

2013 Cayuga Lake Monitoring Project

Progress as of December 3, 2013

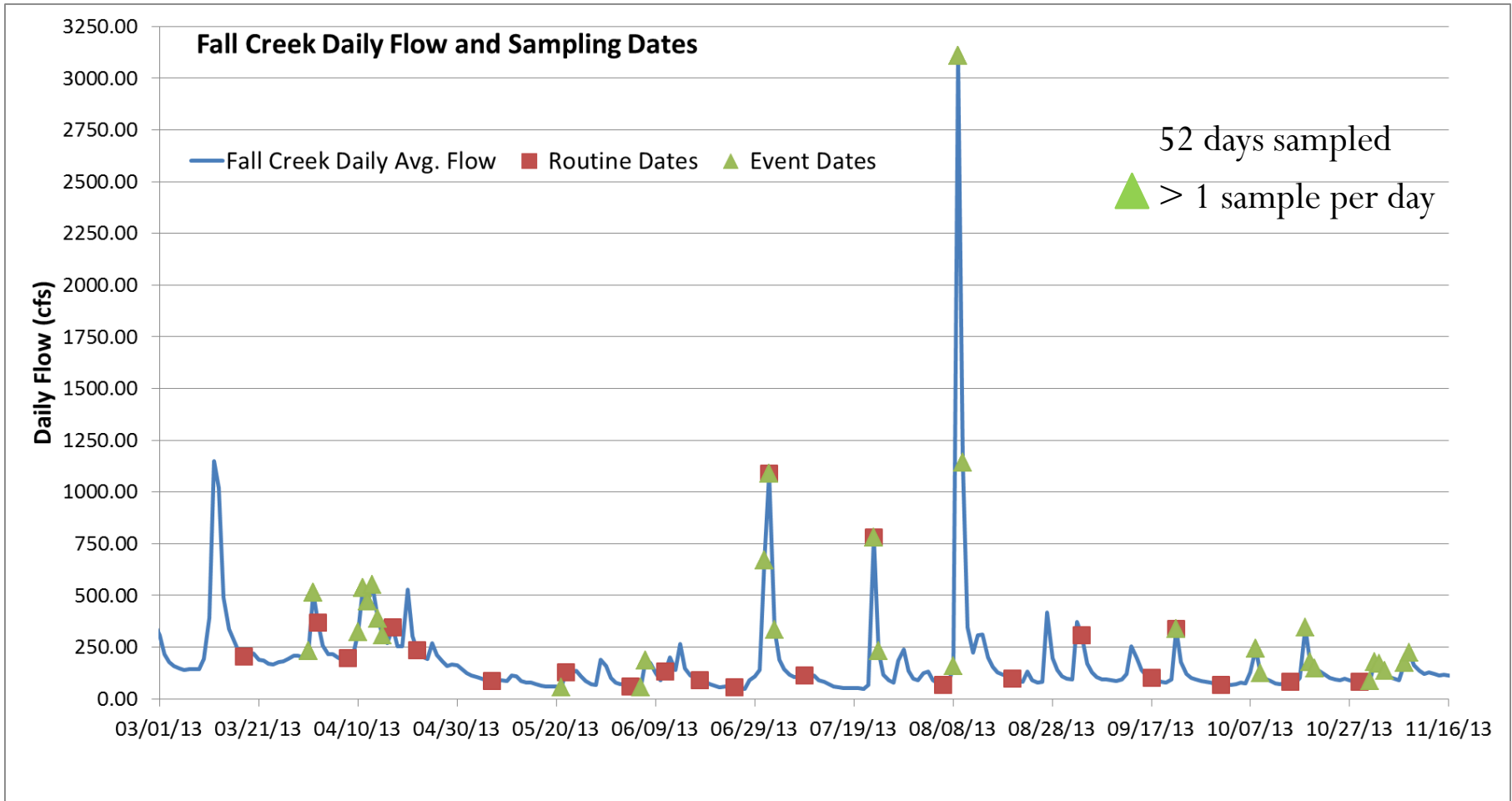
Tributary Monitoring: Routine

- **sites adjoining mouths**
 - **Program began in mid-March and continued biweekly through October**
 - **15 sampling dates are required to satisfy QAPP**
 - **18 routine monitoring days collected as of 10/29**
 - **Field measurements and chemistry analytes have been collected and conducted as outlined in QAPP**
 - **task is complete**

Tributary Monitoring: Events

- **sites adjoining mouths**
 - **4 events required to satisfy the QAPP**
 - **There have been events monitored in April, June, July, August, September, and October**
 - **Number of event samples for QAPP satisfied, UFI authorized to collect additional samples in the Fall.**
 - **~10 runoff events (> 70 total samples) monitored for Fall Creek, including Aug. 8-10 which was the highest flow peak of the year (to date)**
 - **Similar coverage for other 3 streams (Salmon Creek, Six-Mile Creek, and Cayuga Inlet)**
 - **task is complete**

