

2007 Parameter Data: Ammonium-nitrogen in Lakes, Ponds and Reservoirs

Ammonium-nitrogen the most reactive form of nitrogen present in aquatic systems, and is the preferred form for algae and plant growth. It can adhere to soils and sediment, but when dissolved oxygen (DO) is readily available, bacteria quickly oxidize ammonium-N to nitrate-N through a process known as nitrification. Other types of bacteria produce ammonia as they decompose dead plant and animal matter – indirectly reducing dissolved oxygen concentrations. At higher temperatures and pH (a measurement of “acidity”) ammonium forms ammonium hydroxide, which is extremely toxic to fish and aquatic life. Waters with low DO and high ammonium hydroxide levels (typically hundreds of parts per billion (ppb) the units URI Watershed Watch reports measurements in) are more toxic than waters with low DO alone. While most sites monitored by URI Watershed Watch have low or no detectable levels of ammonium-nitrogen, many of our deep lakes had periods of quite ammonium-N levels from mid-summer until de-stratification in the fall, usually late September. In addition, high levels of ammonium-nitrogen in surface waters may indicate sewage outfalls, failed septic systems or eutrophication.

Watershed code	LOCATION	Sample Depth (m)	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	MEAN
			-- (ug/l or ppb) --						
WD	ALTON POND	1	ND	-	40	-	-	50	35
S	ASA POND	1	60	-	ND	-	-	40	38
WD	BARBER POND	1	-	160	ND	-	-	-	88
WD	BARBER POND	4.5	-	40	190	-	-	-	115
A	BELLEVILLE POND - LOWER	1	70	-	80	-	-	50	67
A	BELLEVILLE POND - UPPER	0.5	70	-	ND	-	-	-	43
TH	BILLINGS LAKE (CT)	1	ND	-	30	-	-	40	ND
TH	BILLINGS LAKE (CT)	7	-	-	ND	-	-	ND	ND
PA	BLACKAMORE POND	1	40	-	ND	-	-	430	162
TH	BLUE LAKE	1	ND	-	ND	-	-	70	33
WD	BOONE LAKE	1	40	-	100	-	-	90	77
WD	BOONE LAKE	5	ND	-	330	-	-	50	132
TH	BOWDISH RESERVOIR	1	ND	-	40	-	40	-	32
WD	BREAKHEART POND	1	ND	-	-	60	-	60	45
TH	CARBUNCLE POND	1	ND	-	-	80	-	50	48
TH	CARBUNCLE POND	6.5	100	-	-	420	-	720	413
PE	CARR POND (NK)	1	60	-	80	-	-	-	70
PE	CARR POND (NK)	4.5	70	-	80	-	-	-	75
PA	CARR POND (WG)	1	ND	-	ND	-	-	120	50
PA	CARR POND (WG)	9	130	-	150	-	-	70	117
R	CENTRAL POND (Turner Reservoir-north)	1	ND	-	-	-	-	970	493
WD	CHAPMAN POND	1	100	-	ND	-	-	-	58
CW	DEEP POND	1	40	-	50	-	-	170	87
CW	DEEP POND	5	ND	-	90	-	-	100	68
WD	EISENHOWER LAKE	1	ND	-	ND	-	-	30	ND

ND = No Detect; Limit of Detection = 30 ppb;
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			MAY	JUNE	JULY	AUG.	SEPT.	OCT.		
-- (ug/l or ppb) --										
PA	FLAT RIVER RESERVOIR	1	ND	-	60	380	-	-	-	152
PA	FLAT RIVER RESERVOIR	7	40	-	180	270	-	-	-	163
WO	GEORGIAVILLE POND	1	40	-	60	-	-	90	-	63
WO	GEORGIAVILLE POND	6	40	-	170	-	-	100	-	103
NA	GORTON POND	1	30	-	ND	-	-	60	-	35
NA	GORTON POND	10	320	-	1210	-	-	1640	-	1057
B	HANDY POND	1	ND	-	40	-	-	70	-	42
WO	HAWKINS POND	1	40	-	140	-	-	160	-	113
WD	HUNDRED ACRE POND	1	40	-	ND	-	-	90	-	48
WD	HUNDRED ACRE POND	6	-	-	370	-	-	100	-	235
S	INDIAN LAKE	1	30	-	70	-	-	60	-	53
B	KEECH POND	1	ND	-	ND	-	-	70	-	33
WD	LARKIN POND	1	-	nd	30	-	-	-	-	30
WD	LARKIN POND	8	-	110	200	-	-	-	-	155
CE	LILY POND	1	ND	-	40	-	-	50	-	35
PA	LITTLE POND	1	ND	-	ND	ND	-	60	-	26
PA	LITTLE POND	5	40	-	ND	40	-	110	-	51
WD	LOCUSTVILLE POND	1	ND	-	ND	-	-	100	-	43
S	LONG POND (SK)	1	70	-	120	-	-	150	-	113
S	LONG POND (SK)	7	-	-	60	-	-	110	-	85
WD	MEADOWBROOK POND	1	40	-	ND	-	-	70	-	42
NA	MELVILLE P - UPPER	1	70	-	140	-	-	880	-	363
PA	MISHNOCK LAKE	1	120	-	110	80	-	150	-	115
PA	MISHNOCK LAKE	4	160	-	240	340	-	80	-	205
PA	MISHNOCK LAKE - LITTLE	1	50	-	130	160	-	210	-	138
PA	PONAGANSETT RESERVOIR	1	50	-	60	-	-	70	-	60
PA	PONAGANSETT RESERVOIR	9	70	-	100	-	-	240	-	137
NA	PRINCE'S POND	1	170	-	170	-	-	120	-	153
NA	PRINCE'S POND	3	390	-	2080	-	-	1200	-	1223
WD	(Glen Rock Reservoir)	1	ND	-	40	-	-	60	-	38
PA	RANDALL POND	1	50	-	50	-	-	70	-	57
PA	SAND POND	1	50	-	ND	-	-	50	-	38
PA	SAND POND	7	230	-	660	-	-	750	-	547
S	SAUGATUCKET POND	1	160	-	240	-	-	560	-	320
CW	SCHOOLHOUSE P - LOWER	1	ND	-	ND	-	-	70	-	33
CW	SCHOOLHOUSE P - LOWER	6+	-	-	-	-	-	120	-	

