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SEDIMENT OXYGEN DEMAND IN SIX LAKES OF THE UPPER ST. JOHNS RIVER BASIN

FINAL REPORT

Sediment Oxygen Demand in Six Lakes of the Upper St. Johns River Basin

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Introduction

The following sections summarize the field and laboratory data associated with four seasonal sediment samplings for sediment oxygen demand (SOD) determinations in six lakes in the Upper St. Johns River.

Sampling Sites

The areas of three (Lakes Winder, Poinsett, and Washington) of the six upper lakes in the St. Johns River are large enough to warrant two sediment sampling stations (Figure 1) – one representing shallow sediment depths and the other deeper sediment layers as indicated by unpublished soft sediment distribution map provided by the St. Johns River Water Management District. The remaining three lakes (Blue Cypress, Hell 'n Blazes, and Sawgrass) each had one sampling station. The GPS coordinates for each station/lake are provided in Table 1.

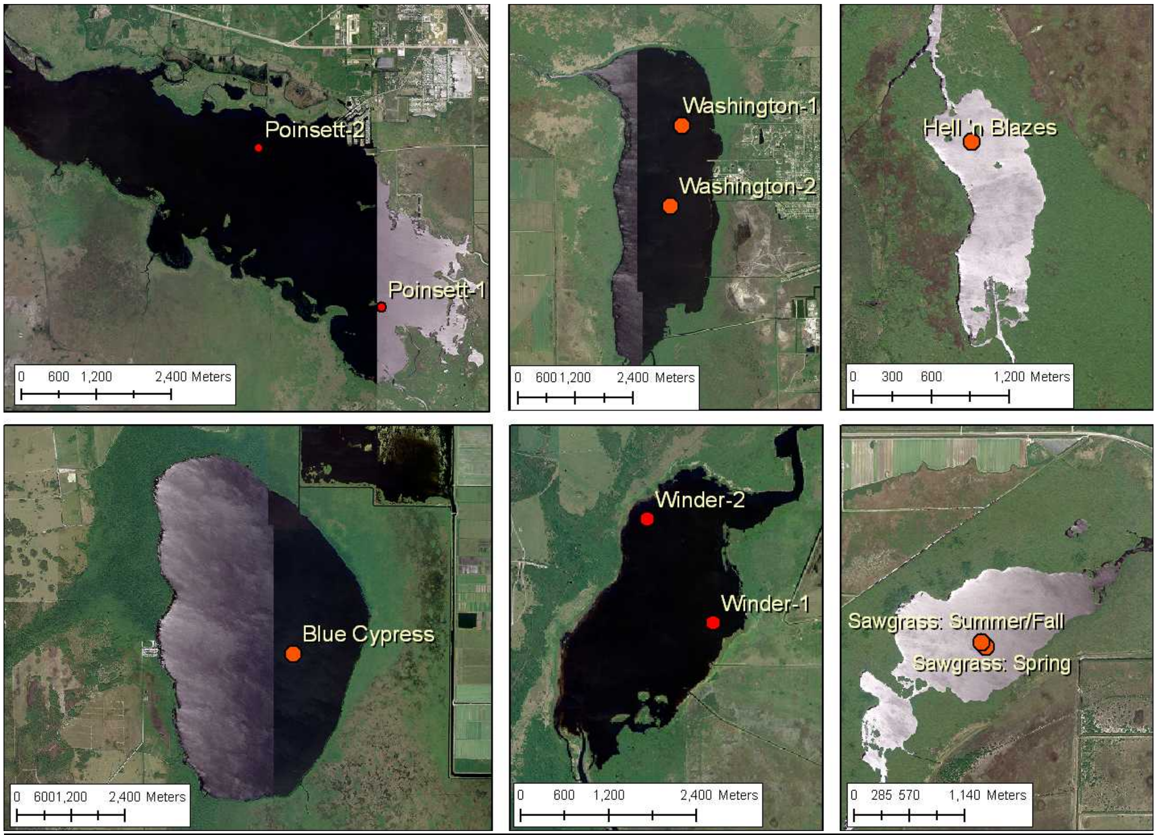

Figure 1. Aerial photographs of each of the six lakes with sampling sites shown.

Field Methods

At each station, triplicate sediment cores were obtained with 7.0 cm (i.d.) acrylic tubes attached to a piston corer equipped with a suction release valve. After detaching the acrylic cores from the piston corer, the bottom of the core was capped with a plastic cap. To prevent leakage, the seam between the top of the plastic cap and the outside wall of the core was covered with weatherproofing repair tape. The cores were immediately placed on ice. Surface water (4L – 8L) from each lake was also collected to serve as source water for the oxygenated overlying water within the sediment cores and as a control (i.e., absence of sediment) during the incubation.

Following the coring, *in situ* dissolved oxygen (DO) concentration and temperature (Table 1) were obtained approximately 10 cm above the sediment-water interface at each sampling station with a Hach Sension™156 multiparameter meter and a Hach DO sensor (Model 51970).

The DO sensor was air-calibrated in the field prior to reading the bottom water concentration. Water column depth, GPS coordinates, and field conditions were also noted (Tables 1 and 2).

Sampling of the six lakes were staggered over three separate field trips within a 6- to 11-day period during each of the four sampling seasons (spring: April 6-17, 2006; summer: July 3-11, 2006; fall: October 3-9, 2006; and winter: January 15-22, 2007). Thus only two lakes were sampled per sampling trip.

Laboratory Methods

The cores and surface waters, which were refrigerated during the 24 hours prior to incubation (except Hell 'n Blazes and Sawgrass sediment cores collected in the summer, which were 48 hours), were incubated at ± 2.0ºC of the *in situ* temperature for 48 hours. The overlying water of each core was decanted and replaced to the top of the core with oxygen-saturated lake surface water (0.40-1.23 L) that had been brought to near the field-measured water temperature. To prevent resuspension of the sediment, a circular disk cut from an Oxford Tri-Pour® beaker cap was placed on top of the sediment surface prior to pouring. The cores were filled to the top to prevent air pockets before being stoppered with a # 13.5 rubber stopper. The cores were then placed into either a Fisher Scientific Model 146 low temperature incubator or a water bath containing an Ulanet Model 306 heater (500 W) for the 48-hour incubation. Both the incubator and the water bath were pre-set to the *in situ* temperature prior to initiation of the incubation. A Beckett Corp. M60A Fountain Pump was submersed in the water bath to prevent thermal stratification from occurring. Incubations were carried out in the dark.

Each core was measured for DO concentration and temperature with a HQ 20 Hach Portable LDO™ Dissolved Oxygen meter and sensor in the lab at 0, 2, 8-10, 24, 36 and 48 hours. An additional DO concentration measurement occurred after 30 hours of incubation for Lakes Sawgrass and Hell 'n Blazes during the summer. The luminescent principle employed by the Hach Portable LDO™ Dissolved Oxygen sensor insures a more accurate reading than the older polarographic technology since the luminescent sensor does not require agitation within the water column to obtain an accurate reading. The water column depth of all readings was 3-4 cm above the sediment-water interface. To assess the vertical homogeneity of the temperature and

DO concentration within the overlying water, periodic measurements were also performed 2-3 cm below the air-water interface, and were within 0.3 mg/L of the DO concentrations measured 3-4 cm above the sediment-water interface 89% of the time. However, only the DO concentrations and temperatures for the water column at 3-4 cm above the sediment-water interface are reported. Prior to all laboratory readings for DO concentration and water temperature, the sensor was either air-calibrated, or its previous calibration validated, in an enclosed moisture-saturated container. Sensor calibration was also monitored at the end of each measurement period, and was usually within ±0.1 mg/L of the moisture-saturated air value.

Temperature was monitored in three separate ways during the incubations. First, the temperature of the air in the incubator or the water in the water bath was recorded before each of the readings at times 0, 8-10, 24, 36, and 48 hours. Second, the water temperature within each core at the depth of 3-4 cm above the sediment-water interface was also recorded during each of the measurements as previously described (Appendix 1). Finally, a min-max thermometer was read after the 48-hr incubation to check the temperature variance during the entire incubation period (Table 1). All thermometers, including the field thermometer (part of the Hach DO Sensor Model 51970), were calibrated with a NIST-traceable thermometer prior to each quarterly sampling period.

After the 48-hr incubation, the sediment within each replicate core was extruded and the physical characteristics of the sediment noted.

Results

Field Conditions

The sampling dates, sampling locations (GPS coordinates), water columns depths, *in situ* dissolved oxygen (DO) concentrations and water temperatures, and the incubation temperatures are listed for the spring (April 6 – 17, 2006), summer (July 6 – 11, 2006), fall (October 3-9, 2006), winter (January 15-22, 2007) periods in Table 1. Meteorological conditions on the sampling days are described in Table 2. Locations of the sampling stations within each lake are provided in Figure 1.

Table 1. Station location, water column depth, dissolved oxygen concentration (DO), and temperatures (field and incubation) for the spring (April 6-17, 2006), summer (July 6-11, 2006), fall (October 3-9, 2006), and winter (January 15-22, 2007) sediment samplings for sediment oxygen demand.

Date	Lake-Station	GPS Coord.‡		In-Situ Water Column			Incub Temp
		X	Y	Depth (m)	DO* (mg/L)	Temp* (ºC)	Min-Max (ºC)
4/6/06	Winder-1	0515513	3125182	1.09	6.43	23.7	21-21.5
4/6/06	Winder-2	0514608	3126595	0.86	5.95	23.7	21-21.5
4/6/06	Poinsett-1	0518498	3132904	0.85	8.11	25.5	22.5-23
4/6/06	Poinsett-2	0513700	3123700	1.12	5.75	25.2	22.5-23
4/12/06	Hell 'n Blazes	0519928	3099870	0.41	7.19	20.3	20-22
4/12/06	Sawgrass	0521756	3105247	0.61	6.15	21.0	20-22
4/17/06	Blue Cypress	0525125	3066735	3.05	6.55	23.9	23-24.5
4/17/06	Washington-1	0525426	3114599	1.42	6.77	25.5	24.5-26
4/17/06	Washington-2	0525188	3112916	1.30	7.54	25.9	24.5-26
7/6/06	Winder-1	0515513	3125182	0.71	5.52	28.5	26-28
7/6/06	Winder-2	0514608	3126595	0.46	5.10	27.8	26-28
7/6/06	Poinsett-1	0518498	3132904	0.41	4.97	29.6	26-30
7/6/06	Poinsett-2	0516519	3135463	0.64	5.56	29.8	26-30
7/3/06	Hell 'n Blazes	0519928	3099870	0.89	4.77	28.6	26.5-29
7/3/06	Sawgrass**	0521706	3105299	1.19	3.60	29.0	26.5-29
7/11/06	Blue Cypress	0525125	3066735	2.77	6.11	28.8	26.5-29
7/11/06	Washington-1	0525426	3114599	2.03	6.47	28.8	26.5-29
7/11/06	Washington-2	0525188	3112916	2.03	5.26	29.6	26.5-29
10/9/06	Winder-1	0515513	3125182	2.08	3.66	25.7	25-26.5
10/9/06	Winder-2	0514608	3126595	1.93	2.87	25.5	25-26.5
10/9/06	Poinsett-1	0518498	3132904	1.83	3.36	25.3	25-26.5
10/9/06	Poinsett-2	0513700	3123700	1.91	3.60	25.3	25-26.5
10/5/06	Hell 'n Blazes	0519928	3099870	1.35	3.73	25.3	25-26.5
10/5/06	Sawgrass	0521756	3105247	1.63	3.19	25.4	25-26.5
10/3/06	Blue Cypress	0525125	3066735	2.92	6.69	27.8	26-29
10/3/06	Washington-1	0525426	3114599	2.41	4.28	27.8	26-29
10/3/06	Washington-2	0525188	3112916	2.35	4.05	28.2	26-29
1/15/07	Winder-1	0515513	3125182	1.04	7.56	20.2	20-23
1/15/07	Winder-2	0514608	3126595	0.86	7.66	20.4	20-23
1/15/07	Poinsett-1	0518498	3132904	0.76	8.00	21.6	20-23
1/15/07	Poinsett-2	0513700	3123700	0.91	7.73	21.2	20-23
1/18/07	Hell 'n Blazes	0519928	3099870	0.97	6.80	20.8	n.d.
1/18/07	Sawgrass	0521756	3105247	1.19	6.01	20.9	n.d.
1/22/07	Blue Cypress	0525125	3066735	2.64	8.18	20.6	20.5-23
1/22/07	Washington-1	0525426	3114599	2.03	7.78	21.0	20.5-23
1/22/07	Washington-2	0525188	3112916	1.91	n.d.	21.1	20.5-23

* 5 cm above sediment surface

** sampling location changed during the 7/3/06 sampling date

n.d. = no data

‡. datum: WGS 84; projection: Universal Transverse Mercator (UTM), Zone 17R

Table 2. Meteorological conditions (wind direction, speed and cloud cover) on the sampling days.

Date	Lake-Station	Wind speed, direction and cloud cover
4/6/06	Winder-1	No wind; sunny
4/6/06	Winder-2	" " ; "
4/6/06	Poinsett-1	Wind NE @ 15 knots; sunny
4/6/06	Poinsett-2	" " @ " " ; "
4/12/06	Hell 'n Blazes	Wind NE @ 15-20 knots; partly cloudy
4/12/06	Sawgrass	Wind NE @ 25 knots; partly cloudy; hydrilla coverage near 100%
4/17/06	Blue Cypress	Wind W @ 5-10 knots; sunny
4/17/06	Washington-1	Wind W @ 20-25 knots; sunny
4/17/06	Washington-2	Wind W @ 20 knots; sunny
7/6/06	Winder-1	Wind S @ 15 knots; sunny
7/6/06	Winder-2	" " @ " " ; "
7/6/06	Poinsett-1	Wind S @ 10 knots; sunny
7/6/06	Poinsett-2	" " @ " " ; sunny
7/3/06	Hell 'n Blazes	Wind NE @ 4 knots; sunny
7/3/06	Sawgrass*	No wind; sunny; no hydrilla but blue-green algal scum present
7/11/06	Blue Cypress	Wind E @ 5 knots; sunny
7/11/06	Washington-1	" " @ " " ; sunny
7/11/06	Washington-2	" " @ " " ; sunny
10/9/06	Winder-1	Wind N-NW @ 15 knots; sunny
10/9/06	Winder-2	" " " @ " " ; "
10/9/06	Poinsett-1	Wind N-NW @ 5-10 knots; sunny
10/9/06	Poinsett-2	" W @ " " " " ; "
10/5/06	Hell 'n Blazes	Wind N-NE @ 5-10 knots; sunny
10/5/06	Sawgrass	" " " @ " " " ; " ; no hydrilla
10/3/06	Blue Cypress	Wind E-NE @ 10 knots; sunny
10/3/06	Washington-1	" " " @ 15 knots; "
10/3/06	Washington-2	" " " @ gusting to 15 knots; sunny
1/15/07	Winder-1	No Wind; sunny
1/15/07	Winder-2	No Wind; sunny
1/15/07	Poinsett-1	Wind SE@ 5-10 knots; sunny
1/15/07	Poinsett-2	Wind SE@ 10-15 knots; sunny
1/18/07	Hell 'n Blazes	No Wind; dense fog
1/18/07	Sawgrass	Wind SW@ 5 knots; fog
1/22/07	Blue Cypress	Wind S @ 20 knots; sunny
1/22/07	Washington-1	Wind SW @ 5-20 knots; partly cloudy
1/22/07	Washington-2	" " " @ 15-20knots; cloudy

* sampling location changed during the 7/3/06 sampling date

Sediment Characteristics

The sediment characteristics varied widely among lakes, but were generally similar from season to season at a given location. Replicate cores were usually in good agreement. See Appendix 2 for a complete description of each sediment core. A summary of the sediment characteristics for each lake station follows.

- Winder – Station 1: thin, fine-grain floc underlain by sand followed by either clay or sandy clay layer.
- Winder – Station 2: thin, fine-grain floc underlain by sand followed by either clay or sandy clay layer.
- Poinsett – Station 1: Thin floc layer underlain by muck and/or clay.
- Poinsett – Station 2: Thin floc layer underlain by sand and sometimes followed by clay.
- Hell 'n Blazes: Thin layer of fibrous detrital material followed by muck and then peat.
- Sawgrass: Thin layer of fibrous detrital material followed by peat and then clay or sand.
- Blue Cypress: Entire core length consists of a black, fine-grain, cohesive muck.
- Washington - Station 1: Thin layer of fine-grain, cohesive particles followed by a muck horizon.
- Washington – Station 2: Thin layer of fine-grain floc followed by organic sand or sandy muck and then a clay layer.

Seasonal variation for sediment collected at Blue Cypress was the most consistent of all the lakes among the four seasonal coring events, followed by Hell 'n Blazes, Sawgrass, Lake Washington (both stations), Lake Winder (both stations) and then Lake Poinsett (both stations). Clay or sand layers close to the sediment surface in Lake Poinsett (stations 1 and 2) and Lake Washington (station 2) prevented retrieving cores that were equal to or longer than 20 cm.

General Field and Lab Observations

Besides the expected seasonal change in water temperatures, there were other changes that occurred which had an effect on the measured SOD rates. These field and laboratory observations are summarized below.

1. Lake Sawgrass was nearly covered with hydrilla (*Hydrilla verticillata* Royle) in the spring. After what was likely the result of herbicide spraying as a control measure, there was no hydrilla noted in the lake during the remainder of the sampling period (summer, fall, and winter). However, a thick surface bloom of cyanobacteria was prominent in the summer.
2. Lake stages (water column depths) were highest in all lakes during the fall except Blue Cypress, indicating that rainfall-runoff was highest between the summer (July 3-11, 2006) and fall (October 3-9, 2006) sampling periods. The dissolved organic color of the waters in the lakes appeared to be darker in the fall than during the previous spring and summer sampling periods, which likely accounted for the higher DO depletion rates in both the sediment and control cores (see below).
3. Inhabitation of the incubation cores by mollusks caused a dramatic decrease in the DO concentration compared to replicate cores without mollusks. It is clear that omitting mollusks (either by design or from random sampling) will result in an underestimation of the *in situ* SOD.

DO Depletion in Control (Water Only) and Sediment Cores

Raw data for the DO concentrations measured for each sediment and control core and at each incubation time (0, 2, 8 or 10, 24, 36, and 48 hours) can be found in Appendix 1. The DO depletion curve in each core for each 48-hour incubation is shown in Figures 2-3, 5-6, 8, 12-13, and 15. The means (±1 S.E.) of the replicate cores are also provided. The data have been grouped according to season for each lake station. The DO depletion data for those stations where benthic invertebrates were collected within the sediment core are shown separately from the cores where benthic invertebrates were not present in the sediment. The averages of the replicate cores with and without invertebrates are presented in Appendix 3.

DO concentration depletion within the intact sediment cores during the 48-hr lab incubations was linear (Figures 2-3, 5-6, 8, 10, 12-13, and 15). For the intact sediment cores, $r^2 > 0.92$ except Rep B at Station 2 of Lake Washington in the fall ($r^2 = 0.70$). Reproducibility was high among the three replicate sediment cores as shown by the small standard error bars in Figures 4, 7, 9, 11, and 14. Exceptions occurred when mollusks (clams [*Corbicula*], mussels [Unionidae], or snails) were encountered within the core. Station locations, times, and taxonomic designations of when mollusks were inadvertently collected within the sediment cores can be found in Appendix 4. There was no attempt during coring to avoid or include mollusks.

In a few instances, the DO reached negligible concentrations before the 48-hour incubation period had elapsed (e.g., Lakes Sawgrass and Hell 'n Blazes in the fall – see Figures 8-11). When that occurred, the data associated with the period of time during the incubation with low DO concentrations were excluded in the least squares fit calculation of the depletion rates.

In two of the total 283 sediment cores that were incubated over the year, leakage occurred to an extent that it caused artificially elevated DO concentrations. In those two instances, the DO data were truncated at a point in time during the incubation beyond which the DO concentrations became spuriously elevated.

For those lakes where two sampling stations were located (Lakes Winder, Poinsett, and Washington), the DO depletion curves were similar (Figures 4, 7, and 14), again the exception being if mollusks were present in the sediment. This indicates variability in DO depletion due to substrate differences in the three lakes was minor.

The DO depletion within the control cores (surface water only) were minor for the spring and winter incubations. However, because of higher incubation temperatures, DO depletion was somewhat elevated in the control cores during the summer incubation than spring or winter incubations (Figures 2-16). During the summer, Lake Sawgrass surface water had a significant cyanobacteria bloom. Although an effort was made to exclude the floating cyanobacteria cells from the incubation waters for Lake Sawgrass, some cells were still introduced in the incubation water. This is why the control core for Lake Sawgrass produced the highest oxygen demand among the sampled lakes during the 48-hour dark incubation period for the summer (Figures 2-16).

Notwithstanding the cooler fall than summer incubation temperatures, the DO depletion measured in the control (surface water only) cores was highest in the fall than for any other season (Figures 2-16), and may have been due to the influx of terrestrial labile organic matter associated with the higher water levels. The control cores, consisting of overlying water without sediment, for all station locations exerted significant oxygen demands (39% to 100% of the sediment core oxygen demand). In some lakes (Winder –station 1; Poinsett – stations 1 and 2; Hell 'n Blazes), the DO depletion within the control cores equaled or nearly equaled the DO depletion within the sediment cores during the fall (Figures 2, 5-6, and 10). Since the DO depletion rates of the control cores are subtracted from the DO depletion rates of the sediment cores, the resulting SOD rates for the fall period are the lowest for any of the seasons at some of the lakes (Table 3).

