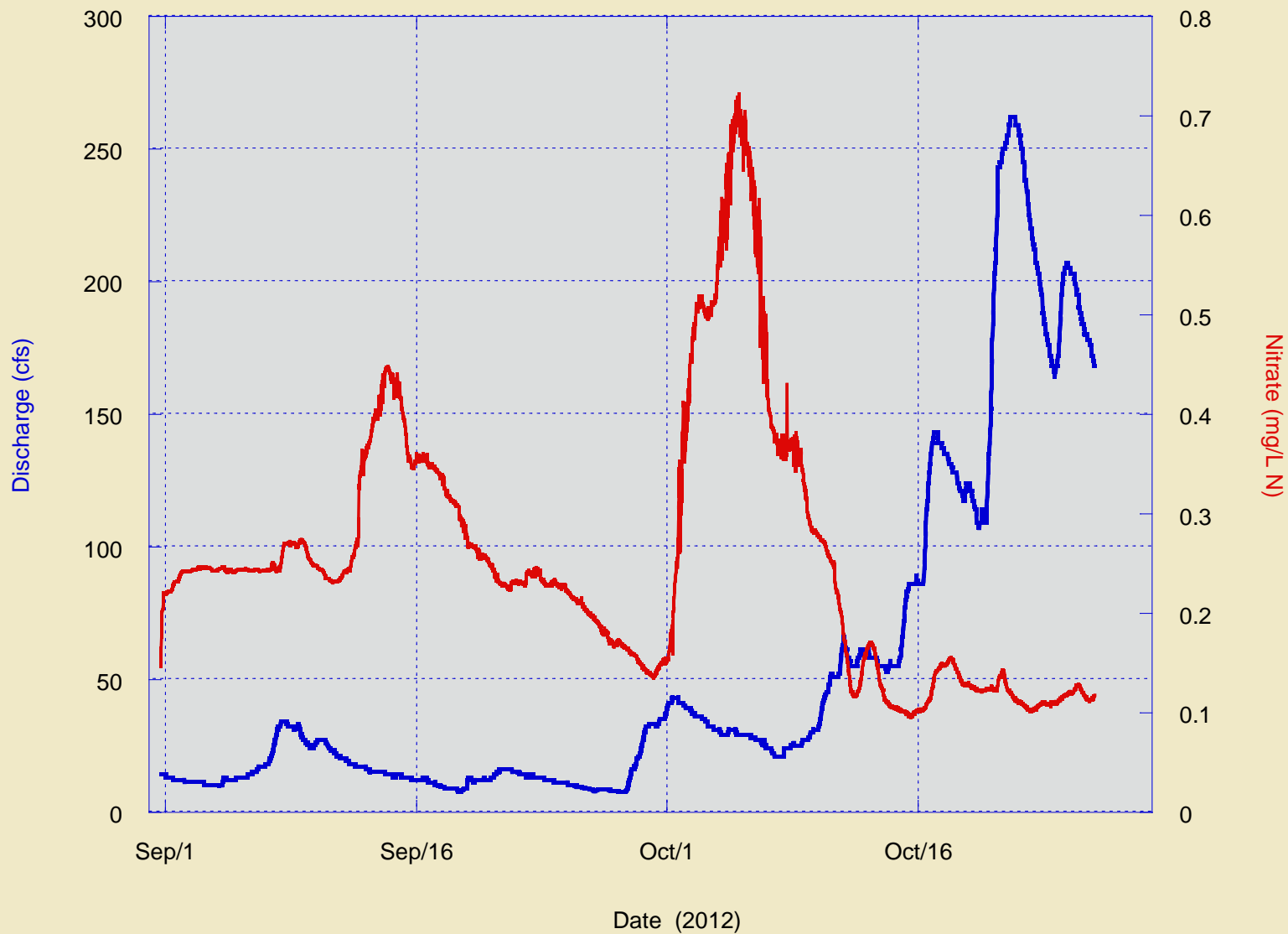
USGS gaging station

# Lamprey River near Newmarket, NH





# Lamprey River near Newmarket, NH



# Wiswall Dam, Durham NH



