



290 Elwood Davis Road, Suite 230  
Liverpool, New York 13088  
Phone 315.453.9009  
Fax 315.453.9010  
www.anchorqea.com

## **Three Rivers System – Summary of 2009 Data**

### Overview Map and Sample Summary Table

- Three full water quality surveys were conducted on July 9<sup>th</sup>, August 12<sup>st</sup> and September 24<sup>th</sup>, 2009. Three additional surveys were conducted only at Buoy 316 on July 30<sup>th</sup>, August 27<sup>th</sup> and September 16<sup>th</sup>. In addition, YSI data sondes were deployed between June and October 2009 to measure in-situ water quality parameters (e.g., dissolved oxygen, pH, salinity, and temperature) at 15-minute intervals.

### Seneca River Hydrograph and Flow Summary Table

- Flow conditions in the Seneca River in 2009 exhibited a pattern of relatively higher and more variable flows in spring and relatively lower flows in summer. Compared to the past two years the summer flow conditions were more variable, with flows ranging between 2,000 and 6,000 cfs and relatively short low flow periods at the beginning of August and throughout the month of September. The average summer flow rate in 2009 was approximately 1,600 cfs, which is comparable with the long-term summer average of 1,700 cfs, but higher than what might be considered a summer low flow condition (7Q10 flow is estimated at 350 cfs). In 2009 there were just two days below the 7Q10 flow rate.

### Spatial Plots of Water Quality Parameters

- The Seneca River water column appeared to be vertically well-mixed during the July 9<sup>th</sup> (3,350 cfs) and the August 12<sup>th</sup> (5,090 cfs) surveys, but exhibited stratification in water quality parameters during the September 24<sup>th</sup> (783 cfs) survey, especially between the Onondaga Lake outlet and the Three River Junction.
  - Generally in 2009 the spatial trends of the water quality parameters were consistent with those measured under similar flow conditions in previous years (e.g., 2008 and 2006). However, the patterns in 2009 were generally less pronounced than those observed in lower flow years (e.g., 2007). A summary of the spatial trends in 2009 water quality is as follows:
    - Between Cross Lake and the Onondaga Lake outlet:
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- Soluble reactive phosphorus (SRP) concentrations increased gradually while Chlorophyll-*a* concentrations exhibited a notable decrease due to zebra mussel activities.
  - Chlorophyll-*a* data at Buoy-409 in the September river survey exhibited relatively high Chlorophyll-*a* concentrations (up to about 55 µg/L) in the vicinity of the Cross Lake, which decreased to below 30 µg/L at the Onondaga Lake outlet.
  - Dissolved oxygen (DO) concentrations during the July and August surveys were similar in the top and the bottom layers; DO decreased steadily across the area by a total of 2 - 3 mg/L as a result of zebra mussel respiration and sediment oxygen demand. During the September survey, the DO data indicated stratified conditions in the river with concentrations being higher within the surface waters than the bottom waters throughout the reach between Cross Lake (surface higher by 2 mg/L) and the Onondaga Lake Outlet (surface higher by 3 mg/L).
  - Ammonia-N (NH<sub>3</sub>-N), nitrate (NO<sub>3</sub>-N) and nitrite (NO<sub>2</sub>-N) concentrations exhibited little change, with only a slight increase of NH<sub>3</sub>-N, likely due to zebra mussel activities.
- o Between the Onondaga Lake outlet and the Three Rivers Junction:
    - SRP concentrations remained relatively constant in the surface waters as a result of the balancing of algal production with filtration of the remaining algae by zebra mussels, as well as mixing with deeper waters and Onondaga Lake inflows. During the September survey, a slight increase in SRP was observed, suggesting a greater influence by zebra mussel activities during that time. The top and bottom SRP concentrations were similar during the July and August surveys but the bottom SRP concentrations were higher than the top SRP during the September survey. A similar situation occurred during the low flow survey in September of 2007 – in both instances the SRP depletion in the top water was also accompanied by an increase in DO and Chlorophyll-*a* concentrations, suggesting that this trend is a result of phytoplankton activity.
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- Consistent with past years, stratification downstream of the lake outlet was observed for salinity, DO, and to a much lesser extent for temperature, but most noticeably during the September survey. These observations can be explained by the influx of Onondaga Lake water, oxygen demand associated with sediments and zebra mussel activity, limited vertical mixing, and potential inflow of groundwater in the area of the “Deep Hole”.
  - NH<sub>3</sub>-N concentrations exhibited little change during the July and August surveys and a slight stratification during the September survey, with higher concentrations in the bottom waters, which was likely due to the lower river flow conditions and possibly flux from sediments and/or zebra mussel activity.
  - NO<sub>2</sub>-N concentrations exhibited little change in this reach of the river, with the exception of a slight increase in the bottom waters during the September survey (similar to NH<sub>3</sub>-N, but less pronounced).
  - Increased concentrations in NO<sub>3</sub>-N resulting from lake water inflow were observed in all three surveys, although during the September survey, NO<sub>3</sub>-N exhibited the most prominent increase, including a strong vertical stratification with high bottom layer concentrations (up to 1.7 mgN/L) just downstream of the outlet. The stratification was due to the relatively high bottom concentration waters that entered the river from the lake and the limited vertical mixing in the area of the “Deep Hole”. In all surveys the NO<sub>3</sub>-N concentrations increased toward the Three Rivers Junction as a result of increased vertical mixing.

#### YSI Sonde Figure

Temporal trends in the high frequency DO data recorded by the YSI sondes exhibited some stratification at Buoy 409, with several periods of low concentrations (in the upper waters and more so in the bottom waters), with relatively large diurnal variations as compared to the other sampling locations. Compared to 2008, the daily DO concentrations at Buoy 409 were similar in the top waters and slightly higher in the bottom waters, with a greater swing in the daily minimum and maximum DO values. Similar to 2008, DO data at Buoys 316 and 236 showed less stratification and

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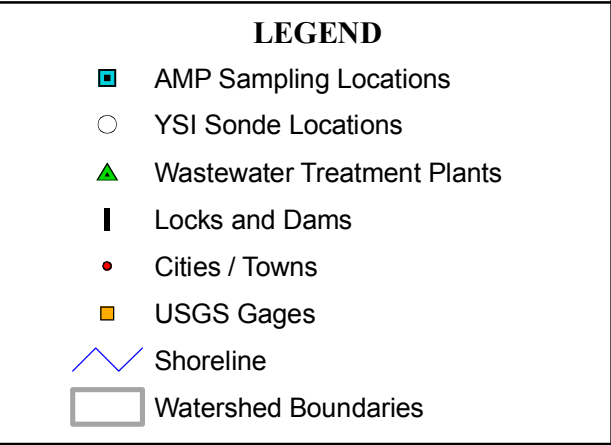
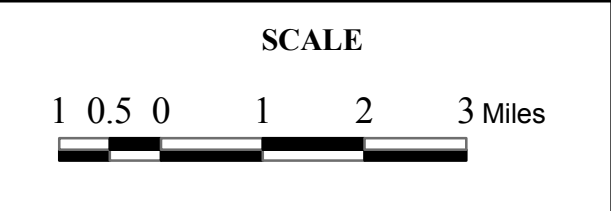
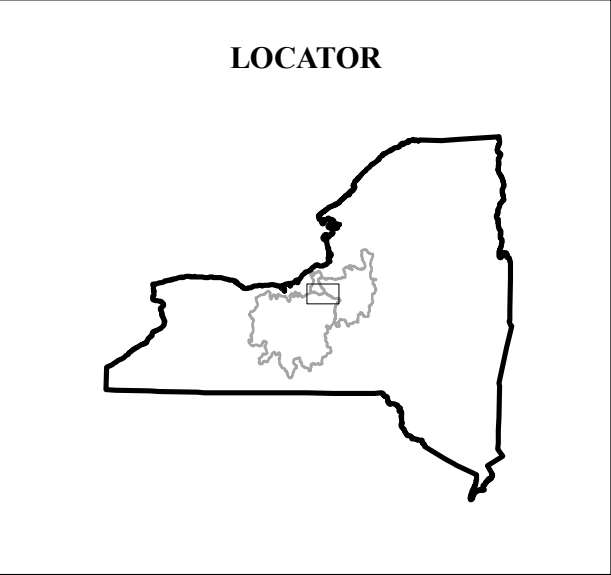
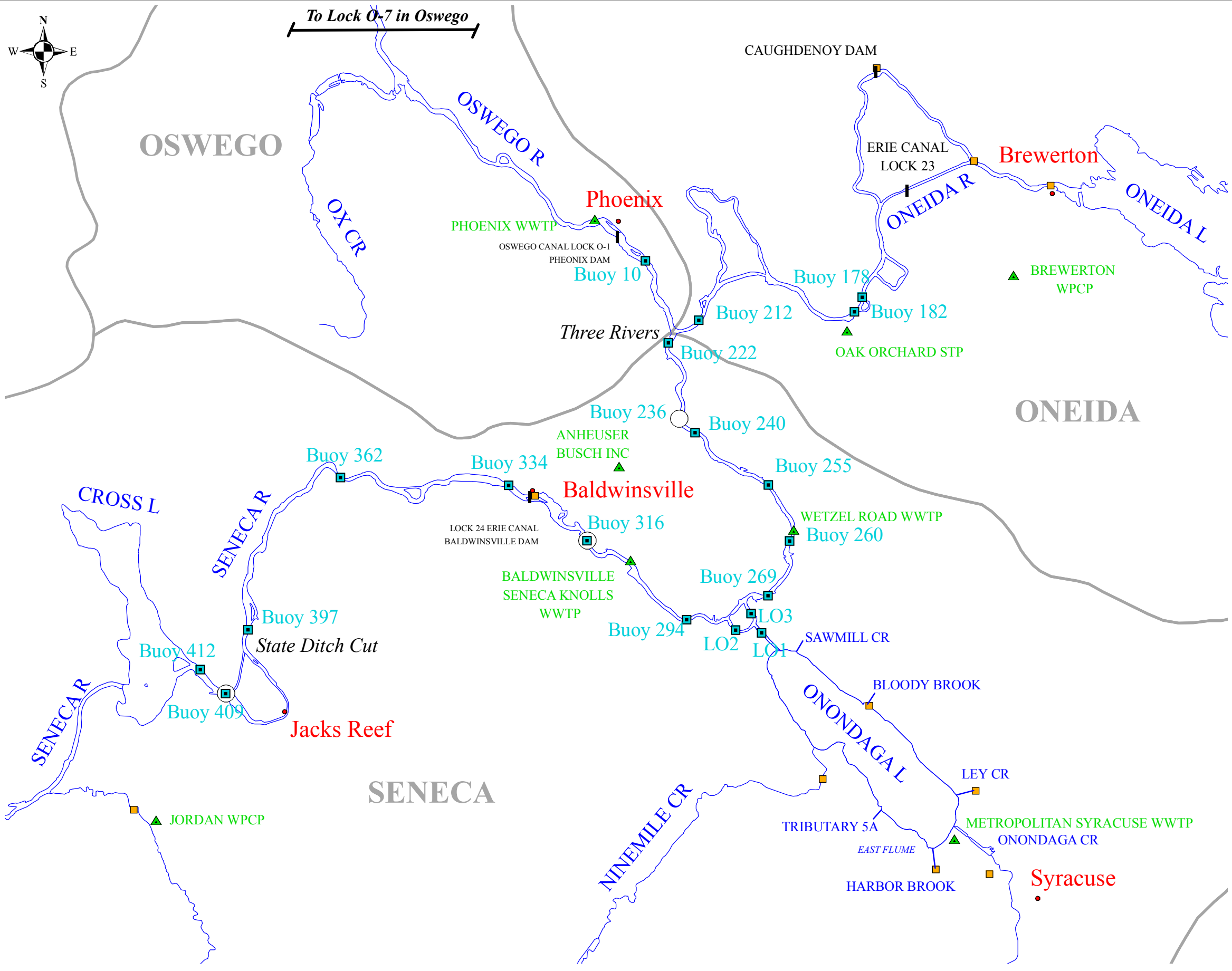
less day-to-day variability. Note that the DO concentrations at Buoy 236 were higher at the bottom water than at the top water during the first half of July. The reason for this oxygenated bottom water is uncertain; however, the large DO increase (from 1.4 to 15.3 mg/L) in the bottom water on July 3<sup>rd</sup> 2009 may suggest an equipment failure.

#### Seneca River Compliance and Sonde Compliance Tables

- From the routine water quality surveys, the data showed two violations of the NYSDEC instantaneous minimum DO standard (4 mg/L) for both the top and bottom waters at Buoy 316 during the August 27<sup>th</sup> survey. There were no observed violations of the NH<sub>3</sub>-N or NO<sub>2</sub> standards.
  - In 2009, DO standard violations were observed in the 15-minute in-situ data collected by the YSI sondes. For days in which the sondes were in operation, one or more of the measured DO levels at either the top or the bottom layer were below the daily instantaneous standard of 4 mg/L on 26%, 19% and 19% of those days at Buoys 409, 316, and 236, respectively. Likewise, daily averages calculated from the DO measurements made by the sondes at either the top or the bottom layer were below the daily average standard of 5 mg/L on 14%, 24% and 21% of the days in which the sondes were operated at Buoys 409, 316, and 236, respectively. Similar to previous years, these violations were more prevalent in the bottom waters than in the upper waters. However, compared to previous lower flow years, these data represent an improvement in water quality conditions (e.g., the frequency of violations was much higher during the low flow conditions observed in 2007).
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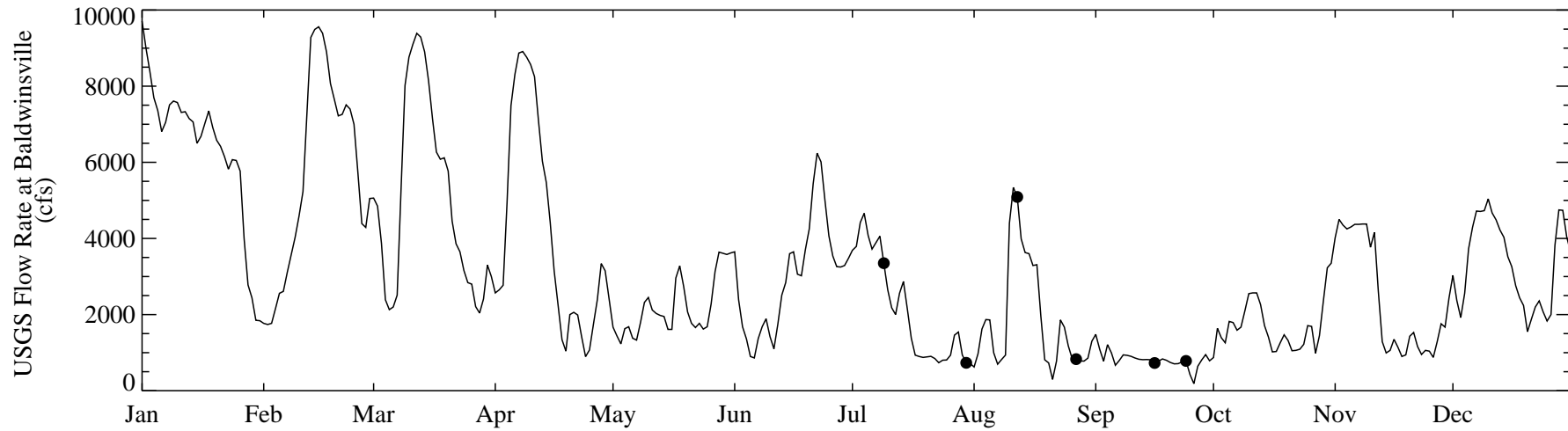
### **Three Rivers System – 2009 Major Findings**

- The water quality data collected in 2009 during the three full river surveys were generally similar to data collected in previous years. The data measured during the individual surveys were reflective of the predominant processes occurring in the river at that time of the year, including flow conditions, zebra mussel activities and inflow from Onondaga Lake and subsequent mixing.
  - The average summer flow rate in 2009 was comparable to the long-term summer average, but it was much higher than what might be considered summer low flow conditions. As a result, the spatial trends of water quality parameters during the July and August surveys were similar in top and bottom waters and were overall less pronounced than those typically observed under lower flow conditions. Spatial trends observed during the September survey indicated stratified flow conditions and were consistent with trends observed during low flow surveys conducted in previous years.
  - When compared with previous lower flow years (e.g., 2007) the water quality conditions in 2009 exhibited an improvement in terms of regulatory compliance.
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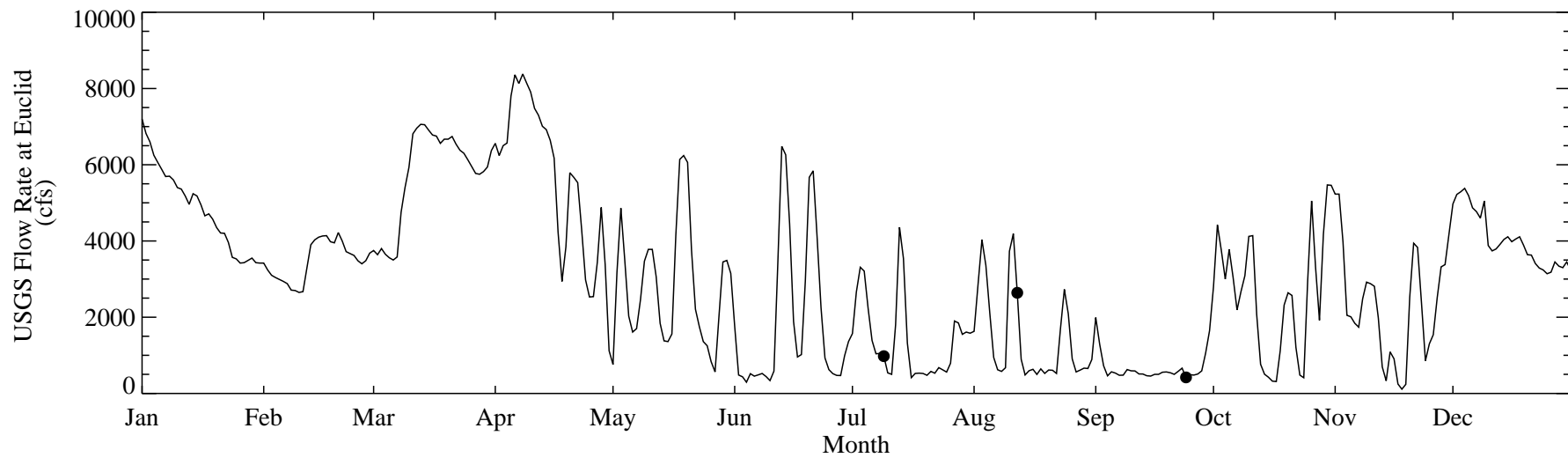