Lake Winder

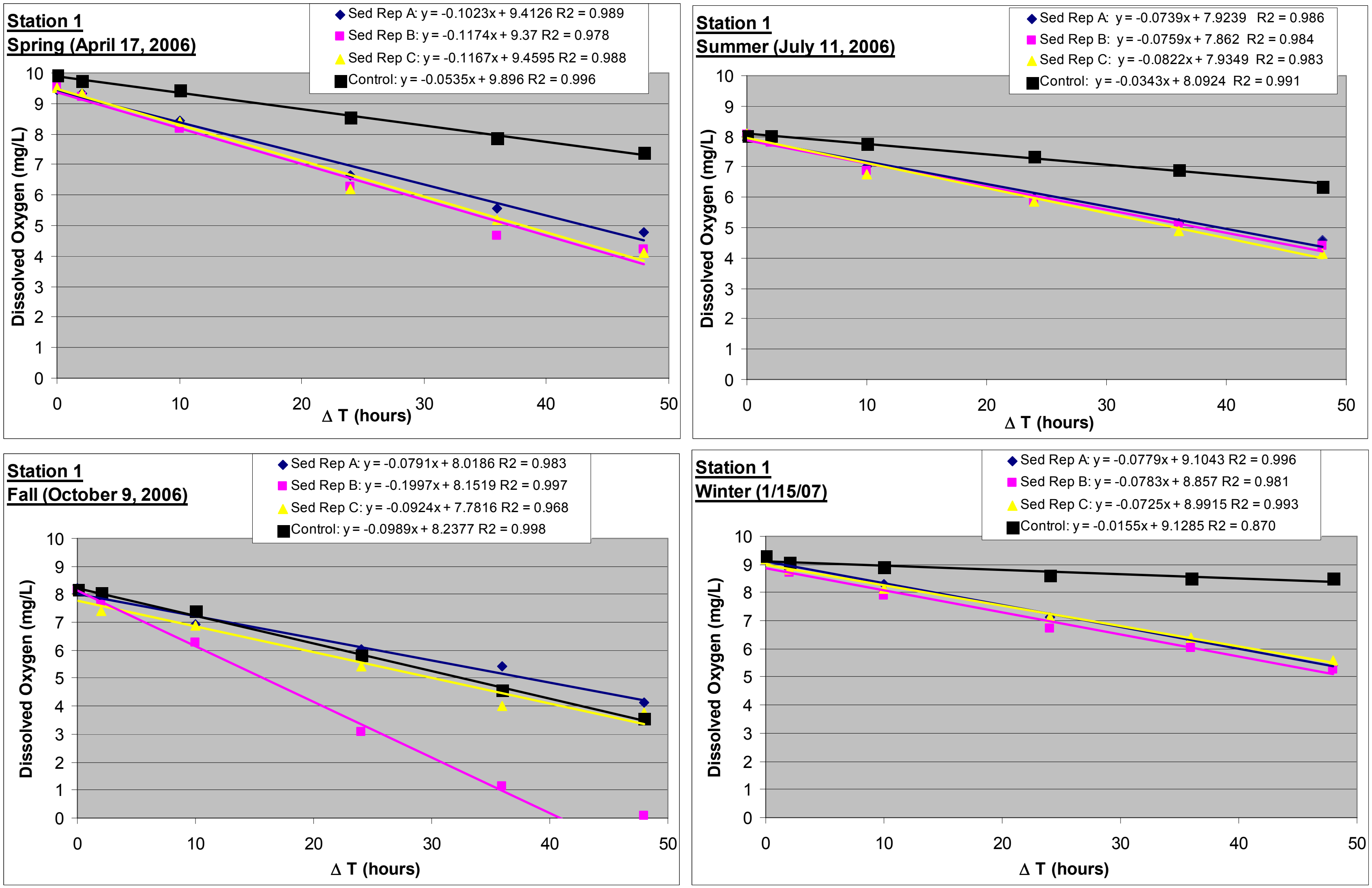

Figure 2. Seasonal dissolved oxygen concentration depletion in the sediment and control (surface water only) replicate cores collected at station 1 of Lake Winder.

Lake Winder

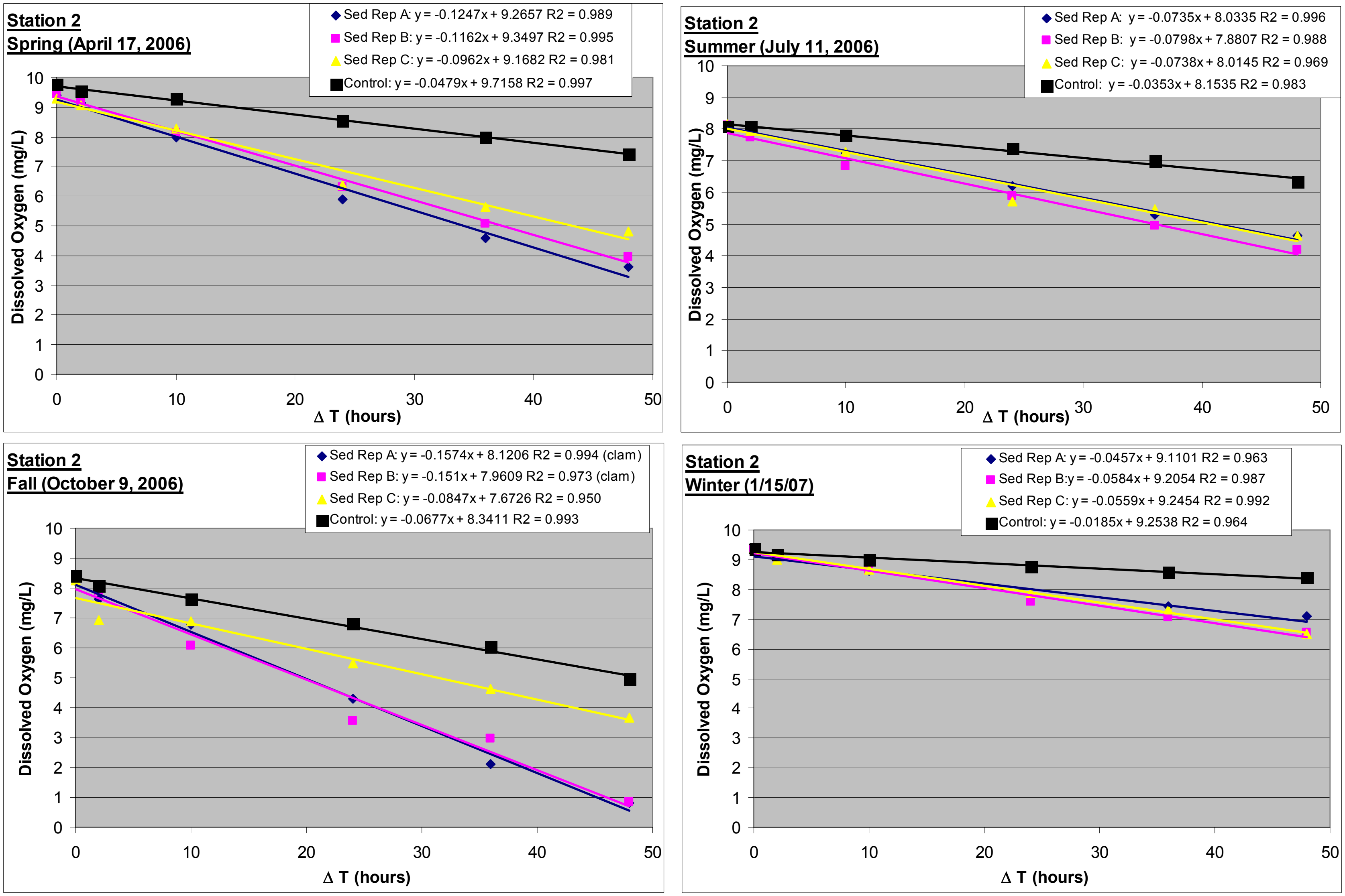

Figure 3. Seasonal dissolved oxygen concentration depletion in the sediment and control (surface water only) replicate cores collected at station 2 of Lake Winder.

Lake Winder

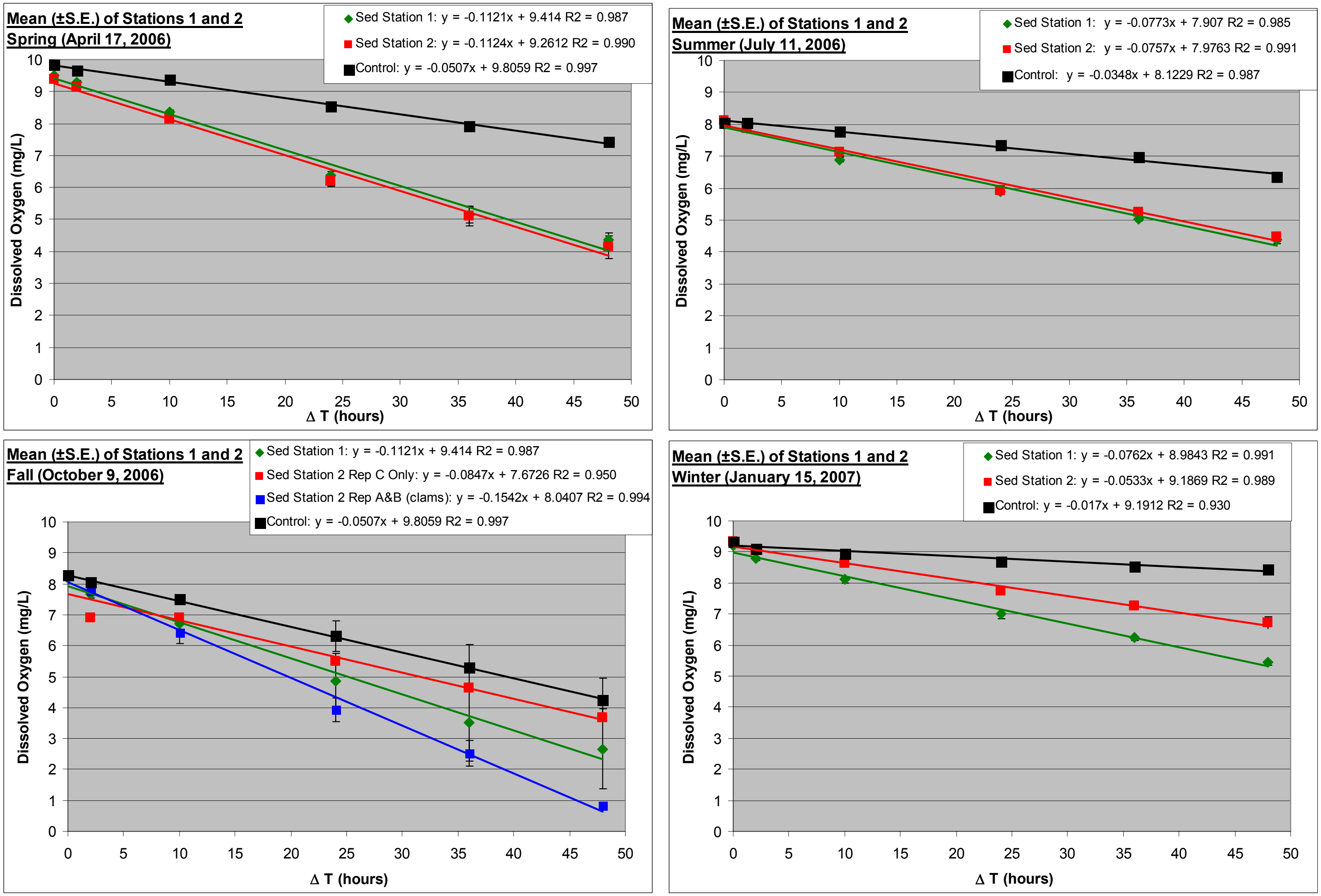

Figure 4. Mean and standard error (S.E.) seasonal dissolved oxygen concentration depletion in the sediment (n=3) and control (surface water only) (n=2) cores collected at stations 1 and 2 of Lake Winder.

Lake Poinsett

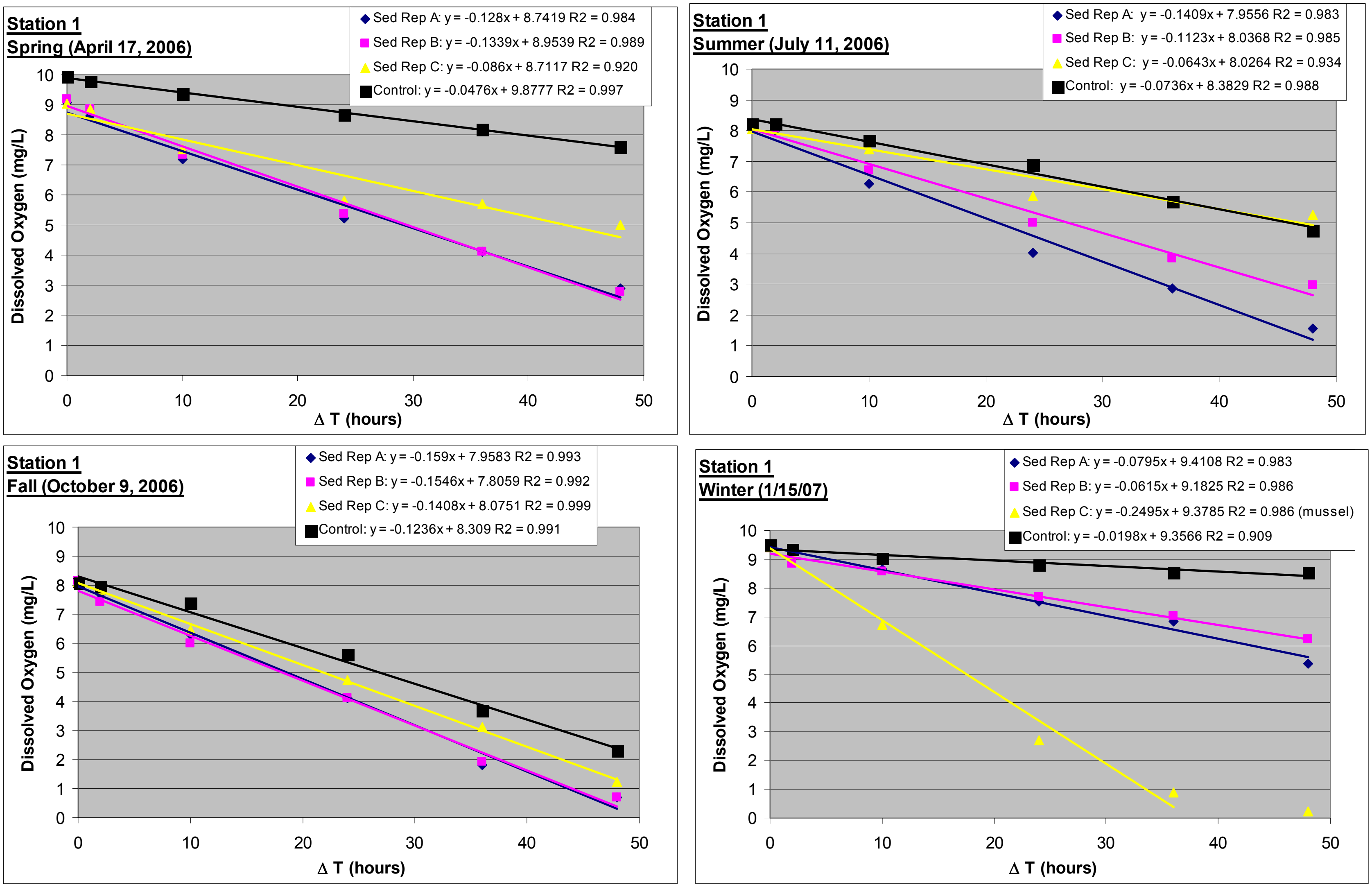

Figure 5. Seasonal dissolved oxygen concentration depletion in the sediment and control (surface water only) replicate cores collected at station 1 of Lake Poinsett.

Lake Poinsett

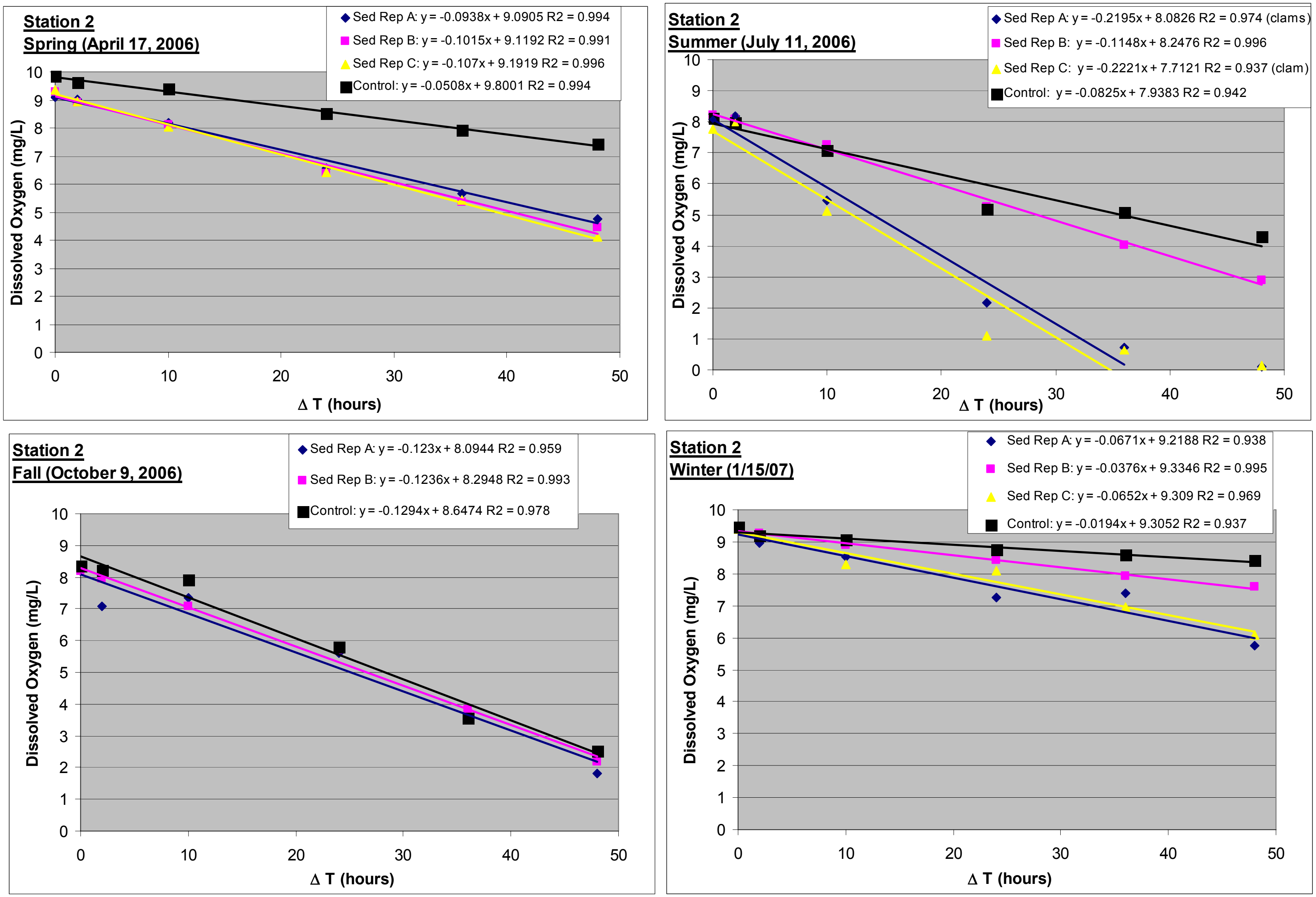

Figure 6. Seasonal dissolved oxygen concentration depletion in the sediment and control (surface water only) replicate cores collected at station 2 of Lake Poinsett.

Lake Poinsett

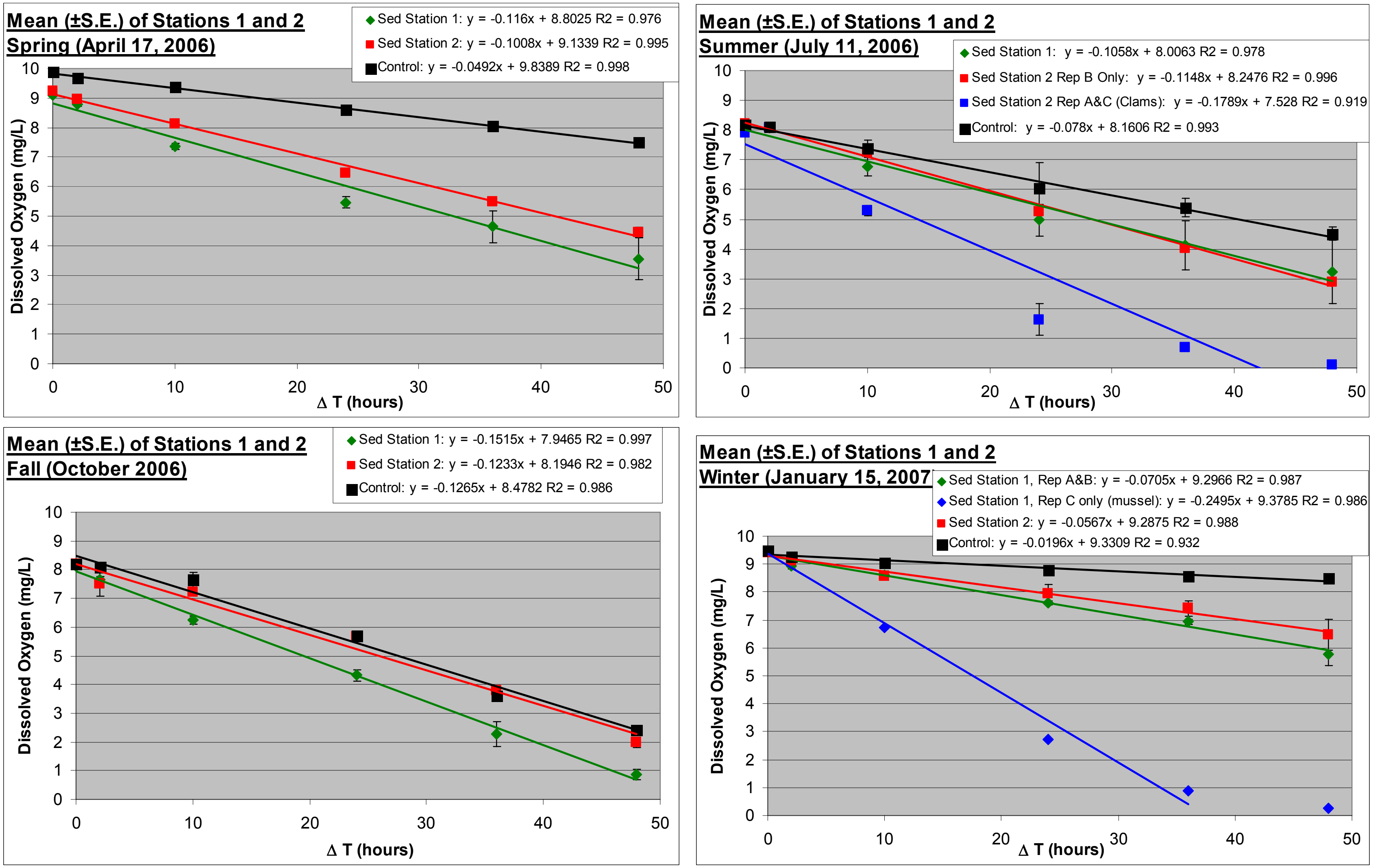

Figure 7. Mean and standard error (S.E.) seasonal dissolved oxygen concentration depletion in the sediment (n=3) and control (surface water only) (n=2) cores collected at stations 1 and 2 of Lake Poinsett.