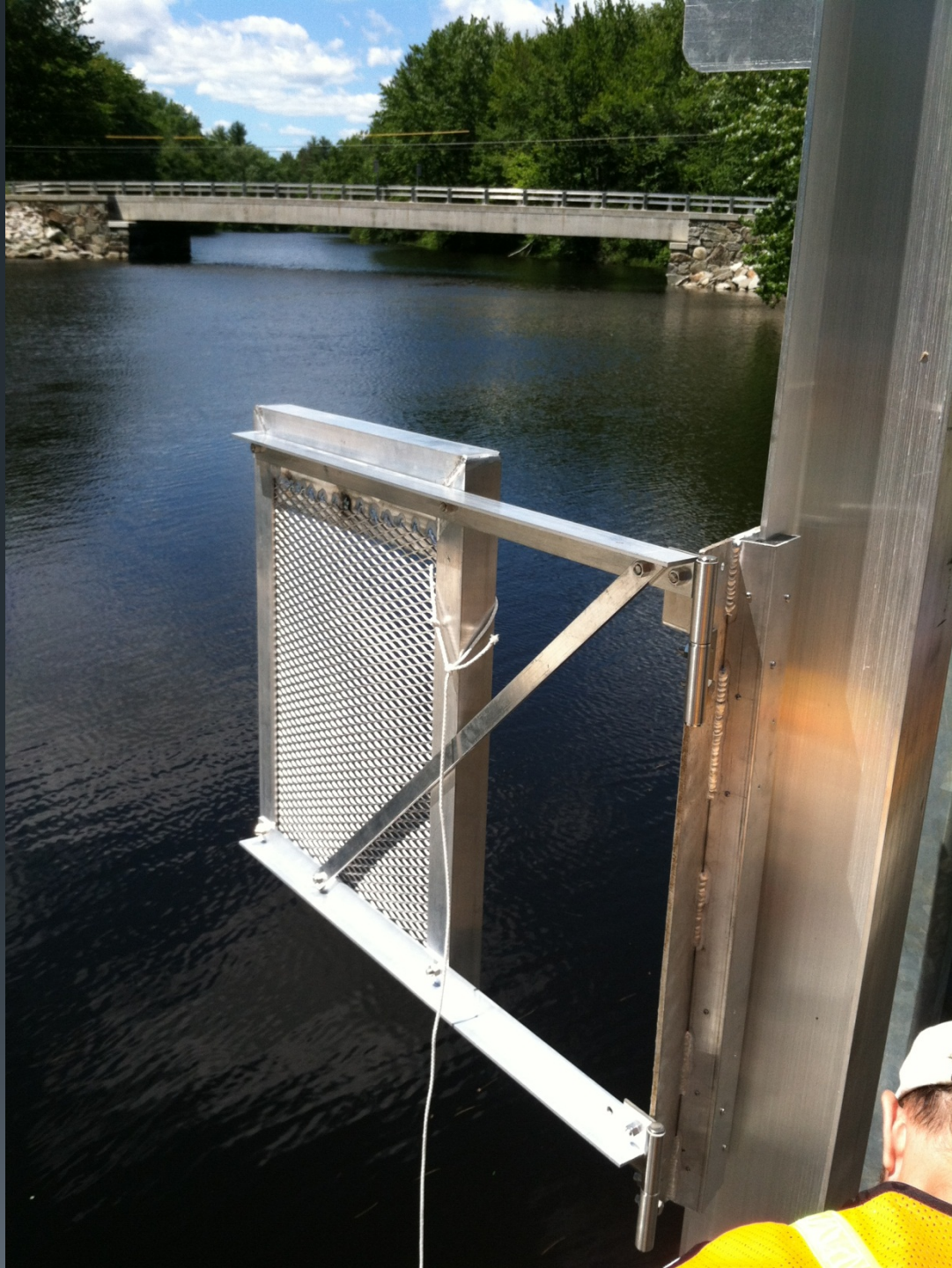


**Danger**

Submerged Dam  
Keep Back









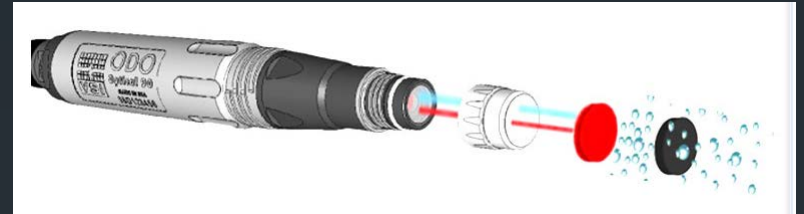
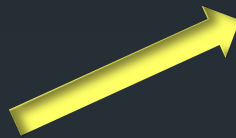
## In Situ Sensors:

- Nitrate
- Dissolved Organic Matter
- Dissolved Oxygen
- Turbidity
- Temperature
- Conductivity
- pH

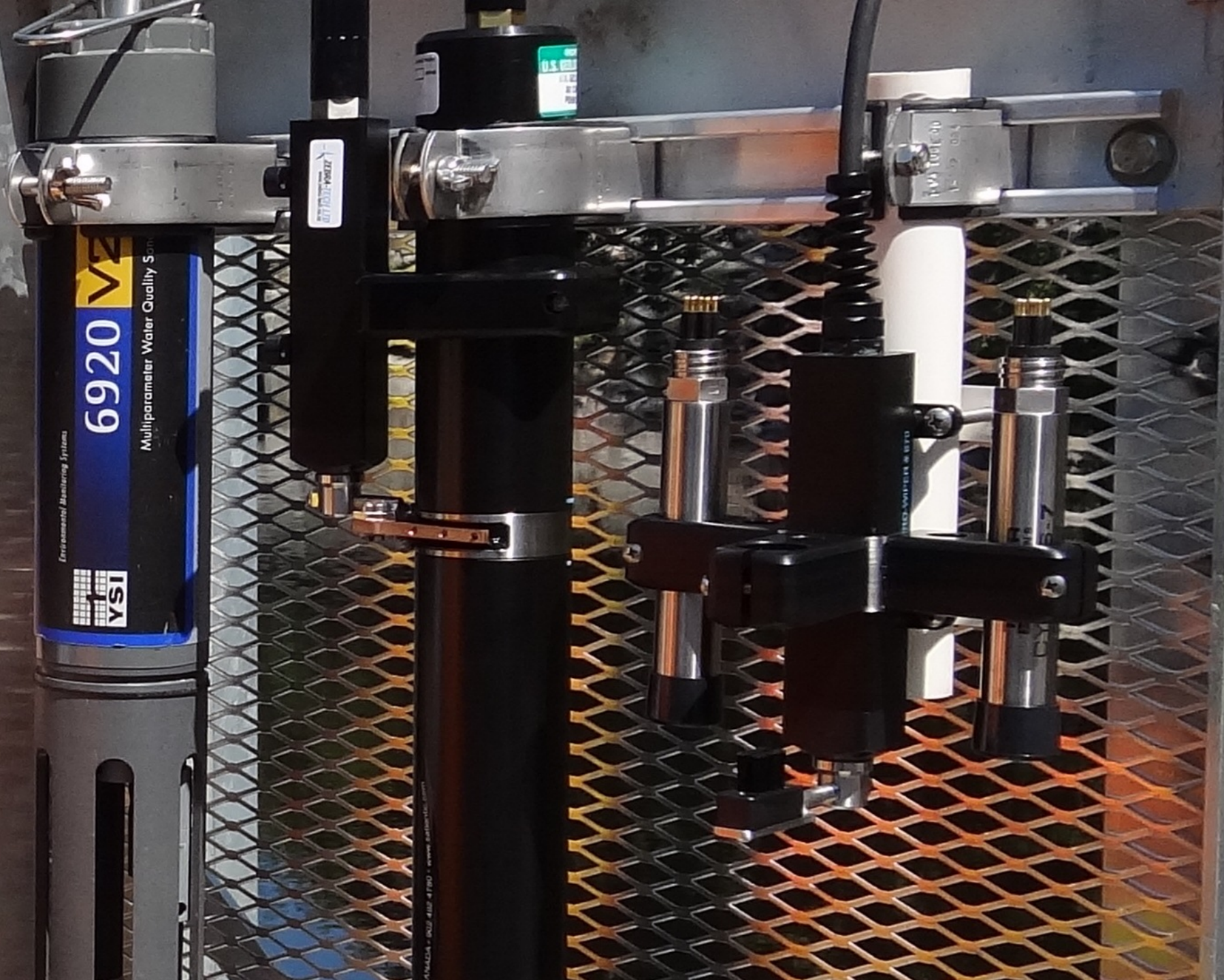


# Optical sensors

Measure **absorption**, **scatter**, or **fluorescence** of light







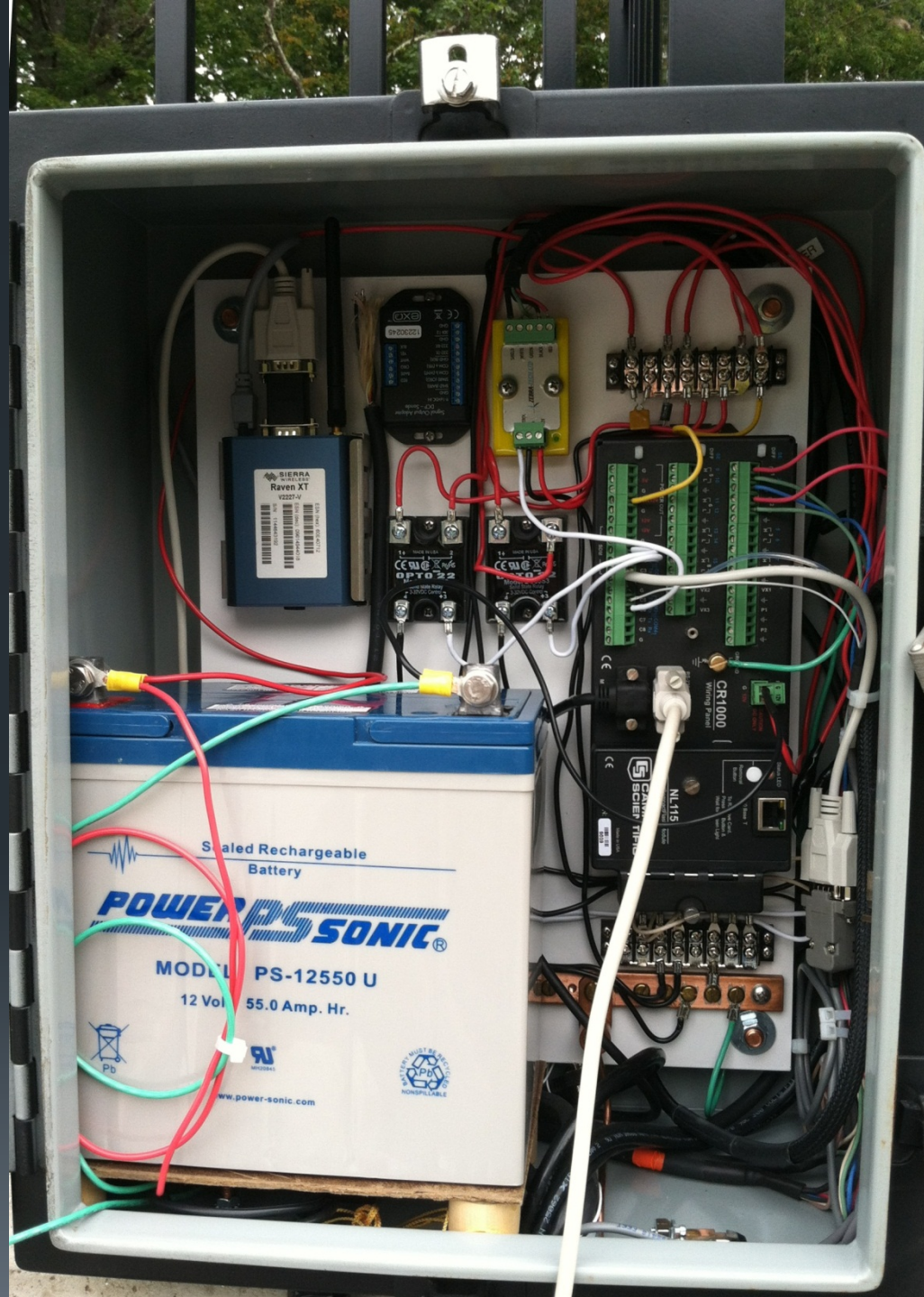




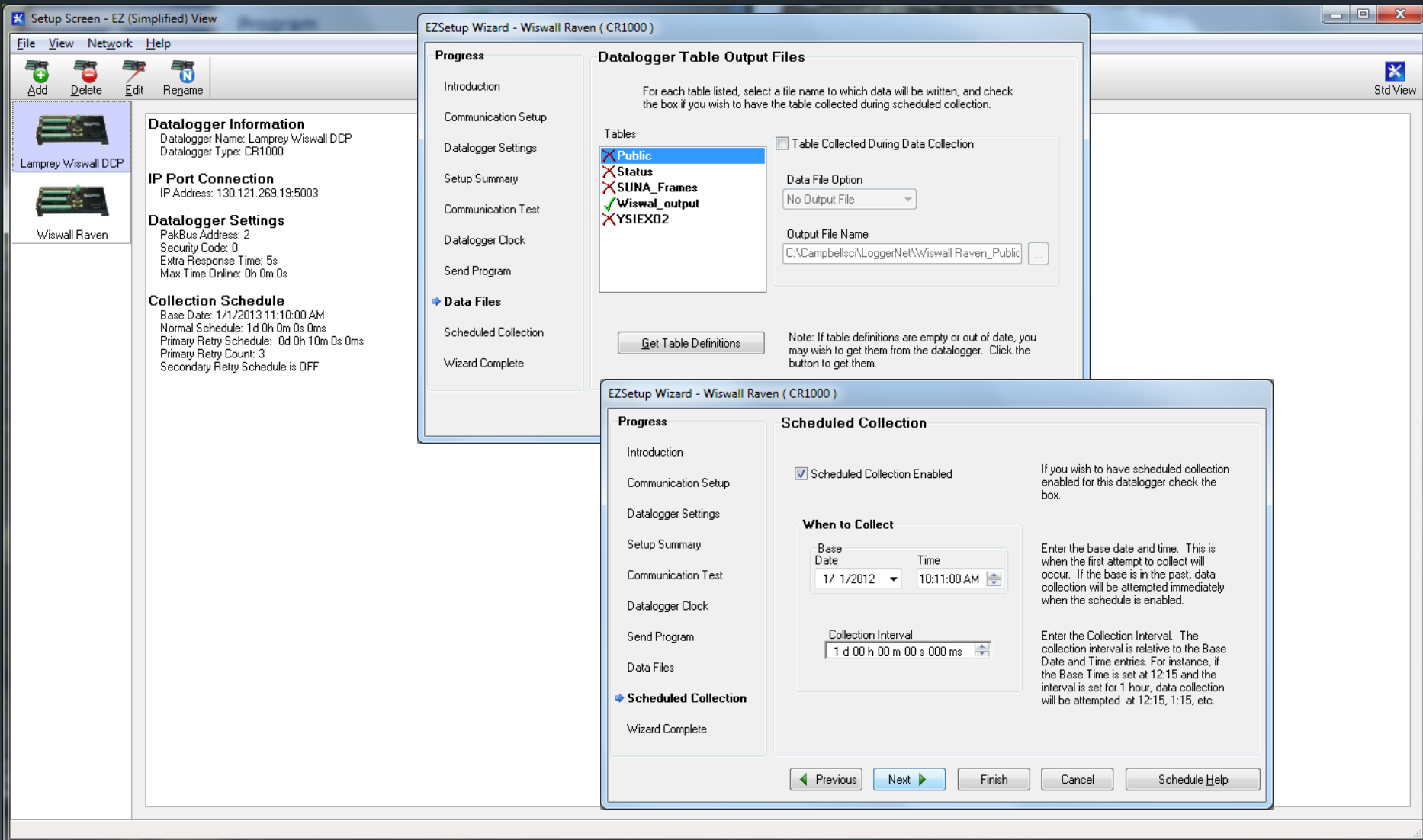
















# USGS National Water Information System NWIS-Web

USGS Water Data for New Hampshire - Internet Explorer

http://water.usgs.gov/nwis-web/

★ Favorites USGS Water Data for New Hampshire

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**USGS Home**  
**Contact USGS**  
**Search USGS**

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## National Water Information System: Web Interface

[USGS Water Resources](#) (District Access)

Data Category: Home Geographic Area: New Hampshire GO

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[News](#) - updated January 8, 2013

## USGS Water Data for New Hampshire

To view real-time groundwater levels in New Hampshire. [click here](#)

### Search for Sites With Data

**Current Conditions** Sites with real-time or recent surface-water, groundwater, or water-quality data.

**Site Information** Descriptive site information for all sites with links to all available water data for individual sites.