**Overview of AMP River Sampling Locations within the Three Rivers System**

### Seneca River



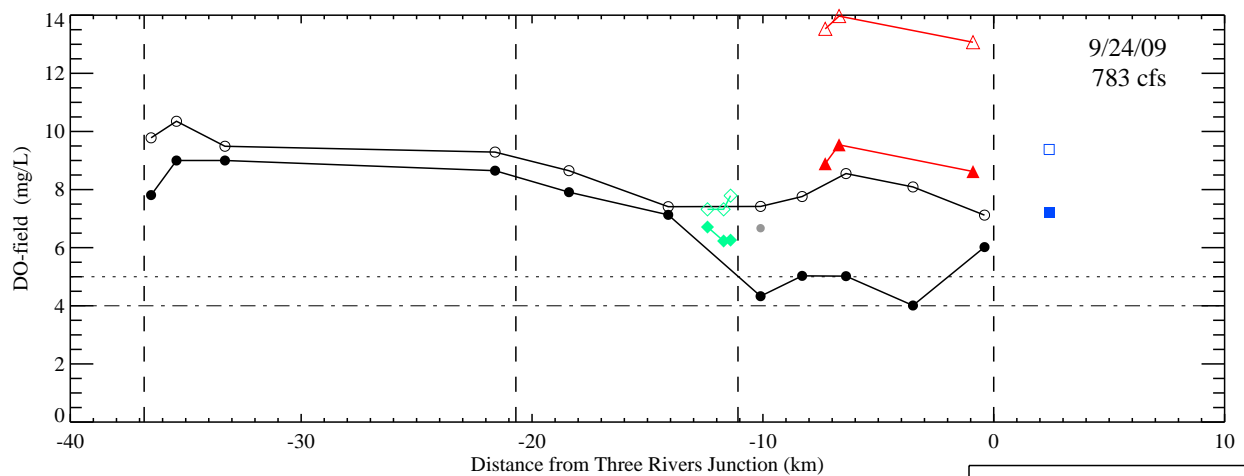
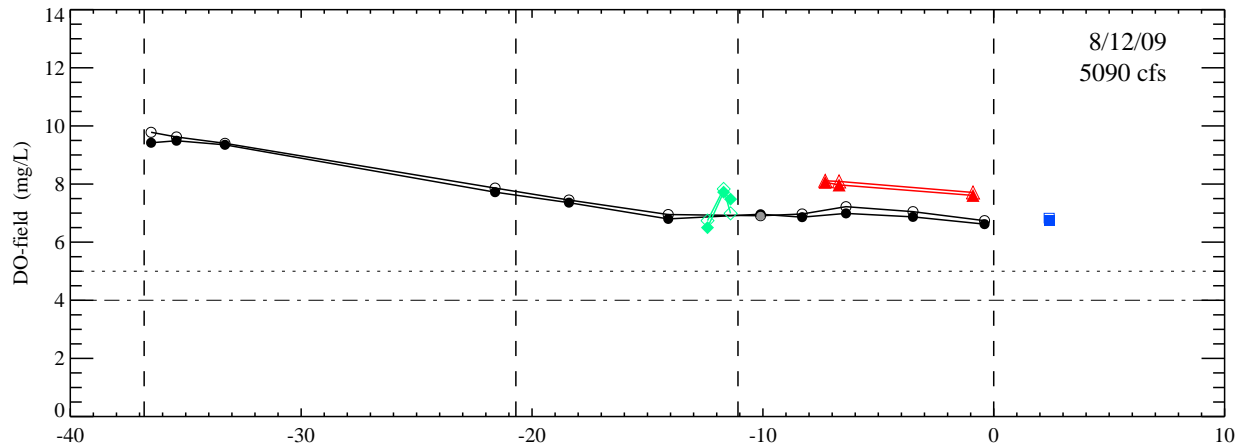
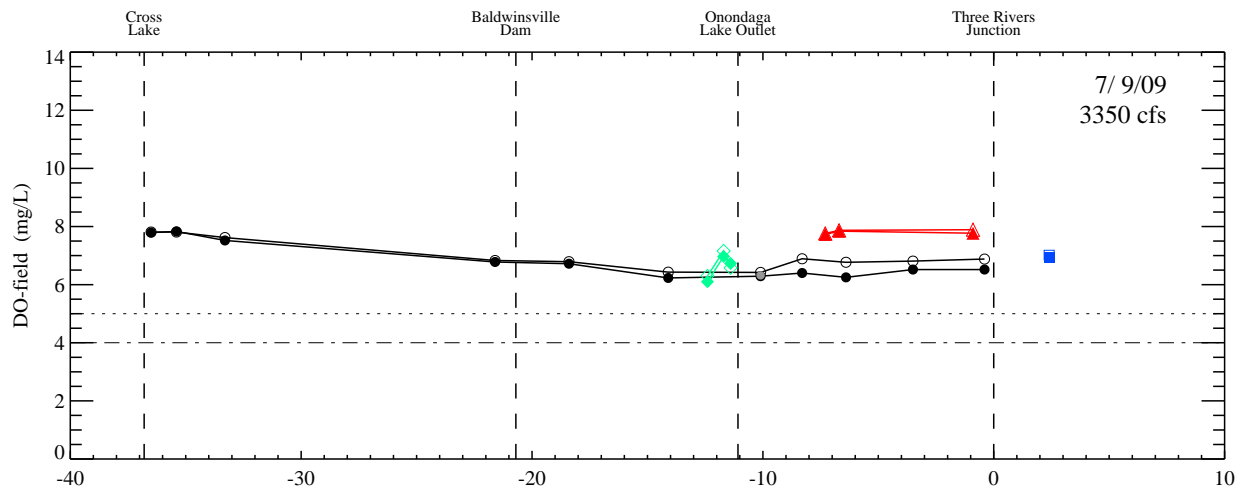
### Oneida River



**Temporal plot of USGS flows at Seneca River and Oneida River as well as days that AMP river surveys were conducted during 2009.**

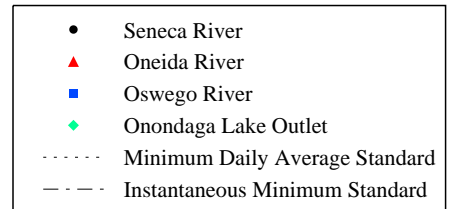
*Note: Points represent OCDWEP water quality sampling dates.*

## DO-field



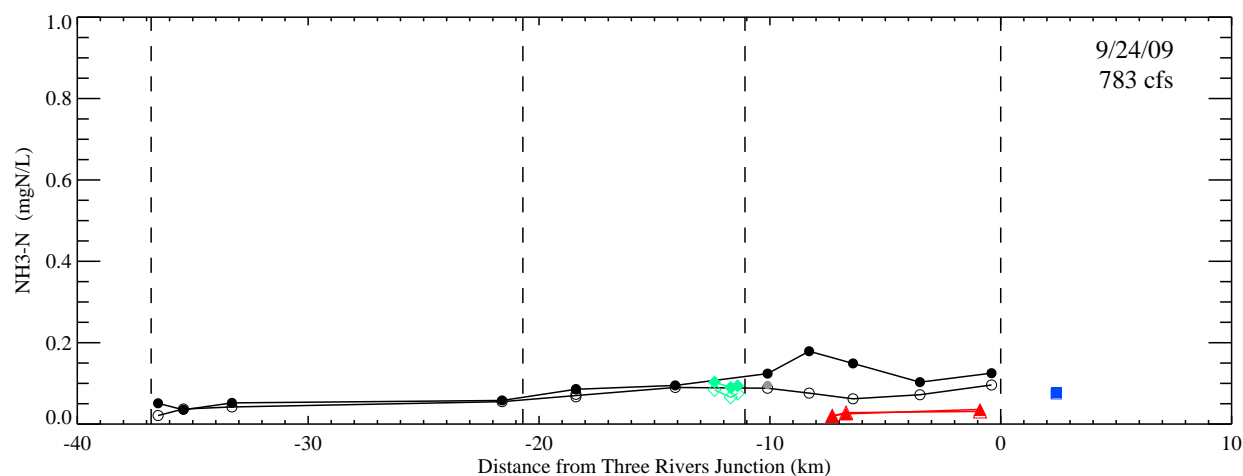
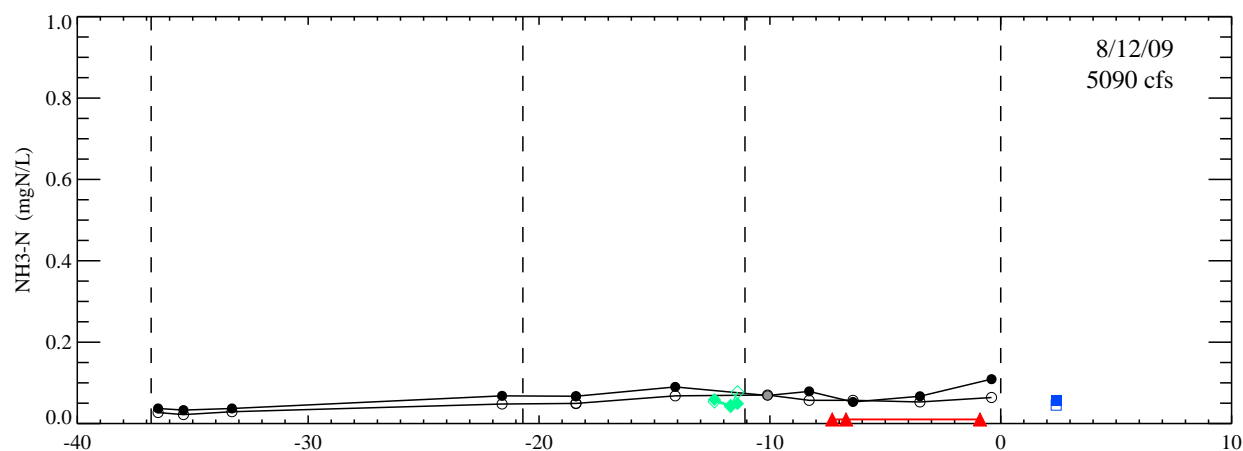
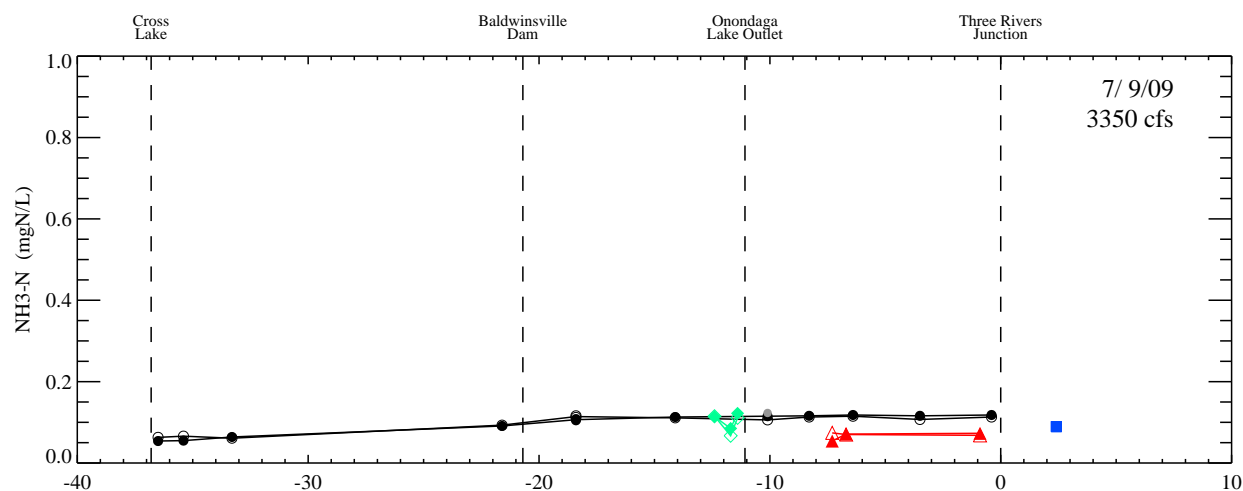
### Spatial profiles of dissolved oxygen collected from the Three Rivers System during 2009.

Notes: (1) River km measured from Three Rivers Junction, upstream (-) for Seneca and Oneida / downstream (+) for Oswego; (2) Open symbols represent surface samples, filled symbols represent bottom samples, gray circles represent mid-depth samples, and open symbols with dots represent composite samples; (3) Baldwinsville flow on sampling dates shown in each panel.



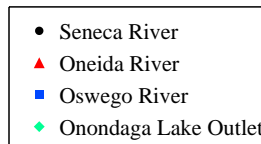


# NH3-N

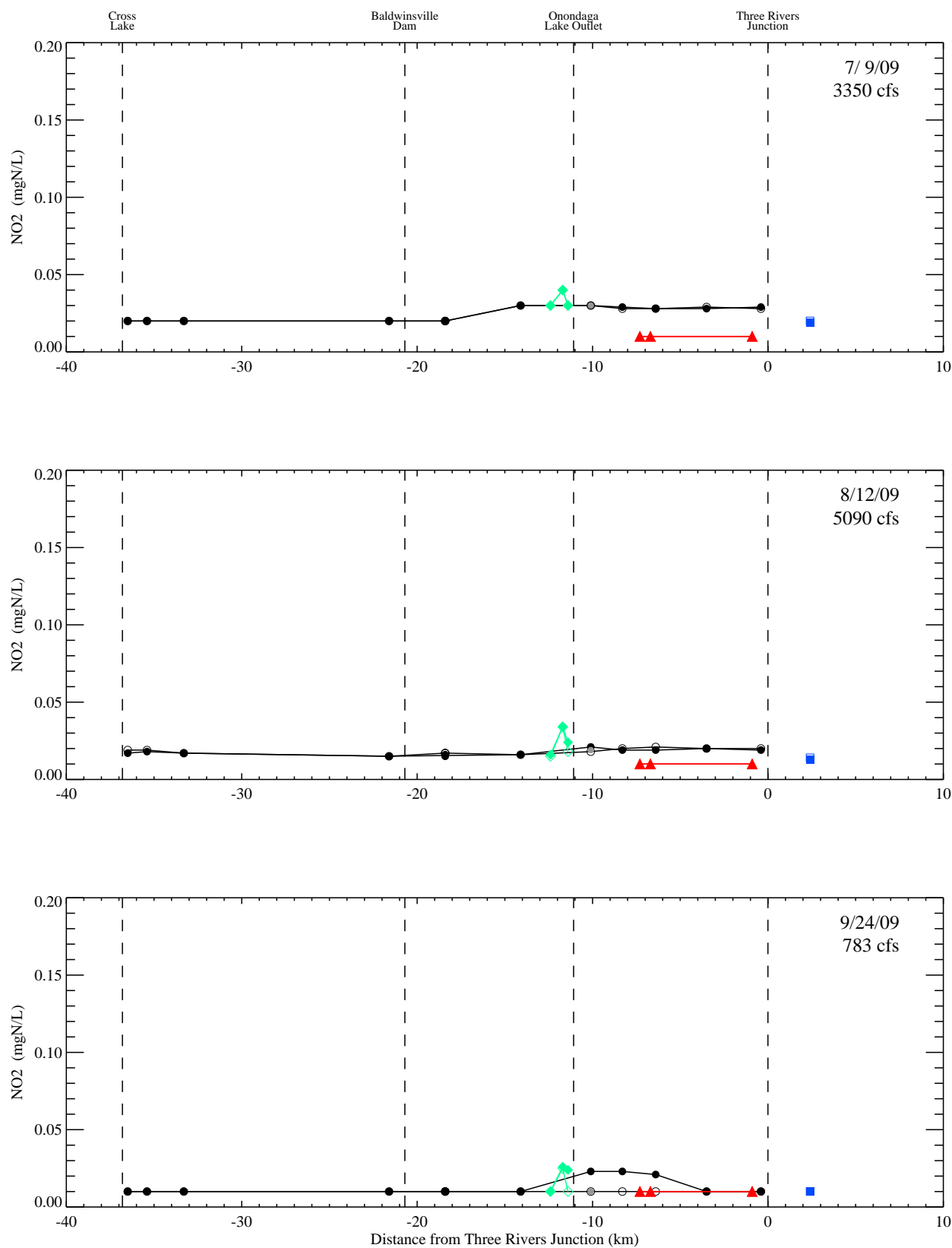


## Spatial profiles of ammonia collected from the Three Rivers System during 2009.

Notes: (1) River km measured from Three Rivers Junction, upstream (-) for Seneca and Oneida / downstream (+) for Oswego; (2) Open symbols represent surface samples, filled symbols represent bottom samples, gray circles represent mid-depth samples, and open symbols with dots represent composite samples; (3) Baldwinsville flow on sampling dates shown in each panel.

