



# 2004 Connecticut River Water Quality Assessment

## Preliminary Assessment Status



### BACKGROUND

IN the summer of 2004, the NH Department of Environmental Services undertook this ambitious study, the most comprehensive river water quality assessment carried out in New Hampshire, at the request of the Connecticut River Joint Commissions, who are engaged with their five local river subcommittees in updating the Connecticut River Management Plan. CRJC learned that the state had little or no information about the safety of swimming and other river recreation or about the quality of aquatic habitat, for over 100 of the 275 miles of river in New Hampshire, and asked for help in filling this knowledge gap. DES responded with a well-organized and intensive effort. The results summarized here are considered preliminary until quality control checks are complete.

Support for the study came from the NH Department of Environmental Services, the US Environmental Protection Agency Region I, and the Connecticut River Joint Commissions. Final results will be posted on DES' Volunteer River Assessment Program website: <http://des.nh.gov/wmb/vrap>.

### AQUATIC HABITAT QUALITY

The study measured these features 12 times at each of 45 locations to assess the quality of water chemistry for aquatic life:

- **dissolved oxygen:** measured using a meter that produces readings for both concentration (mg/L) and percent (%) saturation. For Class B waters in NH (including the Connecticut River), any single dissolved oxygen reading must be greater than 5 mg/L and must have a dissolved oxygen content of not less than 75% of saturation, based on a daily average.
- **pH:** The Class B NH surface water quality standard is 6.5–8.0, unless naturally occurring.
- **specific conductance:** NH surface water quality standards do not contain numeric limits for specific conductance.
- **temperature:** NH surface water quality standards do not contain numeric limits for temperature.

### SWIMMING, FISHING, AND BOATING

The study measured for pathogens five times at each of 45 locations to determine the safety of the water for recreation.

- **bacteria (*Escherichia coli*):** For Class B waters, NH surface water quality standards for *E. coli* are:
  - fewer than 406 counts per 100 ml of water, based on any single sample, or
  - fewer than 126 counts per 100 ml of water, based on a geometric mean calculated from 3 samples within a 60 day period.

### RESULTS

- **fully supporting:** repeated samples show that the water meets NH state standards and therefore supports that use of the river.
- **insufficient information:** conflicting data or not enough data.
- **not supporting:** repeated samples show that the water does not meet state standards and therefore does not support that use.

### NOTES FOR THE TABLE

A) 2004 Connecticut River Project data indicated that water chemistry in this section of river fully supports aquatic life, for pH and dissolved oxygen. However, because this part of the river is smaller than a 4th order stream, state standards require biological data for a full assessment.

B) This is a NH DES “trend station,” one of three on the Connecticut River that has been monitored three times each year for a number of years for a long list of contaminants. It was not sampled as part of this project, but data collected here by other DES researchers are given.

C) Samples gave conflicting information. Geometric means met the state standard, but one sample was above the single sample standard for bacteria.

D) Two geometric means were above the state standard for bacteria.

E) One geometric mean was above the state standard for bacteria.

F) A more detailed analysis of the data is required.

G) Data collected in the 2004 project indicated that this section of river fully supports swimming and other recreational use, but due to the presence of combined sewer overflows that discharge to this section, the state will continue to list this section as not supporting this use.

H) Data collected in the 2004 project indicated that water chemistry in this section of river fully supports use as aquatic habitat, but due to the presence of exotic species (milfoil), the state will continue to list this section as not supporting this use.