Lake Sawgrass

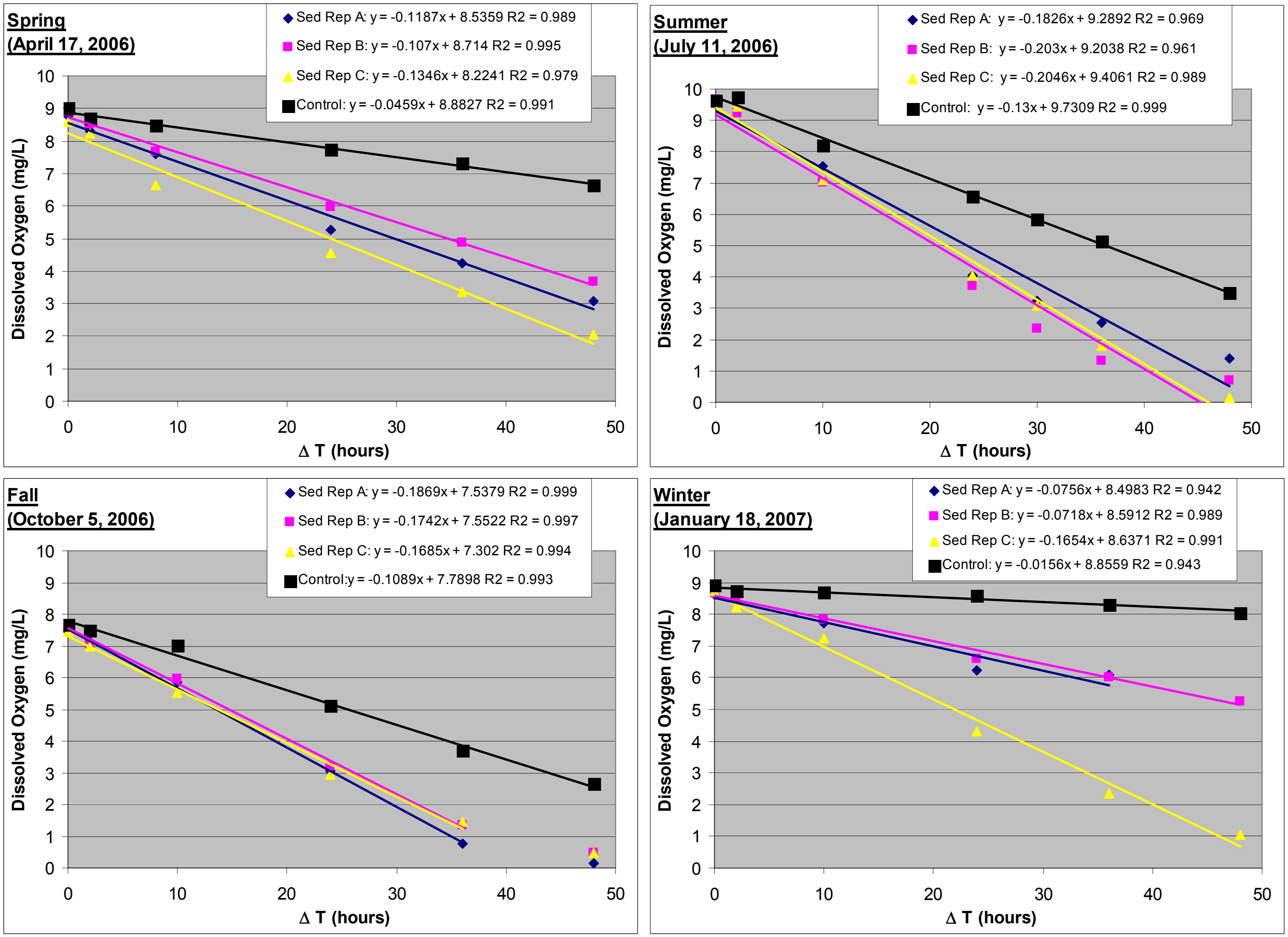

Figure 8. Seasonal dissolved oxygen concentration depletion in the sediment and control (surface water only) replicate cores collected in Lake Sawgrass.

Lake Sawgrass

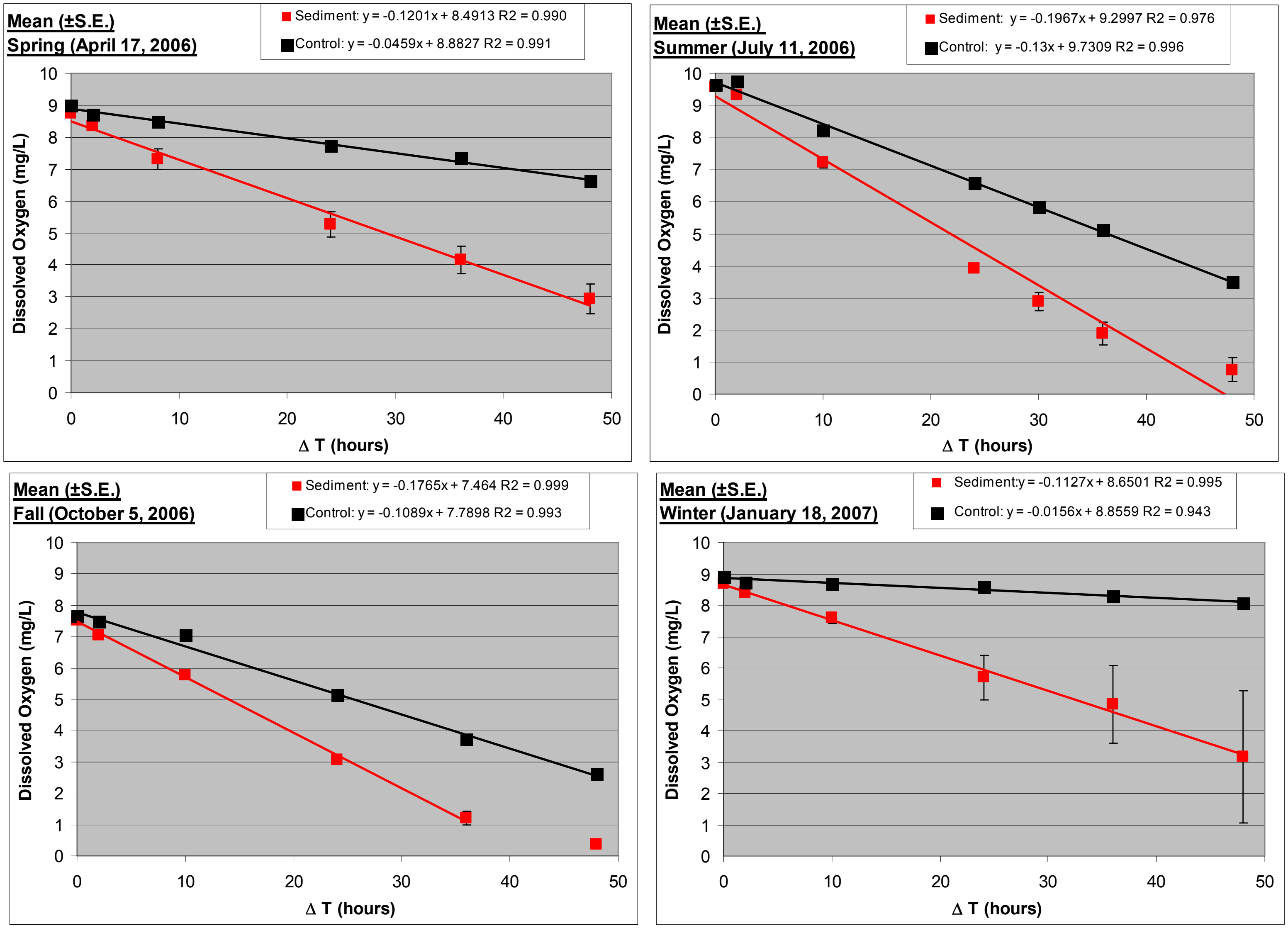

Figure 9. Mean and standard error (S.E.) seasonal dissolved oxygen concentration depletion in the sediment (n=3) and control (surface water only) (n=1) cores collected in Lake Sawgrass.

Lake Hell 'n Blazes

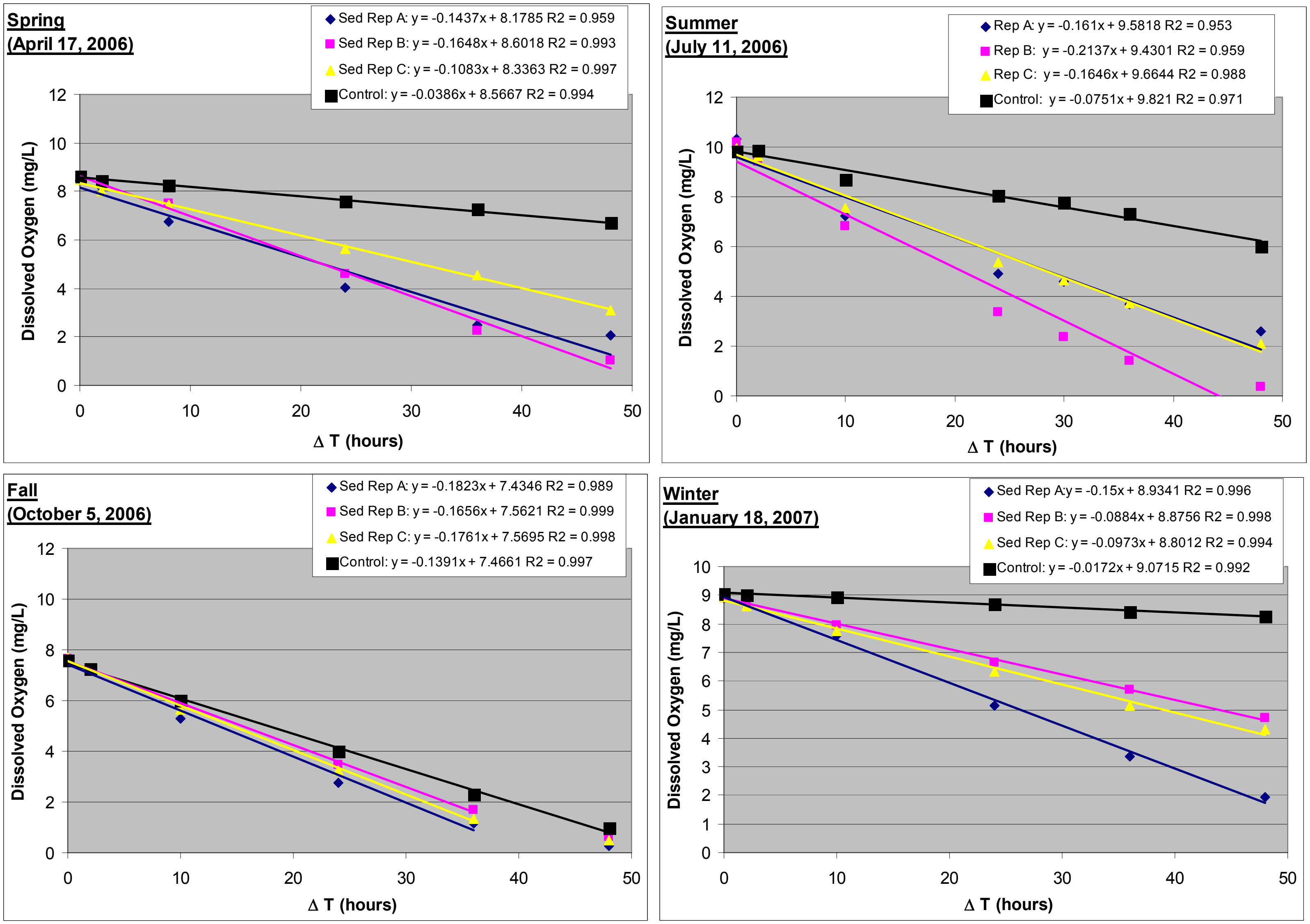

Figure 10. Seasonal dissolved oxygen concentration depletion in the sediment and control (surface water only) replicate cores collected in Lake Hell 'n Blazes.

Lake Hell 'n Blazes

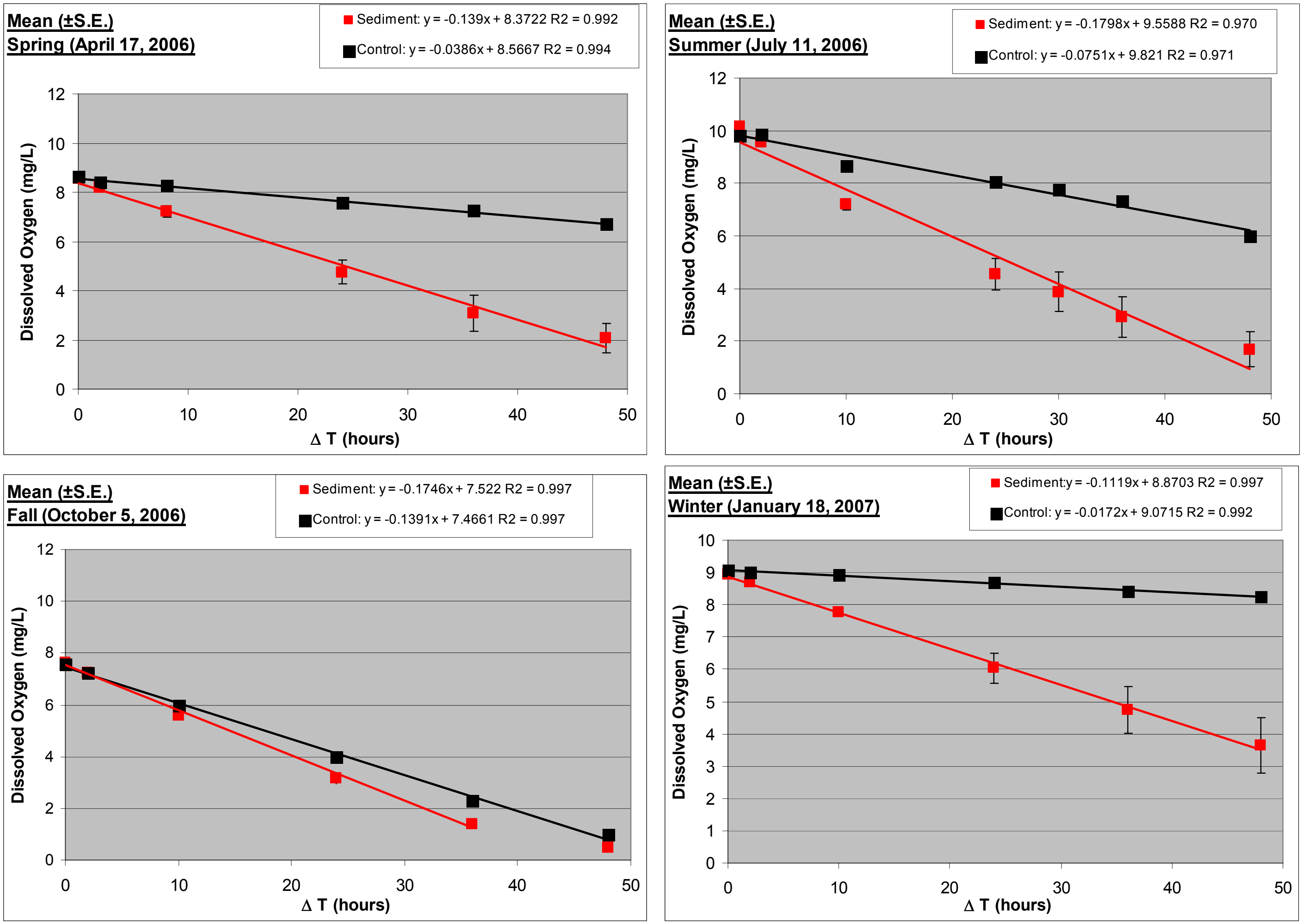

Figure 11. Mean and standard error (S.E.) seasonal dissolved oxygen concentration depletion in the sediment (n=3) and control (surface water only) (n=1) cores collected in Lake Hell 'n Blazes.

Lake Washington

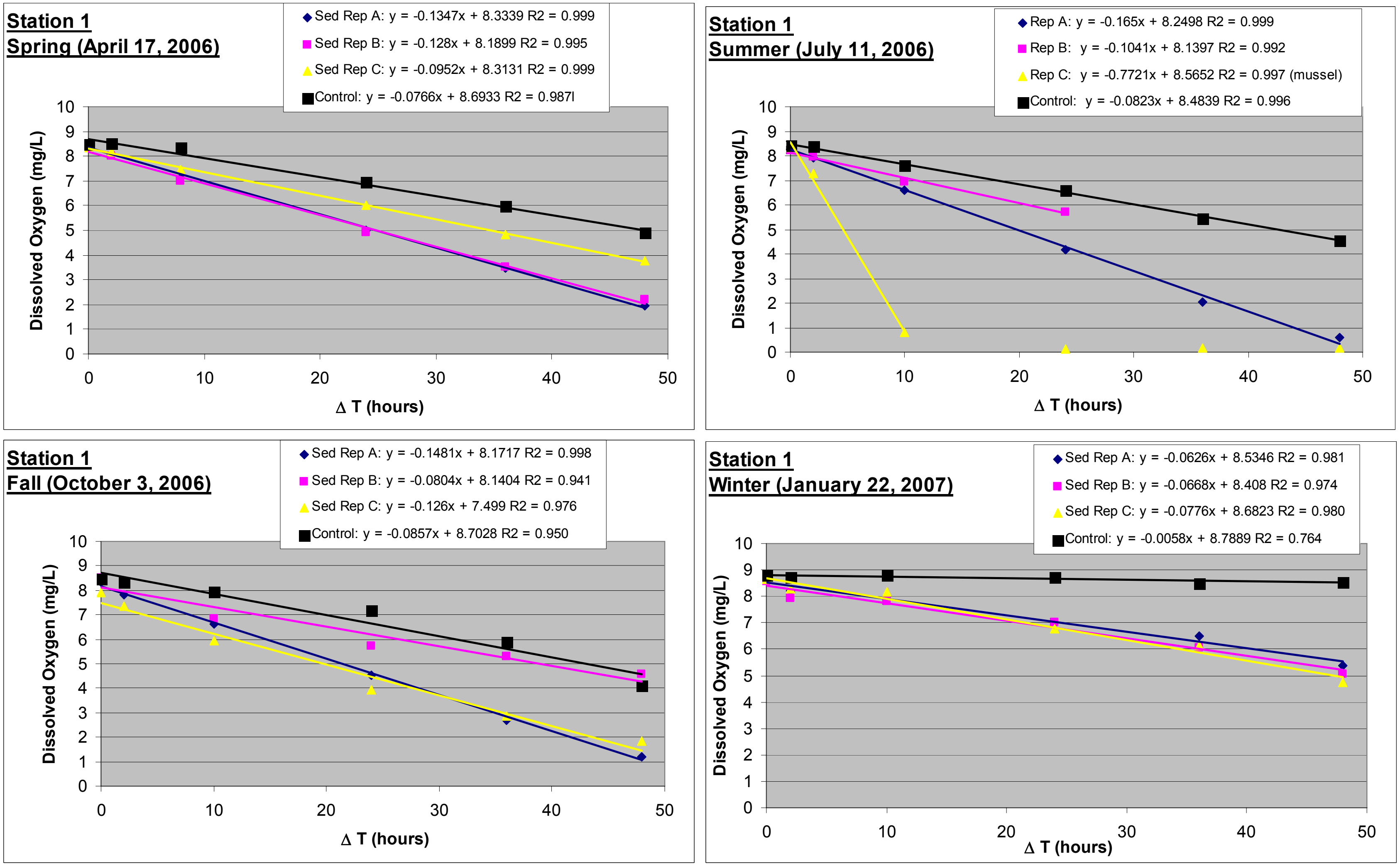

Figure 12. Seasonal dissolved oxygen concentration depletion in the sediment and control (surface water only) replicate cores collected at station 1 of Lake Washington.

Lake Washington

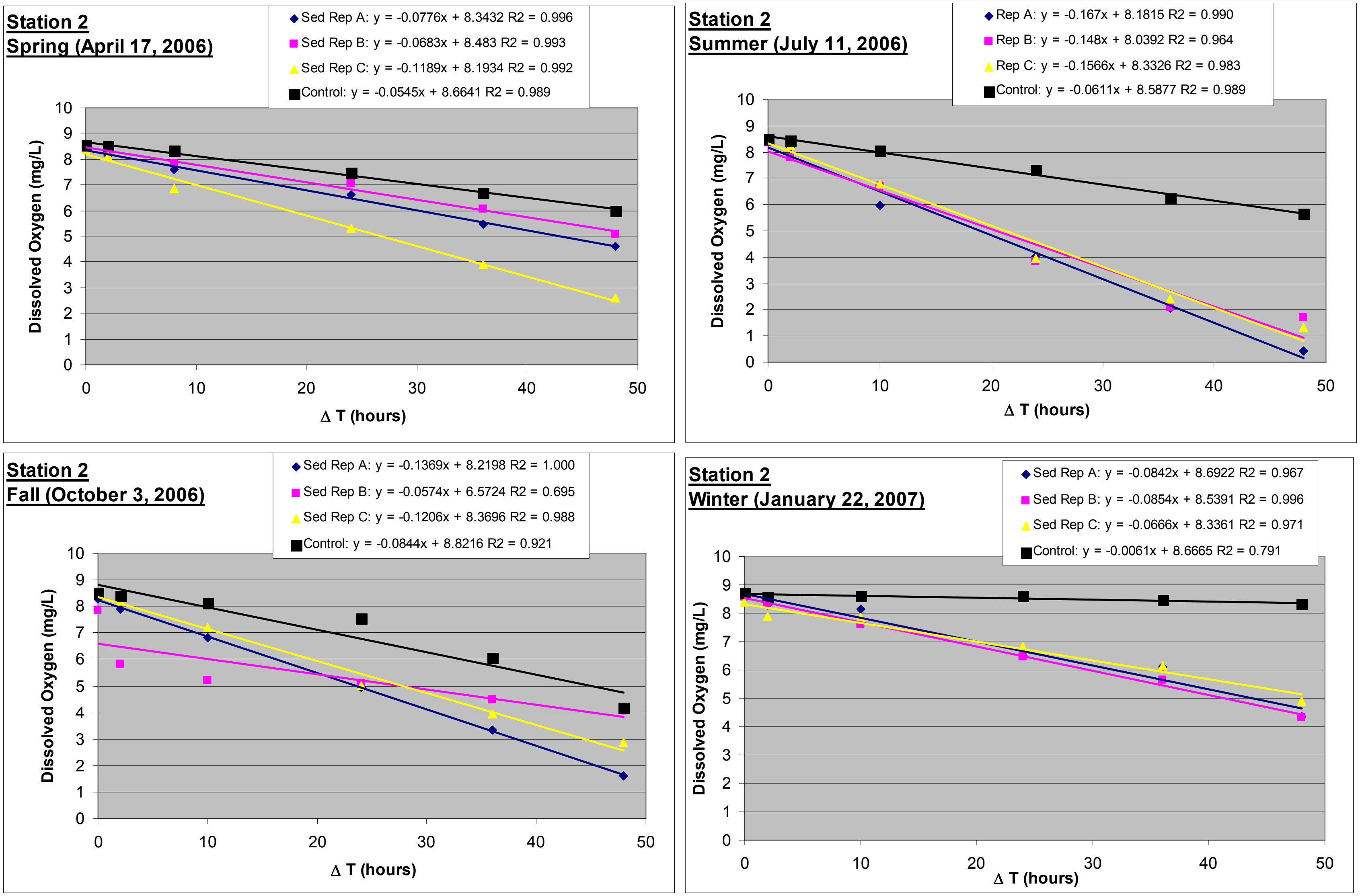

Figure 13. Seasonal dissolved oxygen concentration depletion in the sediment and control (surface water only) replicate cores collected at station 2 of Lake Washington.

