

Watauga Reservoir
Annual Report 2007

Prepared By:

John Hammonds
and
Douglas C. Peterson

Tennessee Wildlife Resources Agency
Region IV
3030 Wildlife Way
Morristown, TN 37814

All activities covered in this report were conducted under the following TWRA cost centers: 4311, 4312, and 4313. Development of this report was financed in part by funds from Federal Aid in Fish and Wildlife Restoration (Public Law 91-503) as documented in Federal Aid Project FW-6.

This program receives Federal Aid in Fish and Wildlife Restoration. Under Title VI of the Civil Rights Act of 1964 and Section 504 of the Rehabilitation Act of 1973, the United States Department of the Interior prohibits discrimination on the basis of race, color, national origin, or disability. If you believe you have been discriminated against in any program, activity, or facility as described above, or if you desire further information, please write to:

Office of Equal Opportunity
United States Department of the Interior
Washington, D.C. 20240

Table of contents

	Page
Species Summaries	3-6
Stocking	7
Habitat	7
 Tables	
1. Morphometric, physical, and chemical characteristics	9
2. Fish stocked in Watauga Reservoir.....	10
3. Number of species collected by gear type	11
4. Largemouth and smallmouth bass CPUE and RSD by category	12
5. Walleye CPUE and RSD by category	13
6. Largemouth bass mean relative weights (Wr).....	14
7. Smallmouth bass mean relative weights (Wr).....	14
8. Habitat enhancement summary	15
 Figures	
1. Sites sampled on Watauga Reservoir in 2006	17
2. Largemouth bass incremental CPUE values.....	18
3. Largemouth bass length frequency by percent	18
4. Largemouth bass mean relative weights (Wr).....	19
5. Largemouth bass traditional PSD and RSD-15 values	19
6. Smallmouth bass incremental CPUE values.....	20
7. Smallmouth bass length frequency by percent	20
8. Smallmouth bass mean relative weights (Wr).....	21
9. Smallmouth bass traditional PSD and RSD-14 values.....	21
 Appendix A – Water Quality	
Tables A1 – A8. Summer water quality sampling data.....	23 – 30
Figures A1 – A8. Summer water quality sampling data	31 – 38
 Appendix B – Reservoir Elevations	
Table B1. Daily reservoir elevation data	40
Figure B1. Daily reservoir elevation data with guide curve	43
 Appendix C – Angler Creel Survey	
	44

Largemouth Bass

Population Parameter	Annual Rating	Measure	Gear	Value
Recruitment	Poor	Sub-stock CPUE	Electrofishing	0.8 fish/hr.
Growth		Mean TL at Age-3	Electrofishing	N/A
	Good	RSD-P (380 mm)	Electrofishing	55 %
Density	Good	CPUE \geq Stock Size (200 mm)	Electrofishing	19.2 fish/hr.
	Good	CPUE \geq Minimum Size Limit	Electrofishing	15.6 fish/hr.
Mortality		Total Mortality (Z)	Electrofishing	N/A
Angling Pressure	Moderate	Fishing Effort (# of hours)	Creel Survey	N/A
Fishing Success	Fair	Angler Catch Rate (# fish/hr)	Creel Survey	N/A
Value of Fishery	Excellent	Trip Expenditures	Creel Survey	N/A

Fishery Forecast:

Due to the low primary production of Watauga Reservoir, the largemouth bass densities have never been high. However, densities have remained stable and this year, they were the highest that have been recorded since standardized sampling began in 1998.

Also the percentage of largemouth bass over 381 mm (15-inches) has been above 40 percent since 1993, indicating a very good quality and stable largemouth bass fishery. The quality of the fishery is excellent and should remain stable for the 2008 season.

Management Recommendations:

No change to the current 305 mm (12-inch) minimum length limit. Gather age, growth, and mortality data.

Smallmouth Bass

Population Parameter	Annual Rating	Measure	Gear	Value
Recruitment	Good	Sub-stock CPUE	Electrofishing	3.8 fish/hr.
<i>Growth*</i>	<i>Good</i>	<i>Mean TL at Age-3</i>	<i>Electrofishing</i>	<i>246 mm</i>
	Good	RSD-P (350 mm)	Electrofishing	47%
Density	Good	CPUE \geq Stock Size (180 mm)	Electrofishing	24.4 fish/hr.
	Fair	CPUE \geq Minimum Size Limit	Electrofishing	14.6 fish/hr.
<i>Mortality*</i>	<i>Moderate</i>	<i>Total Mortality (Z)</i>	<i>Electrofishing</i>	<i>48%</i>
Angling Pressure	Moderate	Fishing Effort (# of hours)	Creel Survey	N/A
Fishing Success	Fair	Angler Catch Rate (# fish/hr)	Creel Survey	N/A
Value of Fishery	Excellent	Trip Expenditures	Creel Survey	N/A

* *Based on a 1999 data set.*

Fishery Forecast:

Although we sampled excellent numbers of larger smallmouth bass in 2007, we had really good numbers of smallmouth from 8 to 10-inches. These size fish should recruit well into the quality and preferred size fish, especially with the incremental size limit being implemented March 1, 2008. As always, the quality of the smallmouth bass fishery is excellent and also very stable. We consistently collect large fish in our electrofishing samples and the data shows no decline in the percent of larger (>356 mm) smallmouth bass in the population. The smallmouth bass fishery should remain in good quality for the 2008 season.

Management Recommendations:

Implement an incremental minimum size limit of 16-inches in 2008 and 18-inches in 2009. Monitor the impact of the new regulation to the smallmouth bass population. Continue to monitor the same concern about the "trout minnows" that seems to be an issue on Watauga as well as South Holston.

Walleye

Population Parameter	Annual Rating	Measure	Gear	Value
Density	Good	RSD-P (510 mm)	Gill Net	38 %
	Good	CPUE >Stock Size (250 mm)	Gill Net	9.4 fish / net night
	Excellent	CPUE > Minimum Size Limit (457 mm)	Gill Net	5.1 fish / net night
Angling Pressure	Good	Fishing Effort (# of hours)	Creel Survey	N/A
Fishing Success	Poor	Angler Catch Rate (# fish/hr)	Creel Survey	N/A
Value of Fishery	Good	Trip Expenditures	Creel Survey	N/A

Fishery Forecast:

The quality of the walleye fishery is excellent. It is an underutilized opportunity for anglers wishing to catch very good quality fish. The samples taken in Watauga consistently have excellent percentages and numbers of quality size walleye. The fishery should remain stable for the 2008 season, due to stocking efforts.

Management Recommendations:

Maintain current regulations and current stocking rates.

Rainbow Trout

Angling Pressure	N/A	Fishing Effort (# of hours)	Creel Survey	N/A
Fishing Success	N/A	Angler Catch Rate (# fish/hr)	Creel Survey	N/A
Value of Fishery	N/A	Trip Expenditures	Creel Survey	N/A

Fishery Forecast:

The quality of the fishery should remain stable. Tennessee Technological University will be conducting a research project on trout species in Watauga Reservoir and we hope to learn a lot more about the size structure, age structure and recommended stocking rates in the near future.

Management Recommendations

Maintain current regulations and current stocking rates. Attempt to sample the fishery with vertical gill nets in the near future.

Lake Trout

Angling Pressure	N/A	Fishing Effort (# of hours)	Creel Survey	N/A
Fishing Success	N/A	Angler Catch Rate (# fish/hr)	Creel Survey	N/A
Value of Fishery	N/A	Trip Expenditures	Creel Survey	N/A

Fishery Forecast:

The quality of the fishery should remain stable. Tennessee Technological University will be conducting a research project on trout species in Watauga Reservoir and we hope to learn a lot more about the size structure, age structure and recommended stocking rates in the near future.

Management Recommendations

Maintain current regulations and current stocking rates. Attempt to sample the fishery with vertical gill nets in the near future.

Stocking and Stocking Evaluations

Species	Number Stocked	Mark	Evaluation	Age-0 CPUE
Walleye	35,061	None	Gill Net	fish / net night
Rainbow Trout	56,629	fin clip	Angler Survey	N/A
Lake Trout	80,937	fin clip	Angler Survey	N/A

Habitat Enhancement and Monitoring

Type of Work	Details	Date
Shoreline Stabilization		See table 7.
Shoreline Seeding		"
Aquatic Plants		"
Fish Attractors (Shallow Water)		"
Fish Attractors (Deep Water)		"
Smallmouth Spawning Benches		"
Stake Beds		"
Water Quality Monitoring	Temperature, pH, Conductivity, and D.O.	July, August, September

Tables

Table 1. The morphometric, physical, and chemical characteristics of Watauga Reservoir.

Parameter	Measurement	
	<i>English</i>	<i>Metric</i>
Surface Area	6,430 ac	2,602 ha
Drainage Area	468 sq. mi	1,213 sq. km
Full Pool Elevation	1,959 ft msl	597 m msl
Mean Annual Fluctuation	44 feet	13.4 m
Shoreline Distance	105 mi	169 km
Maximum Depth	312 ft	95 m
Thermocline Depth	30 ft	9.1m
Mean Chlorophyll (Forebay)	4.0 ppm	4.0 mg/l
Shoreline Development		21%
Trophic Status (Forebay)		Mesotrophic
Trophic Index, Carlson (1977)		44.3
Hydraulic Retention Time		400 days
Reservoir Age		59 years

Table 2. Watauga Reservoir fish stockings 1998 – 2007.

Species	Date	Rate (per acre)	Mean Length (in.)	Number
Walleye	May 1999	15.2	1.25 – 2.75	97,828
	May 2001	155.5	Fry	1,000,000
	May 2002	5.7	1.0 – 2.5	91,119
	May 2003	5.4	1.5	34,821
	May 2005	15.4	1 – 1.5	99,079
	May 2006	11.9	1.0 – 2.0	76,728
	May 2007	5.5	0.75 – 1.25	35,061
Blacknose	Nov. 1996	15.1	2.50	97,077
Black Crappie	Nov. 1997	15.4	2.50	98,731
	Dec. 1998	5.9	2.50	38,000
	Oct. 2007	12.7	1.5 – 5.0	81,599
Rainbow Trout	1998	9.6	Adult	61,603
	1999	6.2	Adult	40,026
	2000	6.2	Adult	39,950
	2001	6.2	Adult	40,022
	2002	6.2	Adult	40,012
	2003	5.9	Adult	38,048
	2004	9.2	Adult	58,968
	2005	5.7	Adult	36,925
	2006	3.8	9.0 – 12.0	24,164
	Jan., Dec. 2007	8.8	9.0 – 10.0	56,629
Lake Trout	1998	13.8	Advanced Fing.	88,852
	2000	14.9	Advanced Fing.	95,784
	2001	16.1	Advanced Fing.	103,592
	2002	11.4	Advanced Fing.	73,356
	2003	7.7	Advanced Fing.	49,811
	2004	16.1	Advanced Fing.	103,495
	2005	20.3	Advanced Fing.	130,695
	2006	7.3	3.0 – 7.0	46,635
Jan. 2007	12.6	5.0 – 6.0	80,937	

Table 3. Number of species collected by gear type in Watauga Reservoir, 2007.