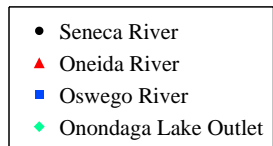


# NO2

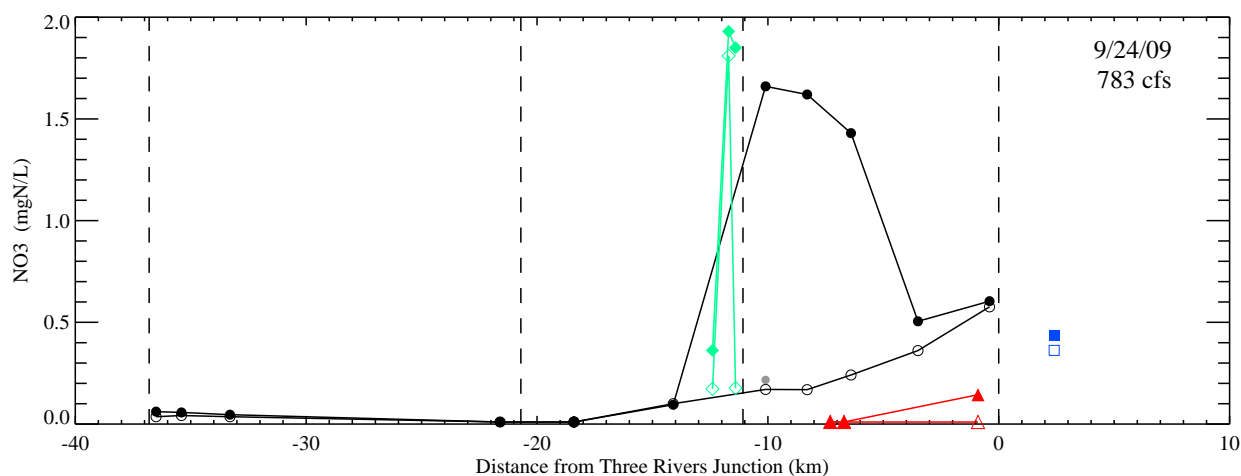
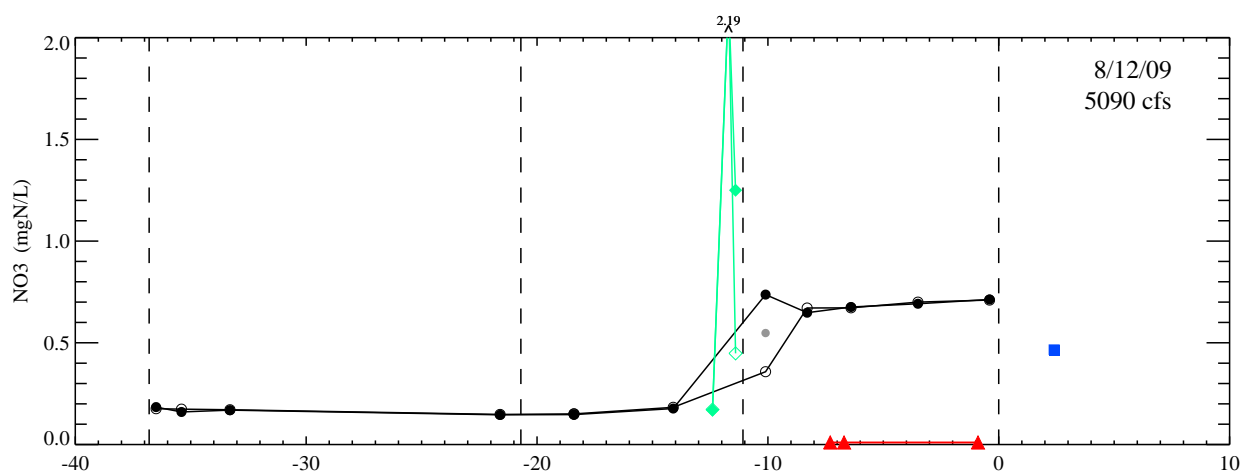
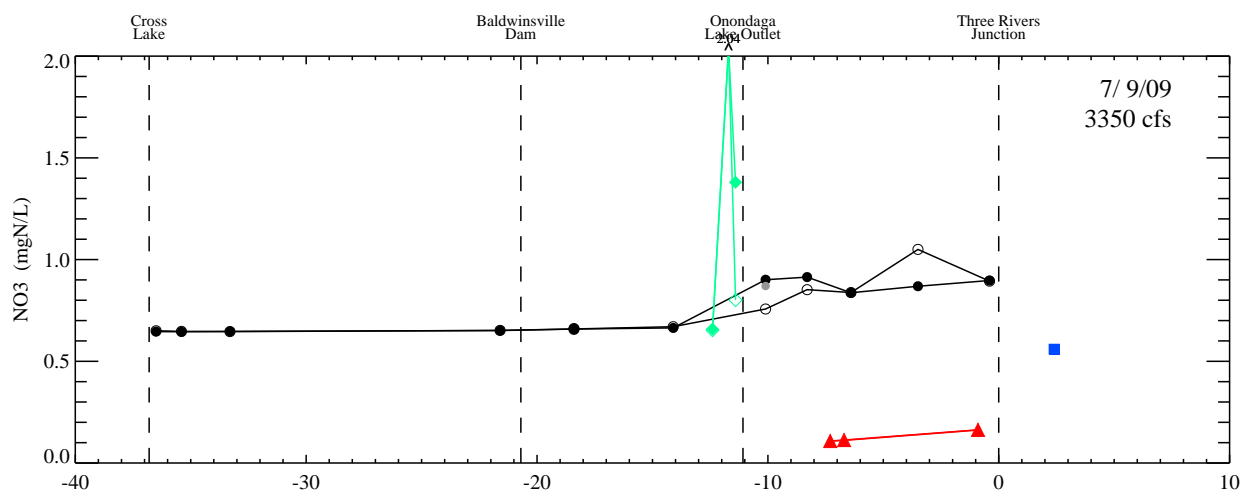


## Spatial profiles of nitrite collected from the Three Rivers System during 2009.

Notes: (1) River km measured from Three Rivers Junction, upstream (-) for Seneca and Oneida / downstream (+) for Oswego; (2) Open symbols represent surface samples, filled symbols represent bottom samples, gray circles represent mid-depth samples, and open symbols with dots represent composite samples; (3) Baldwinsville flow on sampling dates shown in each panel.

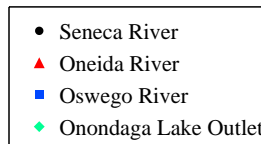


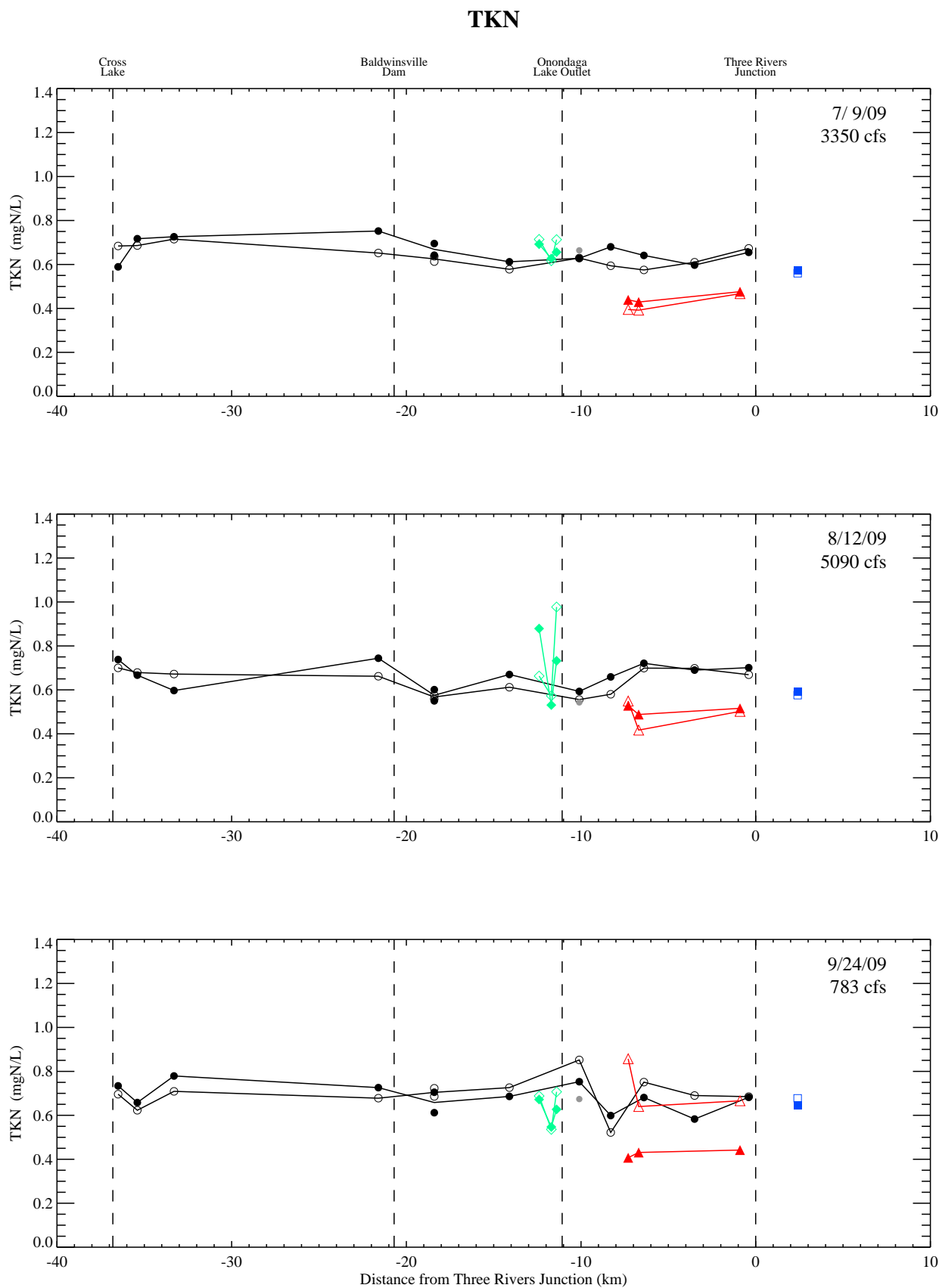
# NO3



## Spatial profiles of nitrate collected from the Three Rivers System during 2009.

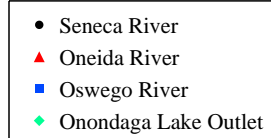
Notes: (1) River km measured from Three Rivers Junction, upstream (-) for Seneca and Oneida / downstream (+) for Oswego; (2) Open symbols represent surface samples, filled symbols represent bottom samples, gray circles represent mid-depth samples, and open symbols with dots represent composite samples; (3) Baldwinsville flow on sampling dates shown in each panel.



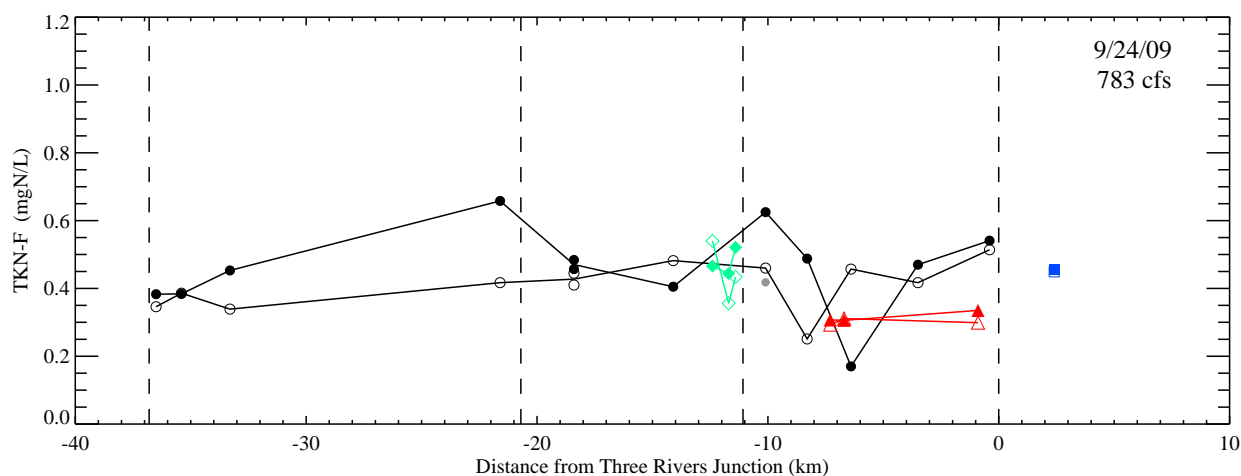
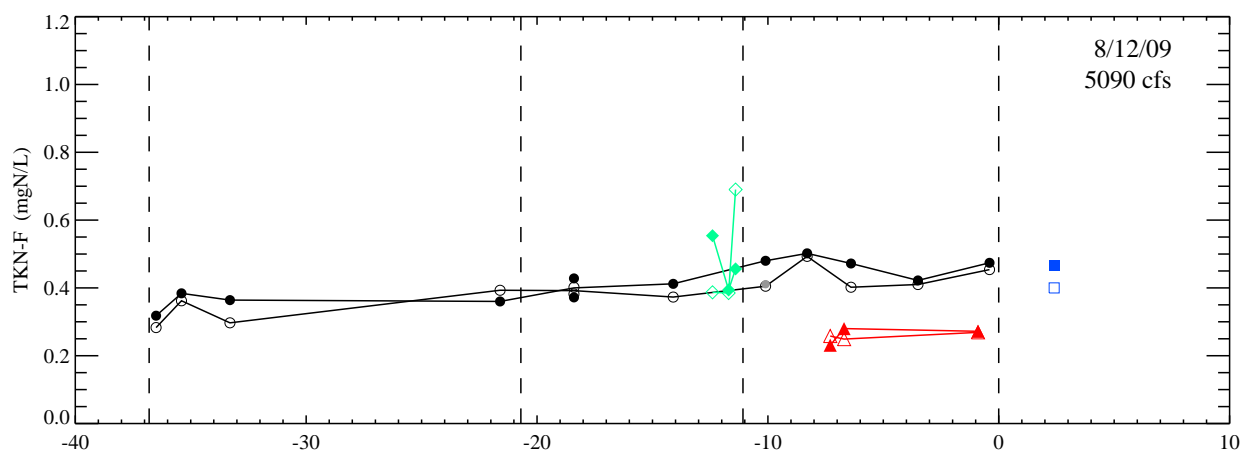
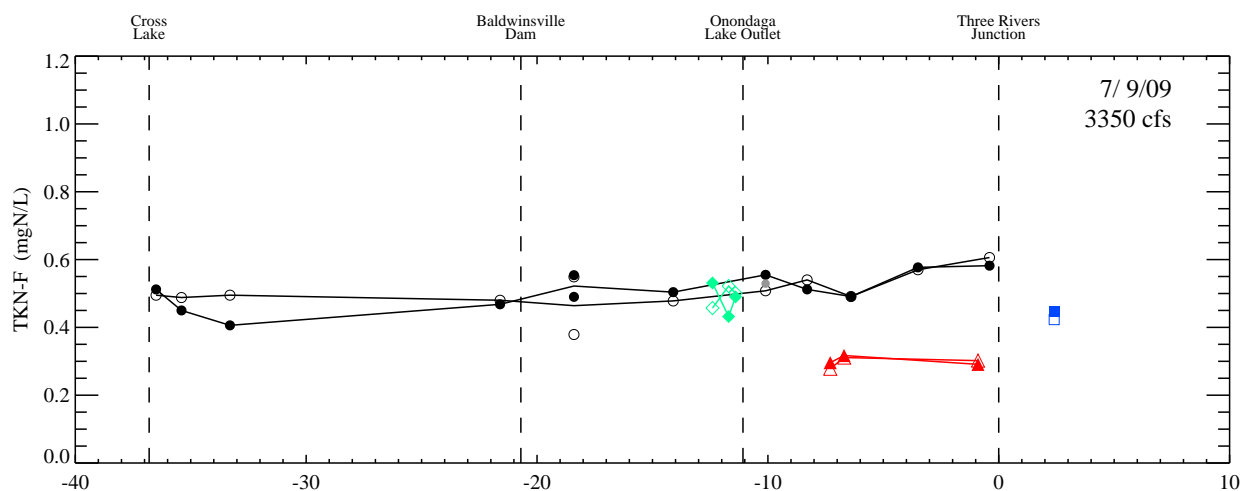


### Spatial profiles of TKN collected from the Three Rivers System during 2009.

*Notes: (1) River km measured from Three Rivers Junction, upstream (-) for Seneca and Oneida / downstream (+) for Oswego; (2) Open symbols represent surface samples, filled symbols represent bottom samples, gray circles represent mid-depth samples, and open symbols with dots represent composite samples; (3) Baldwinsville flow on sampling dates shown in each panel.*