Lake Washington

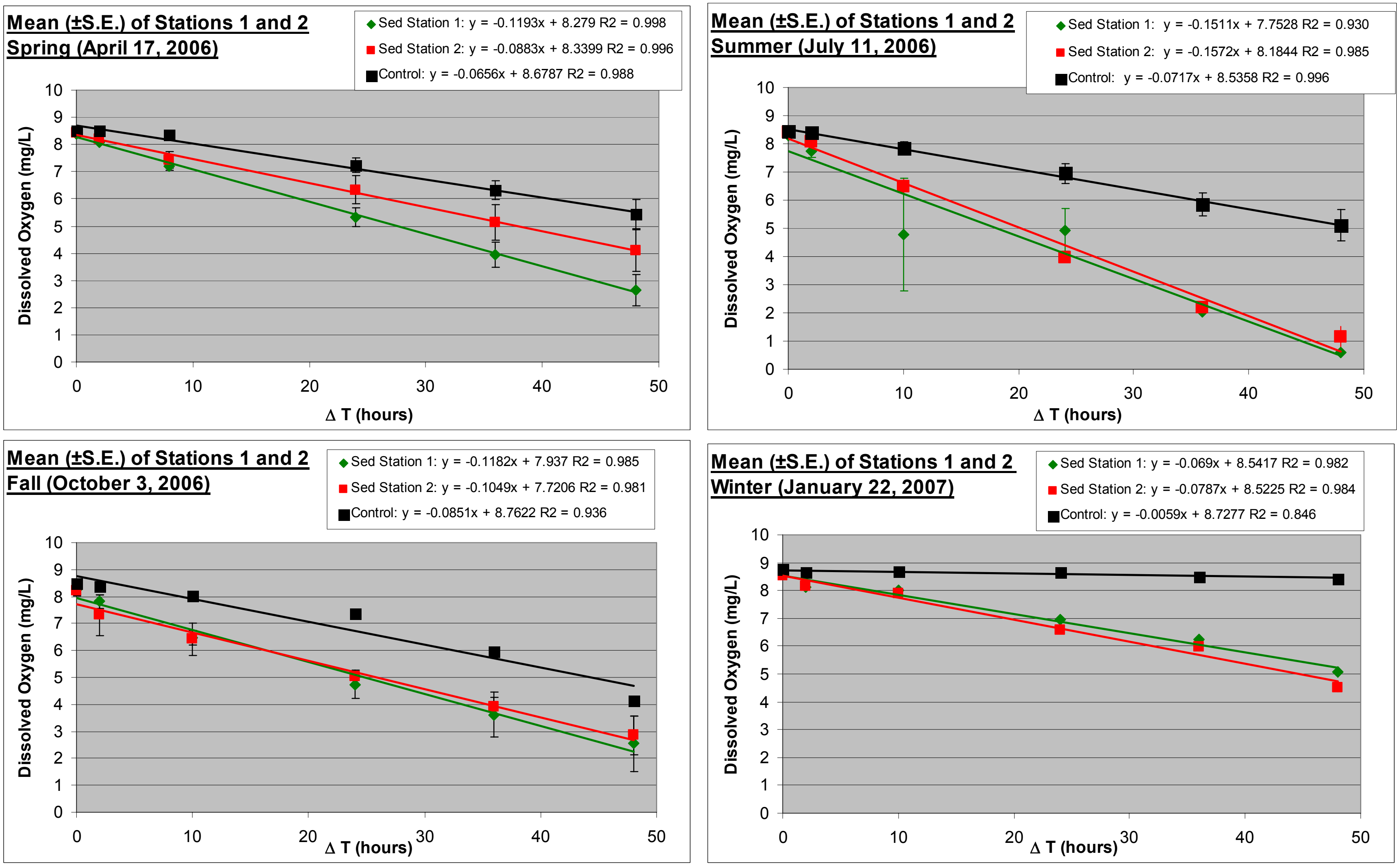

Figure 14. Mean and standard error (S.E.) seasonal dissolved oxygen concentration depletion in the sediment (n=3) and control (surface water only) (n=2) collected at both stations of Lake Washington.

Lake Blue Cypress

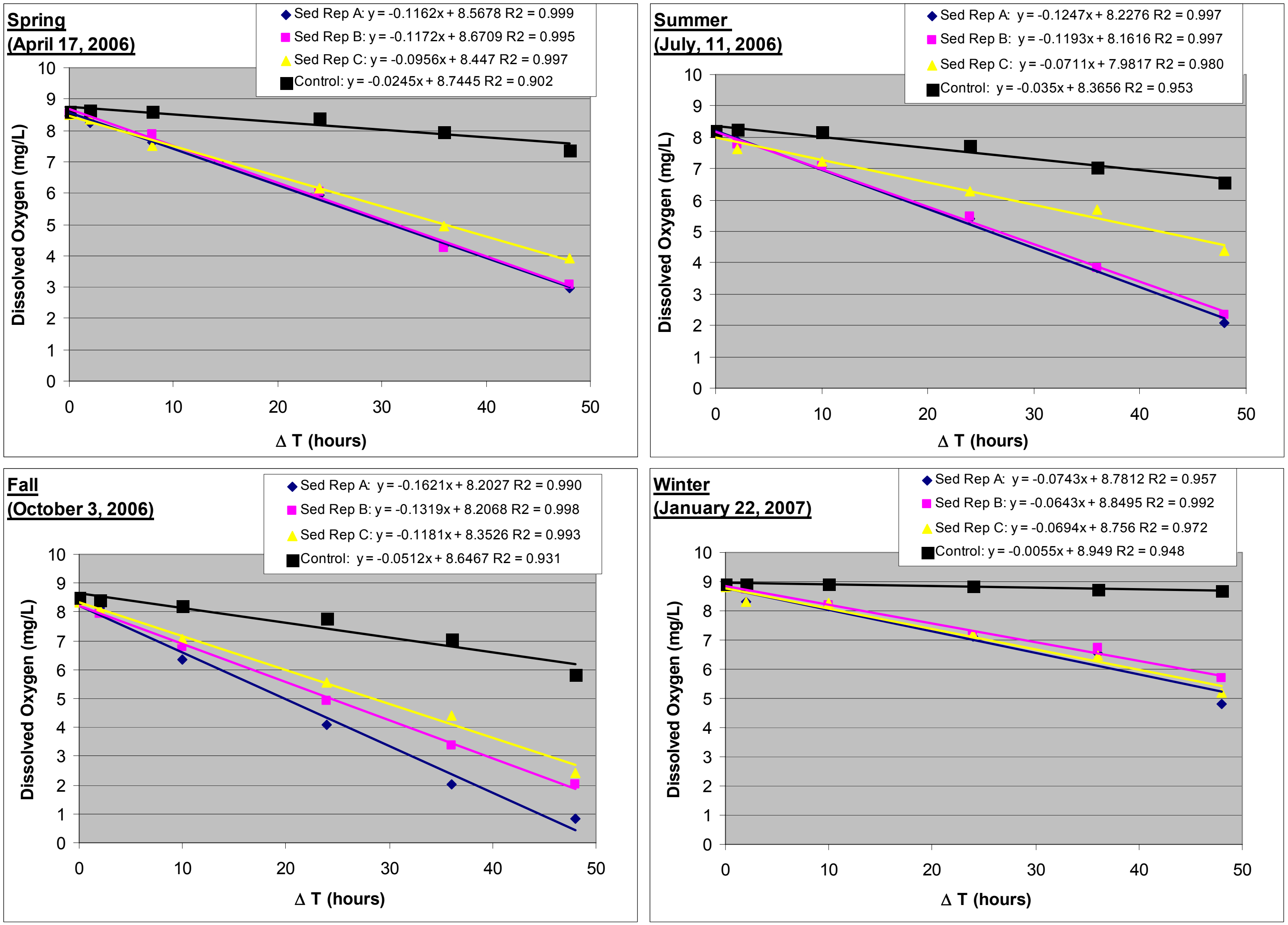

Figure 15. Seasonal dissolved oxygen concentration depletion in the sediment and control (surface water only) replicate cores collected in Lake Blue Cypress.

Lake Blue Cypress

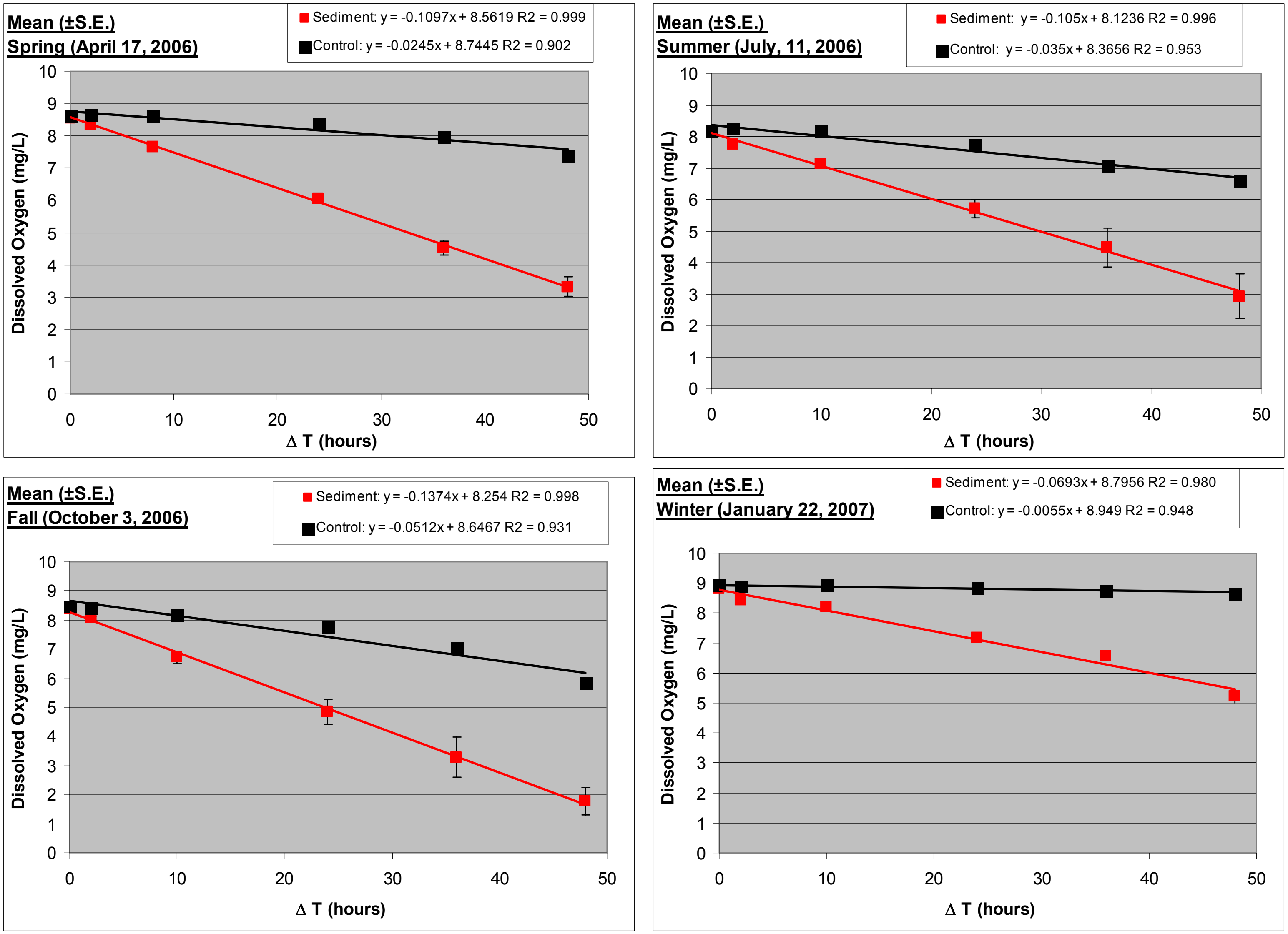

Figure 16. Mean and standard error (S.E.) seasonal dissolved oxygen concentration depletion in the sediment (n=3) and control (surface water only) (n=1) cores collected in Lake Blue Cypress.

Sediment Oxygen Demand (SOD) Rates

Because of the higher temperatures, the SOD rates were highest during the summer in lakes Hell 'n Blazes, Washington, Winder (station 2), and Poinsett (station 2) (Table 3). SOD rates were lowest in the fall in Lakes Hell 'n Blazes, Washington, Winder (station 1), and Poinsett, likely due to the high DO depletion of labile organic matter collected with the overlying water (Figures 2,5,6,10,12,13). The high standard errors associated with the summer mean SOD rates for Lake Washington (station 1) and Lake Poinsett (station 2), the fall mean for Lake Winder (station 2), and the winter mean for station 1 of Lake Poinsett (Table 3) were due to the presence of mollusks in one or two of the three replicate sediment cores, which effectively increased the SOD rate relative to the cores without the mollusks.

The mean annual SOD rates (including the presence of mollusks) among the 6 lakes were very similar (Table 3). The highest SOD rate of 0.40 g O_2/m^2-day for L. Washington (station 2) was only 32% higher than the lowest annual rate of 0.27 g O_2/m^2-day at Hell 'n Blazes and Lake Poinsett (station 1). The consistency in the annual SOD rates is remarkable given that the sediment characteristics differed among the lakes and among stations within a lake. These annual rates are only 13% to 19% of the mean annual rate of 2.1 g O_2/m^2-day reported by Roberts (1983) at a single station in the St. Johns River. Roberts (1983) does not describe the physical location of his sampling station, except as Camp Holly, which is located on the St. Johns River between Lakes Sawgrass and Washington. Differences between his rates and the ones reported herein may be due to riverine vs. lake effects, or the proximity of roads and a bridge located near Camp Holly.

Table 3. Mean ± 1 S.E. seasonal and annual sediment oxygen demand rates (g O_2/m^2-day) for the Upper St. Johns River Chain of Lakes. No. of replicates = 3. Spring, summer, fall, and winter sampling seasons correspond to April 6-17, 2006, July 3-11, 2006, October 3-9, 2006, and January 15-22, 2007, respectively. The influence of mollusks on the SOD rates are included for station 1 of Lake Washington and station 2 of Lake Poinsett in the summer, station 2 of Lake Winder in the fall, and station 1 of Lake Poinsett in the winter.

Lake	Station	Spring	Summer	Fall	Winter	**Annual**
Blue Cypress		0.31±0.03	0.37±0.09	0.38±0.08	0.28±0.03	**0.33±0.02**
Hell 'n Blazes		0.23±0.05	0.34±0.06	0.23±0.05	0.30±0.06	**0.27±0.03**
Sawgrass		0.19±0.02	0.23±0.08	0.43±0.04	0.30±0.10	**0.29±0.05**
Washington	1	0.05±0.05	1.08±0.86	0.02±0.06	0.34±0.04	**0.37±0.24**
Washington	2	0.27±0.06	0.68±0.08	0.20±0.12	0.47±0.04	**0.40±0.11**
Winder	1	0.31±0.02	0.31±0.02	0.16±0.17	0.33±0.04	**0.28±0.04**
Winder	2	0.20±0.02	0.24±0.02	0.29±0.11	0.21±0.02	**0.23±0.02**
Poinsett	1	0.20±0.04	0.22±0.08	-0.01±0.02	0.66±0.24	**0.27±0.14**
Poinsett	2	0.27±0.05	0.77±0.30	0.17±0.06	0.29±0.06	**0.38±0.14**

Conclusions

Rates of SOD for Lakes Blue Cypress, Hell 'n Blazes, Sawgrass, Washington, Winder, and Poinsett during spring, summer, fall, and winter ranged from –0.01 to 1.08 g O_2/m^2-day. For most of the lakes, fall SOD rates were the lowest among the seasons, whereas summer was the highest. Annual rates, which represent the mean of the four seasonal rates, varied within a narrow range among the lakes, with Lake Washington having the highest (0.39 g O_2/m^2-d) and Lake Winder the lowest (0.26 g O_2/m^2-d).

There was a slight effect from sediment composition. Higher SOD rates were associated with Lakes Blue Cypress, Hell 'n Blazes, and Sawgrass, which had higher organic contents throughout the core length. No explanation can be advanced for the rates observed at both stations in Lake Washington, which represented the lowest and highest annual rates measured over the 9-station data set.

The effect of mollusks on the oxygen depletion was pronounced. The presence of mollusks accounted for the highest SOD rates measured during the study. Excluding those cores containing mollusks lowered the range of annual SOD rates to 0.23 to 0.33 g O_2/m^2-day among the six lakes. The narrow range among lake SOD rates likely is attributable to similar characteristics (soils, vegetation, runoff) from the largely undeveloped watershed, and to frequent resuspension, mixing, and transport of sediment in the shallow lakes.

Significant oxygen depletion occurred in the water column during the fall incubation as a result of increased rainfall, which exported labile carbon into the lakes from the watershed. Temperature was highest in the summer, which coincided with the highest seasonal SOD rates for four of the nine stations. Our reported SOD rates, with or without the inclusion of the mollusk data, are considerably lower than the only reported data (from a single location) in the Upper St. Johns River.

References

Roberts, J.E., Jr. 1983. Dissolved Oxygen Budgets of Humic-Colored Aquatic Systems. M.S. in Environmental Science, Florida Institute of Technology, Melbourne, FL.

Appendix 1. Raw data for the dissolved oxygen concentrations and temperature for each sediment and control core at each incubations time. Observations during incubations periods are included in the electronic copy.

Lake Name	Date	Absolute Time	Δ T (hr)	Station ID	DO (mg/L)	Temperature (°C)
Blue Cypress	4/18/2006	10:40	0	BC Rep A	8.61	22.2
Blue Cypress	4/18/2006	10:45	0	BC Rep B	8.52	22.4
Blue Cypress	4/18/2006	10:50	0	BC Rep C	8.51	22.4
Blue Cypress	4/18/2006	10:55	0	BC Control	8.61	22.5
Blue Cypress	4/18/2006	12:40	2	BC Rep A	8.25	23.6
Blue Cypress	4/18/2006	12:45	2	BC Rep B	8.42	23.3
Blue Cypress	4/18/2006	12:50	2	BC Rep C	8.35	22.9
Blue Cypress	4/18/2006	12:55	2	BC Control	8.63	22.8
Blue Cypress	4/18/2006	18:40	8	BC Rep A	7.61	24.4
Blue Cypress	4/18/2006	18:45	8	BC Rep B	7.88	24.3
Blue Cypress	4/18/2006	18:50	8	BC Rep C	7.51	24.3
Blue Cypress	4/18/2006	18:55	8	BC Control	8.62	24.1
Blue Cypress	4/19/2006	10:40	24	BC Rep A	5.93	24.8
Blue Cypress	4/19/2006	10:45	24	BC Rep B	6.05	24.5
Blue Cypress	4/19/2006	10:50	24	BC Rep C	6.16	24.3
Blue Cypress	4/19/2006	10:55	24	BC Control	8.38	24.6
Blue Cypress	4/19/2006	22:40	36	BC Rep A	4.33	25.1
Blue Cypress	4/19/2006	22:45	36	BC Rep B	4.25	24.8
Blue Cypress	4/19/2006	22:50	36	BC Rep C	4.95	24.7
Blue Cypress	4/19/2006	22:55	36	BC Control	7.96	24.7
Blue Cypress	4/20/2006	10:40	48	BC Rep A	2.96	24.3
Blue Cypress	4/20/2006	10:45	48	BC Rep B	3.08	24
Blue Cypress	4/20/2006	10:50	48	BC Rep C	3.92	23.8
Blue Cypress	4/20/2006	10:55	48	BC Control	7.37	21.4
Blue Cypress	7/12/2006	8:30	0	BC Rep A	8.13	26.3
Blue Cypress	7/12/2006	8:35	0	BC Rep B	8.12	26.4
Blue Cypress	7/12/2006	8:40	0	BC Rep C	8.14	26.3
Blue Cypress	7/12/2006	8:45	0	BC Control	8.2	26.7
Blue Cypress	7/12/2006	10:30	2	BC Rep A	7.89	26.6
Blue Cypress	7/12/2006	10:35	2	BC Rep B	7.78	26.5
Blue Cypress	7/12/2006	10:40	2	BC Rep C	7.62	25.8
Blue Cypress	7/12/2006	10:45	2	BC Control	8.24	25.4
Blue Cypress	7/12/2006	18:30	10	BC Rep A	7.08	28.8
Blue Cypress	7/12/2006	18:35	10	BC Rep B	7.09	28.9
Blue Cypress	7/12/2006	18:40	10	BC Rep C	7.24	28.9
Blue Cypress	7/12/2006	18:45	10	BC Control	8.17	26.3
Blue Cypress	7/13/2006	8:30	24	BC Rep A	5.39	29
Blue Cypress	7/13/2006	8:35	24	BC Rep B	5.47	29.2
Blue Cypress	7/13/2006	8:40	24	BC Rep C	6.29	29.1
Blue Cypress	7/13/2006	8:45	24	BC Control	7.74	26.4
Blue Cypress	7/13/2006	20:30	36	BC Rep A	3.84	28.8
Blue Cypress	7/13/2006	20:35	36	BC Rep B	3.85	28.9
Blue Cypress	7/13/2006	20:40	36	BC Rep C	5.7	28.9
Blue Cypress	7/13/2006	20:45	36	BC Control	7.06	26.7
Blue Cypress	7/14/2006	8:30	48	BC Rep A	2.07	28.7

Appendix 1. Cont.