Species	Winter Gill Netting			Spring Electrofishing		
	No.	CPUE (# fish / net night)	Total Effort	No.	CPUE (# fish / hour)	Total Effort
Largemouth Bass	X	X	X	100	19.9	5.0
Smallmouth Bass	X	X	X	141	28.0	5.0
Spotted Bass	X	X	X	17	3.4	5.0
Black Crappie	X	X	X	0	0.0	5.0
Black-Nose Crappie	X	X	X	1	0.2	5.0
White Crappie	X	X	X	0	0	5.0
Walleye	66	9.4	7	32	6.4	5.0
White Bass	0	0	0	0	0	5.0

X = non targeted species

Table 4. Catch; mean CPUE and relative stock density by incremental RSD category for largemouth and smallmouth bass in Watauga Reservoir, 1999 – 2007

Species	Year	Gear	Number of Samples	RSD Substock			RSD Stock - Quality			RSD Quality - Preferred			RSD Preferred-Memorabile			RSD Memorabile-Trophy			RSD Trophy			PSD	Total	
				#	CPUE	%	#	CPUE	%	#	CPUE	%	#	CPUE	%	#	CPUE	%	#	CPUE	%	%	#	CPUE
				Largemouth Bass	1999	EL	16	9	2.3	21	13	3.3	39				19	4.8	56	2	0.5	6		
	2000	EL	22	4	0.7	6.9	16	9.5	30	16	2.8	30	19	3.4	35	3	0.5	6				71	58	10.2
	2001	EL	14	0	0	0	17	4.8	28	13	3.6	22	27	7.6	45	3	0.8	5				72	60	16.8
	2002	EL	14	6	1.7	10	12	3.3	21	12	3.3	21	32	8.9	56	1	0.2	2				79	63	12.4
	2003	EL	24	3	0.5	5	11	1.7	20	9	1.5	16	32	5.3	58	3	0.5	5				79	58	9.4
	2004	EL	20	1	0.2	1	7	1.4	9	20	3.8	27	45	8.6	60	3	0.6	4	0	0	0	91	76	14.58
	2005	EL	20	3	0.6	4	13	2.6	18	13	2.6	18	41	8.2	56	6	1.2	8	0	0	0	82	76	15.1
	2006	EL	20	2	0.4	3	16	3.2	22	22	4.4	30	32	6.4	43	4	0.8	5	0	0	0	78	76	15.14
	2007	EL	20	4	0.8	4	17	3.4	18	26	5.2	27	50	10	52	3	0.6	3	0	0	0	82	100	19.9
Smallmouth Bass	1999	EL	16	30	7.5	19	56	14	43	36	9	28	28	7	21	11	2.8	8				57	161	40.3
	2000	EL	22	10	1.8	7	33	5.8	26	47	8.3	37	35	6.2	28	11	1.9	9	1	0.2	1	74	137	24.2
	2001	EL	14	21	5.8	16	23	6.4	21	31	8.6	28	43	12	38	15	4.2	13				79	133	36.8
	2002	EL	14	18	5	18	20	5.5	24	15	4.1	18	32	8.7	39	15	4.1	18				75	100	27.5
	2003	EL	24	8	1.3	8	20	3.2	23	23	3.8	26	26	4.3	30	16	2.6	18				74	95	15.5
	2004	EL	20	2	0.4	2	11	2.1	10	21	4.1	19	43	8.2	39	33	6.3	30	0	0	0	88	112	21.5
	2005	EL	20	2	0.4	3	8	1.6	12	12	2.4	17	26	5.2	38	16	3.2	23	7	1.4	10	88	71	14.1
	2006	EL	20	6	1.2	6	22	4.4	23	21	4.2	22	31	6.2	33	13	2.6	14	7	1.4	7	77	100	19.87
	2007	EL	20	19	3.8	13	41	8.2	34	24	4.8	20	33	6.6	27	21	4.2	17	3	0.6	3	66	141	28.2

Table 5. Catch; mean CPUE and relative stock density by incremental RSD category for walleye in Watauga Reservoir, 1999 – 2007

Species	Year	Gear	Number of Samples	RSD Substock			RSD Stock - Quality			RSD Quality - Preferred			RSD Preferred-Memorable			RSD Memorable-Trophy			RSD Trophy			PSD	Total	
				#	CPUE	%	#	CPUE	%	#	CPUE	%	#	CPUE	%	#	CPUE	%	#	CPUE	%	%	#	CPUE
				Walleye	1999	GN	5				17	3.4	11	92	18	58	47	9.4	29	4	0.8	3		
	2000	GN	8	1	0.1	2	1	6.3	2	30	6.1	60	18	2.4	36	1	0.1	2				98	51	6.4
	2002	EL*	24	1	0		6	0.3	3	93	3.8	43	104	4.3	48	14	0.5	6				97	218	9.1
	2003	EL*	24	1	0.2	2	13	2.1	27	7	1.1	14	19	3.2	39	10	1.7	20	0	0	0	73	50	8.2
	2004	EL*	20	9	1.8	12	7	1.4	10	24	4.6	36	26	5	39	10	1.9	15	0	0	0	90	76	14.6
	2005	EL*	20	0	0	0	3	0.6	9	10	2	29	17	3.4	49	5	1	14	0	0	0	91	35	6.9
	2006	EL*	20	0	0	0	0	0	0	6	1.2	35	10	2	59	1	0.2	6	0	0	0	100	17	3.38
	2007	EL*	20	0	0	0	3	0.6	9	7	1.4	22	18	3.6	56	4	0.8	13	0	0	0	91	32	6.4

*standardized springtime electrofishing

Table 6. Largemouth bass mean relative weights (Wr) in Watauga Reservoir, spring 2007.

Length Group	Mean Wr	Std. Error	N
150	70.667		1
175	74.032		1
200	82.774	2.795	7
225	82.007	4.861	5
250	81.425	0.037	2
275	93.140	8.260	3
300	89.714	1.638	7
325	92.196	1.928	6
350	90.642	2.247	11
375	95.203	3.112	9
400	90.391	1.157	7
425	87.072	7.892	11
450	98.881	3.406	13
475	94.285	1.555	9
500	96.323	0.942	4
525	98.762	3.169	2
Total =			98

Table 7. Smallmouth bass mean relative weights (Wr) in Watauga Reservoir, spring 2007.

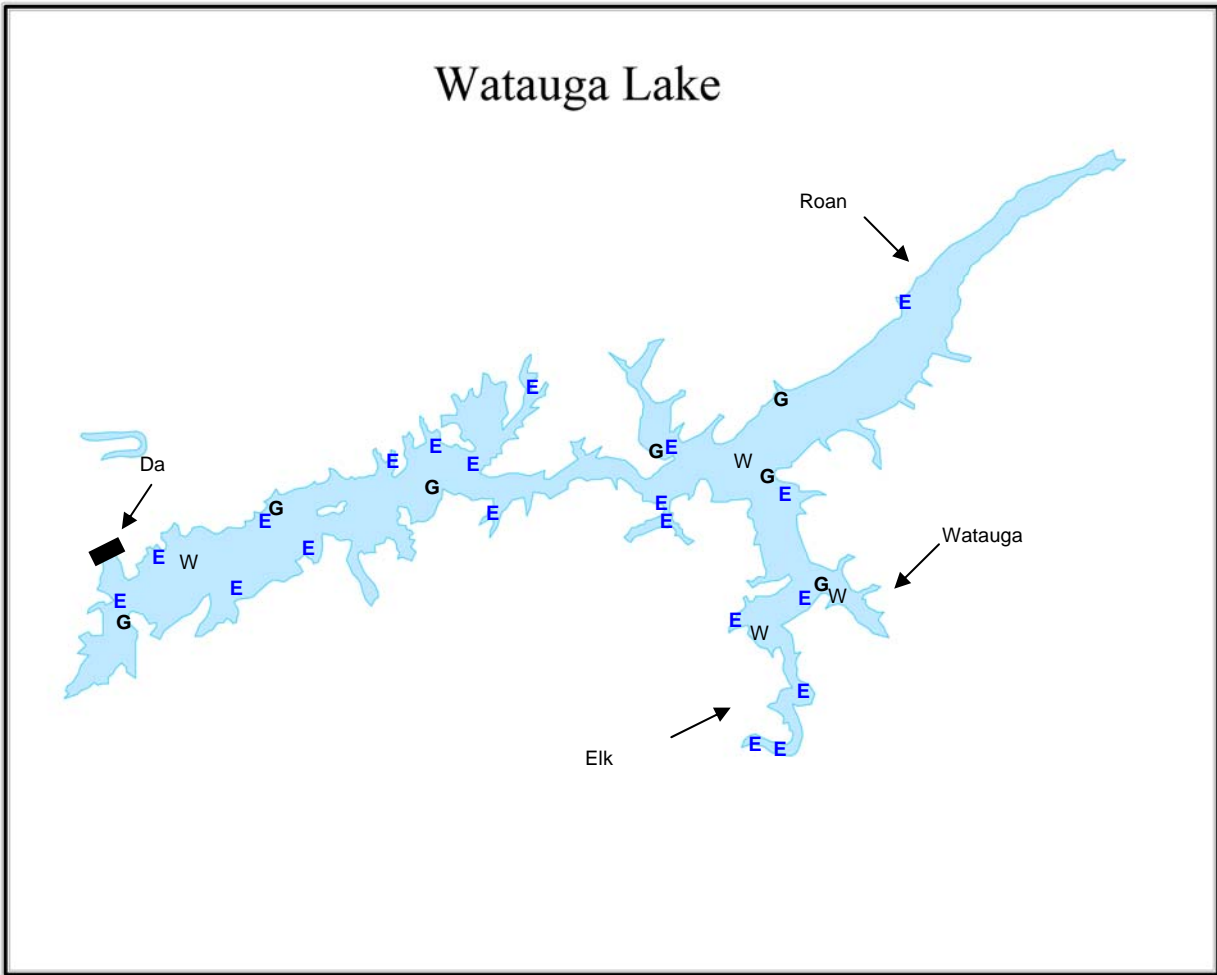
Length Group	Mean Wr	Std. Error	N
150	75.523	3.099	13
175	82.949	1.786	15
200	80.233	1.991	13
225	79.593	2.081	6
250	82.659	2.478	6
275	85.108	1.156	12
300	81.929	1.766	8
325	82.745	2.194	8
350	83.877	4.378	5
375	84.546	1.631	9
400	89.924	2.843	15
425	87.356	3.564	12
450	80.727	4.692	4
475	80.316	2.929	7
500	83.532	8.902	3
525	81.771	0.707	2
550			
575			
600			
Total =			138

Table 7. Watauga Reservoir fish habitat enhancement summary for 2007.

Location	New Sites			Renovated Sites			Expanded Sites		
	Number	Units	Acres	Number	Units	Acres	Number	Units	Acres
			None		in				2007
Total	0	0	0	0	0	0	0	0	0

Figures

Figure 1. Sites sampled on Watauga Reservoir in 2007.