# TKN-F

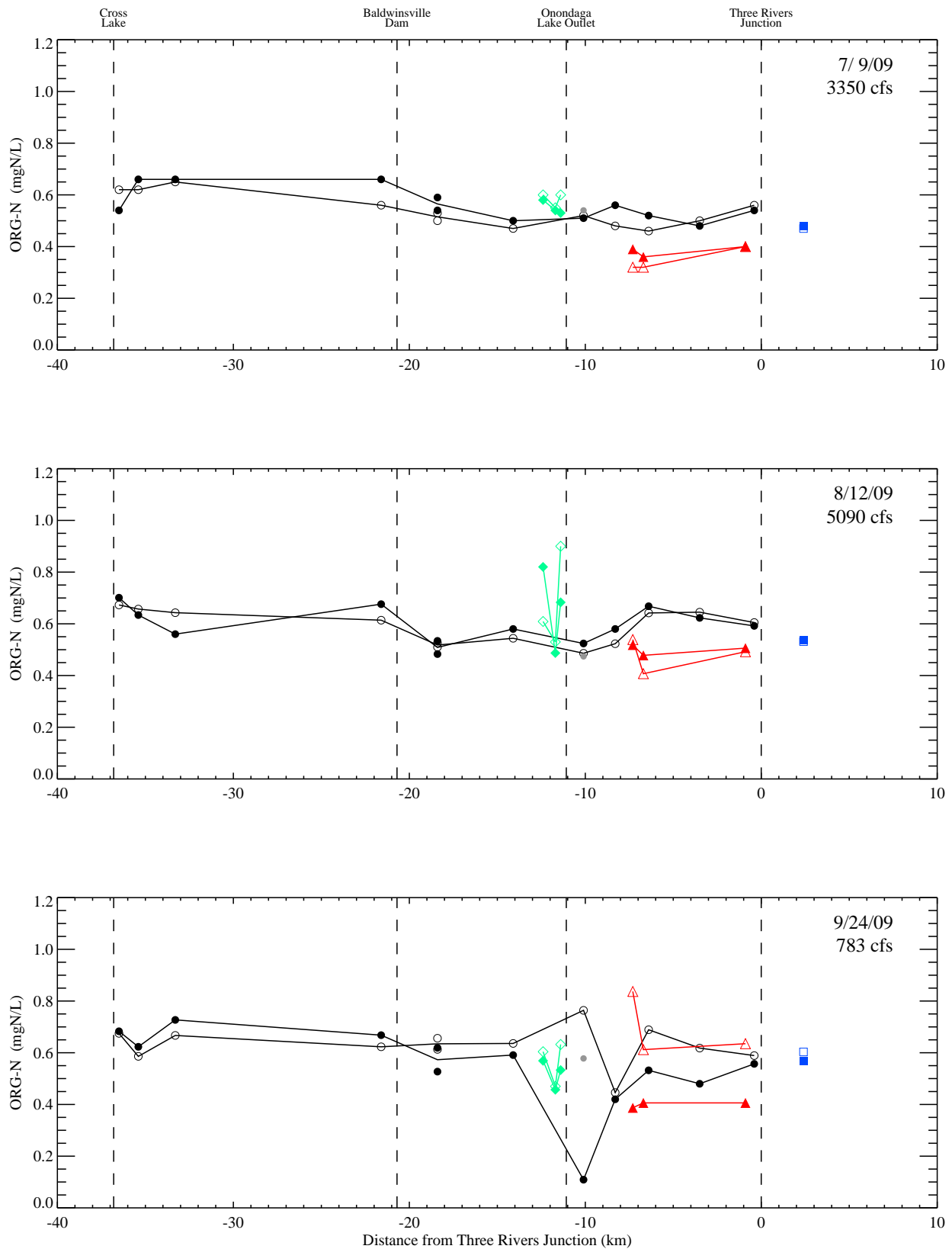


## Spatial profiles of TKN (filtered) collected from the Three Rivers System during 2009.

Notes: (1) River km measured from Three Rivers Junction, upstream (-) for Seneca and Oneida / downstream (+) for Oswego; (2) Open symbols represent surface samples, filled symbols represent bottom samples, gray circles represent mid-depth samples, and open symbols with dots represent composite samples; (3) Baldwinsville flow on sampling dates shown in each panel.

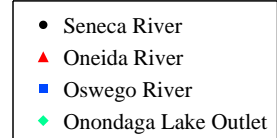
- Seneca River
- ▲ Oneida River
- Oswego River
- ◆ Onondaga Lake Outlet

# ORG-N

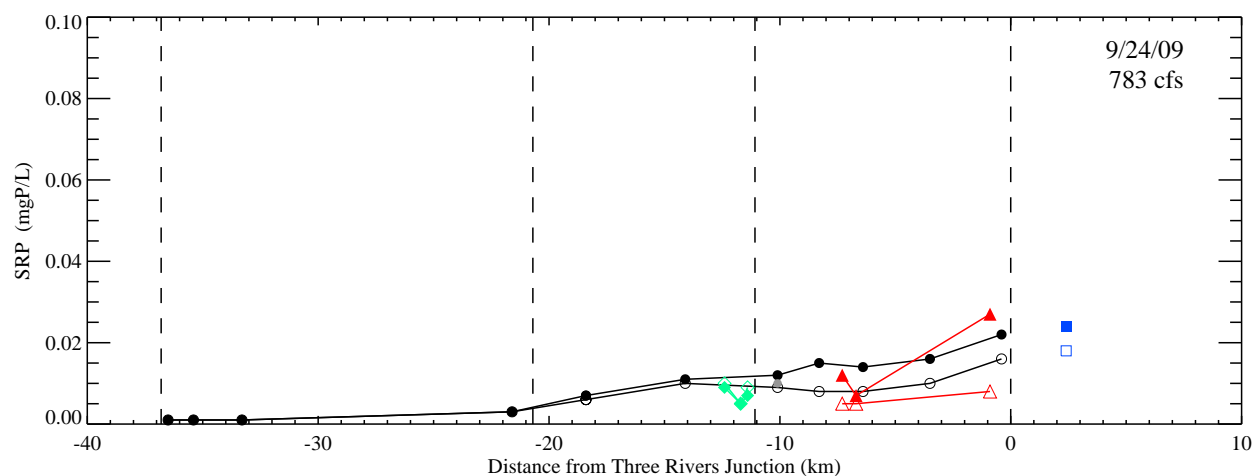
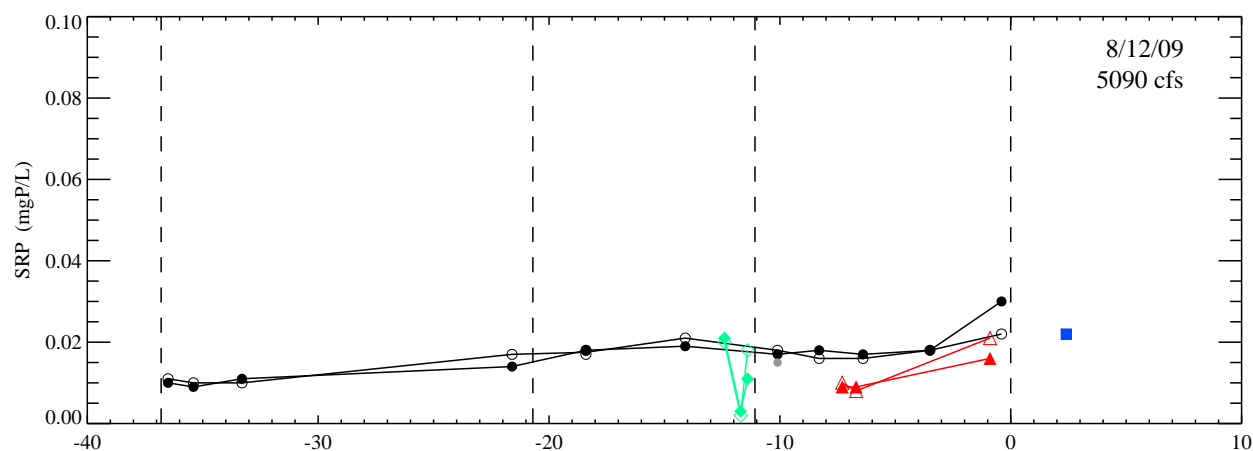
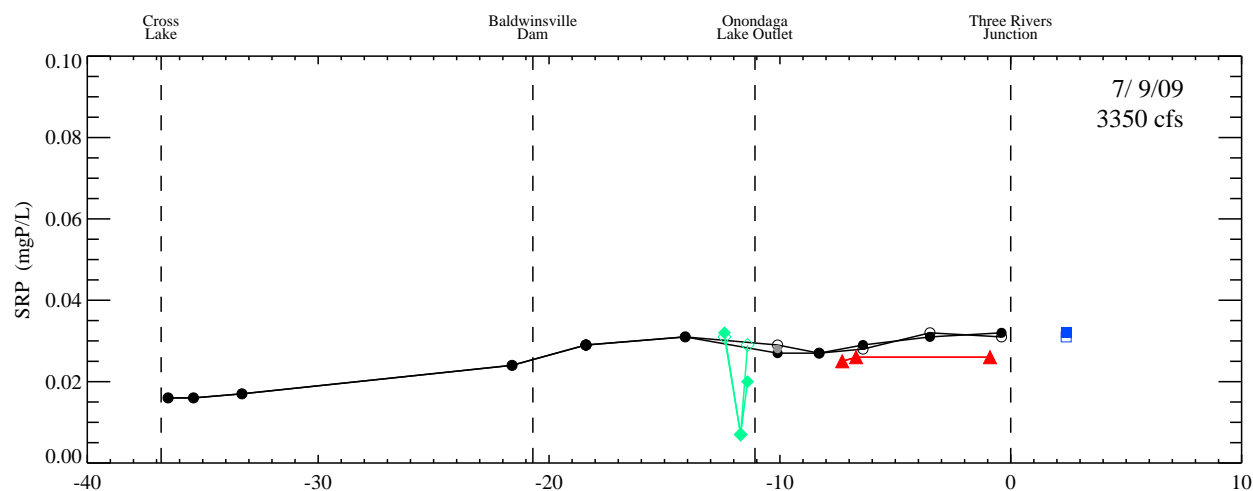


## Spatial profiles of organic N collected from the Three Rivers System during 2009.

Notes: (1) River km measured from Three Rivers Junction, upstream (-) for Seneca and Oneida / downstream (+) for Oswego; (2) Open symbols represent surface samples, filled symbols represent bottom samples, gray circles represent mid-depth samples, and open symbols with dots represent composite samples; (3) Baldwinsville flow on sampling dates shown in each panel.



# SRP

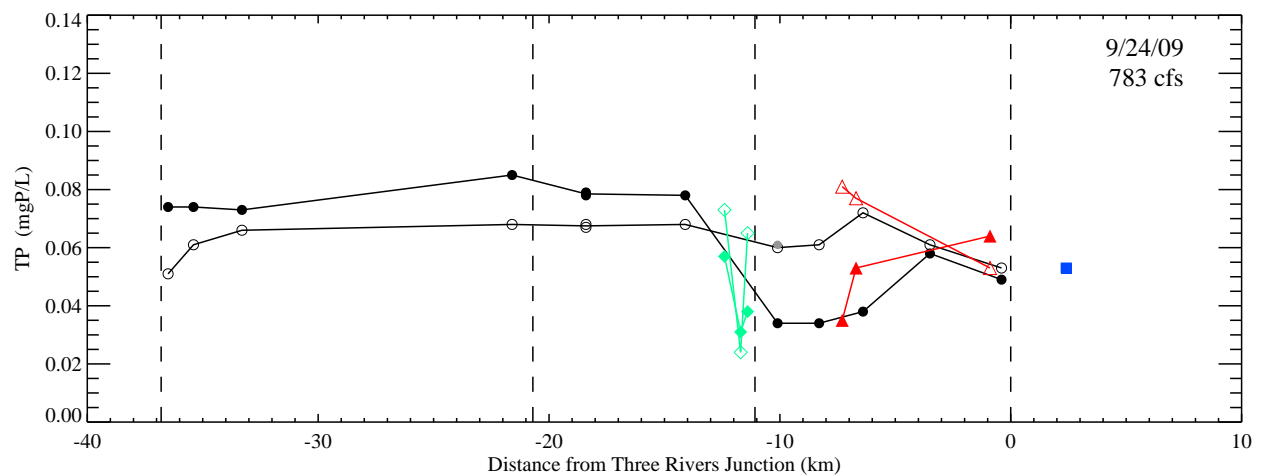
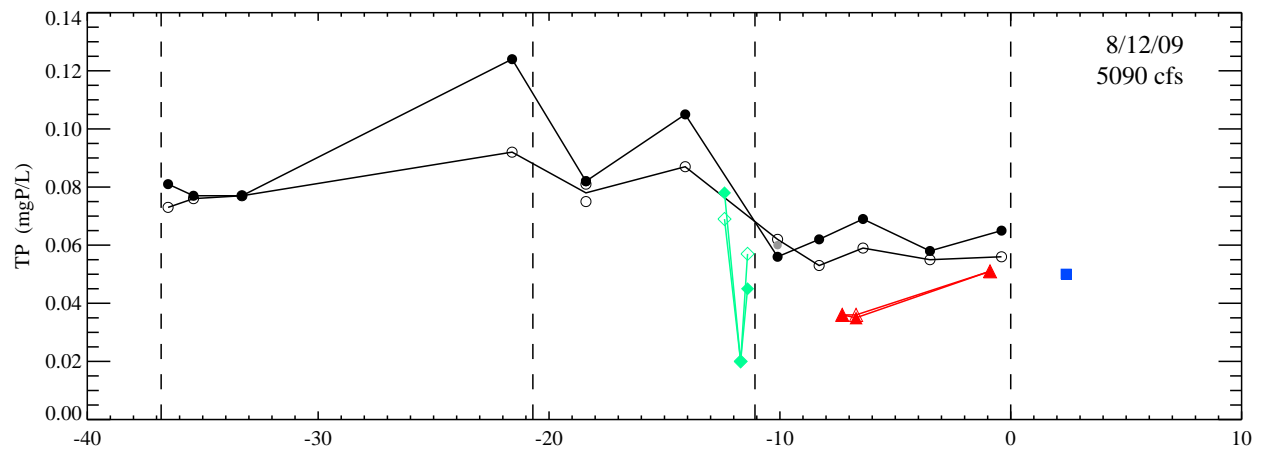
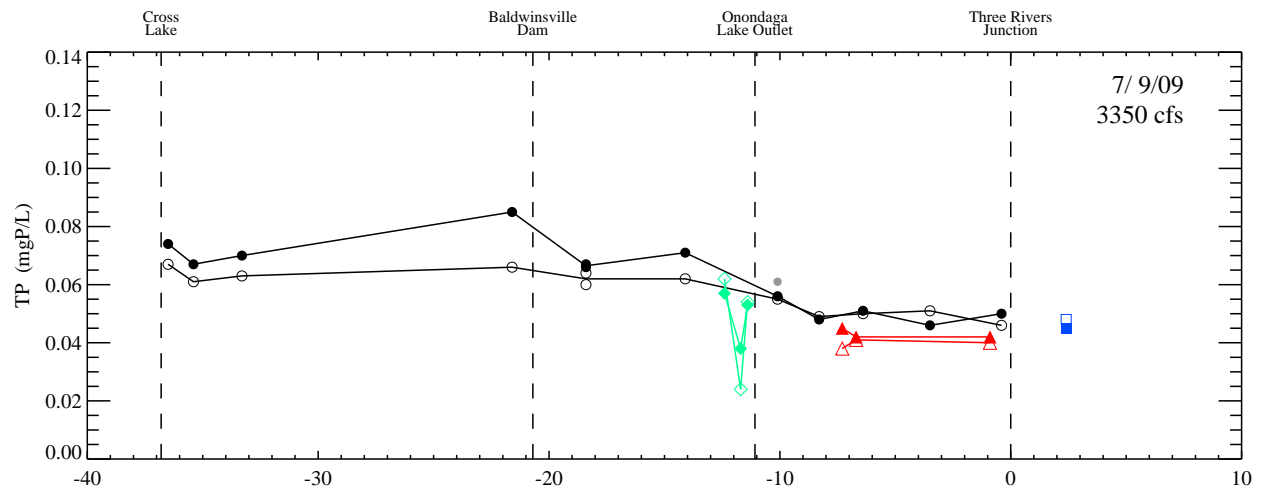


## Spatial profiles of SRP collected from the Three Rivers System during 2009.

Notes: (1) River km measured from Three Rivers Junction, upstream (-) for Seneca and Oneida / downstream (+) for Oswego; (2) Open symbols represent surface samples, filled symbols represent bottom samples, gray circles represent mid-depth samples, and open symbols with dots represent composite samples; (3) Baldwinsville flow on sampling dates shown in each panel.

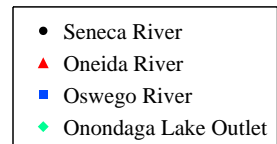
- Seneca River
- ▲ Oneida River
- Oswego River
- ◆ Onondaga Lake Outlet

# TP



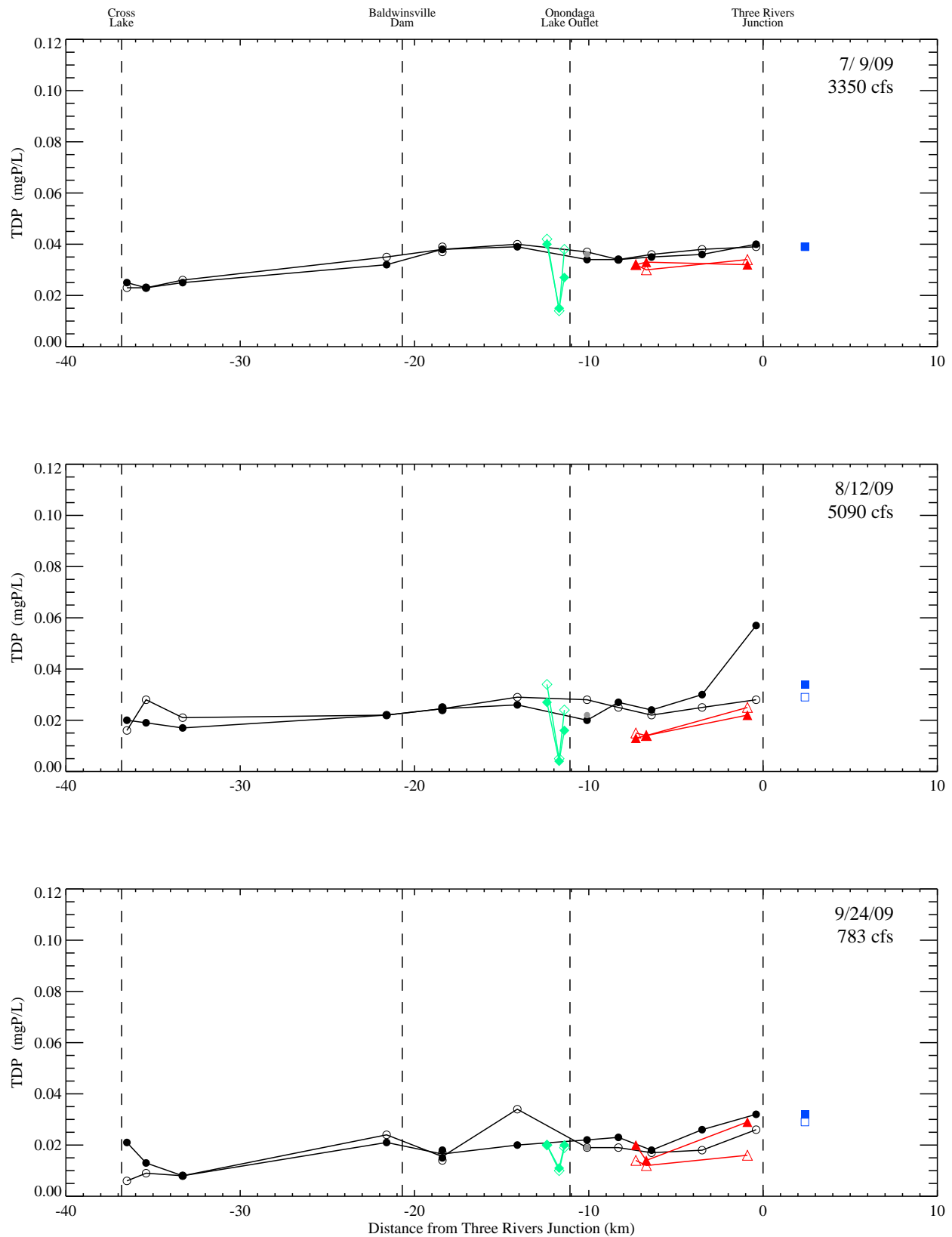
## Spatial profiles of total P collected from the Three Rivers System during 2009.