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CW	SCHOOLHOUSE P - UPPER	1	ND	-	ND	-	-	90	40	
CW	SCHOOLHOUSE P - UPPER	6+	-	-	ND	-	-	140	78	
B	SCOTT POND	1	40	-	200	-	-	90	110	
B	SCOTT POND	9	-	-	1080	-	-	1120	1100	
A	SECRET LAKE	1	30	-	120	-	-	110	87	
S	SILVER LAKE	1	ND	-	ND	ND	-	70	ND	
S	SILVER LAKE	7	50	-	50	ND	50	80	49	
PE	SILVER SPRING LAKE	1	ND	-	60	-	-	90	55	
CE	SIMMONS MILL POND	1	40	-	ND	-	-	50	35	
WO	SLACK'S RESERVOIR	1	30	-	40	-	-	40	37	
WO	SLACK'S RESERVOIR	4	40	-	50	110	-	50	63	
TE	SLATER POND	1	60	-	ND	-	70	50	49	
B	SLATERSVILLE RESERVOIR	1	150	-	50	-	-	70	90	
B	SLATERSVILLE RESERVOIR	5.5	130	-	400	-	-	150	227	
B	SMITH & SAYLES RESERVOIR	1	ND	-	ND	ND	-	-	ND	
WD	SPALDING POND	1	40	-	30	-	-	50	40	
PA	SPECTACLE POND	1	ND	-	60	70	-	150	74	
PA	SPECTACLE POND	4	320	-	830	2350	-	670	1043	
B	SPRING GROVE POND	1	50	-	ND	-	-	60	42	
B	SPRING LAKE	1	ND	-	40	-	-	170	75	
B	SPRING LAKE	5	40	-	220	40	-	100	100	
TA	STAFFORD POND	1	ND	-	ND	-	-	60	ND	
TA	STAFFORD POND	7	60	-	100	-	-	100	87	
PA	TIOGUE LAKE	1	100	-	40	60	-	80	70	
WD	TUCKER POND	1	ND	-	ND	ND	-	40	ND	
WD	TUCKER POND	7.5	130	-	400	-	-	1190	573	
PA	UPPER DAM POND	1	100	-	150	-	-	80	110	
B	VALLEY FALLS POND	0.5	110	-	70	-	-	220	133	
B	WALLUM LAKE	1	ND	-	ND	-	-	60	ND	
B	WALLUM LAKE	5	ND	-	30	-	-	80	42	
NA	WARWICK POND	1	ND	-	ND	ND	-	280	81	
NA	WARWICK POND	5.5	430	-	2000	1910	-	430	1193	
WD	WATCHAUG POND	1	ND	-	30	-	-	-	ND	
WD	WATCHAUG POND	10	-	-	180	-	-	-		
WO	WATERMAN RESERVOIR	1	ND	-	40	-	-	60	38	
NA	WESQUAGE POND	1	30	-	70	-	-	60	53	

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-- (ug/l or ppb) --										
WD	WHITE POND	1	ND	-	ND	-	-	150	60	
WD	WHITE POND	8	60	-	50	-	-	330	147	
WD	WINCHECK POND	1	ND	-	ND	ND	-	70	ND	
WD	WINCHECK POND	5	60	-	ND	ND	-	70	40	
WO	WOONASQUA - STUMP	1	ND	-	40	-	-	150	68	
WD	WORDEN POND	1	ND	-	-	ND	-	50	ND	
WD	WYASSUP LAKE	1	40	-	ND	-	-	40	32	
WD	YAWGOO POND	1	ND	40	ND	70	120	60	53	
WD	YAWGOO POND	10	40	90	250	220	220	260	180	

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Algal bloom caused by excessive nutrients.