E = Electrofishing
G = Walleye Gillnet
WQ = Water Quality

Largemouth Bass

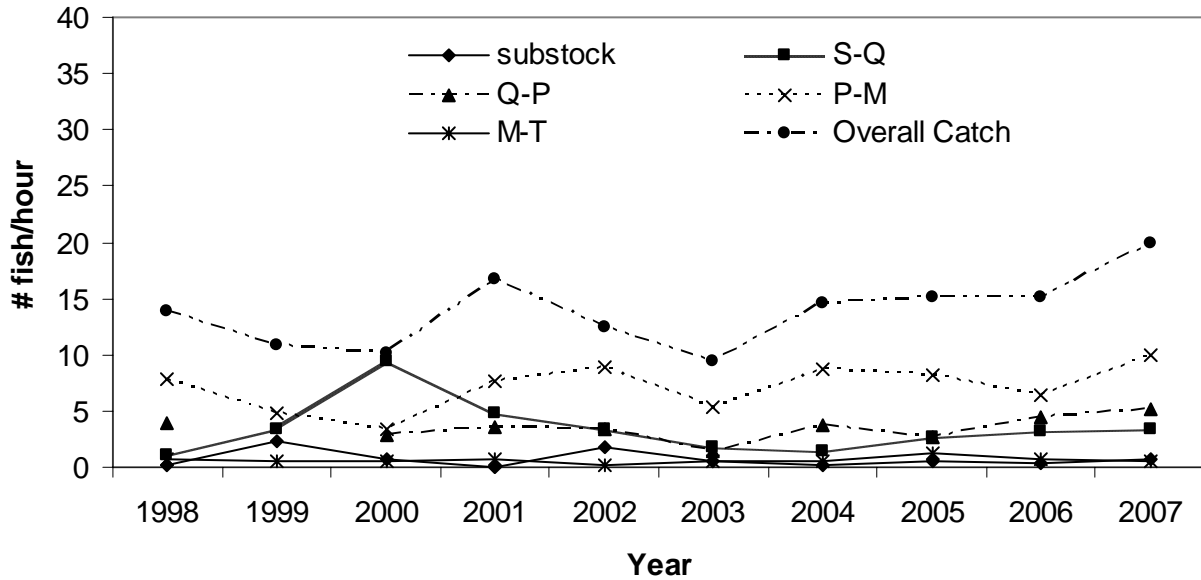


Figure 2. Largemouth bass CPUE values by incremental length category in Watauga Reservoir, 1998 - 2007.

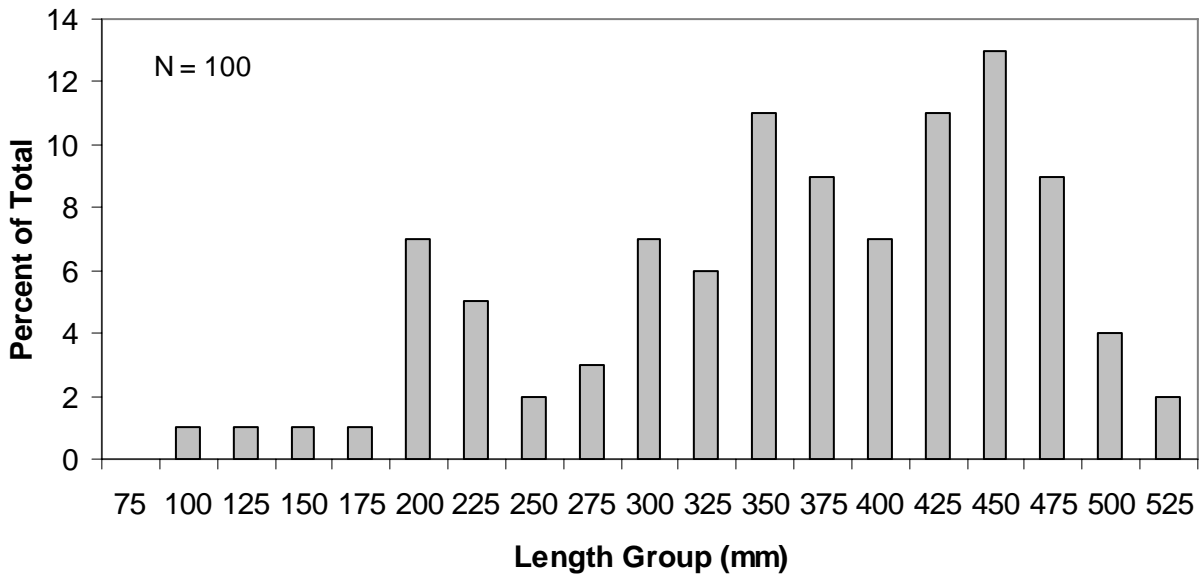


Figure 3. Largemouth bass length frequency by percent in Watauga Reservoir, spring 2007.

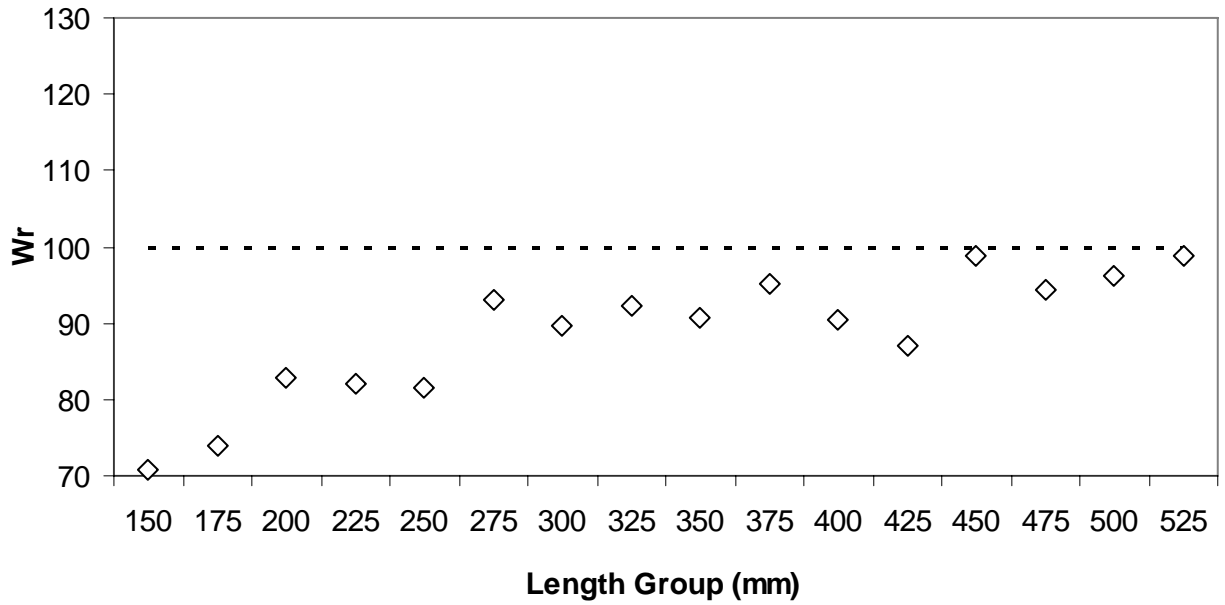


Figure 4. Largemouth bass mean relative weights (Wr) in Watauga Reservoir, spring 2007.

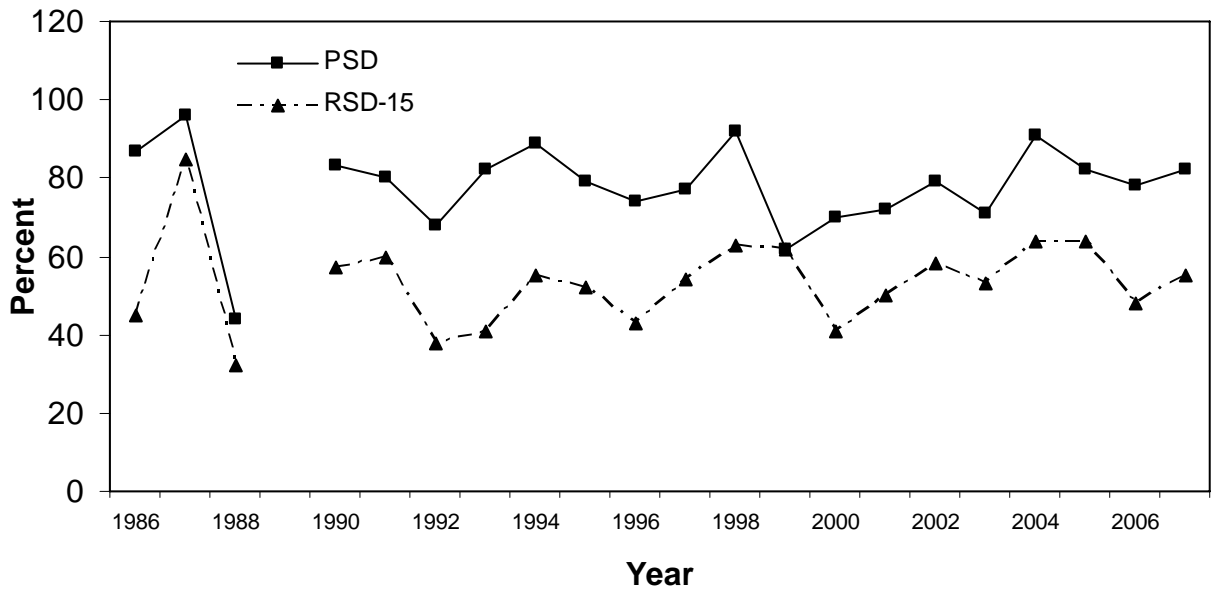


Figure 5. Largemouth bass traditional PSD and RSD-15 values in Watauga Reservoir 1986 – 2007.

Smallmouth Bass

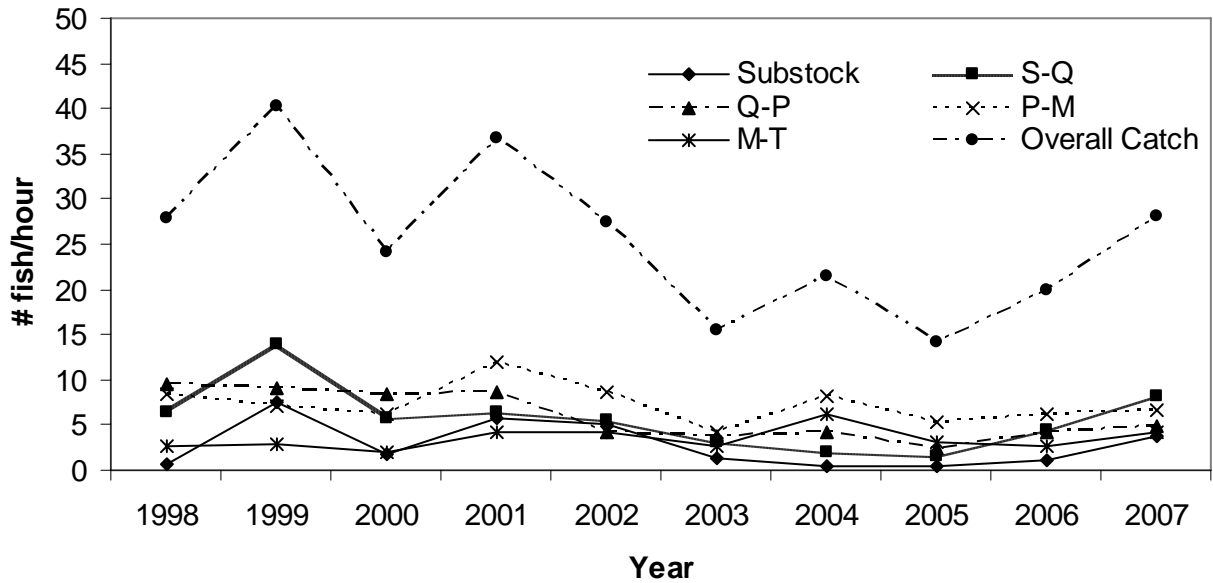


Figure 6. Smallmouth bass CPUE values by incremental length category in Watauga Reservoir, 1998 - 2007.