Notes: (1) River km measured from Three Rivers Junction, upstream (-) for Seneca and Oneida / downstream (+) for Oswego; (2) Open symbols represent surface samples, filled symbols represent bottom samples, gray circles represent mid-depth samples, and open symbols with dots represent composite samples; (3) Baldwinsville flow on sampling dates shown in each panel.



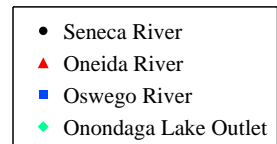


# TDP

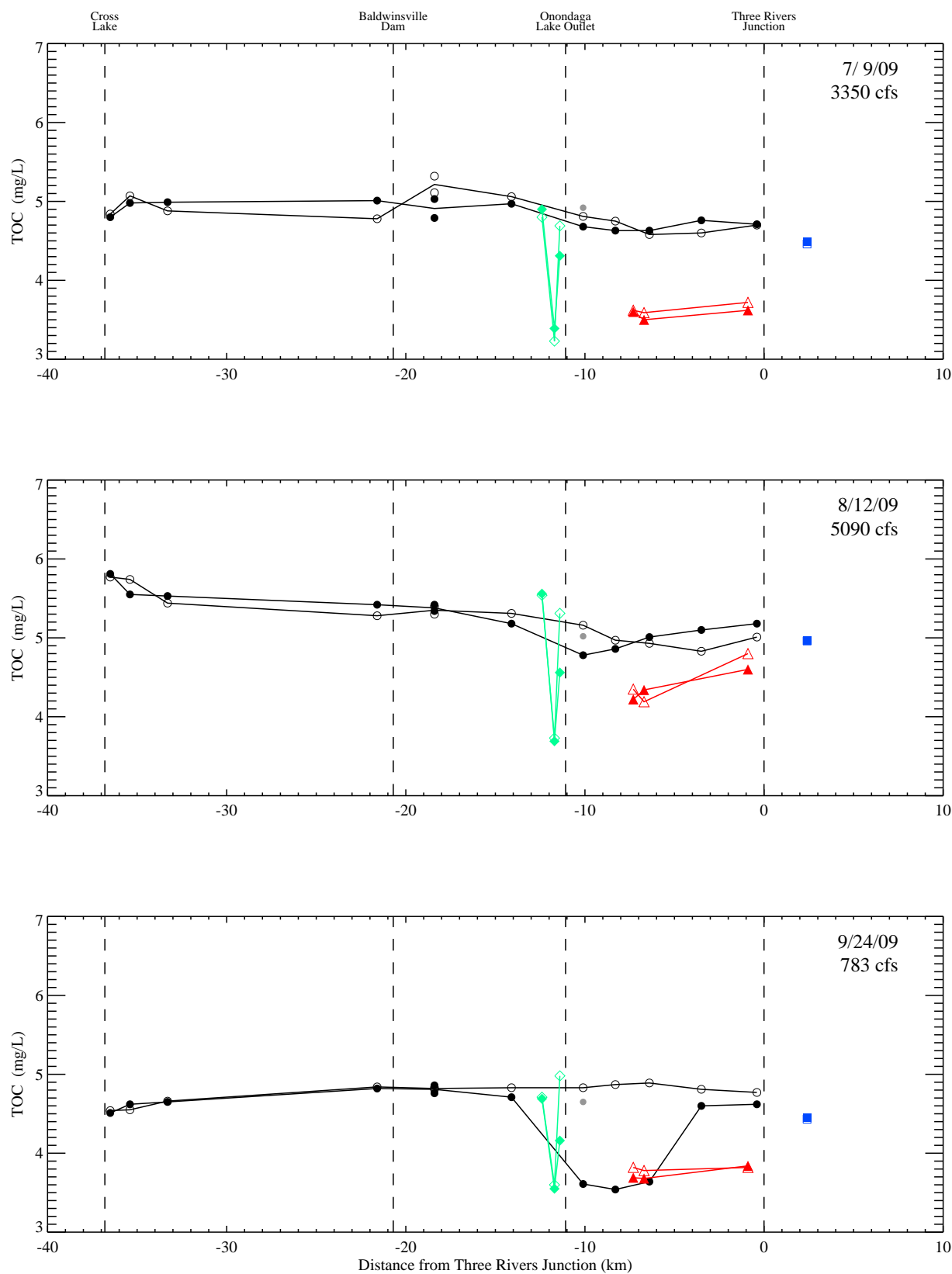


## Spatial profiles of total dissolved P collected from the Three Rivers System during 2009.

Notes: (1) River km measured from Three Rivers Junction, upstream (-) for Seneca and Oneida / downstream (+) for Oswego; (2) Open symbols represent surface samples, filled symbols represent bottom samples, gray circles represent mid-depth samples, and open symbols with dots represent composite samples; (3) Baldwinsville flow on sampling dates shown in each panel.

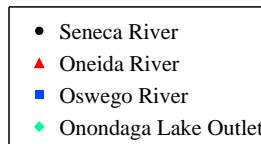


# TOC

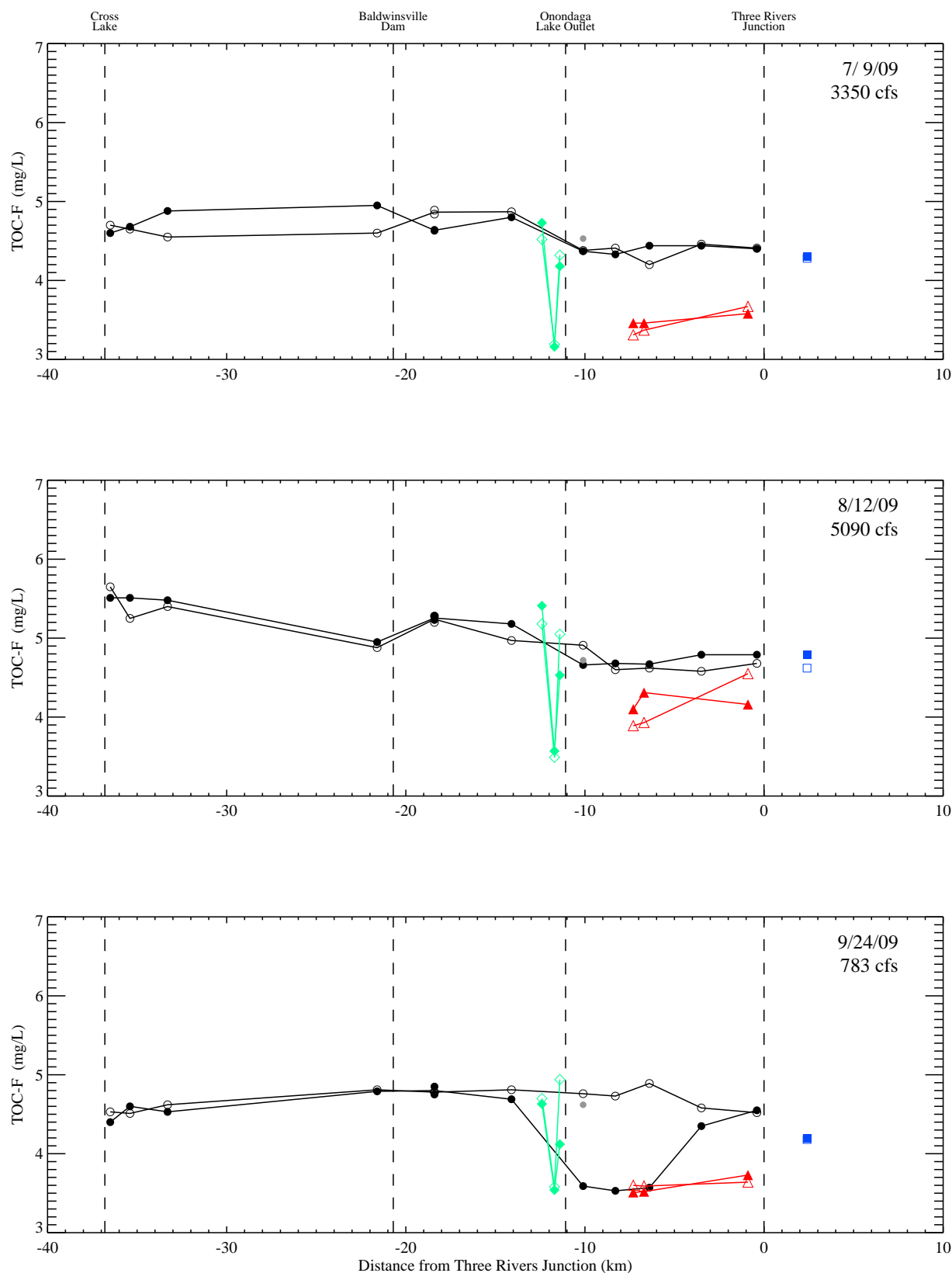


## Spatial profiles of TOC collected from the Three Rivers System during 2009.

Notes: (1) River km measured from Three Rivers Junction, upstream (-) for Seneca and Oneida / downstream (+) for Oswego; (2) Open symbols represent surface samples, filled symbols represent bottom samples, gray circles represent mid-depth samples, and open symbols with dots represent composite samples; (3) Baldwinsville flow on sampling dates shown in each panel.

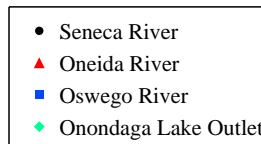


# TOC-F

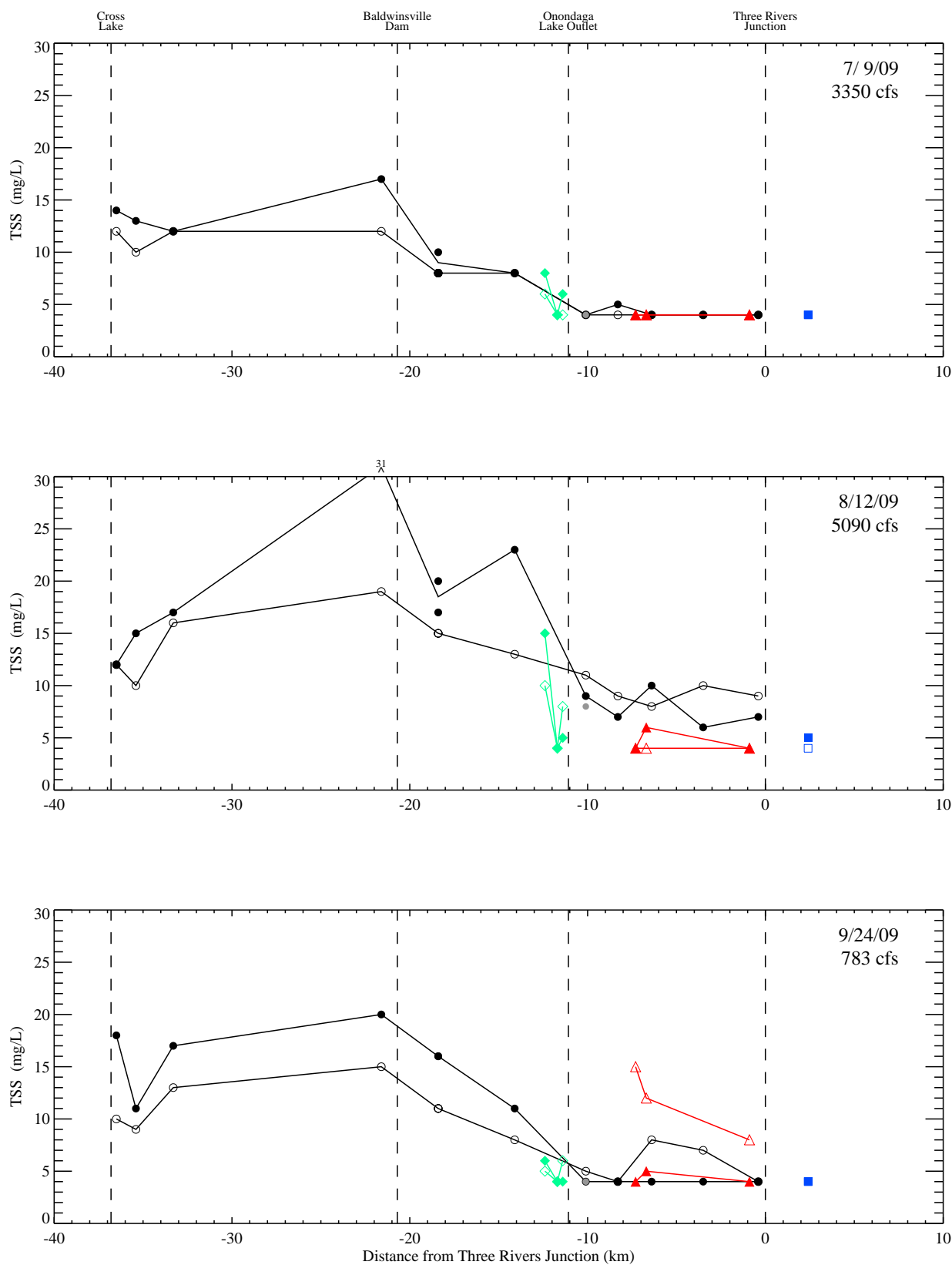


## Spatial profiles of TOC (filtered) collected from the Three Rivers System during 2009.

Notes: (1) River km measured from Three Rivers Junction, upstream (-) for Seneca and Oneida / downstream (+) for Oswego; (2) Open symbols represent surface samples, filled symbols represent bottom samples, gray circles represent mid-depth samples, and open symbols with dots represent composite samples; (3) Baldwinsville flow on sampling dates shown in each panel.



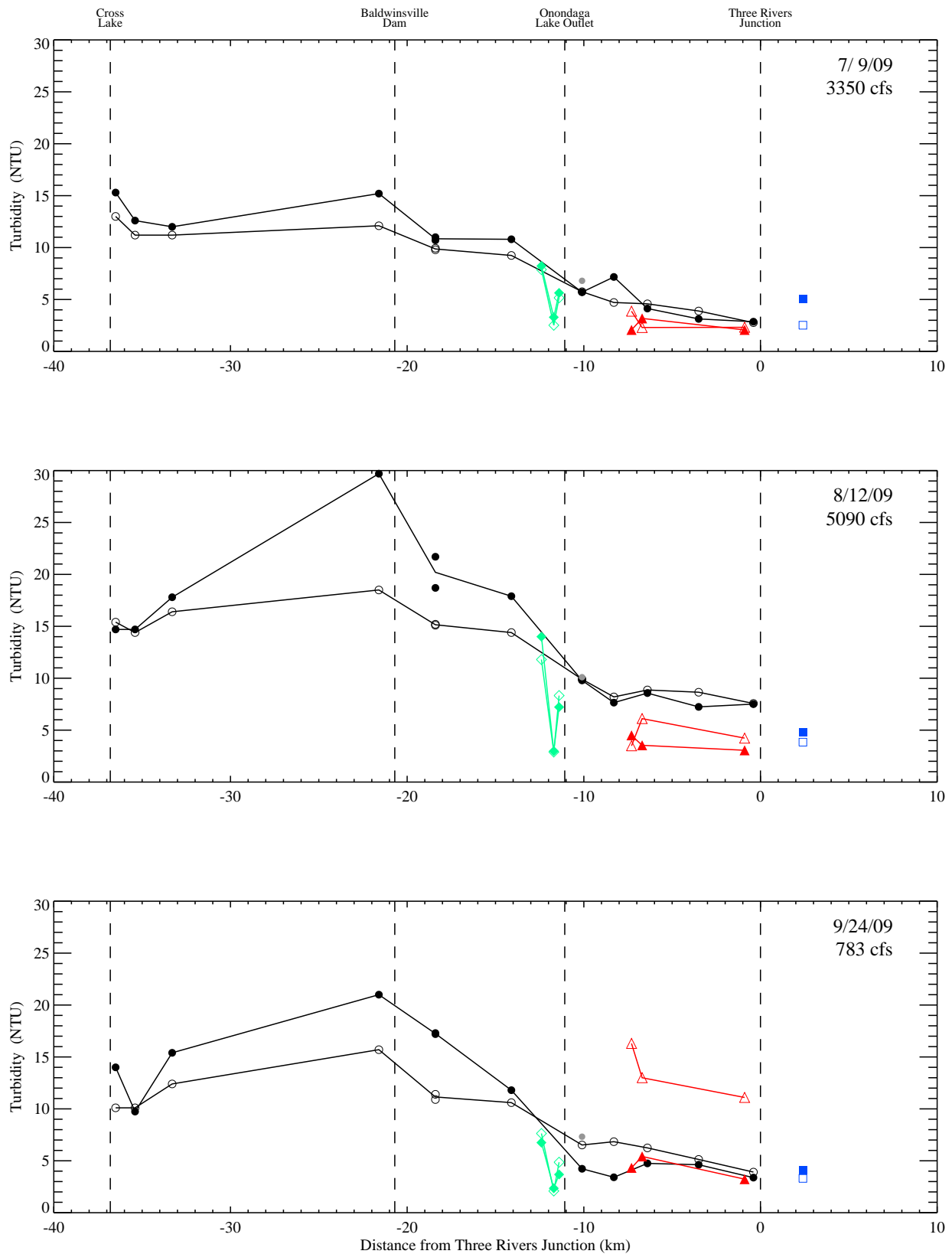
# TSS



## Spatial profiles of TSS collected from the Three Rivers System during 2009.

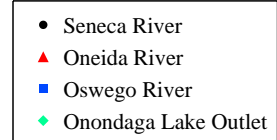
Notes: (1) River km measured from Three Rivers Junction, upstream (-) for Seneca and Oneida / downstream (+) for Oswego; (2) Open symbols represent surface samples, filled symbols represent bottom samples, gray circles represent mid-depth samples, and open symbols with dots represent composite samples; (3) Baldwinsville flow on sampling dates shown in each panel.