Connecticut River Joint Commissions

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STATION NO.	ASSESSMENT UNIT	UNIT SIZE	SAMPLING LOCATION	PREVIOUS ASSESSMENT STATUS 2004 305(B) AND 303(D) SURFACE WATER QUALITY REPORT			INTERIM ASSESSMENT STATUS BASED ON 2004 CT RIVER DATA		
				AQUATIC HABITAT	SWIMMING	FISHING/ BOATING	AQUATIC HABITAT	SWIMMING	FISHING/ BOATING
102-CNT	Fourth CT Lake	2.5 acres	Fourth CT Lake	Insufficient Information	Insufficient Information	Not Assessed	Insufficient Information	Fully Supporting	Fully Supporting
100-CNT	Fourth CT Lake --> Third CT Lake	1.9 miles	Downstream of Fourth CT Lake, Pittsburg	Not Assessed	Not Assessed	Not Assessed	Insufficient Information (A)	Insufficient Information (C)	Fully Supporting
98-CNT	Third CT Lake	289 acres	Third CT Lake, Pittsburg	Insufficient Information	Insufficient Information	Insufficient Information	Insufficient Information	Fully Supporting	Fully Supporting
97-CNT	Third CT Lake	289 acres	E.coli Station; Third CT Lake Boat Ramp	Insufficient Information	Insufficient Information	Insufficient Information	Insufficient Information	Fully Supporting	Fully Supporting
96-CNT	Third CT Lake --> Upper Moose Falls Pond	2.8 miles	Downstream of Third CT Lake, Pittsburg	Not Assessed	Not Assessed	Not Assessed	Not Supporting (low pH)	Insufficient Information (C)	Fully Supporting
92-CNT	Upper Moose Falls Pond	20 acres	Upper Moose Falls Pond Boat Ramp	Insufficient Information	Insufficient Information	Insufficient Information	Not Supporting (low pH)	Insufficient Information (C)	Fully Supporting
88-CNT	Moose Falls Dam --> Scott Brook/ Second CT Lake	0.8 miles	Route 3 Bridge, Pittsburg	Not Assessed	Not Assessed	Not Assessed	Not Supporting (low pH)	Insufficient Information	Fully Supporting
86-CNT	Second CT Lake	1286 acres	Second CT Lake, Pittsburg	Insufficient Information	Insufficient Information	Insufficient Information	Insufficient Information	Fully Supporting	Fully Supporting
85-CNT	Second CT Lake	1286 acres	E.coli station; Second CT Lake Boat Ramp	Insufficient Information	Insufficient Information	Insufficient Information	Insufficient Information	Fully Supporting	Fully Supporting
84-CNT	Second CT Lake Dam --> First CT Lake	3 miles	Magalloway Road Bridge, Pittsburg	Not Assessed	Not Assessed	Not Assessed	Not Supporting (low pH)	Insufficient Information (C)	Fully Supporting
82-CNT	First CT Lake	2807 acres	First CT Lake, Pittsburg	Insufficient Information	Fully Supporting	Fully Supporting	Insufficient Information	Fully Supporting	Fully Supporting
81-CNT	First CT Lake	2807 acres	E.coli station; First Lake Boat Ramp, Pittsburg	Insufficient Information	Fully Supporting	Fully Supporting	Insufficient Information	Fully Supporting	Fully Supporting
80-CNT	First CT Lake Dam --> Lake Francis	2.5 miles	Carr Ridge Road Bridge, Pittsburg	Not Assessed	Not Assessed	Not Assessed	Insufficient Information	Fully Supporting	Fully Supporting
79-CNT	Lake Francis	2081 acres	E.coli station; Lake Francis State Park Boat Ramp	Insufficient Information	Fully Supporting	Fully Supporting	Insufficient Information	Fully Supporting	Fully Supporting
78-CNT	Lake Francis	2081 acres	Lake Francis, Pittsburg	Insufficient Information	Fully Supporting	Fully Supporting	Insufficient Information	Fully Supporting	Fully Supporting
76-CNT	Lake Francis --> confluence w/Indian Stream	4.5 miles	Route 145 Bridge	Not Assessed	Not Assessed	Not Assessed	Not Supporting (low pH)	Fully Supporting	Fully Supporting
75-CNT	Lake Francis --> confluence w/Indian Stream	4.5 miles	Mountain Valley Road, Pittsburg	Not Assessed	Not Assessed	Not Assessed	Not Supporting (low pH)	Fully Supporting	Fully Supporting
74-CNT	Confluence w/ Indian Stream --> confluence w/ Bishop Brook	4.2 miles	Route 3 Bridge, Clarksville/ Pittsburg line	Insufficient Information	Fully Supporting	Fully Supporting	Fully Supporting	Insufficient Information (C)	Fully Supporting
73-CNT	Bishop Brook --> upper end Canaan Dam Impoundment	2.1 miles	Bridge Street Bridge, Stewartstown	Not Assessed	Not Assessed	Not Assessed	Not Supporting (low pH)	Not Supporting (D)	Fully Supporting