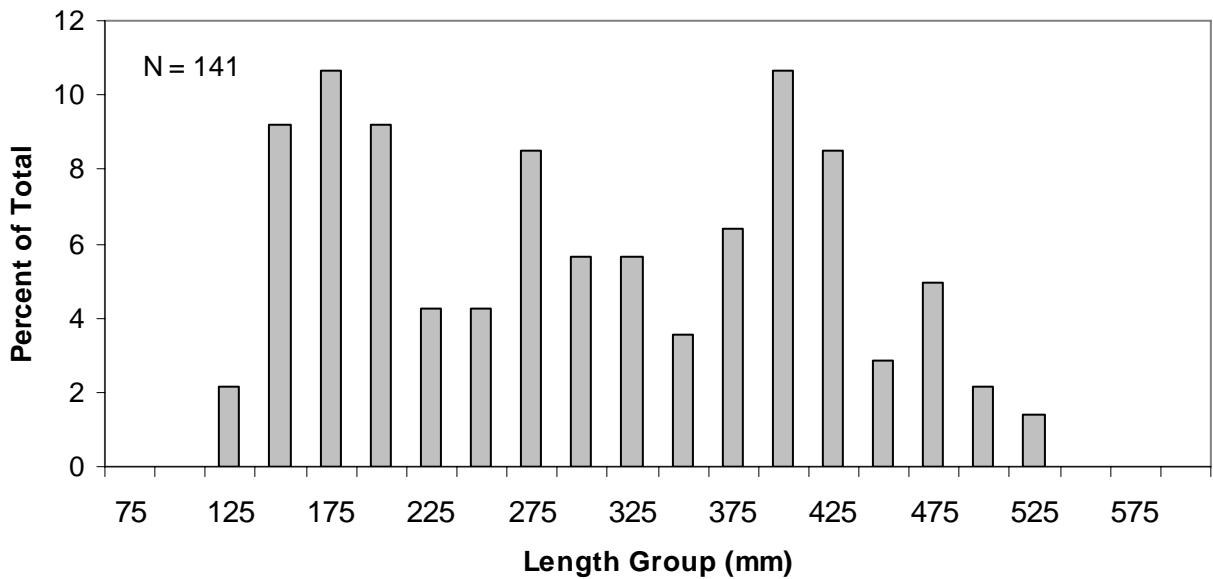


Figure 7. Smallmouth bass length frequency by percent in Watauga Reservoir, spring 2007.

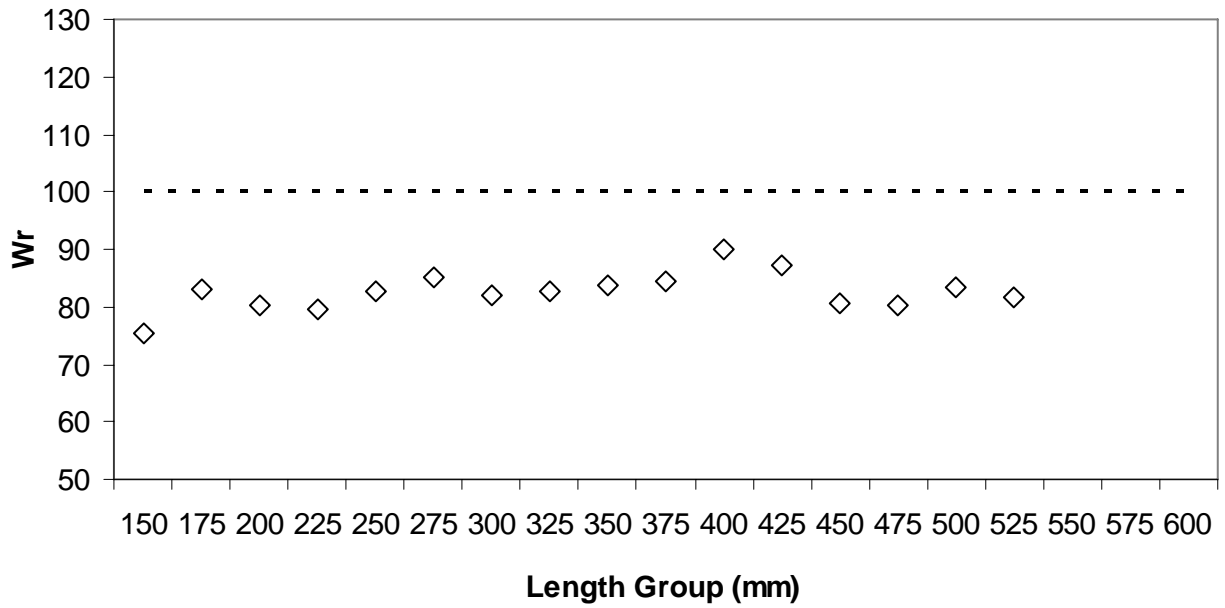


Figure 8. Smallmouth bass mean relative weights (Wr) in Watauga Reservoir, spring 2007.

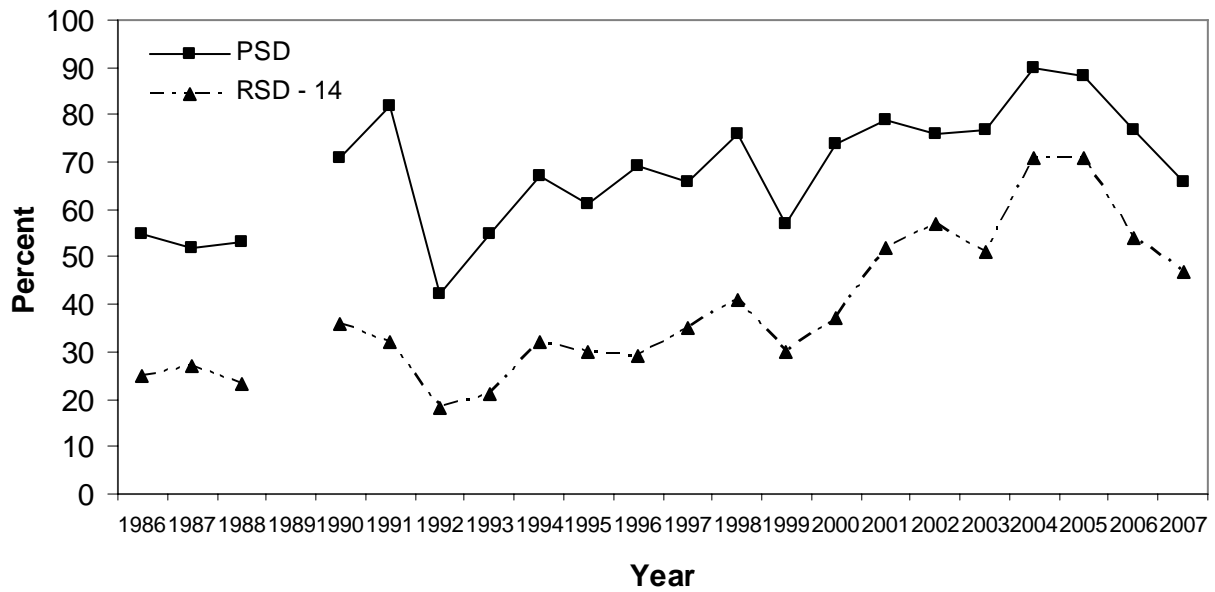


Figure 9. Smallmouth bass traditional PSD and RSD - 14 values in Watauga Reservoir 1986 – 2007.

Appendix A
Water Quality

Table A1. Watauga Reservoir, water quality data at **WRM 39**, July 2, 2007.

Depth (m)	Temp ©	Cond	DO	Site	Secchi (m)	Time
0	23.5	308	8.3	W39		0900
1	25.5	308	8.3			
2	25.5	309	8.4			
3	25.5	309	8.4			
4	25.5	310	8.4			
5	25.5	310	8.4			
6	24.6	312	8.8			
7	19.7	330	11.6			
8	17.6	324	12.2			
9	16.2	326	12.5			
10	14.3	329	11.7			
11	12.4	322	10.7			
12	11.7	322	10.7			
13	10.9	317	10.2			
14	10.2	314	10.0			
15	9.4	315	10.0			
16	9.0	309	9.6			
17	8.8	307	9.6			
18	8.6	306	9.6			
19	8.5	305	9.5			
20	8.4	303	9.5			
21	8.3	300	9.6			
22	8.2	300	9.6			
23	8.1	299	9.6			
24	8.1	298	9.7			
25	8.0	397	9.8			
26	7.9	296	9.8			
27	7.9	296	9.9			
28	7.8	296	9.9			
29	7.8	295	9.9			
30	7.7	295	9.9			

Table A2. Watauga Reservoir, water quality data at **WRM 45**, July 2, 2007.

Depth (m)	Temp C	Cond	DO	Site	Secchi (m)	Time
0	26.3	295	8.2	W45	2.8	1000
1	26.3	303	8.3			
2	26.3	305	8.3			
3	26.3	306	8.3			
4	26.3	307	8.3			
5	25.0	312	8.8			
6	22.4	316	10.5			
7	20.6	318	10.8			
8	18.5	324	11.3			
9	15.6	326	10.5			
10	13.2	332	10.0			
11	12.0	324	9.3			
12	11.2	322	9.2			
13	10.4	323	9.1			
14	9.9	309	8.5			
15	9.3	307	8.6			
16	9.0	305	8.5			
17	8.8	302	8.5			
18	8.7	300	8.5			
19	8.5	299	8.3			
20	8.4	299	8.3			
21	8.3	298	8.4			
22	8.2	297	8.4			
23	8.1	296	8.4			
24	8.1	294	8.5			
25	8.1	294	8.5			
26	7.9	294	8.5			
27	7.9	294	8.5			
28	7.9	294	8.5			
29	7.8	298	8.4			
30	7.8	294	7.9			

Table A3. Watauga Reservoir, water quality data at **WRM 49**, July 2, 2007.