Map of all sites with links to all available water data for individual sites.

### Frequent Searches By Data Category

**Surface Water** Water flow and levels in streams and lakes.

**Groundwater** Water levels in wells.

**Water Quality** Chemical and physical data for streams, lakes, springs, wells and other sites.

**Water Use** Water use information.

### Introduction

The U.S. Geological Survey's (USGS) National Water Information System (NWIS) is a comprehensive and distributed application that supports the acquisition, processing, and long-term storage of water data. USGS Water Data for the Nation Site serves as the publicly available portal to a geographically seamless set of much of the water data maintained within NWIS ([additional background](#)).

USGS Water Data for the Nation Site provides access to water data from over 1.5 million sites in all 50 States and additional border and territorial sites. The data are organized within the categories listed to the left.

The water data available via this site have been acquired as part of the USGS investigations of the occurrence, quantity, quality, distribution, and movement of the surface and underground waters that constitute the Nation's water resources. Additional information about the USGS and water resources of the Nation is available at [water.usgs.gov](http://water.usgs.gov).

[About Us](#) [Help](#) [Tutorial](#)



**USGS Water Resources** (District Access)

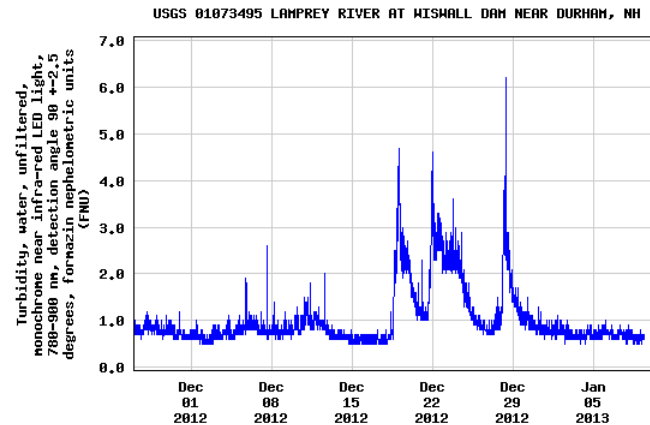
GO

**Summary of all available data for this site**  
**Instantaneous-data availability statement**



**Turbidity, water, unfiltered, monochrome near infra-red LED light, 780-900 nm, detection angle 90  $\pm$  2.5 degrees, formazin nephelometric units (FNU)**

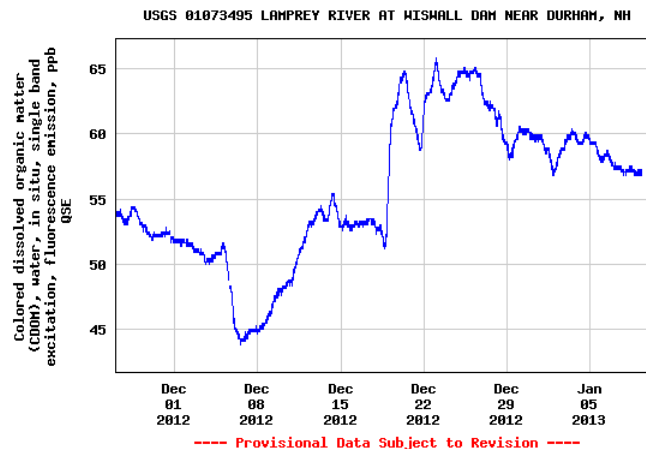
Most recent instantaneous value: 0.6 01-09-2013 09:01 EST

Create [presentation-quality](#) / [stand-alone](#) graph. Subscribe to [WaterAlert](#)

P63680 DD03

[Share this graph](#) | [Facebook](#) [Twitter](#) [Email](#) [Print](#)**Colored dissolved organic matter (CDOM), water, in situ, single band excitation, fluorescence emission, ppb QSE**

Most recent instantaneous value: 56.8 01-09-2013 09:01 EST





?? QUESTIONS ??

<http://waterdata.usgs.gov/nh/nwis>