## Turbidity

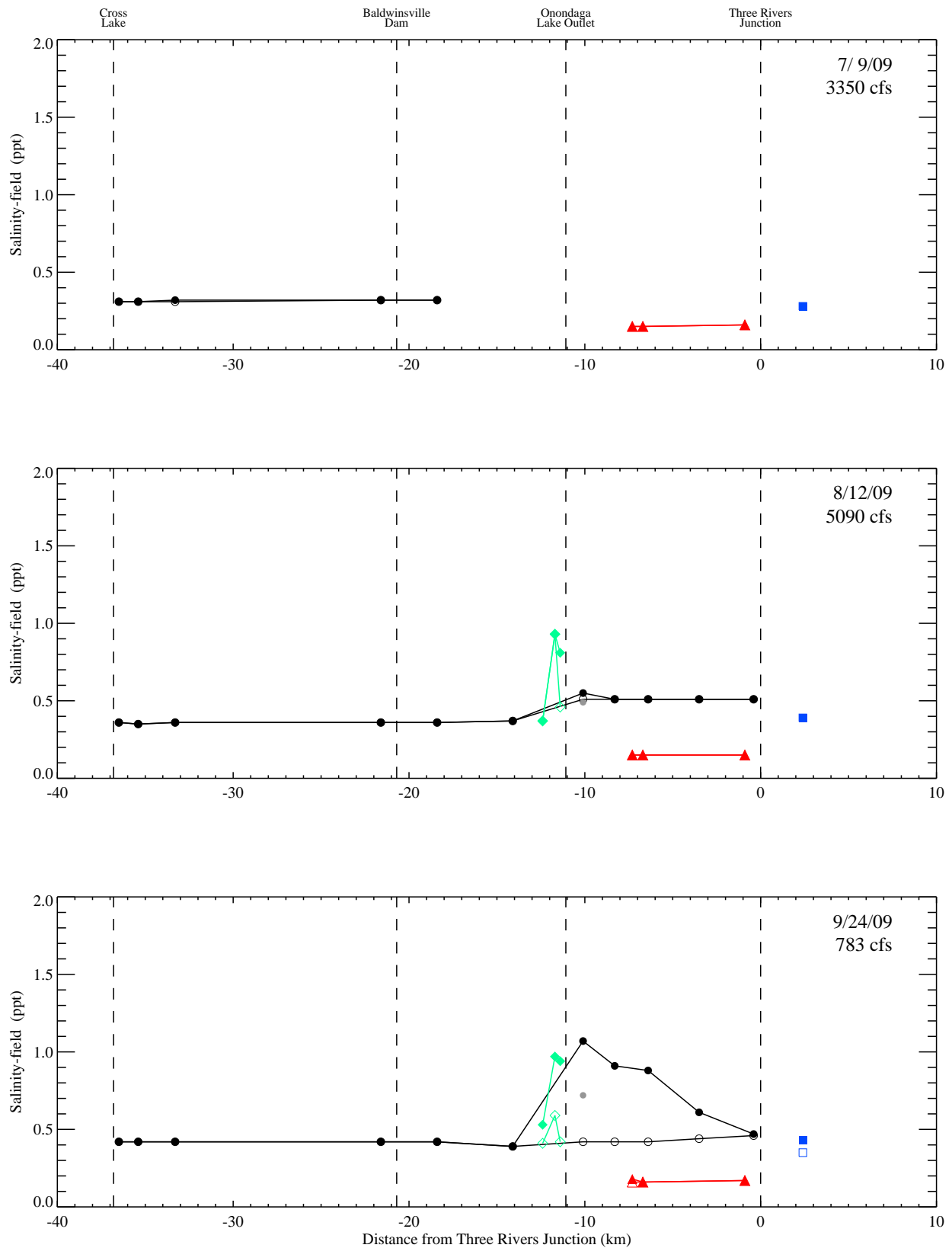


### Spatial profiles of turbidity collected from the Three Rivers System during 2009.

*Notes: (1) River km measured from Three Rivers Junction, upstream (-) for Seneca and Oneida / downstream (+) for Oswego; (2) Open symbols represent surface samples, filled symbols represent bottom samples, gray circles represent mid-depth samples, and open symbols with dots represent composite samples; (3) Baldwinsville flow on sampling dates shown in each panel.*



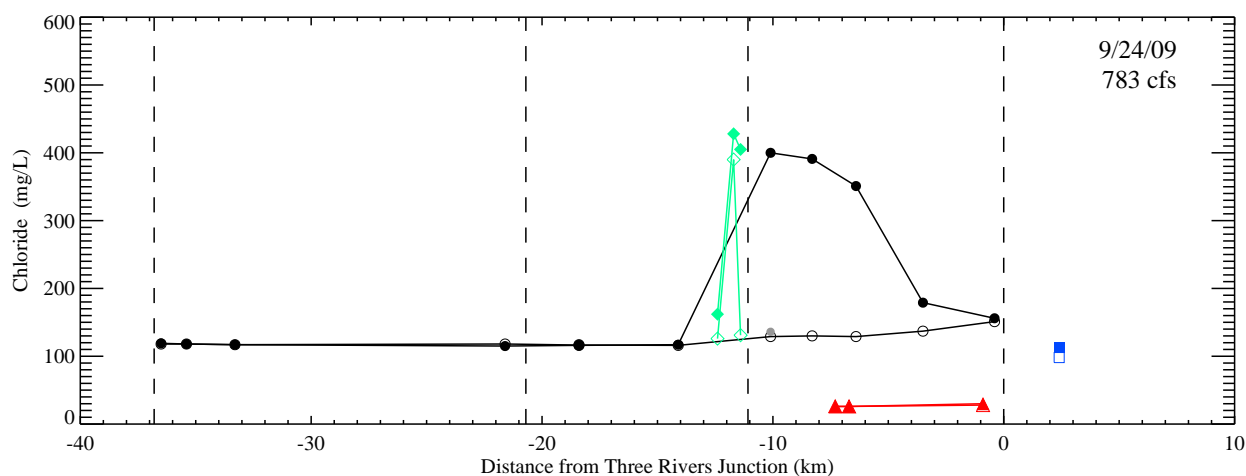
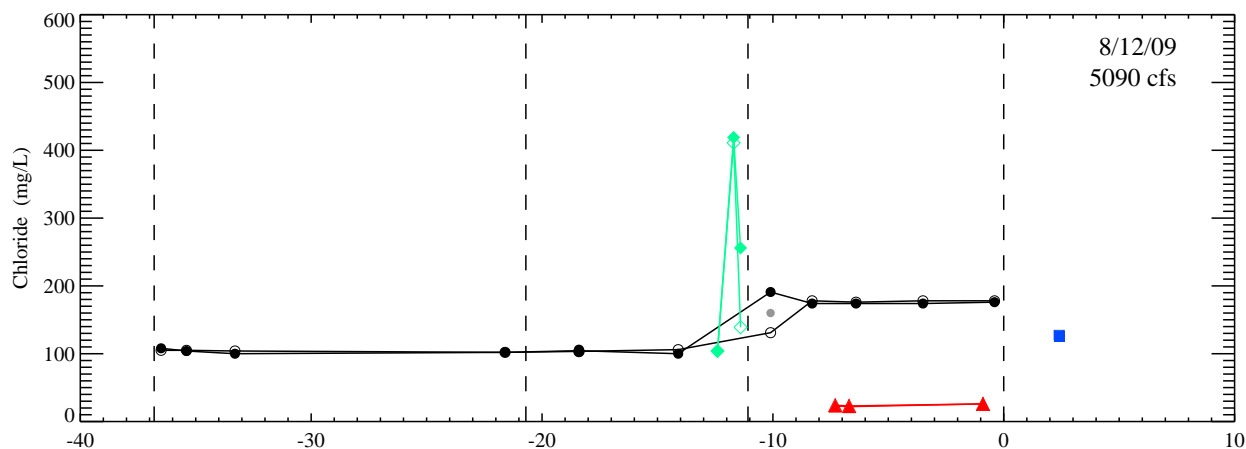
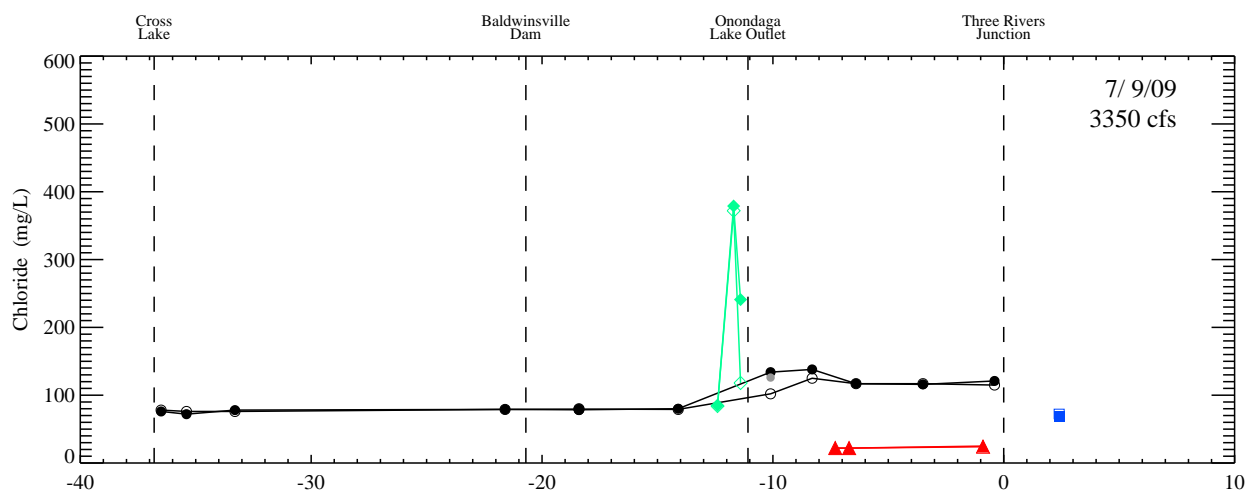
## Salinity-field



### Spatial profiles of salinity collected from the Three Rivers System during 2009.

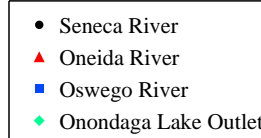
Notes: (1) River km measured from Three Rivers Junction, upstream (-) for Seneca and Oneida / downstream (+) for Oswego; (2) Open symbols represent surface samples, filled symbols represent bottom samples, gray circles represent mid-depth samples, and open symbols with dots represent composite samples; (3) Baldwinsville flow on sampling dates shown in each panel.

# Chloride

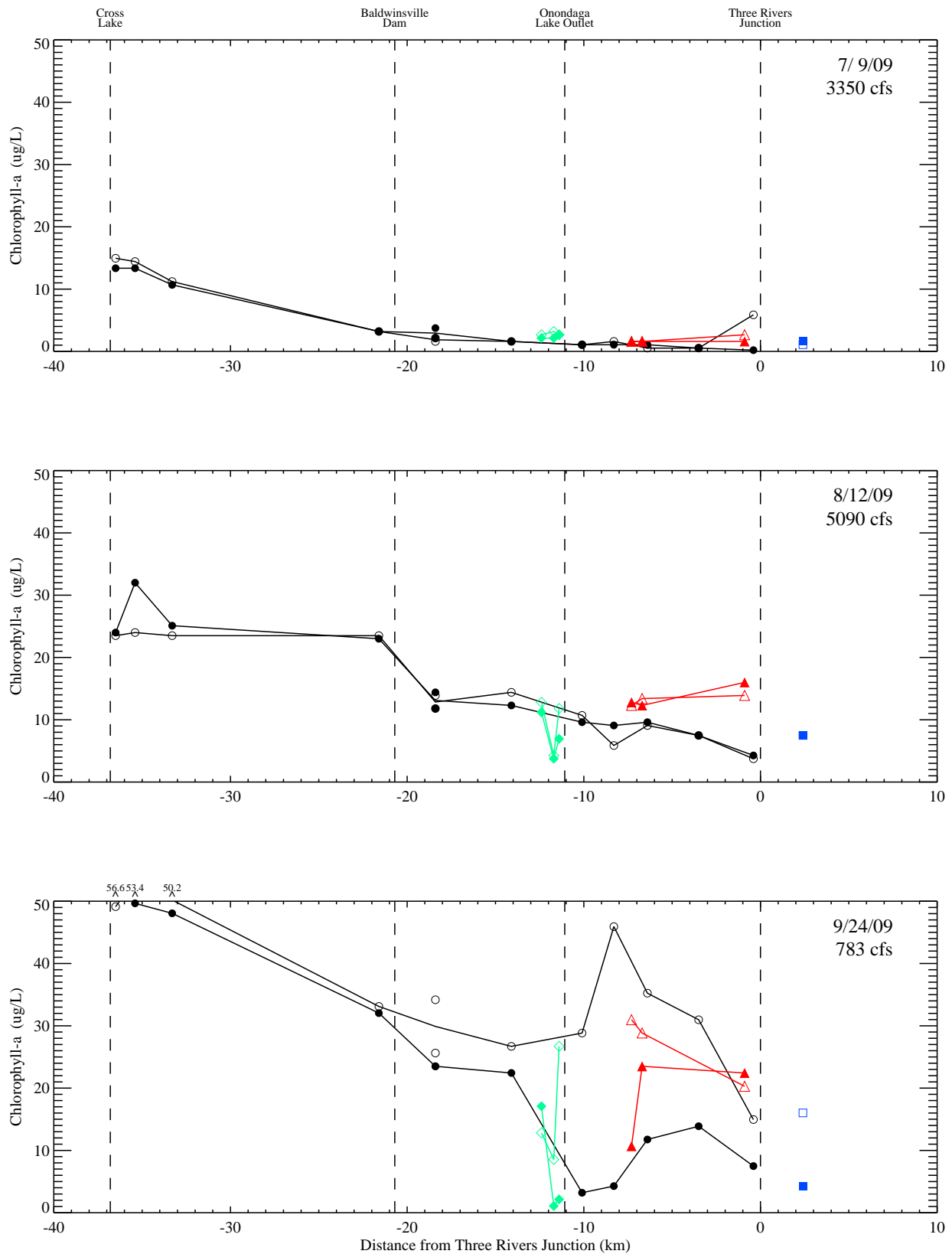


## Spatial profiles of chloride collected from the Three River System during 2009.

Notes: (1) River km measured from Three Rivers Junction, upstream (-) for Seneca and Oneida / downstream (+) for Oswego; (2) Open symbols represent surface samples, filled symbols represent bottom samples, gray circles represent mid-depth samples, and open symbols with dots represent composite samples; (3) Baldwinsville flow on sampling dates shown in each panel.