Depth (m)	Temp ©	Cond	DO	Site	Secchi (m)	Time
0	26.6	287	8.5	W49	1.4	1040
1	26.6	290	8.5			
2	26.6	292	8.5			
3	26.6	296	8.5			
4	25.7	302	8.0			
5	23.5	309	5.7			
6	22.1	312	4.7			
7	19.6	317	2.1			
8	17.1	321	4.1			
9	15.1	317	4.3			
10	13.5	322	4.2			
11	12.3	322	4.2			
12	11.3	321	4.7			
13	10.5	318	5.3			
14	10.0	318	5.4			
15	9.6	317	5.4			
16	9.2	311	4.9			
17	8.8	305	4.5			
18	8.7	304	4.4			
19	8.6	303	4.4			
20	8.6	303	4.5			
21	8.4	302	4.6			
22	8.4	302	4.8			
23	8.4	302	5.0			
24	8.3	300	5.2			
25	8.3	300	5.0			
26	Bottom					
27						
28						
29						
30						

Table A4. Watauga Reservoir, water quality data at **ERM 2**, July 2, 2007.

Depth (m)	Temp ©	Cond	DO	Site	Secchi (m)	Time
0	26.5	295	9.2	E2	1.8	1115
1	26.5	299	9.2			
2	26.5	301	9.3			
3	26.3	304	9.2			
4	25.6	307	9.2			
5	24.2	312	7.7			
6	22.3	314	6.9			
7	20.6	313	6.3			
8	17.5	320	6.1			
9	15.6	324	6.6			
10	13.5	330	7.0			
11	12.5	327	6.9			
12	11.8	324	6.9			
13	11.0	322	7.0			
14	10.5	320	7.0			
15	9.9	319	6.9			
16	9.5	315	6.2			
17	9.3	314	5.9			
18	9.1	312	5.7			
19	8.8	310	5.6			
20	8.6	309	5.7			
21	8.5	306	5.3			
22	Bottom					
23						
24						
25						
26						
27						
28						
29						
30						

Table A5. Watauga Reservoir, water quality data at **WRM 39**, August 8, 2007.

Depth (m)	Temp ©	Cond	DO	Site	Secchi (m)	Time
0	27.1	316	8.3	W39	2.8	0955
1	27.1	317	8.3			
2	27.1	317	8.3			
3	27.0	317	8.3			
4	26.9	317	8.3			
5	25.9	318	8.3			
6	24.7	317	8.7			
7	23.5	317	8.1			
8	21.7	316	7.6			
9	19.5	316	7.8			
10	18.2	310	8.2			
11	17.1	308	8.5			
12	16.4	306	8.0			
13	16.0	304	7.9			
14	15.5	303	7.9			
15	15.0	300	7.7			
16	14.6	299	7.8			
17	14.2	298	7.9			
18	13.7	297	8.0			
19	13.3	296	8.0			
20	12.5	296	8.0			
21	11.9	294	8.0			
22	10.8	295	8.1			
23	10.2	293	8.1			
24	9.9	291	8.3			
25	9.4	290	8.4			
26	9.2	289	8.5			
27	9.0	288	8.6			
28	8.9	287	8.6			
29	8.7	286	8.7			
30	8.7	286	8.7			

Table A6. Watauga Reservoir, water quality data at **WRM 45**, August 8, 2007.

Depth (m)	Temp ©	Cond	DO	Site	Secchi (m)	Time
0	27.4	294	8.5	W45	2.6	1030
1	27.3	296	8.8			
2	27.2	297	8.8			
3	27.2	298	8.9			
4	27.1	298	8.9			
5	26.6	300	9.2			
6	24.6	304	8.9			
7	23.8	305	7.9			
8	22.4	307	6.3			
9	20.7	306	4.9			
10	18.6	310	4.6			
11	15.8	317	4.9			
12	14.3	316	5.4			
13	12.3	317	6.0			
14	11.5	314	6.4			
15	10.3	312	6.8			
16	9.9	304	6.9			
17	9.7	301	7.0			
18	9.4	302	7.0			
19	9.0	301	7.0			
20	8.9	300	6.9			
21	8.7	298	6.8			
22	8.6	297	6.8			
23	8.4	295	7.0			
24	8.4	293	7.2			
25	8.3	292	7.3			
26	8.2	291	7.3			
27	8.2	292	7.3			
28	8.2	292	7.0			
29	8.1	291	6.4			
30	8.1	290	6.1			

Table A7. Watauga Reservoir, water quality data at **WRM 49**, August 8, 2007.

Depth (m)	Temp ©	Cond	DO	Site	Secchi (m)	Time
0	28.3	290	9.5	W49	2.0	1105
1	28.0	294	9.7			
2	27.8	295	9.7			
3	27.7	297	9.6			
4	26.2	302	10.0			
5	25.2	303	9.5			
6	24.5	303	7.6			
7	23.6	302	6.2			
8	22.9	302	5.8			
9	20.8	303	5.7			
10	18.5	310	4.6			
11	16.0	318	3.0			
12	14.4	320	2.5			
13	13.0	320	1.5			
14	11.6	320	0.9			
15	10.8	317	0.9			
16	10.4	308	1.0			
17	9.9	310	1.0			
18	9.6	311	1.0			
19	9.3	311	0.8			
20	9.0	309	0.8			
21	8.9	305	1.0			
22	8.8	303	1.5			
23	8.7	301	1.7			
24	8.7	319	1.6			
25	Bottom					
26						
27						
28						
29						
30						

Table A8. Watauga Reservoir, water quality data at **ERM 2**, August 8, 2007.

Depth (m)	Temp ©	Cond	DO	Site	Secchi (m)	Time
0	28.1	291	10.0	E2	2.6	1130
1	27.7	295	10.1			
2	27.5	297	10.3			
3	26.8	300	11.4			
4	26.4	300	11.6			
5	25.3	301	10.4			
6	24.4	302	8.0			
7	23.5	304	6.2			
8	22.4	304	5.6			
9	21.2	305	5.3			
10	18.4	311	3.7			
11	16.0	317	2.9			
12	14.8	315	3.0			
13	13.3	315	3.3			
14	12.4	314	3.6			
15	11.6	313	3.8			
16	11.4	310	3.6			
17	11.1	308	3.2			
18	10.6	308	2.8			
19	10.1	307	2.4			
20	9.7	307	2.1			
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						

No water quality taken in September 2007.

Figure A1. Watauga Reservoir water quality data at WRM 39, July 2007.

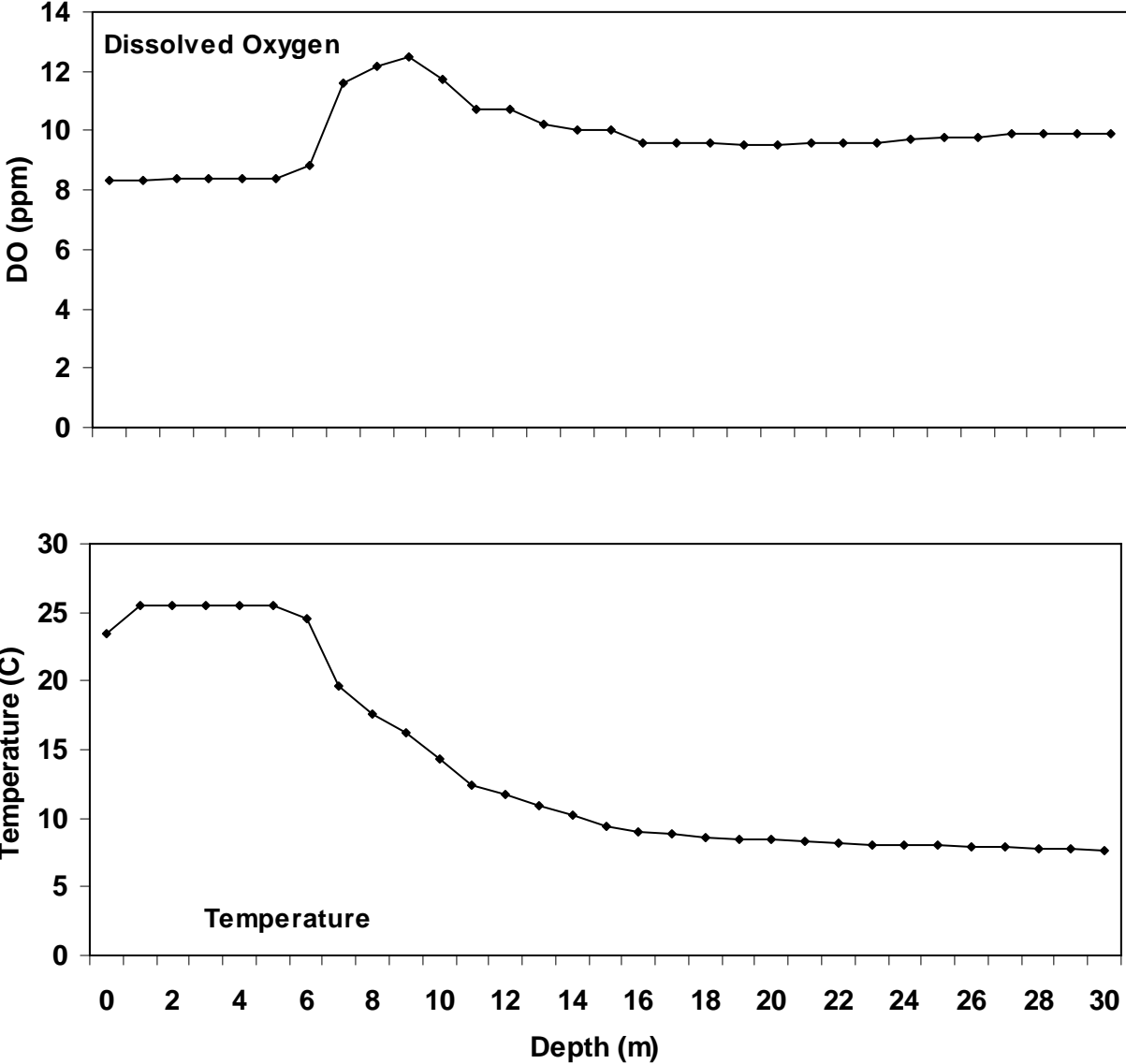


Figure A2. Watauga Reservoir water quality data at WRM 45, July 2007.