Lake Name	Date	Absolute Time	Δ T (hr)	Station ID	DO (mg/L)	Temperature (°C)
Blue Cypress	7/14/2006	8:35	48	BC Rep B	2.34	28.9
Blue Cypress	7/14/2006	8:40	48	BC Rep C	4.37	28.8
Blue Cypress	7/14/2006	8:45	48	BC Control	6.58	26.8
Blue Cypress	10/4/2006	8:35	0	BC Rep A	8.38	23.9
Blue Cypress	10/4/2006	8:40	0	BC Rep B	8.38	24.1
Blue Cypress	10/4/2006	8:45	0	BC Rep C	8.35	23.9
Blue Cypress	10/4/2006	8:50	0	BC Control	8.48	24.1
Blue Cypress	10/4/2006	10:35	2	BC Rep A	8.12	25.7
Blue Cypress	10/4/2006	10:40	2	BC Rep B	7.94	26.1
Blue Cypress	10/4/2006	10:45	2	BC Rep C	8.1	24.8
Blue Cypress	10/4/2006	10:50	2	BC Control	8.42	24.3
Blue Cypress	10/4/2006	18:35	10	BC Rep A	6.33	28.5
Blue Cypress	10/4/2006	18:40	10	BC Rep B	6.77	28.8
Blue Cypress	10/4/2006	18:45	10	BC Rep C	7.06	28.3
Blue Cypress	10/4/2006	18:50	10	BC Control	8.2	28.2
Blue Cypress	10/5/2006	8:35	24	BC Rep A	4.07	29.2
Blue Cypress	10/5/2006	8:40	24	BC Rep B	4.92	29.4
Blue Cypress	10/5/2006	8:45	24	BC Rep C	5.57	29
Blue Cypress	10/5/2006	8:50	24	BC Control	7.76	28.6
Blue Cypress	10/5/2006	20:35	36	BC Rep A	2.02	28.1
Blue Cypress	10/5/2006	20:40	36	BC Rep B	3.39	28.5
Blue Cypress	10/5/2006	20:45	36	BC Rep C	4.42	28.2
Blue Cypress	10/5/2006	20:50	36	BC Control	7.06	28
Blue Cypress	10/6/2006	8:35	48	BC Rep A	0.85	27.4
Blue Cypress	10/6/2006	8:40	48	BC Rep B	2.01	27.9
Blue Cypress	10/6/2006	8:45	48	BC Rep C	2.44	27.6
Blue Cypress	10/6/2006	8:50	48	BC Control	5.82	27.6
Blue Cypress	1/23/2007	9:10	0	BC Rep A	8.82	21.2
Blue Cypress	1/23/2007	9:15	0	BC Rep B	8.86	21.2
Blue Cypress	1/23/2007	9:20	0	BC Rep C	8.8	21.1
Blue Cypress	1/23/2007	9:25	0	BC Control	8.94	21.4
Blue Cypress	1/23/2007	11:10	2	BC Rep A	8.32	20.4
Blue Cypress	1/23/2007	11:15	2	BC Rep B	8.74	20.6
Blue Cypress	1/23/2007	11:20	2	BC Rep C	8.29	20.1
Blue Cypress	1/23/2007	11:25	2	BC Control	8.91	20.6
Blue Cypress	1/23/2007	19:10	10	BC Rep A	8.15	21.3
Blue Cypress	1/23/2007	19:15	10	BC Rep B	8.21	21.2
Blue Cypress	1/23/2007	19:20	10	BC Rep C	8.27	20.9
Blue Cypress	1/23/2007	19:25	10	BC Control	8.93	20.7
Blue Cypress	1/24/2007	9:10	24	BC Rep A	7.13	21.5
Blue Cypress	1/24/2007	9:15	24	BC Rep B	7.15	21.6
Blue Cypress	1/24/2007	9:20	24	BC Rep C	7.2	21.2
Blue Cypress	1/24/2007	9:25	24	BC Control	8.84	20.8
Blue Cypress	1/24/2007	21:10	36	BC Rep A	6.53	21.1
Blue Cypress	1/24/2007	21:15	36	BC Rep B	6.72	21.3
Blue Cypress	1/24/2007	21:20	36	BC Rep C	6.46	21
Blue Cypress	1/24/2007	21:25	36	BC Control	8.73	21.1
Blue Cypress	1/25/2007	9:10	48	BC Rep A	4.82	21.4

Appendix 1. Cont.

Lake Name	Date	Absolute Time	Δ T (hr)	Station ID	DO (mg/L)	Temperature (°C)
Blue Cypress	1/25/2007	9:15	48	BC Rep B	5.7	21.5
Blue Cypress	1/25/2007	9:20	48	BC Rep C	5.19	21.3
Blue Cypress	1/25/2007	9:25	48	BC Control	8.68	21.1
Hell 'n Blazes	4/13/2006	10:30	0	HB Rep A	8.62	21.9
Hell 'n Blazes	4/13/2006	10:35	0	HB Rep B	8.51	21.7
Hell 'n Blazes	4/13/2006	10:40	0	HB Rep C	8.5	21.7
Hell 'n Blazes	4/13/2006	10:45	0	HB Control	8.63	22
Hell 'n Blazes	4/13/2006	12:30	2	HB Rep A	8.16	21.6
Hell 'n Blazes	4/13/2006	12:35	2	HB Rep B	8.34	21.3
Hell 'n Blazes	4/13/2006	12:40	2	HB Rep C	8	21.2
Hell 'n Blazes	4/13/2006	12:45	2	HB Control	8.43	21.3
Hell 'n Blazes	4/13/2006	18:30	8	HB Rep A	6.76	22
Hell 'n Blazes	4/13/2006	18:35	8	HB Rep B	7.48	21.8
Hell 'n Blazes	4/13/2006	18:40	8	HB Rep C	7.43	21.6
Hell 'n Blazes	4/13/2006	18:45	8	HB Control	8.26	21.5
Hell 'n Blazes	4/14/2006	10:30	24	HB Rep A	4.04	21.5
Hell 'n Blazes	4/14/2006	10:35	24	HB Rep B	4.59	21.2
Hell 'n Blazes	4/14/2006	10:40	24	HB Rep C	5.64	20.7
Hell 'n Blazes	4/14/2006	10:45	24	HB Control	7.59	20.9
Hell 'n Blazes	4/14/2006	22:30	36	HB Rep A	2.48	21.1
Hell 'n Blazes	4/14/2006	22:35	36	HB Rep B	2.23	21.1
Hell 'n Blazes	4/14/2006	22:40	36	HB Rep C	4.57	20.6
Hell 'n Blazes	4/14/2006	22:45	36	HB Control	7.25	20.7
Hell 'n Blazes	4/15/2006	10:30	48	HB Rep A	2.05	21.1
Hell 'n Blazes	4/15/2006	10:35	48	HB Rep B	1.01	21
Hell 'n Blazes	4/15/2006	10:40	48	HB Rep C	3.1	20.6
Hell 'n Blazes	4/15/2006	10:45	48	HB Control	6.69	20.7
Hell 'n Blazes	7/5/2006	9:35	0	HB Rep A	10.3	25.9
Hell 'n Blazes	7/5/2006	9:40	0	HB Rep B	10.2	25.7
Hell 'n Blazes	7/5/2006	9:45	0	HB Rep C	9.97	25.9
Hell 'n Blazes	7/5/2006	9:55	0	HB Control	9.83	25.4
Hell 'n Blazes	7/5/2006	11:35	2	HB Rep A	9.65	27.8
Hell 'n Blazes	7/5/2006	11:40	2	HB Rep B	9.4	27.3
Hell 'n Blazes	7/5/2006	11:45	2	HB Rep C	9.62	26.3
Hell 'n Blazes	7/5/2006	11:55	2	HB Control	9.85	25.4
Hell 'n Blazes	7/5/2006	19:35	10	HB Rep A	7.24	29.6
Hell 'n Blazes	7/5/2006	19:40	10	HB Rep B	6.84	28.8
Hell 'n Blazes	7/5/2006	19:45	10	HB Rep C	7.55	28.7
Hell 'n Blazes	7/5/2006	19:55	10	HB Control	8.66	27.8
Hell 'n Blazes	7/6/2006	9:35	24	HB Rep A	4.89	29.5
Hell 'n Blazes	7/6/2006	9:40	24	HB Rep B	3.38	29
Hell 'n Blazes	7/6/2006	9:45	24	HB Rep C	5.36	28.6
Hell 'n Blazes	7/6/2006	9:55	24	HB Control	8.06	27.1
Hell 'n Blazes	7/6/2006	15:35	30	HB Rep A	4.57	29.4
Hell 'n Blazes	7/6/2006	15:40	30	HB Rep B	2.37	29
Hell 'n Blazes	7/6/2006	15:45	30	HB Rep C	4.65	28.5
Hell 'n Blazes	7/6/2006	15:55	30	HB Control	7.76	27.3
Hell 'n Blazes	7/6/2006	21:35	36	HB Rep A	3.66	29.4

Appendix 1. Cont.

Lake Name	Date	Absolute Time	Δ T (hr)	Station ID	DO (mg/L)	Temperature (°C)
Hell 'n Blazes	7/6/2006	21:40	36	HB Rep B	1.39	28.8
Hell 'n Blazes	7/6/2006	21:45	36	HB Rep C	3.73	28.4
Hell 'n Blazes	7/6/2006	21:55	36	HB Control	7.32	27.3
Hell 'n Blazes	7/7/2006	9:35	48	HB Rep A	2.61	29.3
Hell 'n Blazes	7/7/2006	9:40	48	HB Rep B	0.38	29
Hell 'n Blazes	7/7/2006	9:45	48	HB Rep C	2.08	28.3
Hell 'n Blazes	7/7/2006	9:50	48	HB Control	6	27.5
Hell 'n Blazes	10/6/2006	9:55	0	HB Rep A	7.58	25.5
Hell 'n Blazes	10/6/2006	10:00	0	HB Rep B	7.64	25.8
Hell 'n Blazes	10/6/2006	10:05	0	HB Rep C	7.67	25.6
Hell 'n Blazes	10/6/2006	10:10	0	HB Control	7.6	25.7
Hell 'n Blazes	10/6/2006	11:55	2	HB Rep A	7.28	24.4
Hell 'n Blazes	10/6/2006	12:00	2	HB Rep B	7.18	24.8
Hell 'n Blazes	10/6/2006	12:05	2	HB Rep C	7.28	24.6
Hell 'n Blazes	10/6/2006	12:10	2	HB Control	7.23	24
Hell 'n Blazes	10/6/2006	19:55	10	HB Rep A	5.27	25.6
Hell 'n Blazes	10/6/2006	20:00	10	HB Rep B	5.92	25.7
Hell 'n Blazes	10/6/2006	20:05	10	HB Rep C	5.64	25.7
Hell 'n Blazes	10/6/2006	20:10	10	HB Control	6	25.7
Hell 'n Blazes	10/7/2006	9:55	24	HB Rep A	2.77	25.6
Hell 'n Blazes	10/7/2006	10:00	24	HB Rep B	3.47	25.7
Hell 'n Blazes	10/7/2006	10:05	24	HB Rep C	3.23	25.6
Hell 'n Blazes	10/7/2006	10:10	24	HB Control	3.98	25.7
Hell 'n Blazes	10/7/2006	21:55	36	HB Rep A	1.15	25.5
Hell 'n Blazes	10/7/2006	22:00	36	HB Rep B	1.68	25.7
Hell 'n Blazes	10/7/2006	22:05	36	HB Rep C	1.35	25.5
Hell 'n Blazes	10/7/2006	22:10	36	HB Control	2.3	25.7
Hell 'n Blazes	10/8/2006	9:55	48	HB Rep A	0.26	25.2
Hell 'n Blazes	10/8/2006	10:00	48	HB Rep B	0.64	25.4
Hell 'n Blazes	10/8/2006	10:05	48	HB Rep C	0.51	25.4
Hell 'n Blazes	10/8/2006	10:10	48	HB Control	1	25.5
Hell 'n Blazes	1/19/2007	9:10	0	HB Rep A	8.91	19.3
Hell 'n Blazes	1/19/2007	9:15	0	HB Rep B	8.91	19.4
Hell 'n Blazes	1/19/2007	9:20	0	HB Rep C	8.95	19.5
Hell 'n Blazes	1/19/2007	9:25	0	HB Control	9.06	19.8
Hell 'n Blazes	1/19/2007	11:10	2	HB Rep A	8.7	20.2
Hell 'n Blazes	1/19/2007	11:15	2	HB Rep B	8.77	20.1
Hell 'n Blazes	1/19/2007	11:20	2	HB Rep C	8.62	19.9
Hell 'n Blazes	1/19/2007	11:25	2	HB Control	9.02	19.8
Hell 'n Blazes	1/19/2007	19:10	10	HB Rep A	7.58	21.4
Hell 'n Blazes	1/19/2007	19:15	10	HB Rep B	7.93	21.4
Hell 'n Blazes	1/19/2007	19:20	10	HB Rep C	7.75	21.3
Hell 'n Blazes	1/19/2007	19:25	10	HB Control	8.93	20.9
Hell 'n Blazes	1/20/2007	9:10	24	HB Rep A	5.12	21.5
Hell 'n Blazes	1/20/2007	9:15	24	HB Rep B	6.64	21.5
Hell 'n Blazes	1/20/2007	9:20	24	HB Rep C	6.34	21.5
Hell 'n Blazes	1/20/2007	9:25	24	HB Control	8.69	21.2
Hell 'n Blazes	1/20/2007	21:10	36	HB Rep A	3.35	21.6

Appendix 1. Cont.

Lake Name	Date	Absolute Time	Δ T (hr)	Station ID	DO (mg/L)	Temperature (°C)
Hell 'n Blazes	1/20/2007	21:15	36	HB Rep B	5.71	21.6
Hell 'n Blazes	1/20/2007	21:20	36	HB Rep C	5.15	21.4
Hell 'n Blazes	1/20/2007	21:25	36	HB Control	8.41	21
Hell 'n Blazes	1/21/2007	9:10	48	HB Rep A	1.95	21.6
Hell 'n Blazes	1/21/2007	9:15	48	HB Rep B	4.69	21.6
Hell 'n Blazes	1/21/2007	9:20	48	HB Rep C	4.32	21.3
Hell 'n Blazes	1/21/2007	9:25	48	HB Control	8.26	21.3
Poinsett	4/7/2006	22:10	0	P-1 Rep A	9.06	21.1
Poinsett	4/7/2006	22:15	0	P-1 Rep B	9.2	21
Poinsett	4/7/2006	22:20	0	P-1 Control	9.94	20.9
Poinsett	4/7/2006	22:20	0	P-1 Rep C	9.05	21.1
Poinsett	4/7/2006	22:25	0	P-2 Rep A	9.09	21.4
Poinsett	4/7/2006	22:25	0	P-2 Rep B	9.29	21.1
Poinsett	4/7/2006	22:30	0	P-2 Rep C	9.35	21
Poinsett	4/7/2006	22:35	0	P-2 Control	9.84	21.1
Poinsett	4/8/2006	0:00	2	P-1 Rep A	8.63	22.7
Poinsett	4/8/2006	0:15	2	P-1 Rep B	8.86	22.4
Poinsett	4/8/2006	0:20	2	P-1 Control	9.77	22
Poinsett	4/8/2006	0:20	2	P-1 Rep C	8.87	22.3
Poinsett	4/8/2006	0:25	2	P-2 Rep A	9.02	22.9
Poinsett	4/8/2006	0:25	2	P-2 Rep B	8.92	22.9
Poinsett	4/8/2006	0:30	2	P-2 Rep C	8.96	22.4
Poinsett	4/8/2006	0:35	2	P-2 Control	9.62	22.5
Poinsett	4/8/2006	8:10	10	P-1 Rep A	7.18	24.2
Poinsett	4/8/2006	8:15	10	P-1 Rep B	7.33	24
Poinsett	4/8/2006	8:20	10	P-1 Control	9.37	24.1
Poinsett	4/8/2006	8:20	10	P-1 Rep C	7.53	24.1
Poinsett	4/8/2006	8:25	10	P-2 Rep A	8.19	24.2
Poinsett	4/8/2006	8:30	10	P-2 Rep B	8.11	24.2
Poinsett	4/8/2006	8:35	10	P-2 Rep C	8.05	23.9
Poinsett	4/8/2006	8:40	10	P-2 Control	9.39	23.9
Poinsett	4/8/2006	22:10	24	P-1 Rep A	5.21	24.3
Poinsett	4/8/2006	22:15	24	P-1 Rep B	5.38	24.4
Poinsett	4/8/2006	22:20	24	P-1 Control	8.67	24.2
Poinsett	4/8/2006	22:20	24	P-1 Rep C	5.81	24.2
Poinsett	4/8/2006	22:25	24	P-2 Rep A	6.58	24.4
Poinsett	4/8/2006	22:25	24	P-2 Rep B	6.37	24.3
Poinsett	4/8/2006	22:30	24	P-2 Rep C	6.41	24.3
Poinsett	4/8/2006	22:35	24	P-2 Control	8.53	24.1
Poinsett	4/9/2006	10:10	36	P-1 Rep A	4.12	24.3
Poinsett	4/9/2006	10:15	36	P-1 Rep B	4.1	24.4
Poinsett	4/9/2006	10:20	36	P-1 Rep C	5.69	24.2
Poinsett	4/9/2006	10:25	36	P-1 Control	8.2	24.2
Poinsett	4/9/2006	10:25	36	P-2 Rep A	5.67	24.4
Poinsett	4/9/2006	10:35	36	P-2 Rep B	5.37	24.1
Poinsett	4/9/2006	10:35	36	P-2 Rep C	5.43	24.2
Poinsett	4/9/2006	10:40	36	P-2 Control	7.91	24.2
Poinsett	4/9/2006	22:10	48	P-1 Rep A	2.89	24.1

Appendix 1. Cont.

Lake Name	Date	Absolute Time	Δ T (hr)	Station ID	DO (mg/L)	Temperature (°C)
Poinsett	4/9/2006	22:15	48	P-1 Rep B	2.78	24.1
Poinsett	4/9/2006	22:20	48	P-1 Rep C	5	23.9
Poinsett	4/9/2006	22:25	48	P-1 Control	7.61	24.1
Poinsett	4/9/2006	22:25	48	P-2 Rep A	4.74	24.3
Poinsett	4/9/2006	22:25	48	P-2 Rep B	4.47	24.1
Poinsett	4/9/2006	22:30	48	P-2 Rep C	4.11	24.3
Poinsett	4/9/2006	22:35	48	P-2 Control	7.42	24.1
Poinsett	7/7/2006	9:35	0	P-1 Rep A	8.15	24.8
Poinsett	7/7/2006	9:40	0	P-1 Rep B	8.17	24.8
Poinsett	7/7/2006	9:50	0	P-1 Rep C	8.05	24.8
Poinsett	7/7/2006	9:55	0	P-1 Control	8.23	24.3
Poinsett	7/7/2006	10:00	0	P-2 Rep A	8.09	24.1
Poinsett	7/7/2006	10:05	0	P-2 Rep B	8.2	24.6
Poinsett	7/7/2006	10:10	0	P-2 Rep C	7.75	24.7
Poinsett	7/7/2006	10:20	0	P-2 Control	8.12	24.2
Poinsett	7/7/2006	11:35	2	P-1 Rep A	7.99	27.9
Poinsett	7/7/2006	11:40	2	P-1 Rep B	8.07	27.4
Poinsett	7/7/2006	11:50	2	P-1 Rep C	8.19	26
Poinsett	7/7/2006	11:55	2	P-1 Control	8.23	25.5
Poinsett	7/7/2006	12:00	2	P-2 Rep A	8.19	26.8
Poinsett	7/7/2006	12:10	2	P-2 Rep B	8.09	26.9
Poinsett	7/7/2006	12:15	2	P-2 Rep C	7.96	26.7
Poinsett	7/7/2006	12:20	2	P-2 Control	7.98	25.5
Poinsett	7/7/2006	19:35	10	P-1 Rep A	6.28	31.1
Poinsett	7/7/2006	19:40	10	P-1 Rep B	6.69	31
Poinsett	7/7/2006	19:50	10	P-1 Rep C	7.39	30.3
Poinsett	7/7/2006	19:55	10	P-1 Control	7.68	28.8
Poinsett	7/7/2006	20:00	10	P-2 Rep A	5.47	30.9
Poinsett	7/7/2006	20:05	10	P-2 Rep B	7.24	30.8
Poinsett	7/7/2006	20:15	10	P-2 Rep C	5.13	30.5
Poinsett	7/7/2006	20:20	10	P-2 Control	7.09	29.2
Poinsett	7/8/2006	9:50	24	P-1 Rep A	4.02	30
Poinsett	7/8/2006	9:55	24	P-1 Rep B	5.01	30
Poinsett	7/8/2006	10:00	24	P-1 Rep C	5.87	29.6
Poinsett	7/8/2006	10:05	24	P-1 Control	6.9	28.4
Poinsett	7/8/2006	10:10	24	P-2 Rep A	2.15	30.1
Poinsett	7/8/2006	10:15	24	P-2 Rep B	5.27	29.9
Poinsett	7/8/2006	10:20	24	P-2 Control	5.18	29.3
Poinsett	7/8/2006	10:20	24	P-2 Rep C	1.09	30
Poinsett	7/8/2006	21:35	36	P-1 Rep A	2.85	30
Poinsett	7/8/2006	21:40	36	P-1 Rep B	3.84	29.9
Poinsett	7/8/2006	21:50	36	P-1 Rep C	5.7	29.6
Poinsett	7/8/2006	21:55	36	P-1 Control	5.7	28.6
Poinsett	7/8/2006	22:00	36	P-2 Rep A	0.71	30.1
Poinsett	7/8/2006	22:05	36	P-2 Rep B	4.03	30
Poinsett	7/8/2006	22:10	36	P-2 Rep C	0.64	29.9
Poinsett	7/8/2006	22:20	36	P-2 Control	5.08	28.6
Poinsett	7/9/2006	9:50	48	P-1 Rep A	1.54	29.9

Appendix 1. Cont.