Tributary Monitoring Coverage: Fall Creek

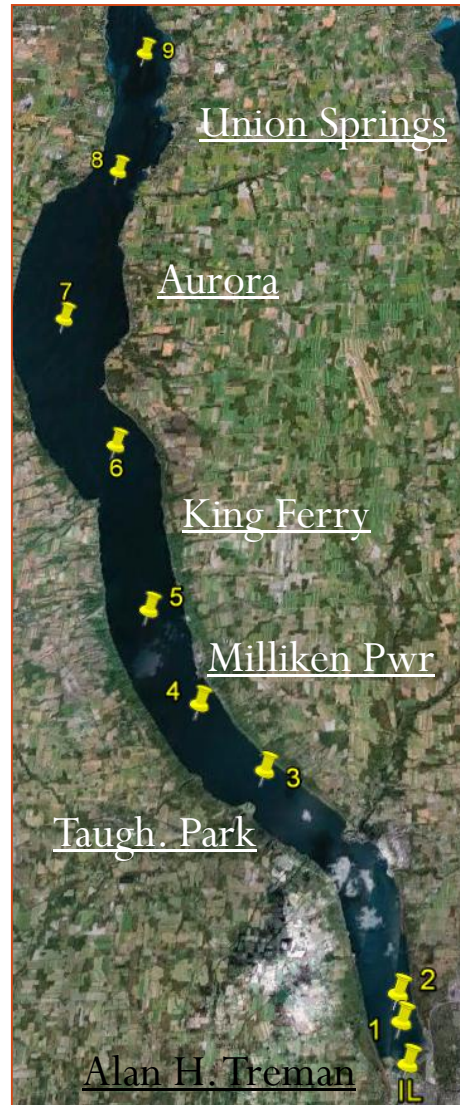


Tributary Monitoring: Synoptic Events

- multiple sites along Fall and Salmon Creeks
 - 2 synoptic surveys on Fall and Salmon Creeks are required to satisfy QAPP
 - 1 synoptic survey completed in April (4/10-4/14)
 - 1 synoptic survey completed in late October (10/31-11/3)
 - task is complete



Lake-Wide Survey Locations



Lake Monitoring: Lake-Wide

- **Program began in early April and has continued biweekly through October**
- **10 sites along main axis of lake from near Union Springs to Cayuga Inlet**
- **15 sampling dates are required to satisfy QAPP**
- **16 total days monitored for routine program**
- **Field measurements, biology collections, and chemistry analytes have been collected and conducted as outlined in QAPP**
- **task is complete**

Frequent South Survey Locations



Lake Monitoring: Frequent South

- **Conducted June through September**
- **4 sites monitored 1-2 times per week in southern shelf region**
- **24 monitoring days collected**
- **task is complete**

Bioavailability Sample Collection

- **Tributary Monitoring**
 - 3 bioavailability studies required by QAPP for Fall Creek, Salmon Creek, Cayuga Inlet, and Six Mile Creek
 - Fall Creek: 3 collected, 3 delivered to MTU
 - Salmon Creek: 3 collected, 3 delivered to MTU
 - Six Mile Creek: 3 collected, 2 delivered to MTU
 - Cayuga Inlet: 3 collected, 2 delivered to MTU
 - Fall Creek and Salmon Creek are now 100% complete
 - awaiting opportunity to complete Cayuga Inlet and Six Mile Creek
- **Ithaca Area WWTP**
 - 3 bioavailability studies required by QAPP
 - 3 collections completed on May 7, June 11, and Sept. 17
 - task is complete
- **Cayuga Heights WWTP**
 - No samples collected

Ancillary Studies (not in QAPP)

- **Lake Monitoring**

- Lake Bioavailability

- 1 bioavailability collection completed on 7/3

- Automated buoy at Site 2

- Data sonde at Inlet Site

- Optical surveys weekly at a pelagic site and sites on southern shelf

- ADCP in Inlet

- thermistor chains

- **Tributary Monitoring**

- Small creeks survey; 1 time sampling on June 11 for 13 additional tributaries to Cayuga Lake

- more events as described above

Commencement of Work Elements

- **two-dimensional hydrothermal/hydrodynamic model**
 - W2
 - widely used – NYC reservoirs, eastern Finger Lakes
- **bioavailability experiments**
 - at Michigan Technol. Univ.
 - determines fraction of phosphorus that will support algae growth
- **other data analysis**
 - tributary
 - lake
 - stakeholder data