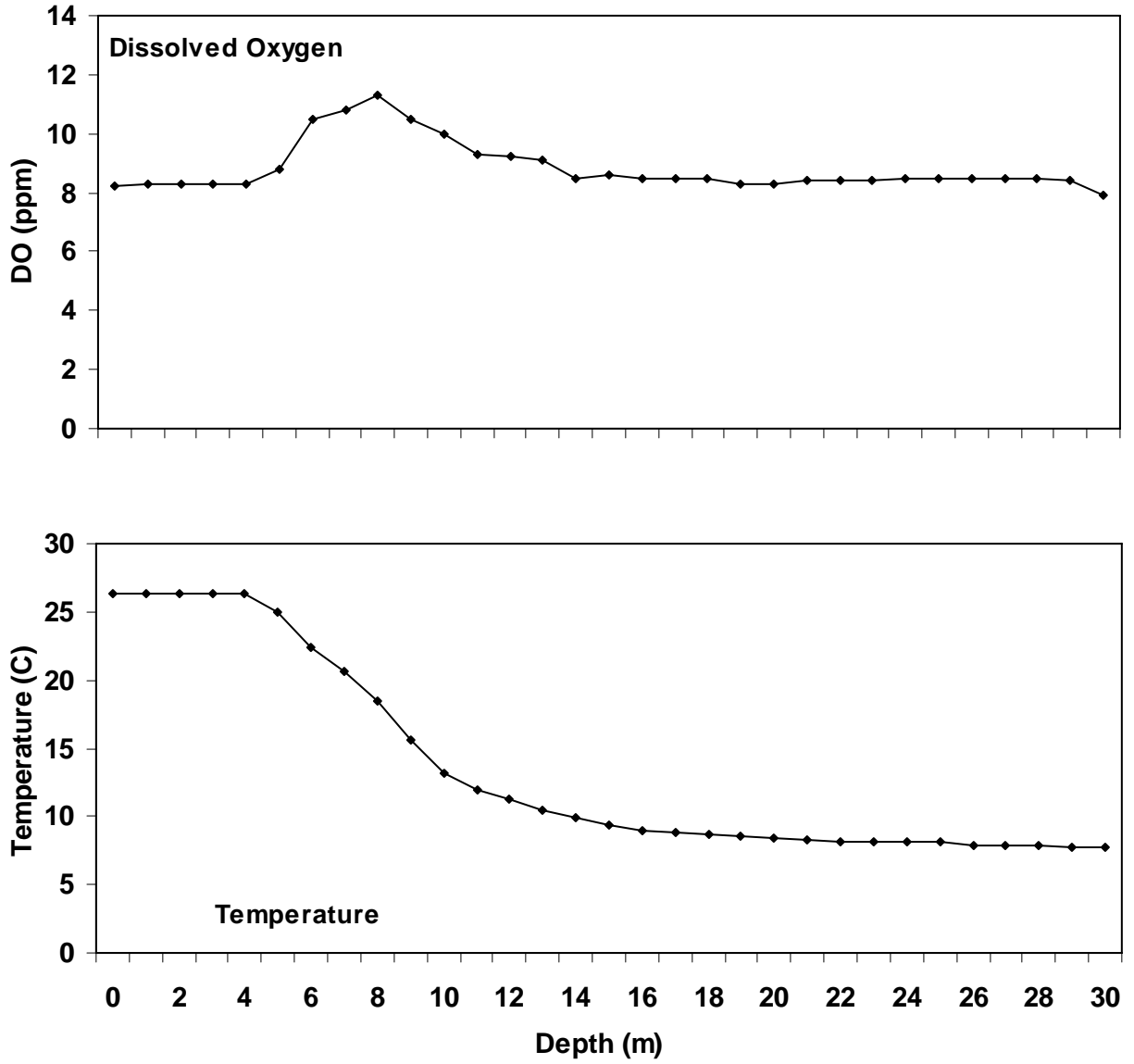


Figure A3. Watuaga Reservoir water quality data at WRM 49, July 2007.

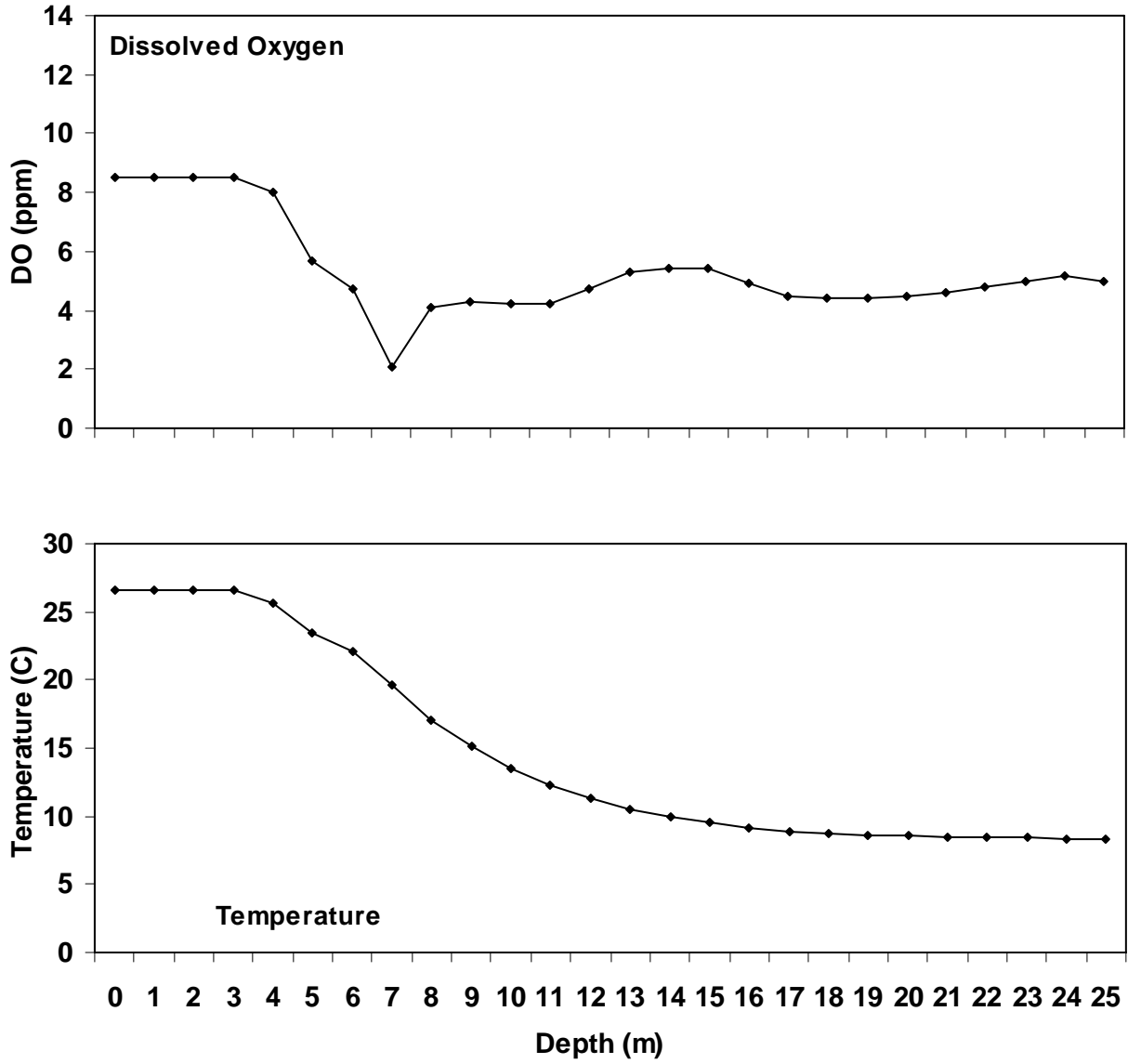


Figure A4. Watauga Reservoir water quality data at ERM 2, July 2007.

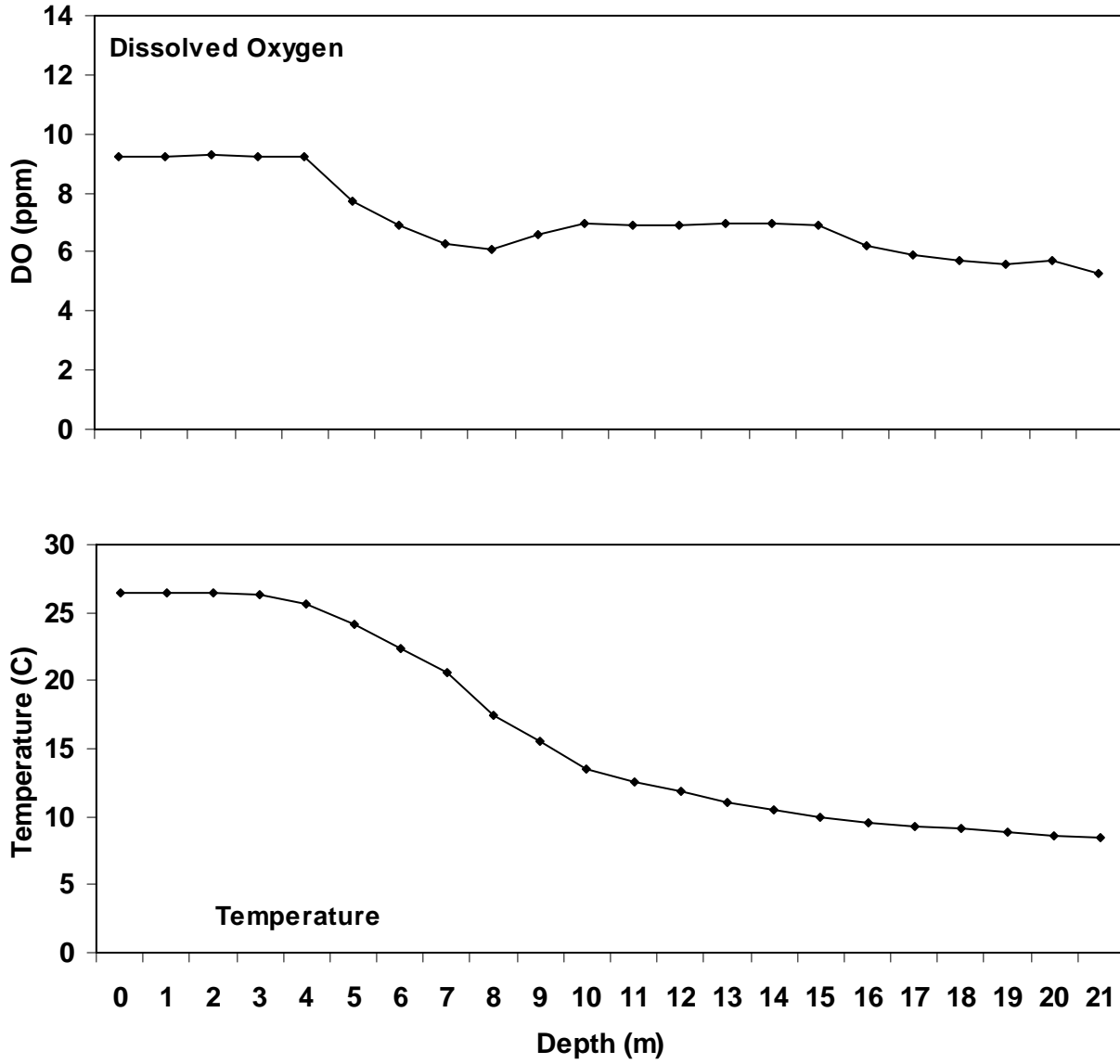


Figure A5. Watauga Reservoir water quality data at WRM 39, August 2007.