Lake Name	Date	Absolute Time	Δ T (hr)	Station ID	DO (mg/L)	Temperature (°C)
Poinsett	7/9/2006	9:55	48	P-1 Rep B	2.96	29.9
Poinsett	7/9/2006	10:05	48	P-1 Control	4.73	28.5
Poinsett	7/9/2006	10:05	48	P-1 Rep C	5.24	29.5
Poinsett	7/9/2006	10:10	48	P-2 Rep A	0.1	30.1
Poinsett	7/9/2006	10:15	48	P-2 Rep B	2.88	29.9
Poinsett	7/9/2006	10:20	48	P-2 Rep C	0.13	29.8
Poinsett	7/9/2006	10:25	48	P-2 Control	4.28	28.5
Poinsett	10/10/2006	8:40	0	P-1 Rep A	8.1	24.2
Poinsett	10/10/2006	8:45	0	P-1 Rep B	8.15	24
Poinsett	10/10/2006	8:50	0	P-1 Rep C	8.12	24.2
Poinsett	10/10/2006	8:55	0	P-1 Control	8.06	24.5
Poinsett	10/10/2006	9:00	0	P-2 Rep A	8.18	24.2
Poinsett	10/10/2006	9:05	0	P-2 Rep B	8.19	23.9
Poinsett	10/10/2006	9:10	0	P-2 Rep C	8.39	24.2
Poinsett	10/10/2006	9:15	0	P-2 Control	8.35	24.4
Poinsett	10/10/2006	10:40	2	P-1 Rep A	7.69	24.3
Poinsett	10/10/2006	10:45	2	P-1 Rep B	7.43	24.2
Poinsett	10/10/2006	10:50	2	P-1 Rep C	7.85	23.9
Poinsett	10/10/2006	10:55	2	P-1 Control	7.97	24.4
Poinsett	10/10/2006	11:00	2	P-2 Rep A	7.08	23
Poinsett	10/10/2006	11:05	2	P-2 Rep B	7.94	22.9
Poinsett	10/10/2006	11:10	2	P-2 Rep C	8.14	23
Poinsett	10/10/2006	11:15	2	P-2 Control	8.22	24.3
Poinsett	10/10/2006	18:40	10	P-1 Rep A	6.29	26
Poinsett	10/10/2006	18:45	10	P-1 Rep B	6	26.1
Poinsett	10/10/2006	18:50	10	P-1 Rep C	6.48	25.6
Poinsett	10/10/2006	18:55	10	P-1 Control	7.37	25.8
Poinsett	10/10/2006	19:00	10	P-2 Rep A	7.35	24.7
Poinsett	10/10/2006	19:05	10	P-2 Rep B	7.08	24.4
Poinsett	10/10/2006	19:10	10	P-2 Rep C	7.65	24.6
Poinsett	10/10/2006	19:15	10	P-2 Control	7.91	25.5
Poinsett	10/11/2006	8:40	24	P-1 Rep A	4.11	26.9
Poinsett	10/11/2006	8:45	24	P-1 Rep B	4.11	26.9
Poinsett	10/11/2006	8:50	24	P-1 Rep C	4.74	26.5
Poinsett	10/11/2006	8:55	24	P-1 Control	5.63	26.9
Poinsett	10/11/2006	9:00	24	P-2 Rep A	5.62	25.9
Poinsett	10/11/2006	9:05	24	P-2 Rep B	5.72	25.8
Poinsett	10/11/2006	9:10	24	P-2 Rep C	6.57	25.9
Poinsett	10/11/2006	9:15	24	P-2 Control	5.8	26.6
Poinsett	10/11/2006	20:40	36	P-1 Rep A	1.79	26.9
Poinsett	10/11/2006	20:45	36	P-1 Rep B	1.91	26.9
Poinsett	10/11/2006	20:50	36	P-1 Rep C	3.11	26.4
Poinsett	10/11/2006	20:55	36	P-1 Control	3.69	26.7
Poinsett	10/11/2006	21:00	36	P-2 Rep A	3.78	26
Poinsett	10/11/2006	21:05	36	P-2 Rep B	3.83	25.7
Poinsett	10/11/2006	21:10	36	P-2 Rep C	6.02	25.5
Poinsett	10/11/2006	21:15	36	P-2 Control	3.55	26.1
Poinsett	10/12/2006	8:40	48	P-1 Rep A	0.69	26.8

Appendix 1. Cont.

Lake Name	Date	Absolute Time	Δ T (hr)	Station ID	DO (mg/L)	Temperature (°C)
Poinsett	10/12/2006	8:45	48	P-1 Rep B	0.68	26.6
Poinsett	10/12/2006	8:50	48	P-1 Rep C	1.25	26.2
Poinsett	10/12/2006	8:55	48	P-1 Control	2.3	26.6
Poinsett	10/12/2006	9:00	48	P-2 Rep A	1.8	25.9
Poinsett	10/12/2006	9:05	48	P-2 Rep B	2.18	25.6
Poinsett	10/12/2006	9:10	48	P-2 Rep C	5.73	25.7
Poinsett	10/12/2006	9:15	48	P-2 Control	2.53	26.4
Poinsett	1/16/2007	9:20	0	P-1 Rep A	9.51	19.4
Poinsett	1/16/2007	9:25	0	P-1 Rep B	9.4	19.4
Poinsett	1/16/2007	9:35	0	P-1 Rep C	9.44	19.2
Poinsett	1/16/2007	9:40	0	P-1 Control	9.49	19.6
Poinsett	1/16/2007	9:45	0	P-2 Rep A	9.39	19.9
Poinsett	1/16/2007	9:50	0	P-2 Rep B	9.4	20
Poinsett	1/16/2007	9:55	0	P-2 Rep C	9.41	20
Poinsett	1/16/2007	10:20	0	P-2 Control	9.47	20.1
Poinsett	1/16/2007	11:20	2	P-1 Rep A	9.04	20.6
Poinsett	1/16/2007	11:25	2	P-1 Rep B	8.83	20.1
Poinsett	1/16/2007	11:35	2	P-1 Rep C	9.18	19.7
Poinsett	1/16/2007	11:40	2	P-1 Control	9.35	19.7
Poinsett	1/16/2007	11:45	2	P-2 Rep A	8.96	19
Poinsett	1/16/2007	11:50	2	P-2 Rep B	9.25	19
Poinsett	1/16/2007	11:55	2	P-2 Rep C	9.18	18.9
Poinsett	1/16/2007	12:20	2	P-2 Control	9.19	19.9
Poinsett	1/16/2007	19:20	10	P-1 Rep A	8.63	20.9
Poinsett	1/16/2007	19:25	10	P-1 Rep B	8.56	20.9
Poinsett	1/16/2007	19:35	10	P-1 Rep C	6.72	20.6
Poinsett	1/16/2007	19:40	10	P-1 Control	9.03	20.2
Poinsett	1/16/2007	19:45	10	P-2 Rep A	8.52	19.9
Poinsett	1/16/2007	19:50	10	P-2 Rep B	8.9	20.1
Poinsett	1/16/2007	19:55	10	P-2 Rep C	8.31	18.7
Poinsett	1/16/2007	20:20	10	P-2 Control	9.05	20.5
Poinsett	1/17/2007	9:20	24	P-1 Rep A	7.54	21.3
Poinsett	1/17/2007	9:25	24	P-1 Rep B	7.7	21.4
Poinsett	1/17/2007	9:35	24	P-1 Rep C	2.71	21.3
Poinsett	1/17/2007	9:40	24	P-1 Control	8.81	21.2
Poinsett	1/17/2007	9:45	24	P-2 Rep A	7.26	19.8
Poinsett	1/17/2007	9:50	24	P-2 Rep B	8.44	20.6
Poinsett	1/17/2007	9:55	24	P-2 Rep C	8.09	18.9
Poinsett	1/17/2007	10:20	24	P-2 Control	8.76	20.3
Poinsett	1/17/2007	21:20	36	P-1 Rep A	6.85	21.5
Poinsett	1/17/2007	21:25	36	P-1 Rep B	7.02	21.7
Poinsett	1/17/2007	21:35	36	P-1 Control	8.53	21.3
Poinsett	1/17/2007	21:35	36	P-1 Rep C	0.88	21.6
Poinsett	1/17/2007	21:40	36	P-2 Rep A	7.38	20.9
Poinsett	1/17/2007	21:45	36	P-2 Rep B	7.92	21
Poinsett	1/17/2007	21:55	36	P-2 Rep C	6.96	19.2
Poinsett	1/17/2007	22:20	36	P-2 Control	8.59	20.4
Poinsett	1/18/2007	9:20	48	P-1 Rep A	5.36	21.5

Appendix 1. Cont.

Lake Name	Date	Absolute Time	Δ T (hr)	Station ID	DO (mg/L)	Temperature (°C)
Poinsett	1/18/2007	9:25	48	P-1 Rep B	6.21	21.4
Poinsett	1/18/2007	9:35	48	P-1 Rep C	0.24	21.3
Poinsett	1/18/2007	9:40	48	P-1 Control	8.55	21.1
Poinsett	1/18/2007	9:45	48	P-2 Rep A	5.75	20.2
Poinsett	1/18/2007	9:50	48	P-2 Rep B	7.58	20.4
Poinsett	1/18/2007	9:55	48	P-2 Rep C	6.08	19.7
Poinsett	1/18/2007	10:20	48	P-2 Control	8.44	20.2
Sawgrass	4/13/2006	10:00	0	S Rep A	8.75	22.3
Sawgrass	4/13/2006	10:05	0	S Rep B	8.91	21.7
Sawgrass	4/13/2006	10:10	0	S Rep C	8.58	21.7
Sawgrass	4/13/2006	10:15	0	S Control	9	22
Sawgrass	4/13/2006	12:05	2	S Rep A	8.3	21.6
Sawgrass	4/13/2006	12:10	2	S Rep B	8.53	21.3
Sawgrass	4/13/2006	12:10	2	S Rep C	8.25	21.1
Sawgrass	4/13/2006	12:15	2	S Control	8.7	21.3
Sawgrass	4/13/2006	18:00	8	S Rep A	7.6	21.7
Sawgrass	4/13/2006	18:05	8	S Rep B	7.68	21.7
Sawgrass	4/13/2006	18:10	8	S Rep C	6.64	21.9
Sawgrass	4/13/2006	18:15	8	S Control	8.48	21.4
Sawgrass	4/14/2006	10:00	24	S Rep A	5.25	21.2
Sawgrass	4/14/2006	10:05	24	S Rep B	5.98	21
Sawgrass	4/14/2006	10:10	24	S Rep C	4.57	20.6
Sawgrass	4/14/2006	10:15	24	S Control	7.73	20.3
Sawgrass	4/14/2006	22:00	36	S Rep A	4.23	20.9
Sawgrass	4/14/2006	22:05	36	S Rep B	4.89	20.8
Sawgrass	4/14/2006	22:10	36	S Rep C	3.36	20.9
Sawgrass	4/14/2006	22:15	36	S Control	7.33	20.9
Sawgrass	4/15/2006	10:00	48	S Rep A	3.08	20.7
Sawgrass	4/15/2006	10:05	48	S Rep B	3.67	20.6
Sawgrass	4/15/2006	10:10	48	S Rep C	2.06	20.9
Sawgrass	4/15/2006	10:15	48	S Control	6.64	20.6
Sawgrass	7/5/2006	10:05	0	S Rep A	9.53	27.6
Sawgrass	7/5/2006	10:10	0	S Rep B	9.67	26.7
Sawgrass	7/5/2006	10:15	0	S Rep C	9.56	26.9
Sawgrass	7/5/2006	10:20	0	S Control	9.64	27
Sawgrass	7/5/2006	12:05	2	S Rep A	9.32	27.7
Sawgrass	7/5/2006	12:10	2	S Rep B	9.23	27.2
Sawgrass	7/5/2006	12:15	2	S Rep C	9.44	27
Sawgrass	7/5/2006	12:20	2	S Control	9.74	26.1
Sawgrass	7/5/2006	20:05	10	S Rep A	7.55	29.2
Sawgrass	7/5/2006	20:10	10	S Rep B	7.01	29
Sawgrass	7/5/2006	20:15	10	S Rep C	7.08	28.9
Sawgrass	7/5/2006	20:20	10	S Control	8.21	28.6
Sawgrass	7/6/2006	10:05	24	S Rep A	4.04	29
Sawgrass	7/6/2006	10:10	24	S Rep B	3.7	29
Sawgrass	7/6/2006	10:15	24	S Rep C	4.04	28.8
Sawgrass	7/6/2006	10:20	24	S Control	6.59	26.9
Sawgrass	7/6/2006	16:05	30	S Rep A	3.25	29

Appendix 1. Cont.

Lake Name	Date	Absolute Time	Δ T (hr)	Station ID	DO (mg/L)	Temperature (°C)
Sawgrass	7/6/2006	16:10	30	S Rep B	2.34	28.8
Sawgrass	7/6/2006	16:15	30	S Rep C	3.09	28.6
Sawgrass	7/6/2006	16:20	30	S Control	5.83	27.2
Sawgrass	7/6/2006	22:05	36	S Rep A	2.53	28.9
Sawgrass	7/6/2006	22:10	36	S Rep B	1.31	28.8
Sawgrass	7/6/2006	22:15	36	S Rep C	1.8	28.5
Sawgrass	7/6/2006	22:20	36	S Control	5.13	27
Sawgrass	7/7/2006	10:00	48	S Rep A	1.41	28.8
Sawgrass	7/7/2006	10:10	48	S Rep B	0.71	28.6
Sawgrass	7/7/2006	10:15	48	S Rep C	0.15	28.3
Sawgrass	7/7/2006	10:20	48	S Control	3.48	27
Sawgrass	10/6/2006	9:35	0	S Rep A	7.45	25.4
Sawgrass	10/6/2006	9:40	0	S Rep B	7.61	25.5
Sawgrass	10/6/2006	9:45	0	S Rep C	7.46	25.5
Sawgrass	10/6/2006	9:50	0	S Control	7.68	25.3
Sawgrass	10/6/2006	11:35	2	S Rep A	7.13	24.8
Sawgrass	10/6/2006	11:40	2	S Rep B	7.07	24.9
Sawgrass	10/6/2006	11:45	2	S Rep C	6.97	24.4
Sawgrass	10/6/2006	11:50	2	S Control	7.48	23.8
Sawgrass	10/6/2006	19:35	10	S Rep A	5.84	25.8
Sawgrass	10/6/2006	19:40	10	S Rep B	5.98	26
Sawgrass	10/6/2006	19:45	10	S Rep C	5.53	25.7
Sawgrass	10/6/2006	19:50	10	S Control	7.03	25.5
Sawgrass	10/7/2006	9:35	24	S Rep A	3.04	25.7
Sawgrass	10/7/2006	9:40	24	S Rep B	3.21	25.9
Sawgrass	10/7/2006	9:45	24	S Rep C	2.96	25.5
Sawgrass	10/7/2006	9:50	24	S Control	5.13	25.6
Sawgrass	10/7/2006	21:35	36	S Rep A	0.77	25.7
Sawgrass	10/7/2006	21:40	36	S Rep B	1.35	25.8
Sawgrass	10/7/2006	21:45	36	S Rep C	1.46	25.5
Sawgrass	10/7/2006	21:50	36	S Control	3.71	25.6
Sawgrass	10/8/2006	9:35	48	S Rep A	0.15	25.3
Sawgrass	10/8/2006	9:40	48	S Rep B	0.47	25.5
Sawgrass	10/8/2006	9:45	48	S Rep C	0.49	25.4
Sawgrass	10/8/2006	9:50	48	S Control	2.64	25.5
Sawgrass	1/19/2007	9:30	0	S Rep A	8.64	19.5
Sawgrass	1/19/2007	9:35	0	S Rep B	8.66	19.7
Sawgrass	1/19/2007	9:40	0	S Rep C	8.75	19.6
Sawgrass	1/19/2007	9:45	0	S Control	8.91	20
Sawgrass	1/19/2007	11:30	2	S Rep A	8.39	19.4
Sawgrass	1/19/2007	11:35	2	S Rep B	8.55	19.6
Sawgrass	1/19/2007	11:40	2	S Rep C	8.24	19.5
Sawgrass	1/19/2007	11:45	2	S Control	8.72	19.5
Sawgrass	1/19/2007	19:30	10	S Rep A	7.7	21
Sawgrass	1/19/2007	19:35	10	S Rep B	7.83	20.9
Sawgrass	1/19/2007	19:40	10	S Rep C	7.25	20.9
Sawgrass	1/19/2007	19:45	10	S Control	8.69	20.5
Sawgrass	1/20/2007	9:30	24	S Rep A	6.23	21.4

Appendix 1. Cont.

Lake Name	Date	Absolute Time	Δ T (hr)	Station ID	DO (mg/L)	Temperature (°C)
Sawgrass	1/20/2007	9:35	24	S Rep B	6.59	21.1
Sawgrass	1/20/2007	9:40	24	S Rep C	4.3	21.4
Sawgrass	1/20/2007	9:45	24	S Control	8.59	21
Sawgrass	1/20/2007	21:30	36	S Rep A	6.09	21.1
Sawgrass	1/20/2007	21:35	36	S Rep B	6.03	20.8
Sawgrass	1/20/2007	21:40	36	S Rep C	2.37	20.9
Sawgrass	1/20/2007	21:45	36	S Control	8.29	20.9
Sawgrass	1/21/2007	9:30	48	S Rep A	6.27	21
Sawgrass	1/21/2007	9:35	48	S Rep B	5.27	21
Sawgrass	1/21/2007	9:40	48	S Rep C	1.06	21.1
Sawgrass	1/21/2007	9:45	48	S Control	8.06	21.1
Washington	4/18/2006	11:00	0	LW-1 Rep A	8.47	22.9
Washington	4/18/2006	11:05	0	LW-1 Rep B	8.39	23.1
Washington	4/18/2006	11:10	0	LW-1 Rep C	8.35	23.3
Washington	4/18/2006	11:15	0	LW-1 Control	8.46	23.1
Washington	4/18/2006	11:20	0	LW-2 Rep A	8.43	22.9
Washington	4/18/2006	11:25	0	LW-2 Rep B	8.44	22.9
Washington	4/18/2006	11:30	0	LW-2 Rep C	8.4	22.9
Washington	4/18/2006	11:35	0	LW-2 Control	8.53	23.1
Washington	4/18/2006	13:00	2	LW-1 Rep A	8.09	26.1
Washington	4/18/2006	13:05	2	LW-1 Rep B	8.01	26.3
Washington	4/18/2006	13:10	2	LW-1 Rep C	8.17	26.3
Washington	4/18/2006	13:15	2	LW-1 Control	8.5	26.6
Washington	4/18/2006	13:20	2	LW-2 Rep A	8.14	26.6
Washington	4/18/2006	13:25	2	LW-2 Rep B	8.35	26.4
Washington	4/18/2006	13:30	2	LW-2 Rep C	8.1	26.5
Washington	4/18/2006	13:35	2	LW-2 Control	8.51	26.6
Washington	4/18/2006	19:00	8	LW-1 Rep A	7.12	26.7
Washington	4/18/2006	19:05	8	LW-1 Rep B	6.98	26.8
Washington	4/18/2006	19:10	8	LW-1 Rep C	7.47	26.5
Washington	4/18/2006	19:15	8	LW-1 Control	8.33	26.7
Washington	4/18/2006	19:20	8	LW-2 Rep A	7.61	26.6
Washington	4/18/2006	19:25	8	LW-2 Rep B	7.85	26.4
Washington	4/18/2006	19:30	8	LW-2 Rep C	6.85	26.4
Washington	4/18/2006	19:35	8	LW-2 Control	8.36	26.5
Washington	4/19/2006	11:00	24	LW-1 Rep A	5.02	25.9
Washington	4/19/2006	11:05	24	LW-1 Rep B	4.91	26
Washington	4/19/2006	11:10	24	LW-1 Rep C	6.02	25.5
Washington	4/19/2006	11:15	24	LW-1 Control	6.97	25.9
Washington	4/19/2006	11:20	24	LW-2 Rep A	6.62	25.7
Washington	4/19/2006	11:25	24	LW-2 Rep B	7.05	25.7
Washington	4/19/2006	11:30	24	LW-2 Rep C	5.32	25.7
Washington	4/19/2006	11:35	24	LW-2 Control	7.5	25.9
Washington	4/19/2006	23:00	36	LW-1 Rep A	3.46	26.2
Washington	4/19/2006	23:05	36	LW-1 Rep B	3.52	26.2
Washington	4/19/2006	23:10	36	LW-1 Rep C	4.85	26.1
Washington	4/19/2006	23:15	36	LW-1 Control	5.96	26.3
Washington	4/19/2006	23:20	36	LW-2 Rep A	5.48	26.2

Appendix 1. Cont.