72-CNT	Canaan Dam Impoundment	20 acres	Canaan Dam Railroad Bridge, Stewartstown	Not Assessed	Not Assessed	Not Assessed	Fully Supporting	Not Supporting (D)	Fully Supporting
71-CNT	Canaan Hydro Dam --> confluence w/ Mohawk River	10 miles	Main Street Bridge, West Stewartstown	Not Assessed	Not Assessed	Not Assessed	Fully Supporting	Insufficient Information (C)	Fully Supporting
69-CNT	Confluence w/ Mohawk River --> confluence w/ Cone Brook	8.6 miles	Bridge Street Bridge, Colebrook	Insufficient Information	Fully Supporting	Fully Supporting	Fully Supporting	Not Supporting (D)	Fully Supporting
68-CNT	Confluence w/ Mohawk River --> confluence w/ Cone Brook	8.6 miles	Columbia Covered Bridge, Columbia	Insufficient Information	Fully Supporting	Fully Supporting	Fully Supporting	Not Supporting (D)	Fully Supporting
67D-CNT	Confluence w/ Cone Brook --> confluence with Nulhegan River	6 miles	Hydrolab Station, 1/2 mi above Rt.105 Bridge, N. Stratford	Insufficient Information	Fully Supporting	Fully Supporting	Not Supporting (high pH)	Insufficient Information (C)	Fully Supporting
67-CNT	Confluence w/ Cone Brook --> confluence with Nulhegan River	6 miles	Route 105 Bridge, North Stratford	Insufficient Information	Fully Supporting	Fully Supporting	Not Supporting (high pH)	Insufficient Information (C)	Fully Supporting
64-CNT	Nulhegan River --> confluence w/ Upper Ammonoosuc River	19 miles	Stratford - Maidstone Bridge	Insufficient Information	Fully Supporting	Fully Supporting	Fully Supporting	Not Supporting (E)	Fully Supporting
61-CNT	Confluence w/ Upper Ammonoosuc River --> 1/2 mile below Guildhall Bridge	3.7 miles	Guildhall Bridge, Northumberland	Insufficient Information	Not Supporting	Fully Supporting	Fully Supporting	Not Supporting (E)	Fully Supporting
58-CNT	1/2 mi below station 61-CNT --> confluence w/ Israel's River	9.3 miles	Route 2 Bridge, Lancaster	Not Supporting (Aluminum)	Fully Supporting	Fully Supporting	Not Supporting (Aluminum) (B)	Fully Supporting	Fully Supporting
56-CNT	Confluence w/ Israel's River --> 1/2 mi below station 56-CNT	5.7 miles	Mt. Orne Covered Bridge, Lancaster	Not Assessed	Not Supporting	Insufficient Information	Fully Supporting	This year data fully supporting	Fully Supporting
55-CNT	1/2 mi below station 56-CNT --> Gilman Dam	3800 acres / ~ 5 miles	Railroad Bridge at John's River, Dalton	Insufficient Information	Not Assessed	Not Assessed	Fully Supporting	Fully Supporting	Fully Supporting
53-CNT	Gilman Dam --> 1/2 mile below dam	1/2 mile	Gilman Road Bridge, Dalton	Not Supporting (Aluminum, pH)	Fully Supporting	Fully Supporting	Not Supporting (Aluminum, low pH) (B)	Fully Supporting	Fully Supporting
52-CNT	Moore Reservoir; 1/2 mile below Gilman Dam --> Moore Dam	3500 acres; ~9 miles	Old Waterford Road Launch	Insufficient Information	Insufficient Information	Insufficient Information	Insufficient Information	Fully Supporting	Fully Supporting
50-CNT	Moore Dam --> Interstate 93 Bridge	1 mile	Route 18 Bridge, Littleton	Insufficient Information	Not Assessed	Not Assessed	Fully Supporting	Fully Supporting	Fully Supporting
49-CNT	Comerford Reservoir; Interstate 93 Bridge --> Comerford Dam	1000 acres ~6 miles	Comerford Reservoir	Insufficient Information	Not Assessed	Not Assessed	Insufficient Information	Fully Supporting	Fully Supporting
48-CNT	Comerford Dam --> 1 mile below dam	1 mile	Comerford Dam Tailrace, Monroe	Not Assessed	Not Assessed	Not Assessed	Not Supporting (low pH)	Fully Supporting	Fully Supporting
46-CNT	McIndoe Falls Reservoir; 1 mi below Comerford Dam --> McIndoe Falls Dam	545 acres / ~ 6 miles	McIndoe Falls - Monroe Bridge	Insufficient Information	Fully Supporting	Fully Supporting	Fully Supporting	Fully Supporting	Fully Supporting
45-CNT	Tailrace of McIndoe Falls Dam to .75 miles below dam	10 acres / ~.7 miles	McIndoe Falls Dam Tailrace, Monroe	Insufficient Information	Not Assessed	Not Assessed	Fully Supporting	Fully Supporting	Fully Supporting
44-CNT	.75 mi below McIndoe Falls Dam --> Dodge Falls Dam	280 acres / ~ 3 miles	Dodge Falls Dam, Monroe	Not Assessed	Not Assessed	Not Assessed	Fully Supporting	Fully Supporting	Fully Supporting
43E-CNT	Dodge Falls Dam --> confluence w/ Ammonoosuc River, Woodsville	4.5 miles	Route 135 canoe access, Bath	Not Assessed	Not Assessed	Not Assessed	Fully Supporting	Fully Supporting	Fully Supporting