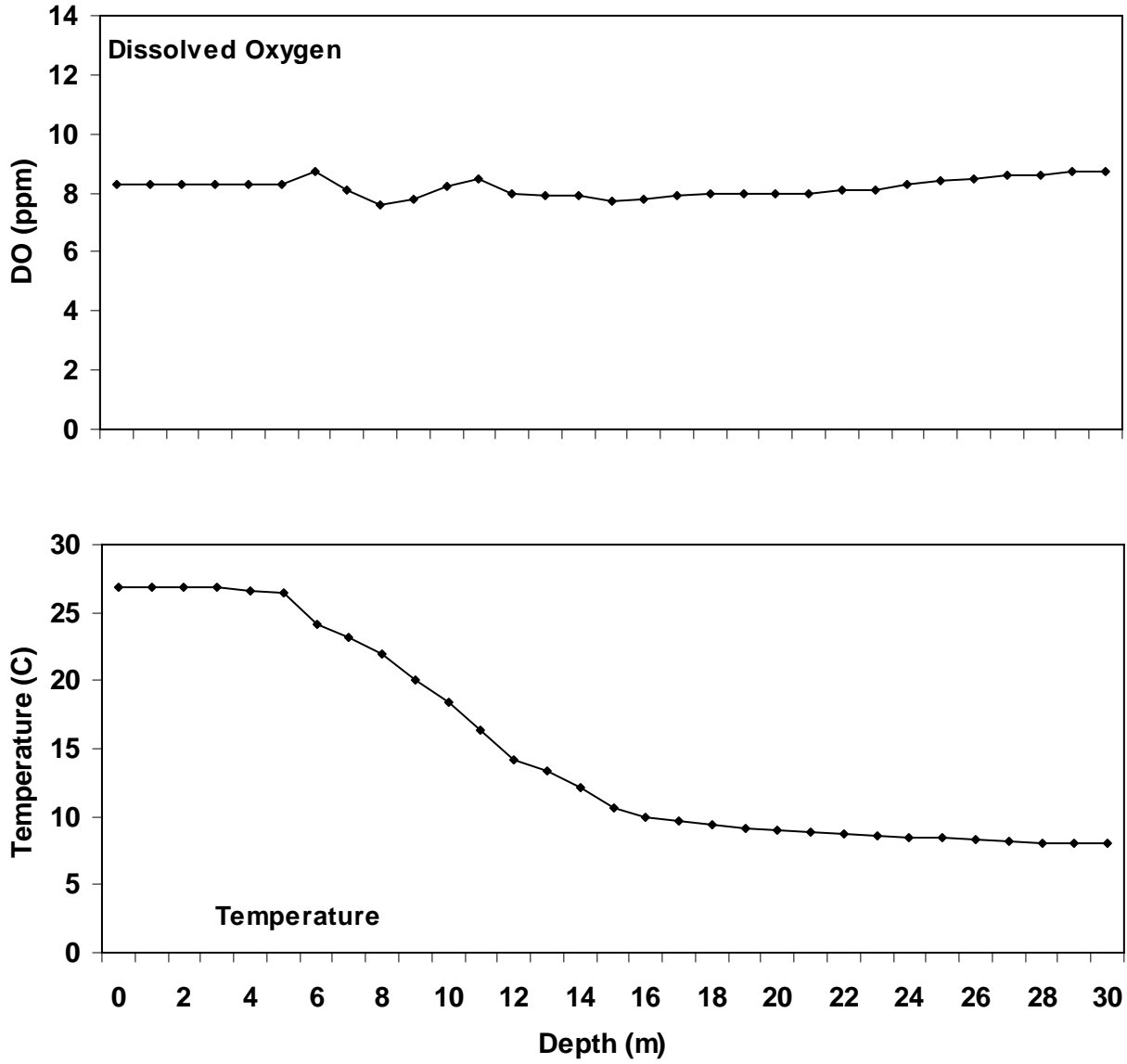


Figure A6. Watauga Reservoir water quality data at WRM 45, August 2007

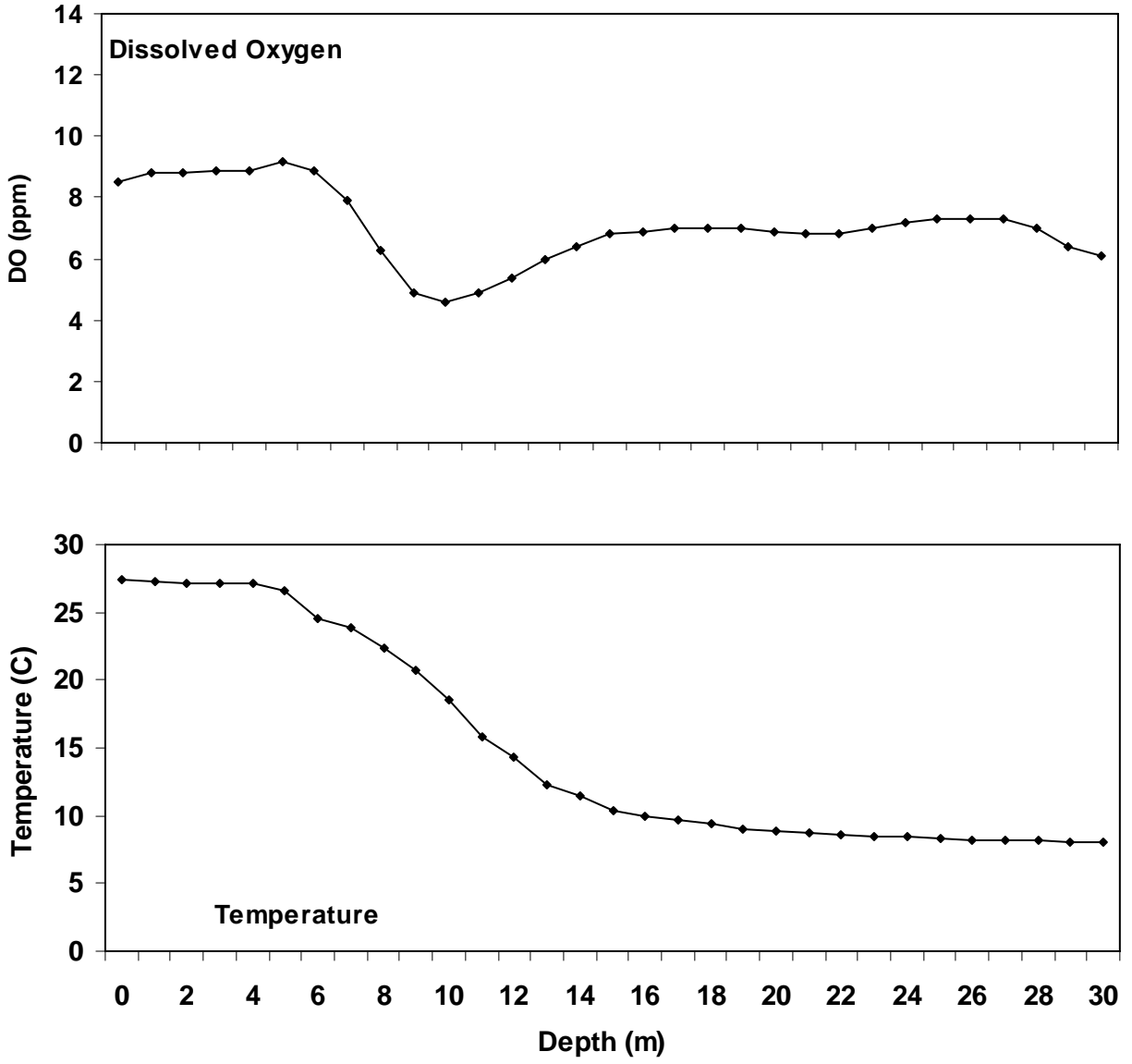


Figure A7. Watauga Reservoir water quality data at WRM 49, August 2007.