Lake Name	Date	Absolute Time	∆ T (hr)	Station ID	DO (mg/L)	Temperature (°C)
Washington	4/19/2006	23:25	36	LW-2 Rep B	6.06	26.1
Washington	4/19/2006	23:30	36	LW-2 Rep C	3.88	26.2
Washington	4/19/2006	23:35	36	LW-2 Control	6.68	26.2
Washington	4/20/2006	11:00	48	LW-1 Rep A	1.95	25.5
Washington	4/20/2006	11:05	48	LW-1 Rep B	2.22	25.7
Washington	4/20/2006	11:10	48	LW-1 Rep C	3.79	25.3
Washington	4/20/2006	11:15	48	LW-1 Control	4.9	25
Washington	4/20/2006	11:20	48	LW-2 Rep A	4.62	25.4
Washington	4/20/2006	11:25	48	LW-2 Rep B	5.09	25.3
Washington	4/20/2006	11:30	48	LW-2 Rep C	2.58	25.3
Washington	4/20/2006	11:35	48	LW-2 Control	5.97	25.5
Washington	7/12/2006	8:50	0	LW-1 Rep A	8.36	24.8
Washington	7/12/2006	8:55	0	LW-1 Rep B	8.2	24.8
Washington	7/12/2006	9:00	0	LW-1 Rep C	8.35	24.7
Washington	7/12/2006	9:05	0	LW-1 Control	8.44	24.8
Washington	7/12/2006	9:10	0	LW-2 Rep A	8.4	24.5
Washington	7/12/2006	9:15	0	LW-2 Rep B	8.38	24.2
Washington	7/12/2006	9:20	0	LW-2 Rep C	8.48	24.4
Washington	7/12/2006	9:25	0	LW-2 Control	8.48	24.6
Washington	7/12/2006	10:50	2	LW-1 Rep A	7.93	26.9
Washington	7/12/2006	10:55	2	LW-1 Rep B	7.96	26.6
Washington	7/12/2006	11:00	2	LW-1 Rep C	7.29	24.9
Washington	7/12/2006	11:05	2	LW-1 Control	8.37	24.9
Washington	7/12/2006	11:10	2	LW-2 Rep A	8.16	25.1
Washington	7/12/2006	11:15	2	LW-2 Rep B	7.78	25.1
Washington	7/12/2006	11:20	2	LW-2 Rep C	8.24	25.1
Washington	7/12/2006	11:25	2	LW-2 Control	8.44	24.2
Washington	7/12/2006	18:50	10	LW-1 Rep A	6.6	29.4
Washington	7/12/2006	18:55	10	LW-1 Rep B	6.95	29.4
Washington	7/12/2006	19:00	10	LW-1 Rep C	0.79	28.8
Washington	7/12/2006	19:05	10	LW-1 Control	7.63	27
Washington	7/12/2006	19:10	10	LW-2 Rep A	5.97	28.5
Washington	7/12/2006	19:15	10	LW-2 Rep B	6.7	28
Washington	7/12/2006	19:20	10	LW-2 Rep C	6.79	28.3
Washington	7/12/2006	19:25	10	LW-2 Control	8.07	26.2
Washington	7/13/2006	8:50	24	LW-1 Rep A	4.18	29.4
Washington	7/13/2006	8:55	24	LW-1 Rep B	5.7	29
Washington	7/13/2006	9:00	24	LW-1 Rep C	0.13	28.7
Washington	7/13/2006	9:05	24	LW-1 Control	6.59	26.6
Washington	7/13/2006	9:10	24	LW-2 Rep A	4.05	28.2
Washington	7/13/2006	9:15	24	LW-2 Rep B	3.82	28.2
Washington	7/13/2006	9:20	24	LW-2 Rep C	3.97	28.6
Washington	7/13/2006	9:25	24	LW-2 Control	7.31	25.6
Washington	7/13/2006	20:50	36	LW-1 Rep A	2.05	29.1
Washington	7/13/2006	20:55	36	LW-1 Rep B	5.48	29
Washington	7/13/2006	21:00	36	LW-1 Rep C	0.18	28.4
Washington	7/13/2006	21:05	36	LW-1 Control	5.44	26.7
Washington	7/13/2006	21:10	36	LW-2 Rep A	2.06	28.3

Appendix 1. Cont.

Lake Name	Date	Absolute Time	Δ T (hr)	Station ID	DO (mg/L)	Temperature (°C)
Washington	7/13/2006	21:15	36	LW-2 Rep B	2.09	28.1
Washington	7/13/2006	21:20	36	LW-2 Rep C	2.39	28.3
Washington	7/13/2006	21:25	36	LW-2 Control	6.25	25.5
Washington	7/14/2006	8:50	48	LW-1 Rep A	0.58	29.2
Washington	7/14/2006	8:55	48	LW-1 Rep B	4.96	29.1
Washington	7/14/2006	9:00	48	LW-1 Rep C	0.15	28.6
Washington	7/14/2006	9:05	48	LW-1 Control	4.56	27.6
Washington	7/14/2006	9:10	48	LW-2 Rep A	0.41	28.2
Washington	7/14/2006	9:15	48	LW-2 Rep B	1.7	28
Washington	7/14/2006	9:20	48	LW-2 Rep C	1.33	28.4
Washington	7/14/2006	9:25	48	LW-2 Control	5.65	26.3
Washington	10/4/2006	8:55	0	LW-1 Rep A	8.33	23.1
Washington	10/4/2006	9:00	0	LW-1 Rep B	8.49	23.1
Washington	10/4/2006	9:05	0	LW-1 Rep C	7.91	23.1
Washington	10/4/2006	9:10	0	LW-1 Control	8.47	23.3
Washington	10/4/2006	9:15	0	LW-2 Rep A	8.26	23.1
Washington	10/4/2006	9:20	0	LW-2 Rep B	7.85	22.4
Washington	10/4/2006	9:25	0	LW-2 Rep C	8.52	23
Washington	10/4/2006	9:30	0	LW-2 Control	8.52	23.1
Washington	10/4/2006	10:55	2	LW-1 Rep A	7.83	23.6
Washington	10/4/2006	11:00	2	LW-1 Rep B	8.26	23.9
Washington	10/4/2006	11:05	2	LW-1 Rep C	7.37	24.9
Washington	10/4/2006	11:10	2	LW-1 Control	8.33	24.6
Washington	10/4/2006	11:15	2	LW-2 Rep A	7.9	24.3
Washington	10/4/2006	11:20	2	LW-2 Rep B	5.83	23
Washington	10/4/2006	11:25	2	LW-2 Rep C	8.2	23.6
Washington	10/4/2006	11:30	2	LW-2 Control	8.4	23.6
Washington	10/4/2006	18:55	10	LW-1 Rep A	6.63	27.9
Washington	10/4/2006	19:00	10	LW-1 Rep B	6.85	28.1
Washington	10/4/2006	19:05	10	LW-1 Rep C	5.94	28.6
Washington	10/4/2006	19:10	10	LW-1 Control	7.95	28
Washington	10/4/2006	19:15	10	LW-2 Rep A	6.83	28.4
Washington	10/4/2006	19:20	10	LW-2 Rep B	5.22	28.3
Washington	10/4/2006	19:25	10	LW-2 Rep C	7.21	28
Washington	10/4/2006	19:30	10	LW-2 Control	8.11	27.8
Washington	10/5/2006	8:55	24	LW-1 Rep A	4.55	28.5
Washington	10/5/2006	9:00	24	LW-1 Rep B	5.73	28.5
Washington	10/5/2006	9:05	24	LW-1 Rep C	3.93	29.2
Washington	10/5/2006	9:10	24	LW-1 Control	7.2	28.2
Washington	10/5/2006	9:15	24	LW-2 Rep A	4.96	29.3
Washington	10/5/2006	9:20	24	LW-2 Rep B	5.09	29
Washington	10/5/2006	9:25	24	LW-2 Rep C	5.01	28.8
Washington	10/5/2006	9:30	24	LW-2 Control	7.53	28.1
Washington	10/5/2006	20:55	36	LW-1 Rep A	2.71	28.2
Washington	10/5/2006	21:00	36	LW-1 Rep B	5.28	27.9
Washington	10/5/2006	21:05	36	LW-1 Rep C	2.88	28.2
Washington	10/5/2006	21:10	36	LW-1 Control	5.88	27.6
Washington	10/5/2006	21:15	36	LW-2 Rep A	3.32	28.3

Appendix 1. Cont.

Lake Name	Date	Absolute Time	Δ T (hr)	Station ID	DO (mg/L)	Temperature (°C)
Washington	10/5/2006	21:20	36	LW-2 Rep B	4.48	28.2
Washington	10/5/2006	21:25	36	LW-2 Rep C	3.94	28
Washington	10/5/2006	21:30	36	LW-2 Control	6.07	27.7
Washington	10/6/2006	8:55	48	LW-1 Rep A	1.21	27.4
Washington	10/6/2006	9:00	48	LW-1 Rep B	4.59	27.4
Washington	10/6/2006	9:05	48	LW-1 Rep C	1.84	27.8
Washington	10/6/2006	9:10	48	LW-1 Control	4.1	27.3
Washington	10/6/2006	9:15	48	LW-2 Rep A	1.62	27.7
Washington	10/6/2006	9:20	48	LW-2 Rep B	4.08	27.4
Washington	10/6/2006	9:25	48	LW-2 Rep C	2.87	27.1
Washington	10/6/2006	9:30	48	LW-2 Control	4.17	26.5
Washington	1/23/2007	9:30	0	LW-1 Rep A	8.62	21
Washington	1/23/2007	9:35	0	LW-1 Rep B	8.58	20.9
Washington	1/23/2007	9:40	0	LW-1 Rep C	8.66	20.8
Washington	1/23/2007	9:45	0	LW-1 Control	8.79	21.1
Washington	1/23/2007	9:50	0	LW-2 Rep A	8.66	21.2
Washington	1/23/2007	9:55	0	LW-2 Rep B	8.58	21.5
Washington	1/23/2007	10:00	0	LW-2 Rep C	8.38	21.6
Washington	1/23/2007	10:05	0	LW-2 Control	8.7	21.8
Washington	1/23/2007	11:30	2	LW-1 Rep A	8.19	19.7
Washington	1/23/2007	11:35	2	LW-1 Rep B	7.92	19.7
Washington	1/23/2007	11:40	2	LW-1 Rep C	8.29	19.8
Washington	1/23/2007	11:45	2	LW-1 Control	8.72	19.9
Washington	1/23/2007	11:50	2	LW-2 Rep A	8.29	20.4
Washington	1/23/2007	11:55	2	LW-2 Rep B	8.35	20.3
Washington	1/23/2007	12:00	2	LW-2 Rep C	7.89	20
Washington	1/23/2007	12:05	2	LW-2 Control	8.58	19.9
Washington	1/23/2007	19:30	10	LW-1 Rep A	8	20.5
Washington	1/23/2007	19:35	10	LW-1 Rep B	7.81	20.6
Washington	1/23/2007	19:40	10	LW-1 Rep C	8.17	20.8
Washington	1/23/2007	19:45	10	LW-1 Control	8.79	20.3
Washington	1/23/2007	19:50	10	LW-2 Rep A	8.15	21.3
Washington	1/23/2007	19:55	10	LW-2 Rep B	7.62	21.3
Washington	1/23/2007	20:00	10	LW-2 Rep C	7.87	21.1
Washington	1/23/2007	20:05	10	LW-2 Control	8.59	20.7
Washington	1/24/2007	9:30	24	LW-1 Rep A	7.03	21
Washington	1/24/2007	9:35	24	LW-1 Rep B	7	20.8
Washington	1/24/2007	9:40	24	LW-1 Rep C	6.78	21
Washington	1/24/2007	9:45	24	LW-1 Control	8.71	20.4
Washington	1/24/2007	9:50	24	LW-2 Rep A	6.49	21.5
Washington	1/24/2007	9:55	24	LW-2 Rep B	6.45	21.5
Washington	1/24/2007	10:00	24	LW-2 Rep C	6.82	21.4
Washington	1/24/2007	10:05	24	LW-2 Control	8.61	21.4
Washington	1/24/2007	21:30	36	LW-1 Rep A	6.5	20.9
Washington	1/24/2007	21:35	36	LW-1 Rep B	6.06	20.9
Washington	1/24/2007	21:40	36	LW-1 Rep C	6.13	20.8
Washington	1/24/2007	21:45	36	LW-1 Control	8.49	20.6
Washington	1/24/2007	21:50	36	LW-2 Rep A	6.1	21

Appendix 1. Cont.

Lake Name	Date	Absolute Time	Δ T (hr)	Station ID	DO (mg/L)	Temperature (°C)
Washington	1/24/2007	21:55	36	LW-2 Rep B	5.66	21.2
Washington	1/24/2007	22:00	36	LW-2 Rep C	6.16	21.2
Washington	1/24/2007	22:05	36	LW-2 Control	8.47	21.1
Washington	1/25/2007	9:30	48	LW-1 Rep A	5.36	21.2
Washington	1/25/2007	9:35	48	LW-1 Rep B	5.06	21.1
Washington	1/25/2007	9:40	48	LW-1 Rep C	4.75	21.1
Washington	1/25/2007	9:45	48	LW-1 Control	8.54	21
Washington	1/25/2007	9:50	48	LW-2 Rep A	4.36	21.5
Washington	1/25/2007	9:55	48	LW-2 Rep B	4.33	21.6
Washington	1/25/2007	10:00	48	LW-2 Rep C	4.9	21.4
Washington	1/25/2007	10:05	48	LW-2 Control	8.32	21.5
Winder	4/7/2006	21:25	0	W-1 Rep A	9.45	20.8
Winder	4/7/2006	21:30	0	W-1 Rep B	9.55	21.2
Winder	4/7/2006	21:35	0	W-1 Rep C	9.52	21.2
Winder	4/7/2006	21:40	0	W-1 Control	9.91	21.5
Winder	4/7/2006	21:45	0	W-2 Rep A	9.4	21.2
Winder	4/7/2006	21:50	0	W-2 Rep B	9.45	21.2
Winder	4/7/2006	21:55	0	W-2 Control	9.76	21.5
Winder	4/7/2006	21:55	0	W-2 Rep C	9.28	21.4
Winder	4/7/2006	23:25	2	W-1 Rep A	9.34	21.3
Winder	4/7/2006	23:30	2	W-1 Rep B	9.22	21.2
Winder	4/7/2006	23:35	2	W-1 Rep C	9.33	21.3
Winder	4/7/2006	23:40	2	W-1 Control	9.75	21.3
Winder	4/7/2006	23:45	2	W-2 Rep A	9.14	21.2
Winder	4/7/2006	23:50	2	W-2 Rep B	9.21	21.3
Winder	4/7/2006	23:55	2	W-2 Control	9.55	21.3
Winder	4/7/2006	23:55	2	W-2 Rep C	9.05	21.3
Winder	4/8/2006	7:25	10	W-1 Rep A	8.44	21.2
Winder	4/8/2006	7:30	10	W-1 Rep B	8.19	21.3
Winder	4/8/2006	7:35	10	W-1 Rep C	8.41	21.3
Winder	4/8/2006	7:40	10	W-1 Control	9.45	21.2
Winder	4/8/2006	7:45	10	W-2 Rep A	8	21.3
Winder	4/8/2006	7:50	10	W-2 Rep B	8.13	21.3
Winder	4/8/2006	7:55	10	W-2 Control	9.29	21.3
Winder	4/8/2006	7:55	10	W-2 Rep C	8.3	21.3
Winder	4/8/2006	21:25	24	W-1 Rep A	6.63	22.2
Winder	4/8/2006	21:30	24	W-1 Rep B	6.28	22.2
Winder	4/8/2006	21:35	24	W-1 Rep C	6.18	22.2
Winder	4/8/2006	21:40	24	W-1 Control	8.56	21.9
Winder	4/8/2006	21:45	24	W-2 Rep A	5.89	22.1
Winder	4/8/2006	21:50	24	W-2 Rep B	6.31	22.2
Winder	4/8/2006	21:55	24	W-2 Control	8.53	22.1
Winder	4/8/2006	21:55	24	W-2 Rep C	6.39	22.2
Winder	4/9/2006	9:25	36	W-1 Rep A	5.57	21.9
Winder	4/9/2006	9:30	36	W-1 Rep B	4.66	21.8
Winder	4/9/2006	9:35	36	W-1 Rep C	5.2	21.9
Winder	4/9/2006	9:40	36	W-1 Control	7.89	21.8
Winder	4/9/2006	9:45	36	W-2 Rep A	4.59	21.7

Appendix 1. Cont.

Lake Name	Date	Absolute Time	Δ T (hr)	Station ID	DO (mg/L)	Temperature (°C)
Winder	4/9/2006	9:50	36	W-2 Rep B	5.09	21.9
Winder	4/9/2006	9:55	36	W-2 Control	7.99	21.6
Winder	4/9/2006	9:55	36	W-2 Rep C	5.62	21.8
Winder	4/9/2006	21:25	48	W-1 Rep A	4.77	22.1
Winder	4/9/2006	21:30	48	W-1 Rep B	4.23	22
Winder	4/9/2006	21:35	48	W-1 Rep C	4.11	22.2
Winder	4/9/2006	21:40	48	W-1 Control	7.4	22.1
Winder	4/9/2006	21:45	48	W-2 Rep A	3.61	22.2
Winder	4/9/2006	21:50	48	W-2 Rep B	3.96	22.2
Winder	4/9/2006	21:55	48	W-2 Control	7.43	22.2
Winder	4/9/2006	21:55	48	W-2 Rep C	4.83	22.2
Winder	7/7/2006	9:00	0	W-1 Rep A	8.1	25.7
Winder	7/7/2006	9:05	0	W-1 Rep B	8.06	25.9
Winder	7/7/2006	9:10	0	W-1 Rep C	8.11	25.7
Winder	7/7/2006	9:15	0	W-1 Control	8.04	25.7
Winder	7/7/2006	9:20	0	W-2 Rep A	8.11	25
Winder	7/7/2006	9:25	0	W-2 Rep B	8.12	25.2
Winder	7/7/2006	9:30	0	W-2 Rep C	8.15	25.2
Winder	7/7/2006	9:35	0	W-2 Control	8.09	25.4
Winder	7/7/2006	11:00	2	W-1 Rep A	7.84	27.2
Winder	7/7/2006	11:05	2	W-1 Rep B	7.81	27.4
Winder	7/7/2006	11:10	2	W-1 Rep C	7.94	27.2
Winder	7/7/2006	11:15	2	W-1 Control	8.02	27.3
Winder	7/7/2006	11:20	2	W-2 Rep A	7.93	27.2
Winder	7/7/2006	11:25	2	W-2 Rep B	7.73	27.2
Winder	7/7/2006	11:30	2	W-2 Rep C	7.95	27.1
Winder	7/7/2006	11:35	2	W-2 Control	8.09	27.3
Winder	7/7/2006	19:00	10	W-1 Rep A	7.03	28.1
Winder	7/7/2006	19:05	10	W-1 Rep B	6.87	28.1
Winder	7/7/2006	19:10	10	W-1 Rep C	6.77	28.1
Winder	7/7/2006	19:15	10	W-1 Control	7.75	28.2
Winder	7/7/2006	19:20	10	W-2 Rep A	7.23	28.1
Winder	7/7/2006	19:25	10	W-2 Rep B	6.83	28.1
Winder	7/7/2006	19:30	10	W-2 Rep C	7.29	28.1
Winder	7/7/2006	19:35	10	W-2 Control	7.79	28.1
Winder	7/8/2006	9:00	24	W-1 Rep A	5.98	26.6
Winder	7/8/2006	9:05	24	W-1 Rep B	5.84	26.7
Winder	7/8/2006	9:20	24	W-1 Rep C	5.87	26.7
Winder	7/8/2006	9:25	24	W-1 Control	7.35	26.7
Winder	7/8/2006	9:30	24	W-2 Rep A	6.19	26.7
Winder	7/8/2006	9:30	24	W-2 Rep B	5.9	26.7
Winder	7/8/2006	9:45	24	W-2 Control	7.37	26.7
Winder	7/8/2006	9:45	24	W-2 Rep C	5.73	26.7
Winder	7/8/2006	21:00	36	W-1 Rep A	5.14	26.9
Winder	7/8/2006	21:05	36	W-1 Rep B	5.1	27
Winder	7/8/2006	21:10	36	W-1 Rep C	4.89	26.9
Winder	7/8/2006	21:15	36	W-1 Control	6.92	27
Winder	7/8/2006	21:20	36	W-2 Rep A	5.29	26.9

Appendix 1. Cont.

Lake Name	Date	Absolute Time	Δ T (hr)	Station ID	DO (mg/L)	Temperature (°C)
Winder	7/8/2006	21:25	36	W-2 Rep B	4.95	26.7
Winder	7/8/2006	21:30	36	W-2 Rep C	5.48	26.9
Winder	7/8/2006	21:35	36	W-2 Control	7.01	26.9
Winder	7/9/2006	9:00	48	W-1 Rep A	4.58	26.8
Winder	7/9/2006	9:05	48	W-1 Rep B	4.39	26.7
Winder	7/9/2006	9:10	48	W-1 Rep C	4.16	26.8
Winder	7/9/2006	9:15	48	W-1 Control	6.36	26.8
Winder	7/9/2006	9:20	48	W-2 Rep A	4.63	26.8
Winder	7/9/2006	9:25	48	W-2 Rep B	4.18	26.9
Winder	7/9/2006	9:30	48	W-2 Rep C	4.63	26.9
Winder	7/9/2006	9:35	48	W-2 Control	6.33	26.9
Winder	10/10/2006	9:20	0	W-1 Rep A	8.22	24.8
Winder	10/10/2006	9:25	0	W-1 Rep B	8.18	24.8
Winder	10/10/2006	9:30	0	W-1 Rep C	8.12	24.6
Winder	10/10/2006	9:35	0	W-1 Control	8.18	24.5
Winder	10/10/2006	9:40	0	W-2 Rep A	8.22	24.3
Winder	10/10/2006	9:45	0	W-2 Rep B	8.33	24
Winder	10/10/2006	9:50	0	W-2 Rep C	8.25	23.4
Winder	10/10/2006	9:55	0	W-2 Control	8.4	23.6
Winder	10/10/2006	11:20	2	W-1 Rep A	7.87	23.5
Winder	10/10/2006	11:25	2	W-1 Rep B	7.74	23.6
Winder	10/10/2006	11:30	2	W-1 Rep C	7.4	23.4
Winder	10/10/2006	11:35	2	W-1 Control	8.04	23.8
Winder	10/10/2006	11:40	2	W-2 Rep A	7.62	23
Winder	10/10/2006	11:45	2	W-2 Rep B	7.9	22.9
Winder	10/10/2006	11:50	2	W-2 Rep C	6.91	23.3
Winder	10/10/2006	11:55	2	W-2 Control	8.09	23.4
Winder	10/10/2006	19:20	10	W-1 Rep A	6.94	25.8
Winder	10/10/2006	19:25	10	W-1 Rep B	6.27	25.6
Winder	10/10/2006	19:30	10	W-1 Rep C	6.89	25.3
Winder	10/10/2006	19:35	10	W-1 Control	7.39	25.3
Winder	10/10/2006	19:40	10	W-2 Rep A	6.78	25
Winder	10/10/2006	19:45	10	W-2 Rep B	6.06	24.6
Winder	10/10/2006	19:50	10	W-2 Rep C	6.9	24.8
Winder	10/10/2006	19:55	10	W-2 Control	7.63	25
Winder	10/11/2006	9:20	24	W-1 Rep A	6.03	26.7
Winder	10/11/2006	9:25	24	W-1 Rep B	3.06	26.6
Winder	10/11/2006	9:30	24	W-1 Rep C	5.44	26.5
Winder	10/11/2006	9:35	24	W-1 Control	5.81	26.4
Winder	10/11/2006	9:40	24	W-2 Rep A	4.3	26.2
Winder	10/11/2006	9:45	24	W-2 Rep B	3.54	25.9
Winder	10/11/2006	9:50	24	W-2 Rep C	5.5	25.9
Winder	10/11/2006	9:55	24	W-2 Control	6.81	25.6
Winder	10/11/2006	21:20	36	W-1 Rep A	5.42	26.8
Winder	10/11/2006	21:25	36	W-1 Rep B	1.13	26.7
Winder	10/11/2006	21:40	36	W-1 Rep C	4	26.3
Winder	10/11/2006	21:45	36	W-1 Control	4.57	25.9
Winder	10/11/2006	21:55	36	W-2 Rep A	2.12	26.1

Appendix 1. Cont.