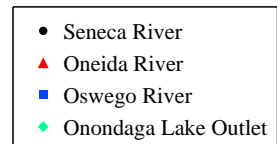


# Chlorophyll-a



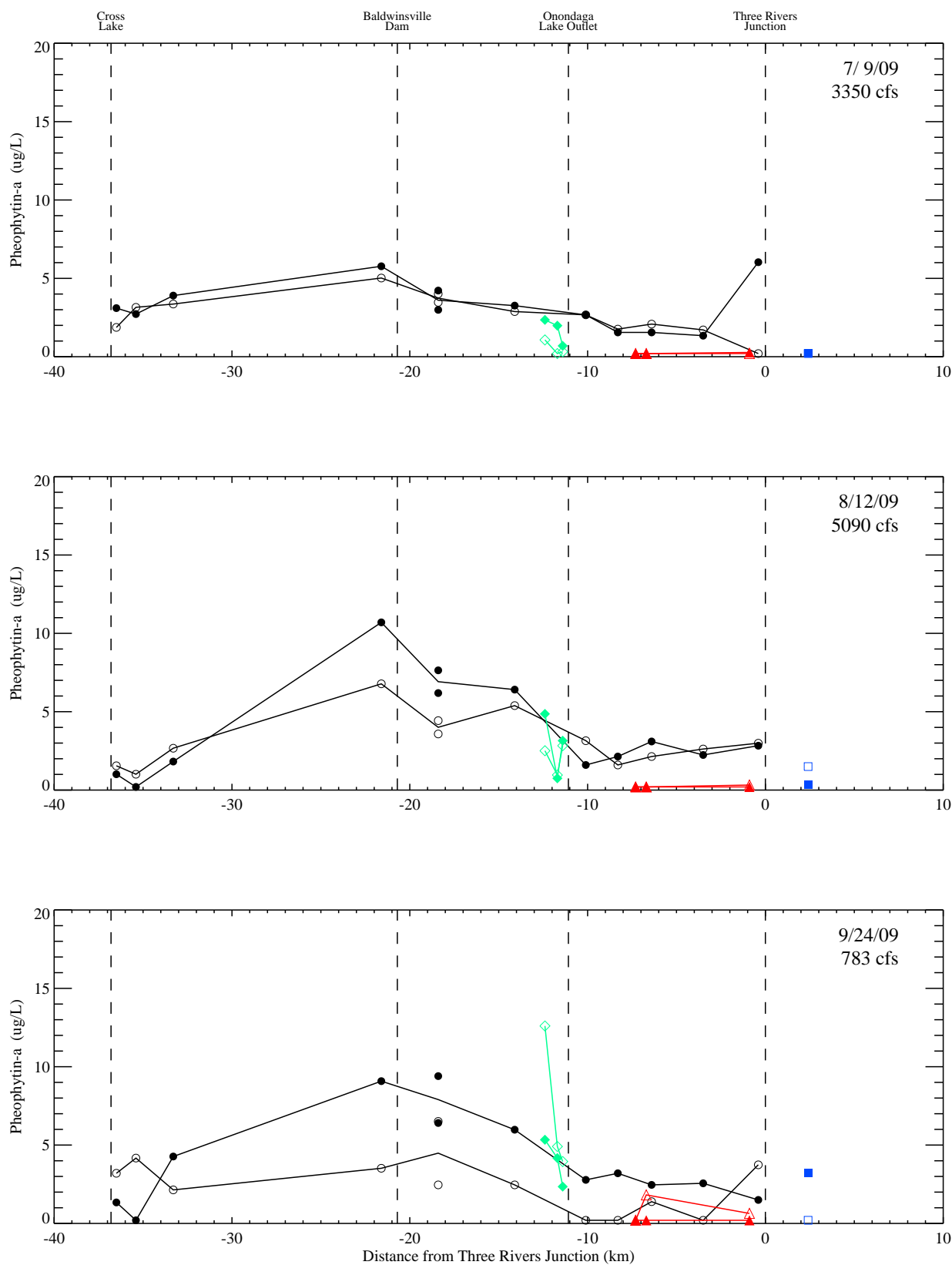
## Spatial profiles of chlorophyll-a collected from the Three Rivers System during 2009.

Notes: (1) River km measured from Three Rivers Junction, upstream (-) for Seneca and Oneida / downstream (+) for Oswego; (2) Open symbols represent surface samples, filled symbols represent bottom samples, gray circles represent mid-depth samples, and open symbols with dots represent composite samples; (3) Baldwinsville flow on sampling dates shown in each panel.





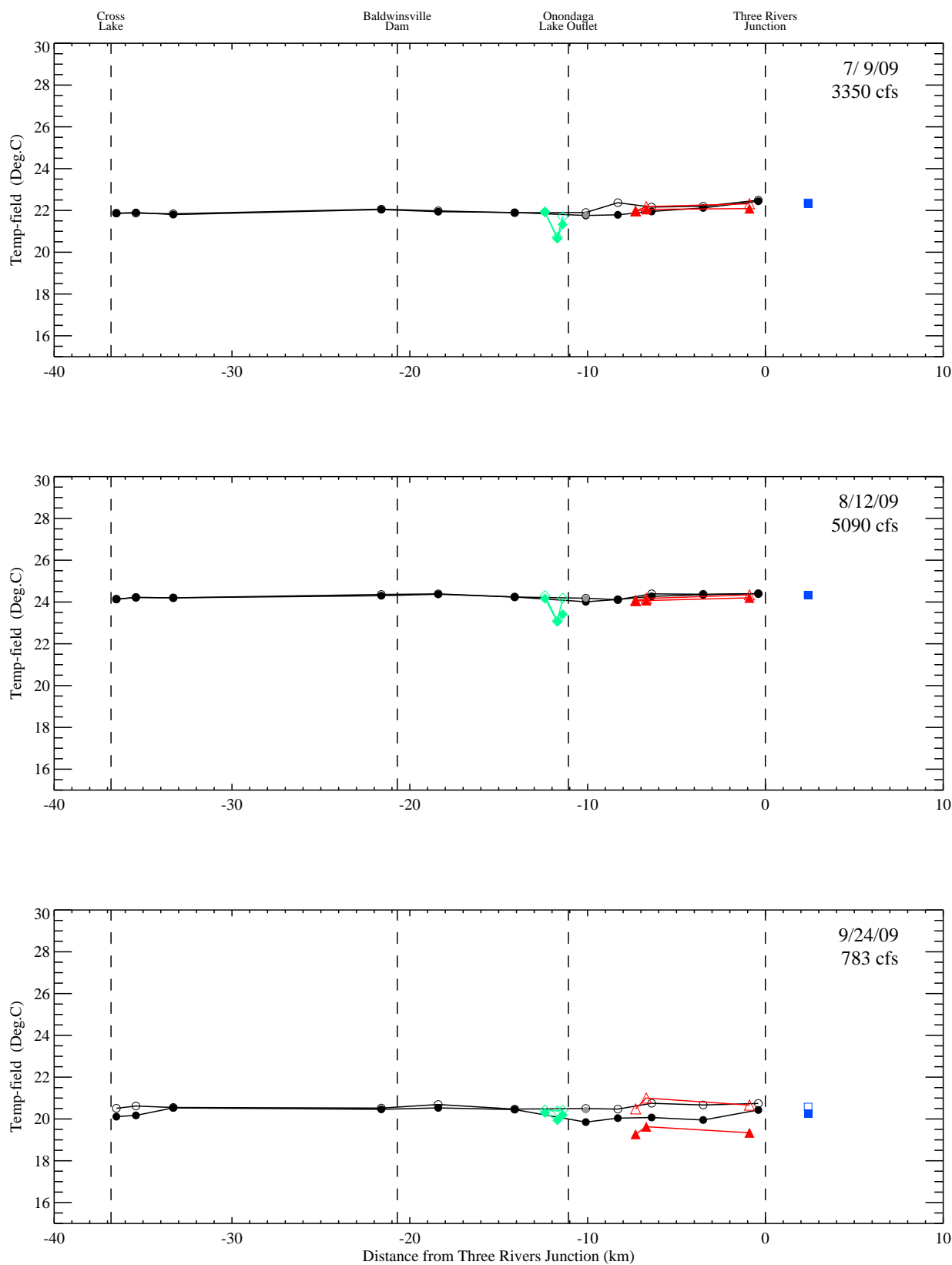
## Pheophytin-a



### Spatial profiles of pheophytin-a collected from the Three Rivers System during 2009.

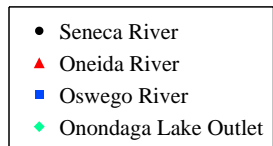
Notes: (1) River km measured from Three Rivers Junction, upstream (-) for Seneca and Oneida / downstream (+) for Oswego; (2) Open symbols represent surface samples, filled symbols represent bottom samples; gray circles represent mid-depth samples, and open symbols with dots represent composite samples; (3) Baldwinsville flow on sampling dates shown in each panel.

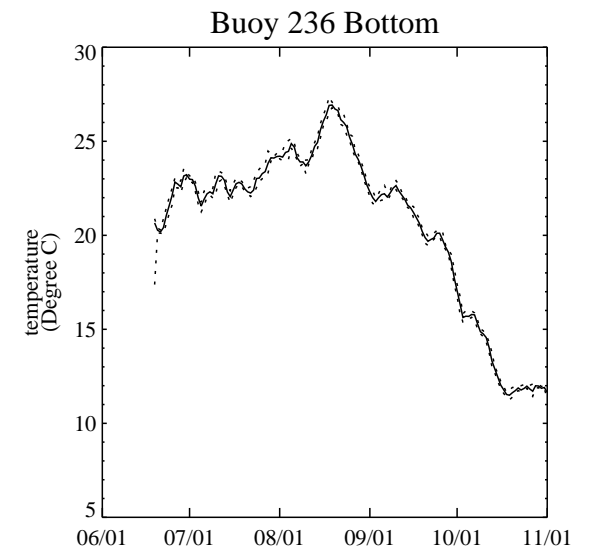
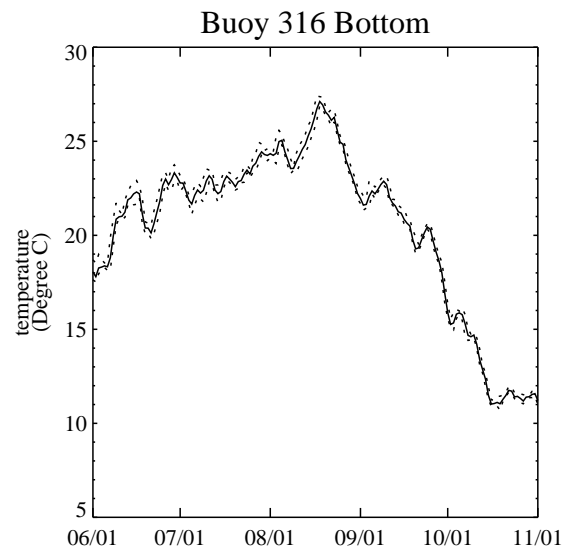
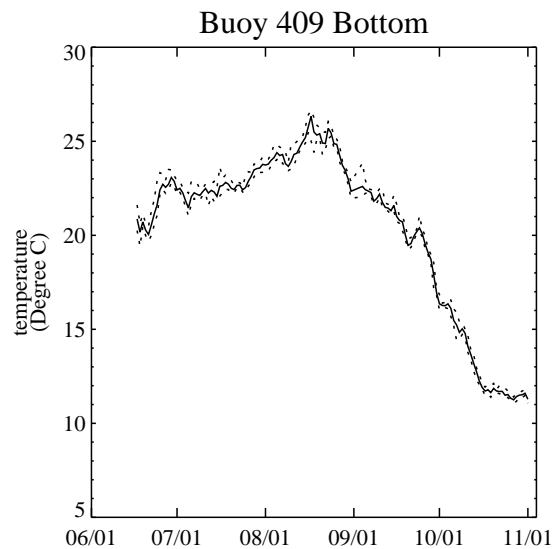
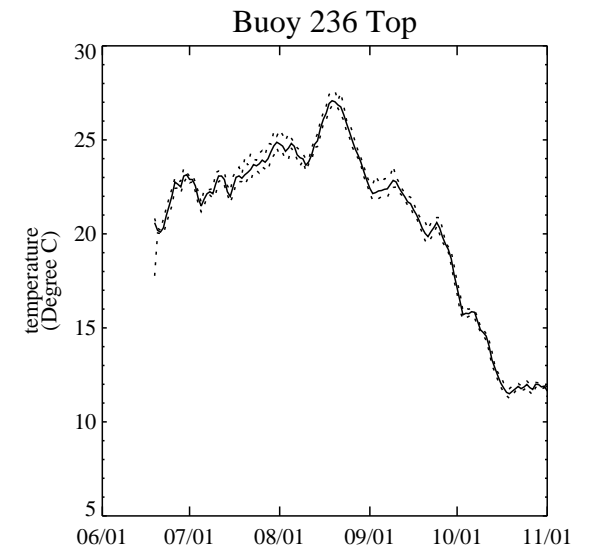
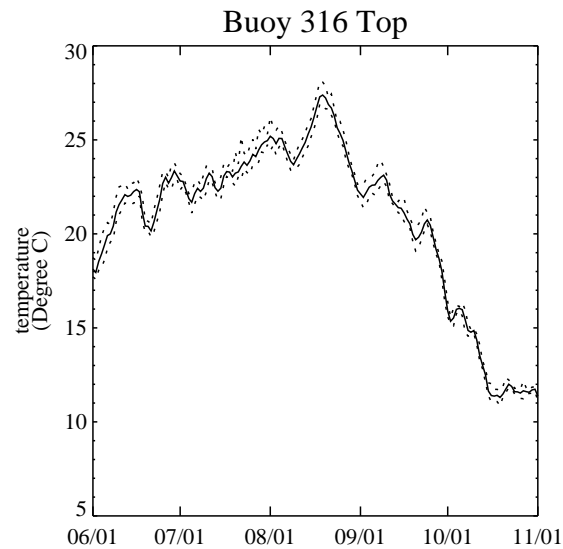
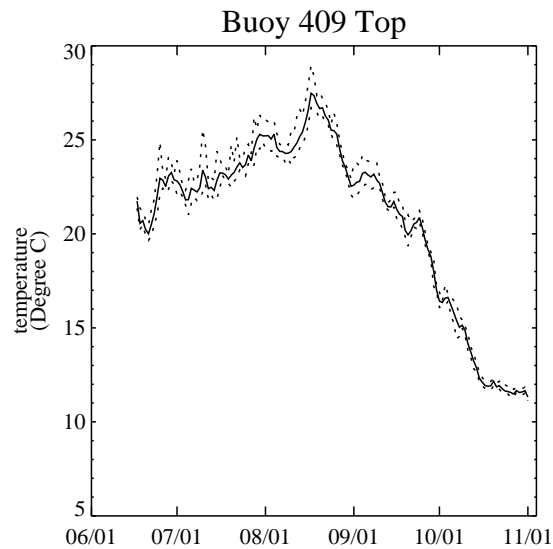
## Temp-field



### Spatial profiles of temperature collected from the Three Rivers System during 2009.

Notes: (1) River km measured from Three Rivers Junction, upstream (-) for Seneca and Oneida / downstream (+) for Oswego; (2) Open symbols represent surface samples, filled symbols represent bottom samples, gray circles represent mid-depth samples, and open symbols with dots represent composite samples; (3) Baldwinsville flow on sampling dates shown in each panel.

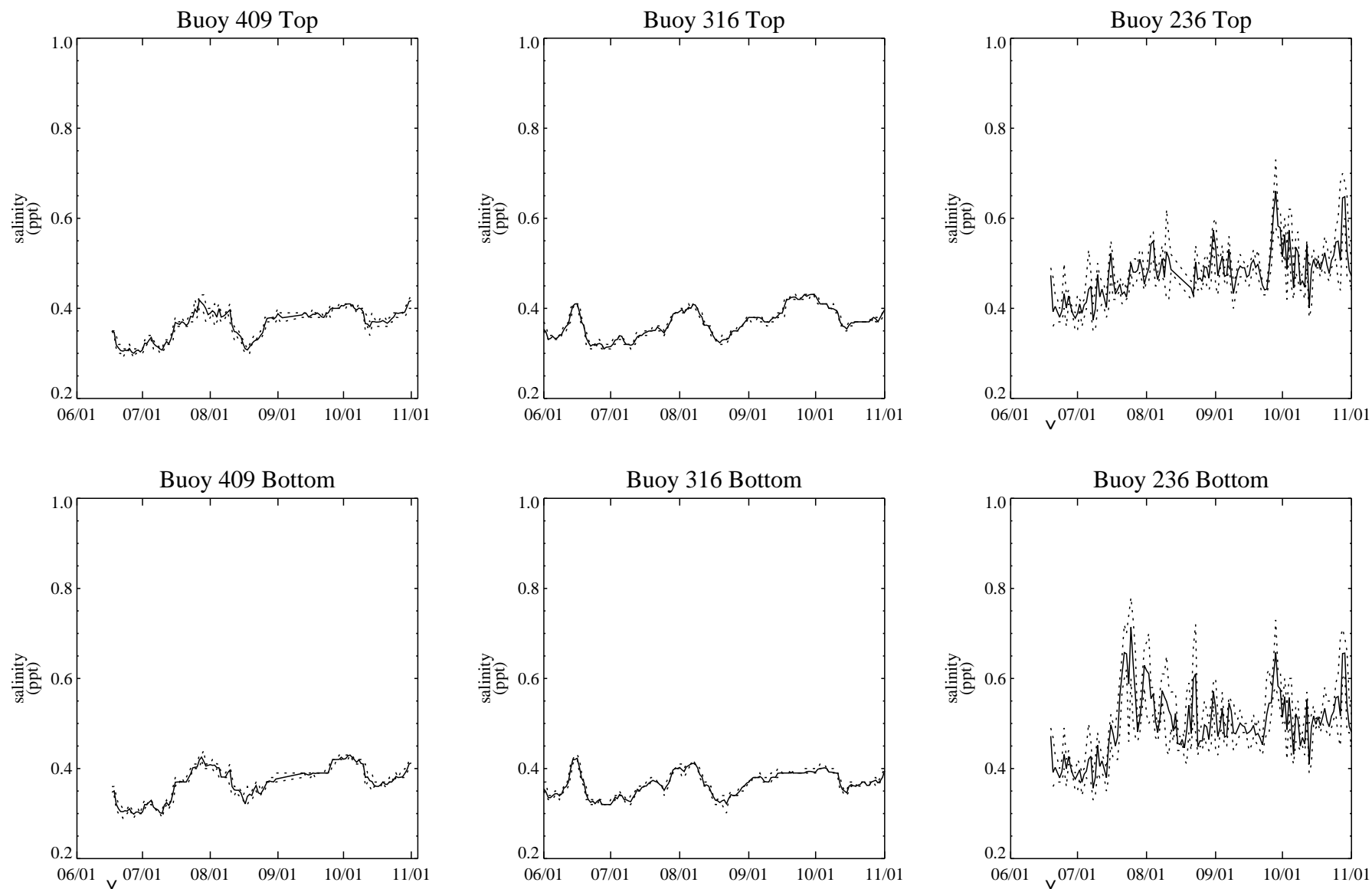




**Temporal profiles of daily average and variations of temperature recorded by YSI sondes at Buoys 409, 316 and 236 during 2009.**