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				AQUATIC HABITAT	SWIMMING	FISHING/ BOATING	AQUATIC HABITAT	SWIMMING	FISHING/ BOATING
40-CNT	Confluence w/ Ammonoosuc River --> confluence w/ Roaring Brook, Piermont	19 miles	Newbury Road Bridge, Haverhill	Insufficient Information	Fully Supporting	Fully Supporting	Fully Supporting	Fully Supporting	Fully Supporting
35-CNT	Confluence w/ Roaring Brook --> confluence w/ Clay Brook, Lyme	12 miles	Samuel Morey Bridge (Route 25A), Orford	Not Assessed	Not Assessed	Not Assessed	Fully Supporting	Fully Supporting	Fully Supporting
30-CNT	Wilder Impoundment; Confluence w/ Clay Brook --> Wilder Dam	1760 acres / ~ 19 miles	Ledyard Bridge, Hanover	Insufficient Information	Insufficient Information	Not Assessed	Fully Supporting	Fully Supporting	Fully Supporting
28-CNT	Wilder Dam --> confluence w/ White River	1.5 miles	Route 4 Bridge, West Lebanon	Not Assessed	Fully Supporting	Fully Supporting	Fully Supporting	Fully Supporting	Fully Supporting
27'-CNT	Confluence w/ White River --> confluence w/ Mascoma River	1.3 miles	Railroad Bridge, West Lebanon	Not Assessed	Not Supporting (CSO)	Not Assessed	Fully Supporting	Not Supporting (CSO) (G)	Fully Supporting
27-CNT	Confluence w/ Mascoma River --> confluence w/ Blow Me Down Brook, Cornish	12.5 miles	Interstate 89 bridge, Lebanon	Insufficient Information	Not Supporting (CSO)	Fully Supporting	Fully Supporting	Not Supporting (CSO) (G)	Fully Supporting
24-CNT	Confluence w/ Mascoma River --> confluence w/ Blow Me Down Brook, Cornish	12.5 miles	Sumner Falls Hartland	Insufficient Information	Not Supporting (CSO)	Fully Supporting	Fully Supporting	Not Supporting (CSO) (G)	Fully Supporting
20M-CNT	Confluence w/ Blow Me Down Brook -->confluence w/ Sugar River, Claremont	6.7 miles	North Star Canoe Launch, Cornish	Insufficient Information	Fully Supporting	Fully Supporting	Fully Supporting	Fully Supporting	Fully Supporting
20-CNT	Confluence w/ Blow Me Down Brook -->confluence w/ Sugar River, Claremont	6.7 miles	Ascutney Bridge, Claremont	Insufficient Information	Fully Supporting	Fully Supporting	Fully Supporting	Fully Supporting	Fully Supporting
15-CNT	Confluence w/ Sugar River --> 1/4 mi below Cheshire Bridge	13 miles	Cheshire (Route 11) Bridge, Charlestown	Not Supporting (non-native species)	Fully Supporting	Fully Supporting	Not Supporting (non-native species) (H)	Fully Supporting	Fully Supporting
13D-CNT	1/4 mi below Cheshire Bridge --> Bellows Falls Dam	1720 acres / ~9 miles	Arch Street Bridge, Walpole	Not Assessed	Not Assessed	Not Assessed	Fully Supporting	Fully Supporting	Fully Supporting
13-CNT	Bellows Falls Dam --> end of bypassed section of river	1/2 mile	Vilas Bridge, Walpole	Insufficient Information	Fully Supporting	Fully Supporting	Fully Supporting	Fully Supporting	Fully Supporting
10-CNT	End of Bellows Falls bypass --> confluence w/ Houghton Brook, Walpole	7.5 miles	Route 123 Bridge, Walpole	Insufficient Information	Fully Supporting	Fully Supporting	Fully Supporting	Fully Supporting	Fully Supporting
09-CNT	Confluence w/ Houghton Brook --> confluence w/ Partridge Brook	4.5 miles	Cheshire Co. Farm just above Partridge Brook, Westmoreland	Not Assessed	Not Assessed	Not Assessed	Fully Supporting	Fully Supporting	Fully Supporting
07-CNT	Confluence w/ Partridge Brook --> confluence with West River	11 miles	Route 9 Bridge, Chesterfield	Insufficient Information	Fully Supporting	Fully Supporting	Fully Supporting	Fully Supporting	Fully Supporting
04-CNT	1 mi below Rte 9 Bridge --> Vernon Dam	2000 acres / ~ 6 miles	Route 119 Bridge, Hinsdale	Insufficient Information	Not Assessed	Not Assessed	Fully Supporting	Fully Supporting	Fully Supporting
01-CNT	Vernon Dam --> Route 10 Bridge, Northfield, MA	6 miles	Route 10 Bridge Northfield, MA	Not Supporting (Aluminum & Copper)	Fully Supporting	Fully Supporting	Not Supporting (Aluminum & Copper) (B)	Fully Supporting	Fully Supporting