Lake Name	Date	Absolute Time	Δ T (hr)	Station ID	DO (mg/L)	Temperature (°C)
Winder	10/11/2006	22:00	36	W-2 Rep B	2.95	25.8
Winder	10/11/2006	22:05	36	W-2 Rep C	4.63	25.8
Winder	10/11/2006	22:10	36	W-2 Control	6.03	25.4
Winder	10/12/2006	9:20	48	W-1 Rep A	4.14	26.7
Winder	10/12/2006	9:25	48	W-1 Rep B	0.1	26.6
Winder	10/12/2006	9:30	48	W-1 Rep C	3.75	26.4
Winder	10/12/2006	9:35	48	W-1 Control	3.57	26.1
Winder	10/12/2006	9:40	48	W-2 Rep A	0.8	26.2
Winder	10/12/2006	9:45	48	W-2 Rep B	0.86	26
Winder	10/12/2006	9:50	48	W-2 Rep C	3.68	25.8
Winder	10/12/2006	9:55	48	W-2 Control	4.96	25.8
Winder	1/16/2007	10:05	0	W-1 Rep A	9.25	20.1
Winder	1/16/2007	10:10	0	W-1 Rep B	9.15	20.1
Winder	1/16/2007	10:15	0	W-1 Rep C	9.18	20.1
Winder	1/16/2007	10:20	0	W-1 Control	9.3	20.2
Winder	1/16/2007	10:25	0	W-2 Rep A	9.28	20.2
Winder	1/16/2007	10:30	0	W-2 Rep B	9.34	20.2
Winder	1/16/2007	10:35	0	W-2 Rep C	9.38	20.2
Winder	1/16/2007	10:40	0	W-2 Control	9.37	20.2
Winder	1/16/2007	12:05	2	W-1 Rep A	8.87	20.6
Winder	1/16/2007	12:10	2	W-1 Rep B	8.69	20.3
Winder	1/16/2007	12:15	2	W-1 Rep C	8.81	20.2
Winder	1/16/2007	12:20	2	W-1 Control	9.05	19.8
Winder	1/16/2007	12:25	2	W-2 Rep A	9.04	20.1
Winder	1/16/2007	12:30	2	W-2 Rep B	9.06	20
Winder	1/16/2007	12:35	2	W-2 Rep C	8.99	20.4
Winder	1/16/2007	12:40	2	W-2 Control	9.18	20.2
Winder	1/16/2007	20:05	10	W-1 Rep A	8.3	20.9
Winder	1/16/2007	20:10	10	W-1 Rep B	7.88	21
Winder	1/16/2007	20:15	10	W-1 Rep C	8.15	20.8
Winder	1/16/2007	20:20	10	W-1 Control	8.91	20.1
Winder	1/16/2007	20:25	10	W-2 Rep A	8.61	20.8
Winder	1/16/2007	20:30	10	W-2 Rep B	8.63	20.8
Winder	1/16/2007	20:35	10	W-2 Rep C	8.67	21.1
Winder	1/16/2007	20:40	10	W-2 Control	8.99	20.6
Winder	1/17/2007	10:05	24	W-1 Rep A	7.12	21.1
Winder	1/17/2007	10:10	24	W-1 Rep B	6.73	21.2
Winder	1/17/2007	10:15	24	W-1 Rep C	7.13	21.1
Winder	1/17/2007	10:20	24	W-1 Control	8.63	20.3
Winder	1/17/2007	10:25	24	W-2 Rep A	7.72	21
Winder	1/17/2007	10:30	24	W-2 Rep B	7.59	20.8
Winder	1/17/2007	10:35	24	W-2 Rep C	7.89	20.9
Winder	1/17/2007	10:40	24	W-2 Control	8.78	20.5
Winder	1/17/2007	22:05	36	W-1 Rep A	6.33	21.5
Winder	1/17/2007	22:10	36	W-1 Rep B	6.02	21.4
Winder	1/17/2007	22:15	36	W-1 Rep C	6.38	21.4
Winder	1/17/2007	22:20	36	W-1 Control	8.52	20.8
Winder	1/17/2007	22:25	36	W-2 Rep A	7.43	21.3

Appendix 1. Cont.

Lake Name	Date	Absolute Time	Δ T (hr)	Station ID	DO (mg/L)	Temperature (°C)
Winder	1/17/2007	22:30	36	W-2 Rep B	7.08	21.2
Winder	1/17/2007	22:35	36	W-2 Rep C	7.32	21.3
Winder	1/17/2007	22:40	36	W-2 Control	8.57	20.6
Winder	1/18/2007	10:05	48	W-1 Rep A	5.41	21.7
Winder	1/18/2007	10:10	48	W-1 Rep B	5.28	21.6
Winder	1/18/2007	10:15	48	W-1 Rep C	5.6	21.5
Winder	1/18/2007	10:20	48	W-1 Control	8.5	20.3
Winder	1/18/2007	10:25	48	W-2 Rep A	7.1	21.2
Winder	1/18/2007	10:30	48	W-2 Rep B	6.53	21.3
Winder	1/18/2007	10:35	48	W-2 Rep C	6.51	21.4
Winder	1/18/2007	10:40	48	W-2 Control	8.41	20.4

Appendix 2. Sediment characteristics for each of the three replicate cores collected during the four seasonal samplings.

Spring

Lake Winder - 1 (closest to inflow)

- Reps A and B: 3 cm of dark, fine-grained, flocculent particles underlain with 11 cm of light-colored sand with a sharp boundary between the two horizons; 8 cm of dark sandy clay at the bottom
- Rep C: entire core length (23 cm) consisted of dark, fine-grained particles, becoming more densely packed with depth. No sand noted – only muck.

Lake Winder - 2 (closest to outflow)

- Reps A-C: 0.5-1.0 cm of dark, fine-grained flocculent particles underlain with 7-8 cm of light-colored sand with a sharp boundary between the two horizons; 10 cm of dark sandy clay at the bottom.

Lake Poinsett - 1 (closest to inflow)

- Reps A-C: < 0.5 cm of dark, fine-grained flocculent particles underlain with 2 cm of dark cohesive muck, which is underlain by lighter-colored muck containing sand and clays.

Lake Poinsett - 2 (closest to outflow)

- Reps A-C: 0.5 cm dark, fine-grained flocculent particles underlain with 6-8 cm of lighter-colored sand with a sharp boundary between the two horizons; 7-10 cm of hard clay at the bottom.

Hell 'n Blazes

- Reps A-C: Upper 0.5 cm fibrous detritus followed by 3-4 cm of coarse-grained muck; bottom 20-21 cm of core is peat.

Sawgrass

- Rep A: Upper 4 cm large detritus particles, darker than the 18 cm of brown peat below. No observable sandy layer.
- Rep B: Upper 2 cm large detritus particles, darker than the 9 cm of brown peat below, which is followed by 6 cm of brown, sandy peat. Bottom 4 cm of core is dark-colored clay.

- Rep C: Upper 4 cm large detritus particles, darker than the 9 cm of brown peat below, which is followed by 8 cm of brown, sandy peat. Bottom 5 cm of core is dark-colored clay.

Blue Cypress

- Reps A-C: Entire core length is black, fine-grained, cohesive muck with particle density increasing with core depth. No plant fragments.

Lake Washington – 1 (closest to inflow)

- Reps A-C: Upper 2-3 cm fine-grained, cohesive, particles followed by dark brown, fine-grained muck that is less cohesive.

Lake Washington –2 (closest to outflow)

- Rep A: 1 cm of dark, fine-grained floc followed by 8 cm of brown, organic sand. Bottom 2 cm of core is clay.
- Rep B: 1 cm of dark, fine-grained floc followed by 8 cm of dark brown, fine-grained, cohesive, muck.
- Rep C: 2 cm of dark, fine-grained floc followed by 8 cm of brown, organic sand. Bottom 5 cm of core is dark, sandy clay.

Summer

Lake Winder - 1 (closest to inflow)

- Rep A: 2 cm of dark, fine-grained, flocculent particles underlain with 8.5 cm of dark sandy clay at the bottom.
- Rep B: 1 cm of dark, fine-grained, flocculent particles underlain with 6.5 cm of dark sandy clay at the bottom.
- Rep C: 1.5 cm of dark, fine-grained, flocculent particles underlain with 7.0 cm of dark sandy clay at the bottom.

Lake Winder - 2 (closest to outflow)

- Rep A: 0.1 cm of dark, fine-grained flocculent particles underlain with 6 cm of light-colored sand with a sharp boundary between the two horizons; 15 cm of dark (black) sandy clay at the bottom.

Appendix 2. Cont.

- Rep B: 0.1 cm of dark, fine-grained flocculent particles underlain with 5 cm of light-colored sand with a sharp boundary between the two horizons; 18 cm of dark (black) sandy clay at the bottom.
- Rep C: 0.1 cm of dark, fine-grained flocculent particles underlain with 5 cm of light-colored sand with a sharp boundary between the two horizons; 10 cm of dark (black) sandy clay at the bottom.

Lake Poinsett - 1 (closest to inflow)

- Rep A: 0.3 cm of dark, fine-grained flocculent particles underlain with 24 cm of brown sand followed by 2-cm clay layer at bottom.
- Rep B: 0.3 cm of dark, fine-grained flocculent particles underlain with 10 cm of lighter-colored muck containing sand followed by 9 cm of brown sand.
- Rep C: 0.1 cm of dark, fine-grained flocculent particles underlain with 19.5 cm of brown sand.

Lake Poinsett - 2 (closest to outflow)

- Rep A: 0.3 cm dark, fine-grained flocculent particles underlain with 4.5 cm of mucky sand containing 4 live clams and one live snail followed by 7 cm of gray, sandy cohesive clay.
- Rep B: 0.3 cm dark, fine-grained flocculent particles underlain with 4 cm of mucky sand followed by 15 cm of gray, sandy cohesive clay.
- Rep C: 0.3 cm dark, fine-grained flocculent particles underlain with 4 cm of mucky sand containing 1 live clam followed by 9 cm of gray, sandy cohesive clay and then 9 cm of mostly sand with a little clay (less gray and cohesive than preceding horizon).

Hell ‘n Blazes

- Reps A-C: Upper 0.5 cm fibrous detritus followed by 20.5-21 cm of coarse-grained, dark brown muck all the way to the bottom of the cores. Upper layer of the horizon was slightly darker (almost black) compared to the lower part of the horizon.

Sawgrass

- Rep A: Upper 0.1 cm large, flocculent detritus particles, darker than the 4 cm of sand below, which was followed by a 11 cm dark, sandy clay layer.

Appendix 2. Cont.

- Rep B: Upper 0.1 cm large, flocculent detritus particles, darker than 5 cm of brown peat below, which was followed by 12 cm of sand. Bottom 4 cm of core was dark-colored clay.
- Rep C: Upper 0.1 cm large detritus particles, darker than the 1.5 cm of brown peat below, which is followed by 1.5 cm of sand. Bottom 17 cm of core is a dark-colored clay.

Blue Cypress

- Reps A-C: Entire core length is black, fine-grained, cohesive muck with particle density increasing with core depth. No plant fragments.

Lake Washington – 1 (closest to inflow)

- Reps A-C: Upper 2-3 cm fine-grained, cohesive, particles followed by dark brown or almost black, fine-grained muck that is cohesive.

Lake Washington –2 (closest to outflow)

- Rep A: 1 cm of dark, fine-grained floc followed by 6.5 cm of brown, organic sand.
- Rep B: 1 cm of dark, fine-grained floc followed by 11.5 cm of dark brown, fine-grained, cohesive, sandy muck.
- Rep C: 0.5 cm of dark, fine-grained floc followed by 6 cm of dark brown, fine-grained, cohesive muck with just a slight amount of sand.

Fall

Lake Winder - 1 (closest to inflow)

- Rep A: 2 cm of dark, fine-grained, flocculent particles underlain with 9.5 cm of dark sandy clay at the bottom.
- Rep B: 1 cm of dark, fine-grained, flocculent particles underlain with 16.5 cm of dark brown, fine-grained cohesive muck at the bottom.
- Rep C: 0.3 cm of dark, fine-grained, flocculent particles underlain with 17.7 cm of dark sandy clay at the bottom.

Lake Winder - 2 (closest to outflow)

- Rep A: 0.5 cm of dark, fine-grained flocculent particles containing one live snail underlain with 7 cm of light-colored sand with a sharp boundary between the two horizons; 8 cm of dark (black) sandy clay at the bottom.

Appendix 2. Cont.

- Rep B: 0.2 cm of dark, fine-grained flocculent particles containing one live snail underlain with 12 cm of light-colored sand with a sharp boundary between the two horizons, grading into darker- colored sand at the bottom.
- Rep C: 0.1 cm of dark, fine-grained flocculent particles underlain with 8 cm of light-colored sand with a sharp boundary between the two horizons; 11 cm of dark (black) sandy clay at the bottom.

Lake Poinsett - 1 (closest to inflow)

- Rep A: 0.3 cm of dark, fine-grained flocculent particles underlain with 15 cm of dark, sandy clay followed by 6-cm clay layer at bottom.
- Rep B: 0.3 cm of dark, fine-grained flocculent particles underlain with 20 cm of lighter-colored muck containing sand.
- Rep C: 0.3 cm of dark, fine-grained flocculent particles underlain with 13 cm of dark, sandy clay followed by 6 cm of dark clay.

Lake Poinsett - 2 (closest to outflow)

- Rep A: 0.5 cm dark, fine-grained flocculent particles underlain with 2 cm of light-colored sand followed by 7 cm of gray, sandy cohesive clay.
- Rep B: 0.5 cm dark, fine-grained flocculent particles underlain with 5 cm of light-colored sand followed by 8 cm of gray, sandy cohesive clay.
- Rep C: 0.3 cm dark, fine-grained flocculent particles underlain with 3 cm of light-colored sand containing 1 chironomid lava followed by 4 cm of gray, sandy cohesive clay.

Hell 'n Blazes

- Reps A-C: Upper 0.5 cm (Rep A only) and 0.2 cm (Reps B and C) fibrous detritus followed by 20.5-21 cm of coarse-grained, dark brown muck all the way to the bottom of the cores.

Sawgrass

- Rep A: Upper 0.2 cm consists of fibrous detritus followed by 7 cm of brown peat, darker than the 9 cm of sand below, which was followed by a 9 cm dark, sandy clay layer.
- Rep B: Upper 0.2 cm consists of fibrous detritus, darker than 9 cm of brown peat below, which was followed by 5 cm of sand. Bottom 5.5 cm of core was dark sandy clay layer.

Appendix 2. Cont.

- Rep C: Upper 0.2 cm fibrous detritus, darker than the 10 cm of brown peat below, which is followed by 5 cm of sand. Bottom 5 cm of core is dark-colored clay.

Blue Cypress

- Reps A-C: Entire core length is black, fine-grained, cohesive muck with particle density increasing with core depth. No plant fragments.

Lake Washington – 1 (closest to inflow)

- Reps A -C: Dark brown, fine-grained muck with drier, not as cohesive particles towards the bottom for Reps A and B than Rep C, which is more cohesive.

Lake Washington –2 (closest to outflow)

- Rep A: 0.5 cm of dark, fine-grained floc followed by 2 cm of brown, organic sand underlain by 11 cm of gray-black sandy clay.
- Rep B: 1 cm of dark, fine-grained floc followed by 2 cm of dark brown, fine-grained, cohesive, sandy muck underlain by 9 cm of gray-black sandy clay.
- Rep C: 0.5 cm of dark, fine-grained floc followed by 3 cm of dark brown, fine-grained, cohesive sandy muck underlain by 9 cm of gray-black sandy clay.

Winter

Lake Winder - 1 (closest to inflow)

- Rep A: 1 cm of dark, fine-grained, flocculent particles followed by 6 cm of brown, sandy clay underlain with 8 cm of black clay followed by 2 cm of dark sandy clay at the bottom.
- Rep B: 1 cm of dark, fine-grained, flocculent particles underlain with 6 cm of brown sandy clay followed by 17 cm of black, sandy clay at the bottom.
- Rep C: 0.1 cm of dark, fine-grained, flocculent particles underlain with 3 cm of brown, sandy clay followed by 19 cm of black, sandy clay at the bottom.

Lake Winder - 2 (closest to outflow)

- Rep A: 0.5 cm of dark, fine-grained flocculent particles underlain with 7 cm of light-colored sand with a sharp boundary between the two horizons; 12cm of dark (black) sandy clay at the bottom.

- Rep B: 0.3 cm of dark, fine-grained flocculent particles underlain with 18 cm of light-colored sand with a sharp boundary between the two horizons, grading into black, sandy clay at the bottom.
- Rep C: 0.1 cm of dark, fine-grained flocculent particles underlain with 8 cm of light-colored sand with a sharp boundary between the two horizons; 11 cm of dark (black) sandy clay at the bottom.

Lake Poinsett - 1 (closest to inflow)

- Rep A: 0.3 cm of dark, fine-grained flocculent particles underlain with 12 cm of dark, sandy clay layer at the bottom.
- Rep B: 0.3 cm of dark, fine-grained flocculent particles underlain with 12.5 cm of dark, sandy clay at the bottom.
- Rep C: 0.3 cm of dark, fine-grained flocculent particles containing one live bivalve underlain with 16 cm of dark, sandy clay followed by 7 cm of dark clay.

Lake Poinsett - 2 (closest to outflow)

- Rep A: 0.5 cm dark, fine-grained flocculent particles underlain with 5 cm of light-colored sand at the bottom.
- Rep B: 1.0 cm dark, fine-grained flocculent particles underlain with 4.5 cm of light-colored sand at the bottom.
- Rep C: 0.3 cm dark, fine-grained flocculent particles underlain with 5.5 cm of light-colored sand at the bottom.

Hell 'n Blazes

- Reps A:-C: Upper 0.1 cm fibrous detritus followed by 4 cm of black muck and ending with 16-18.5 cm of coarse-grained dark brown muck.

Sawgrass

- Rep A: Upper 0.1 cm consists of fibrous detritus followed by 3 cm of black muck, then 10 cm of brown peat, and ending with 8 cm of light sand.
- Rep B: Upper 0.1 cm consist of fibrous detritus followed by 2 cm of black muck, then 8.5 cm of brown peat, followed by 4 cm of sand. Bottom 9 cm of core was a dark sandy clay.
- Rep C: Upper 0.1 cm consist of fibrous detritus followed by 5.5 cm of black muck, then 9 cm of brown peat, followed 7 cm of sand.

Blue Cypress

Appendix 2. Cont.

- Reps A-C: Entire core length is black, fine-grained, cohesive muck with particle density increasing with core depth. No plant fragments.

Lake Washington – 1 (closest to inflow)

- Reps A -C: Dark brown, fine-grained muck with drier, not as cohesive particles towards the bottom.

Lake Washington – 2 (closest to outflow)

- Rep A: 1.5 cm of dark, fine-grained floc followed by 6 cm dark brown, fined-grained, cohesive, sandy muck.
- Rep B: 1 cm of dark, fined-grained floc followed by 4 cm of dark brown, fine-grained, cohesive, sandy muck underlain by 8 cm of gray-black sandy clay
- Rep C: 1 cm of dark, fine-grained floc followed by 7 cm of dark brown, fine-grained, cohesive, sandy muck.

Appendix 3. Averages of the replicate cores with and without invertebrates and sediment oxygen demand calculations for each sediment and control core for each season.

Lake Winder DO (Spring)

Parameter	Date	Δ T (hr)	W-1 Control	W-1 Rep A	W-1 Rep B	W-1 Rep C	W-2 Rep A	W-2 Rep B	W-2 Rep C	W-2 Control	W-1 Avg.	W-2 Avg.	Control Avg.	W-1 S.E.	W-2 S.E.	Control S.E.
DO	4/7/2006	0	9.91	9.45	9.55	9.52	9.4	9.45	9.28	9.76	9.51	9.38	9.84	0.030	0.050	0.075
	4/7/2006	2	9.75	9.34	9.22	9.33	9.14	9.21	9.05	9.55	9.30	9.13	9.65	0.038	0.046	0.1
	4/8/2006	10	9.45	8.44	8.19	8.41	8	8.13	8.3	9.29	8.35	8.14	9.37	0.079	0.087	0.08
	4/8/2006	24	8.56	6.63	6.28	6.18	5.89	6.31	6.39	8.53	6.36	6.20	8.55	0.136	0.155	0.015
	4/9/2006	36	7.89	5.57	4.66	5.2	4.59	5.09	5.62	7.99	5.14	5.10	7.94	0.264	0.297	0.05
	4/9/2006	48	7.4	4.77	4.23	4.11	3.61	3.96	4.83	7.43	4.37	4.13	7.42	0.203	0.363	0.015
Based on Regression		Initial DO	9.896	9.413	9.370	9.459	9.266	9.350	9.168	9.716	9.414	9.261	9.806			
		Final DO	7.330	4.502	3.734	3.857	3.280	3.770	4.553	7.418	4.031	3.868	7.374			
		Slope	-0.0535	-0.1023	-0.1174	-0.1167	-0.1247	-0.1162	-0.0962	-0.0479	-0.1121	-0.1124	-0.0507			

Area of core (m^2) 0.00385

	W-1 Rep A	W-1 Rep I	W-1 Rep C	W-1 Control	W-2 Rep A	W-2 Rep B	W-2 Rep C	W-2 Control
Sediment Depth (cm)	22	23	23		20.5	19	18	
Overlying water depth (cm)	22	21	20.5	21	15.5	17	18	22
Area of core (cm^2)	38.465	38.465	38.465	38.465	38.465	38.465	38.465	38.465
Volume of overlying water (L)	0.846	0.808	0.789	0.808	0.596	0.654	0.692	0.846
Δ of DO (mg/L)	4.910	5.636	5.603	2.566	5.986	5.579	4.616	2.298
O_2 Depletion (g $O_2/m^2 \cdot$day)	0.54	0.59	0.57	0.27	0.46	0.47	0.42	0.25
SOD (g $O_2/m^2 \cdot$day)	0.27	0.32	0.30		0.21	0.22	0.16	

Average	W-1	W-2	Control
O_2 Depletion (g $O_2/m^2 \cdot$day)	0.57	0.45	0.26
S.E.	0.015	0.018	0.008
SOD (g $O_2/m^2 \cdot$day)	0.30	0.20	
S.E.	0.015	0.018	
Lake SOD (g $O_2/m^2 \cdot$day)	0.25		
S.E.	0.025		

Notes: All data accepted.