*Notes: Results are only shown for days that at least half of the 15-minute instantaneous data were available.*

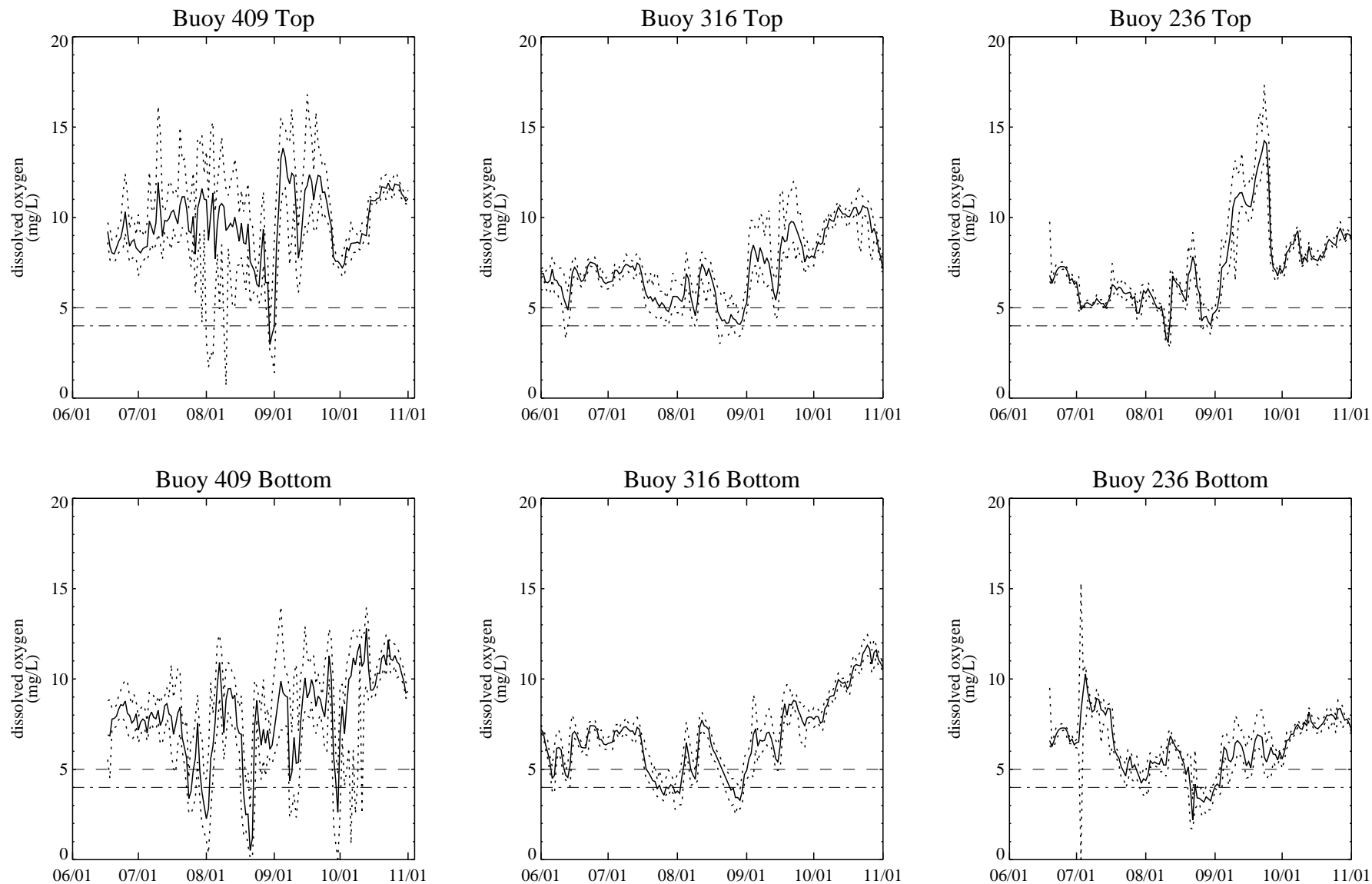




**Temporal profiles of daily average and variations of salinity recorded by YSI sondes at Buoys 409, 316 and 236 during 2009.**

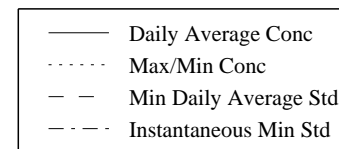
*Notes: Results are only shown for days that at least half of the 15-minute instantaneous data were available.*

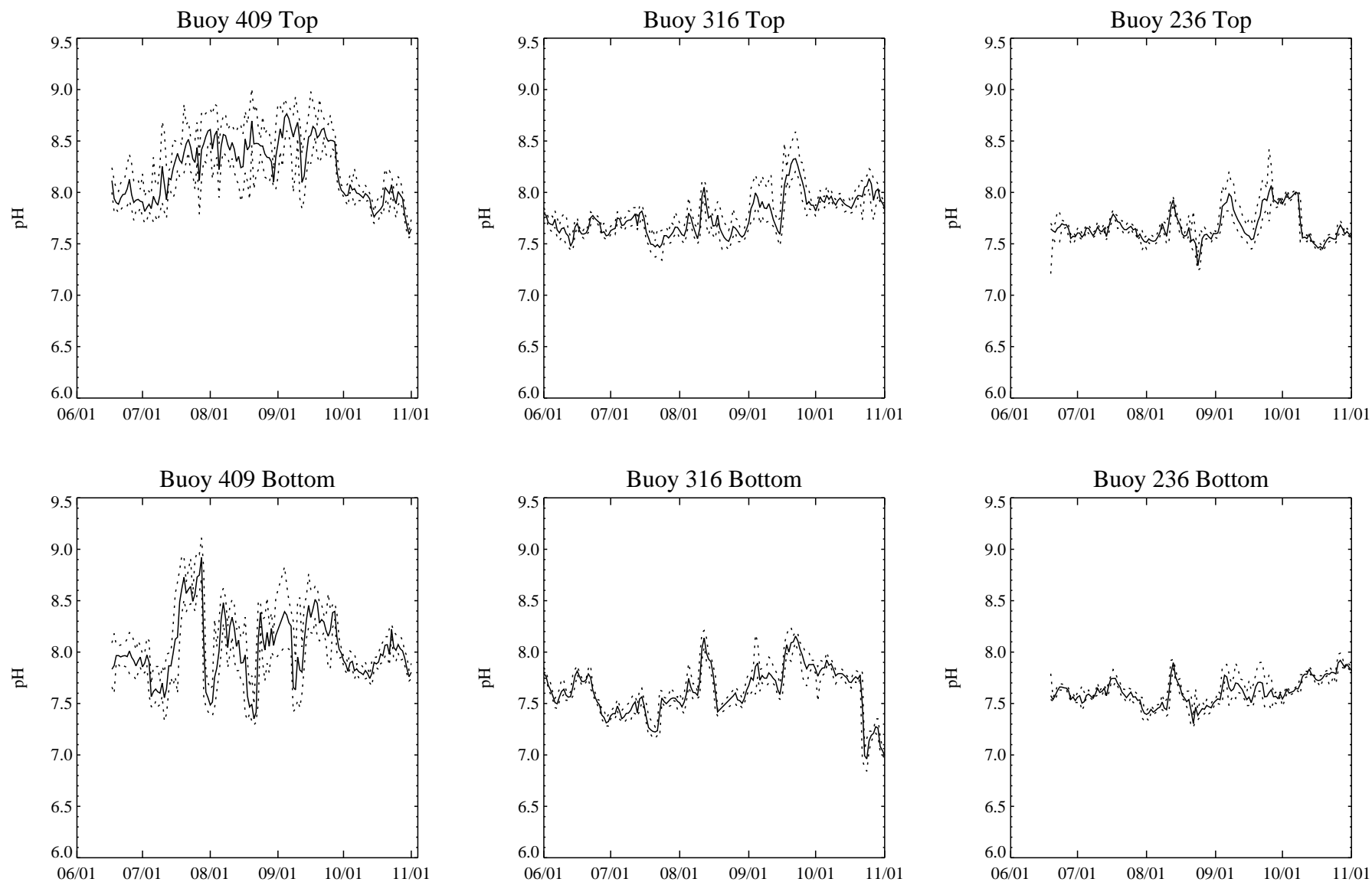




**Temporal profiles of daily average and variations of dissolved oxygen recorded by YSI sondes at Buoys 409, 316 and 236 during 2009.**

*Notes: Results are only shown for days that at least half of the 15-minute instantaneous data were available.*

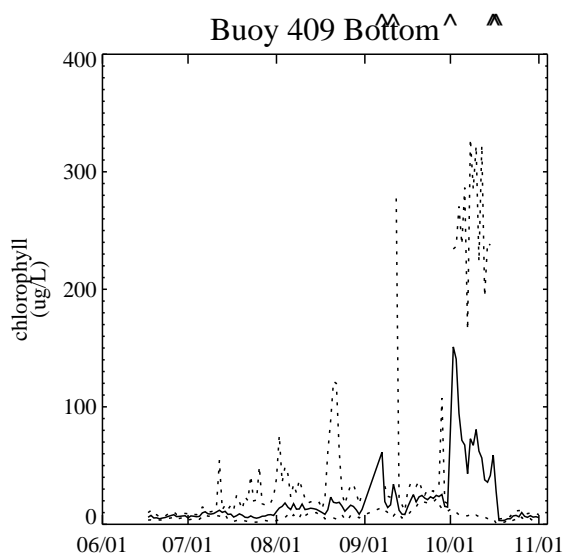
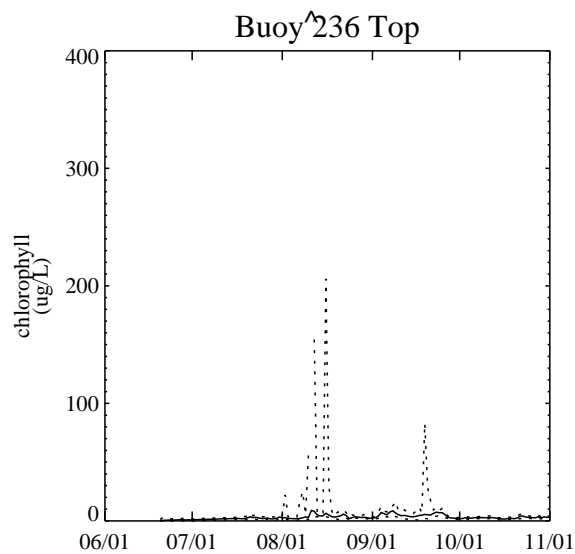
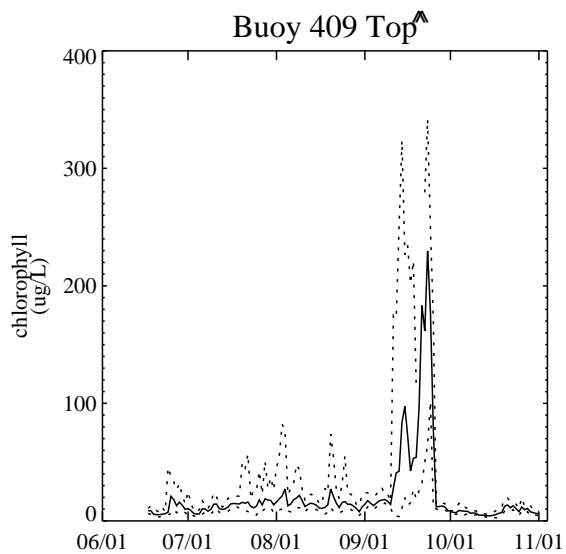




**Temporal profiles of daily average and variations of pH recorded by YSI sondes at Buoys 409, 316 and 236 during 2009.**

*Notes: Results are only shown for days that at least half of the 15-minute instantaneous data were available.*





**Temporal profiles of daily average and variations of chlorophyll recorded by YSI sondes at Buoys 409 and 236 during 2009 .**

*Notes: Results are only shown for days that at least half of the 15-minute instantaneous data were available.*



Summary of Seneca River flow conditions between 2001 and 2009.

This indicates that the summer flow conditions in 2009 were moderate compared to past years.

Year	Average summer flow rate (cfs)	Days below 7Q10 criteria
2001	800	0
2002	842	7
2003	2028	0
2004	4518	0
2005	1052	8
2006	4607	3
2007	774	4
2008	1497	0
2009	1606	2

*Notes:*

*Summer season starts on July 1<sup>st</sup> and ends on September 31<sup>st</sup>.*



Summary of AMP river sampling locations and total numbers of samples collected in 2009.

Buoy	Buoy 412	Buoy 409	Buoy 397	Buoy 362	Buoy 334	Buoy 316	Buoy 294	Buoy 269	Buoy 260	Buoy 255	Buoy 240	Buoy 222	Buoy 178	Buoy 182	Buoy 212	Buoy 10	LO1	LO2	LO3
River	Seneca	Seneca	Seneca	Seneca	Seneca	Seneca	Seneca	Seneca	Seneca	Seneca	Seneca	Seneca	Oneida	Oneida	Oneida	Oswego	Lake Outlet	Lake Outlet	Lake Outlet
Kilometer1	-36.5	-35.4	-33.3	-26.9	-21.6	-18.4	-14.1	-10.1	-8.3	-6.4	-3.5	-0.4	-7.3	-6.7	-0.9	2.4	-11.7	-12.4	-11.4
DO-field	6	6	6	0	6	12	6	9	6	6	6	6	6	6	6	6	6	6	6
Chlorophyll-a	6	6	6	0	6	24	6	6	6	6	6	6	6	6	6	6	6	6	6
Pheophytin-a	6	6	6	0	6	24	6	6	6	6	6	6	6	6	6	6	6	6	6
TOC	6	6	6	0	6	24	6	9	6	6	6	6	6	6	6	6	6	6	6
TOC-F	6	6	6	0	6	24	6	9	6	6	6	6	6	6	6	6	6	6	6
NH3-N	6	6	6	0	6	24	6	9	6	6	6	6	6	6	6	6	6	6	6
NO2	6	6	6	0	6	24	6	9	6	6	6	6	6	6	6	6	6	6	6
NO3	6	6	6	0	6	24	6	9	6	6	6	6	6	6	6	6	6	6	6
ORG-N	6	6	6	0	6	24	6	9	6	6	6	6	6	6	6	6	6	6	6
TKN	6	6	6	0	6	24	6	9	6	6	6	6	6	6	6	6	6	6	6
TKN-F	6	6	6	0	6	24	6	9	6	6	6	6	6	6	6	6	6	6	6
TP	6	6	6	0	6	24	6	9	6	6	6	6	6	6	6	6	6	6	6
SRP	6	6	6	0	6	24	6	9	6	6	6	6	6	6	6	6	6	6	6
TDP	6	6	6	0	6	24	6	9	6	6	6	6	6	6	6	6	6	6	6
Chloride	6	6	6	0	6	24	6	9	6	6	6	6	6	6	6	6	6	6	6
COND-field	6	6	6	0	6	12	6	9	6	6	6	6	6	6	6	6	6	6	6
Salinity-field	6	6	6	0	6	12	4	6	4	4	4	4	6	6	6	6	4	4	4
Temp-field	6	6	6	0	6	12	6	9	6	6	6	6	6	6	6	6	6	6	6
pH-field	6	6	6	0	6	12	6	9	6	6	6	6	6	6	6	6	6	6	6
Turbidity	6	6	6	0	6	24	6	9	6	6	6	6	6	6	6	6	6	6	6
TSS	6	6	6	0	6	24	6	9	6	6	6	6	6	6	6	6	6	6	6

Note:

<sup>1</sup> River kilometers measured from Three Rivers Junction, upstream (-) for Seneca and Oneida / downstream (+) for Oswego.

Summary of non-compliances Dissolved Oxygen, Nitrite and Total Ammonia in the Seneca River during 2009.

Parameter	Sampling Date	Location	Depth	Value (mg/L)
Dissolved Oxygen (Instantaneous Compliance Criteria = 4 mg/L)	8/27/2009	BUOY-316	BOTTOM	3.62
	8/27/2009	BUOY-316	TOP	3.86
Parameter	Sampling Date	Location	Depth	Value (mgN/L)
NO2-N (Compliance Criteria = 0.1 mgN/L)	None	None	None	--
Total NH3 (NYSDEC Criteria Calculated from pH and Temperature)	None	None	None	--

Summary of 15-minute dissolved oxygen (DO) data <sup>(1)</sup> collected by the YSI sondes in 2009.

Sonde Location	Deployment Dates <sup>(2)</sup>		Operation (days) <sup>(3)</sup>	DO < 5 mg/L (days) <sup>(4)</sup>	DO < 4 mg/L (days) <sup>(5)</sup>
	Start	End			
Buoy 409 (Top)	6/17/2009	11/4/2009	141	3	9
Buoy 409 (Bottom)			138	17	30
Buoy 409 (Top or Bottom)			141	20	36
Buoy 316 (Top)	5/28/2009	11/2/2009	157	17	14
Buoy 316 (Bottom)			151	31	22
Buoy 316 (Top or Bottom)			157	37	30
Buoy 236 (Top)	6/19/2009	11/2/2009	136	16	8
Buoy 236 (Bottom)			136	23	21
Buoy 236 (Top or Bottom)			136	29	25

Notes:

(1) Blank and negative DO values were excluded from analysis.

(2) Not all parameters may have been measured during the deployment dates.

(3) DO measured at least half of the time within one day.

(4) NYSDEC minimum daily average DO standard. Reported value represents number of days in which the daily average calculated from the 15-minute data was below the standard.

(5) NYSDEC instantaneous minimum DO standard. Reported value represents the number of days in which one or more of the 15-minute readings was below the standard.