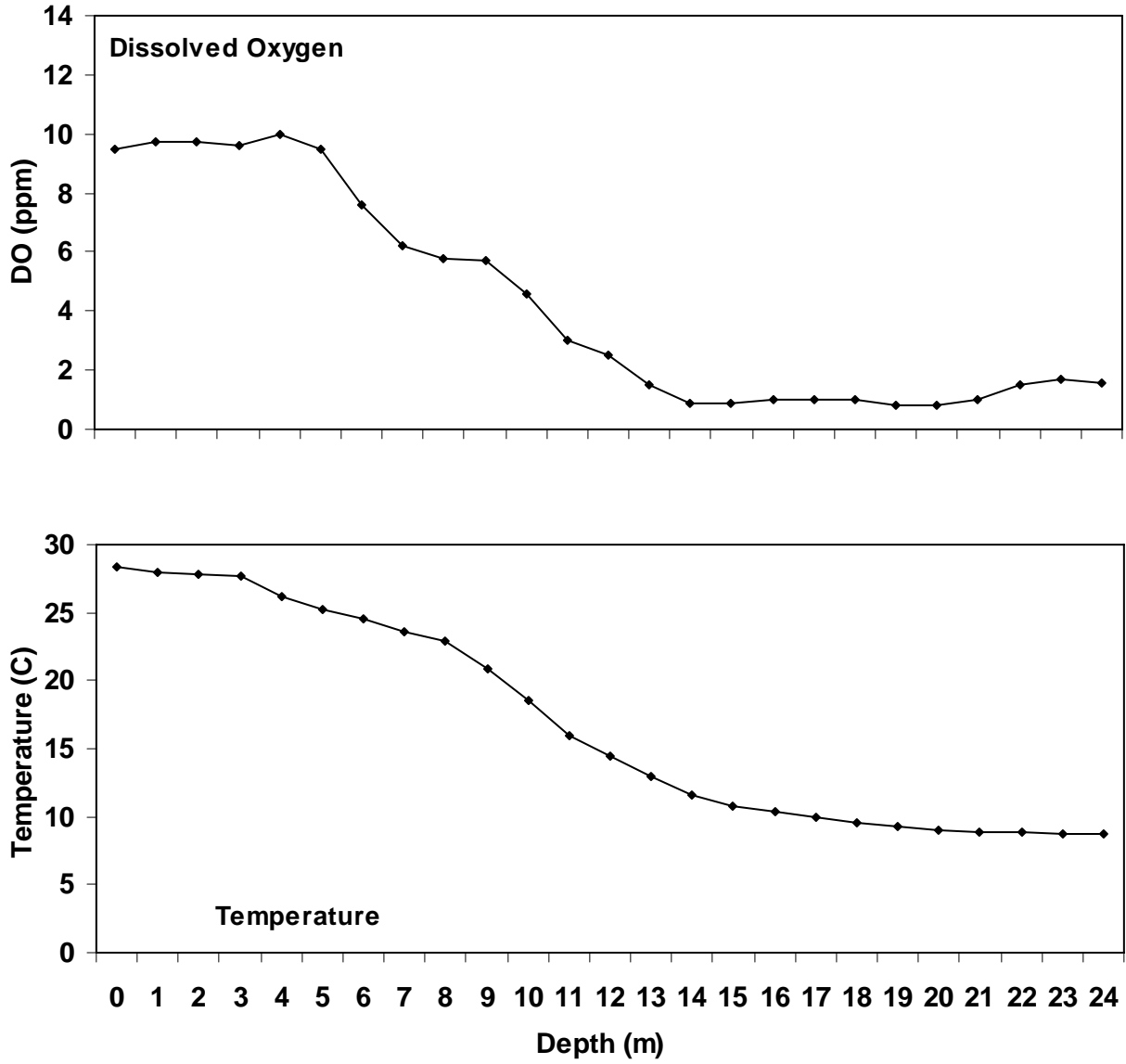
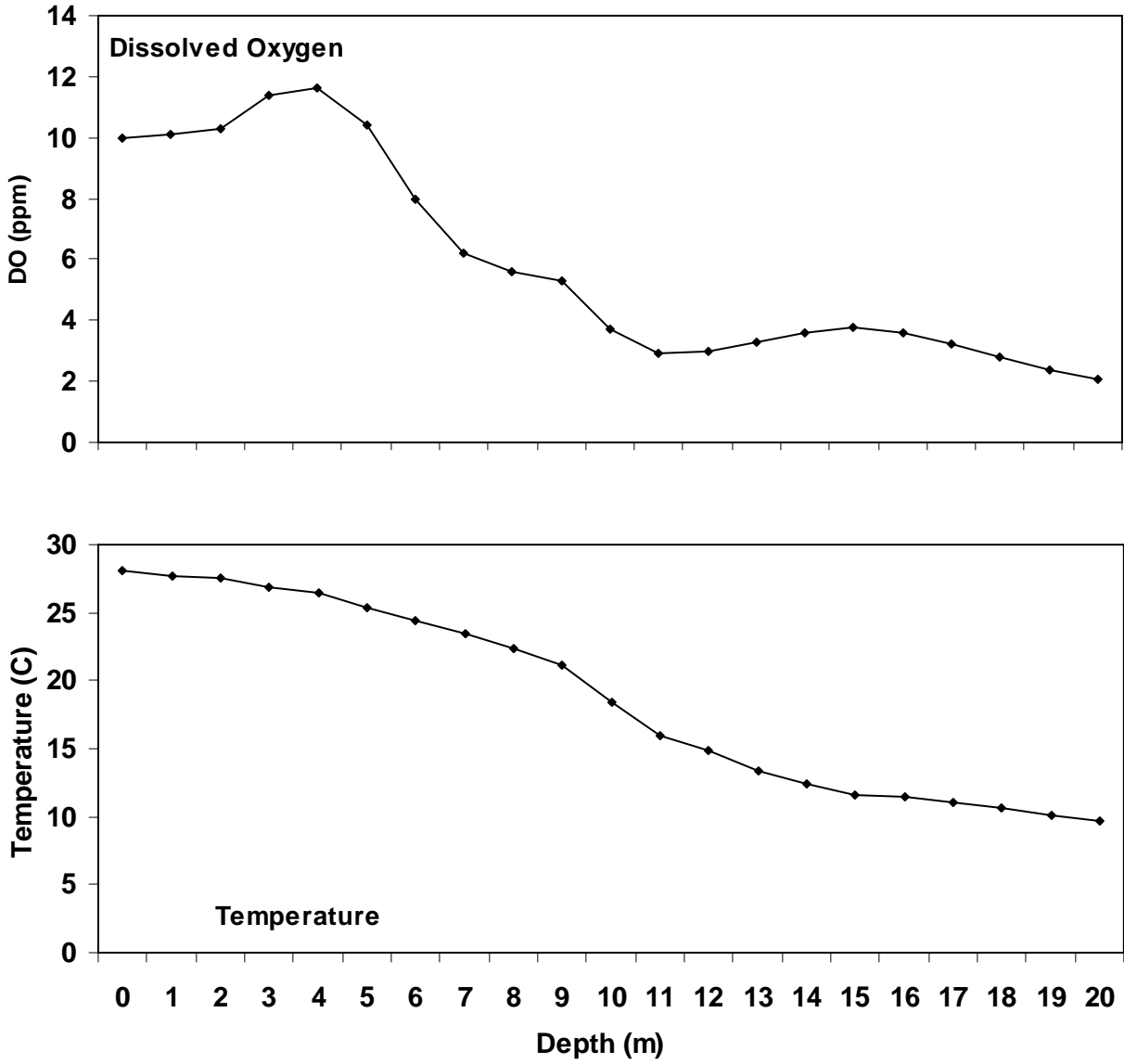


Figure A8. Watauga Reservoir water quality data at ERM 2, August 2007.



Appendix B
Reservoir Elevations

Table B1. Watauga Reservoir elevation data for 2007. Data is courtesy of TVA.

Elevation	Month	Day	Elevation	Month	Day	Elevation	Month	Day
1952.13	January	1	1949.17	February	24	1954.20	April	19
1951.98	January	2	1949.32	February	25	1954.42	April	20
1951.44	January	3	1949.41	February	26	1954.65	April	21
1950.81	January	4	1949.47	February	27	1954.84	April	22
1950.31	January	5	1949.54	February	28	1954.82	April	23
1950.12	January	6	1949.60	March	1	1954.98	April	24
1949.93	January	7	1950.19	March	2	1954.98	April	25
1949.79	January	8	1950.53	March	3	1954.91	April	26
1949.65	January	9	1950.77	March	4	1954.85	April	27
1949.40	January	10	1950.90	March	5	1954.91	April	28
1949.01	January	11	1951.00	March	6	1955.01	April	29
1948.58	January	12	1951.06	March	7	1955.08	April	30
1948.79	January	13	1951.12	March	8	1955.20	May	1
1948.98	January	14	1951.15	March	9	1955.32	May	2
1949.03	January	15	1951.16	March	10	1955.44	May	3
1948.89	January	16	1951.18	March	11	1955.56	May	4
1948.86	January	17	1951.20	March	12	1955.62	May	5
1948.76	January	18	1951.20	March	13	1955.76	May	6
1948.66	January	19	1951.27	March	14	1955.83	May	7
1948.73	January	20	1951.28	March	15	1955.95	May	8
1948.80	January	21	1951.80	March	16	1956.09	May	9
1948.83	January	22	1952.33	March	17	1956.22	May	10
1948.87	January	23	1952.62	March	18	1956.36	May	11
1948.94	January	24	1952.81	March	19	1956.38	May	12
1948.97	January	25	1952.96	March	20	1956.48	May	13
1948.97	January	26	1953.10	March	21	1956.51	May	14
1949.06	January	27	1952.86	March	22	1956.57	May	15
1949.10	January	28	1952.92	March	23	1956.61	May	16
1949.07	January	29	1953.01	March	24	1956.59	May	17
1949.04	January	30	1953.11	March	25	1956.58	May	18
1949.01	January	31	1953.19	March	26	1956.58	May	19
1948.90	February	1	1953.18	March	27	1956.64	May	20
1948.95	February	2	1953.16	March	28	1956.40	May	21
1949.04	February	3	1953.27	March	29	1956.37	May	22

Table B1. Continued.

Elevation	Month	Day	Elevation	Month	Day	Elevation	Month	Day
1953.28	June	12	1948.76	August	5	1943.19	September	28
1953.10	June	13	1948.66	August	6	1942.98	September	29
1952.92	June	14	1948.53	August	7	1942.95	September	30
1952.76	June	15	1948.38	August	8	1942.91	October	1
1952.65	June	16	1948.24	August	9	1942.87	October	2
1952.70	June	17	1948.03	August	10	1942.86	October	3
1952.61	June	18	1947.87	August	11	1942.88	October	4
1952.54	June	19	1947.85	August	12	1942.91	October	5
1952.42	June	20	1947.69	August	13	1942.90	October	6
1952.28	June	21	1947.49	August	14	1942.88	October	7
1952.13	June	22	1947.34	August	15	1942.88	October	8
1951.97	June	23	1947.13	August	16	1942.87	October	9
1952.02	June	24	1946.95	August	17	1942.82	October	10
1951.95	June	25	1946.76	August	18	1942.69	October	11
1951.86	June	26	1946.57	August	19	1942.65	October	12
1951.72	June	27	1946.44	August	20	1942.53	October	13
1951.60	June	28	1946.37	August	21	1942.53	October	14
1951.60	June	29	1946.26	August	22	1942.51	October	15
1951.57	June	30	1946.11	August	23	1942.48	October	16
1951.63	July	1	1945.93	August	24	1942.45	October	17
1951.51	July	2	1945.76	August	25	1942.47	October	18
1951.34	July	3	1945.60	August	26	1942.42	October	19
1951.23	July	4	1945.40	August	27	1942.27	October	20
1951.07	July	5	1945.23	August	28	1942.27	October	21
1951.06	July	6	1945.04	August	29	1942.18	October	22
1950.85	July	7	1944.82	August	30	1942.23	October	23
1950.77	July	8	1944.61	August	31	1942.41	October	24
1950.47	July	9	1944.49	September	1	1942.63	October	25
1950.26	July	10	1944.49	September	2	1942.71	October	26
1950.16	July	11	1944.43	September	3	1942.67	October	27
1949.98	July	12	1944.43	September	4	1942.67	October	28
1949.78	July	13	1944.41	September	5	1942.65	October	29
1949.64	July	14	1944.40	September	6	1942.45	October	30
1949.67	July	15	1944.34	September	7	1942.25	October	31
1949.53	July	16	1944.22	September	8	1942.03	November	1
1949.41	July	17	1944.17	September	9	1941.82	November	2
1949.33	July	18	1944.16	September	10	1941.59	November	3
1949.23	July	19	1944.09	September	11	1941.29	November	4
1949.15	July	20	1944.04	September	12	1941.13	November	5
1948.92	July	21	1944.03	September	13	1940.91	November	6
1948.90	July	22	1944.05	September	14	1940.67	November	7
1948.81	July	23	1944.03	September	15	1940.42	November	8
1948.87	July	24	1943.98	September	16	1940.16	November	9
1949.03	July	25	1943.98	September	17	1939.91	November	10
1949.27	July	26	1943.98	September	18	1939.66	November	11
1949.44	July	27	1944.01	September	19	1939.35	November	12
1949.39	July	28	1944.03	September	20	1939.07	November	13
1949.47	July	29	1944.03	September	21	1938.79	November	14
1949.46	July	30	1944.00	September	22	1938.52	November	15
1949.41	July	31	1944.00	September	23	1938.40	November	16
1949.32	August	1	1943.87	September	24	1938.21	November	17
1949.17	August	2	1943.69	September	25	1938.08	November	18
1948.98	August	3	1943.57	September	26	1937.98	November	19
1948.81	August	4	1943.37	September	27	1937.92	November	20

Table B1. Continued.

Elevation	Month	Day
1937.79	November	21
1937.70	November	22
1937.57	November	23
1937.46	November	24
1937.38	November	25
1937.26	November	26
1937.16	November	27
1937.05	November	28
1936.93	November	29
1936.81	November	30
1936.80	December	1
1936.69	December	2
1936.60	December	3
1936.54	December	4
1936.47	December	5
1936.42	December	6
1936.36	December	7
1936.31	December	8
1936.29	December	9
1936.24	December	10
1936.21	December	11
1936.13	December	12
1936.11	December	13
1936.05	December	14
1936.05	December	15
1935.96	December	16
1935.94	December	17
1935.93	December	18
1935.91	December	19
1935.91	December	20
1935.90	December	21
1935.88	December	22
1935.91	December	23
1936.00	December	24
1936.05	December	25
1936.06	December	26

Figure B1. Watauga Reservoir daily reservoir elevations for 2007 (TVA data).

