Appendix J. Tributaries to the Connecticut River in the Riverbend Region

New Hampshire

TOWN where trib. enters CT R.	Tributary	STATE ASSESSMENT*	Sediment Quality** contaminants found above level at which ecological effects might be expected	Local observations
Lancaster	Israel's River	Largely supports swimming and other recreation. Some low pH readings that could reflect natural conditions. 6.63 miles in Jefferson and 2.03 miles in Lancaster do not support recreation due to E. coli bacteria.	SD027l (lower river near WWTF and CT R.)- *no pollutants found above screening levels.* SD028L (upper, near Lancaster Ctr)- phenanthrene, pyrene, benzo (a)anthracene, chrysene, benzo(a)pyrene found above screening levels.	Once known as Siwooganook. Israel River Volunteer Advisory Group began WQ monitoring in 2006 with all three towns in the watershed (Lancaster, Jefferson, Whitefield) at 8 stations. Results met state standards. Group has gained confidence of towns, is now sampling in nearby streams. Geomorphic assessment underway for Stagg Hollow Brook in Jefferson. US Army Corps of Engineers ice control structures.
	Bunnell Brook	7.85 miles aquatic life impaired, low pH		
	Otter Brook	2.34 miles aquatic life impaired by low pH; swimming impaired by E. coli		
	Caleb Brook	swimming impaired by E. coli		
	Indian Brook	3.32 miles aquatic life impaired by low pH		
	Bone Brook	swimming impaired by E. coli		
Dalton	John's River	upper river not assessed; lowest 3.9 miles aquatic habitat impaired due to low pH; insufficient information on safety of swimming	SD 032L (French Rd. bridge) -phenanthrene, pyrene, fluoranthene, benzo(a)anthracene, chrysene, benzo(a)pyrene, low level mercury	
	Rix Brook	not assessed	not assessed	High quality brook trout stream, upper watershed largely forested; runs through damaged and undersized culvert under Route 135, large scour hole below culvert. Efforts to replace culvert with natural bottom design and appropriate size.
	Cushman Brook	4.44 miles impairments to aquatic life based on fish bioassessments		
	unnamed brook to Forest Lake	0.65 miles aquatic habitat impaired-low pH		
Littleton	Carpenter Brook	not assessed	not assessed	
	Cow Brook	not assessed	not assessed	
	Mullikin Brook	not assessed	not assessed	
Monroe	Roaring Brook	not assessed	not assessed	
	Hunt Mtn. Brook	not assessed	not assessed	

TOWN where trib. enters CT R.	Tributary	STATE ASSESSMENT*	Sediment Quality** contaminants found above level at which ecological effects might be expected	Local observations
Bath	Chamberlain Brook	not assessed	not assessed	
	Caribu Brook	not assessed	not assessed	
	unnamed brook, enters above The Narrows	not assessed	not assessed	Second order stream, length 1.1 miles. Corridor partly forested, partly in agriculture; some road runoff, dispersed development, intensive cropping, lack of buffer, perched culverts, cemetery. Discarded appliances and other trash was observed between Route 135 and CT R in 2006; new landowner cleaning it up in 2007. No evident WQ problems.
Haverhill	Ammonoosuc River *Designated into NH Rivers Management and Protection Program, 2007*	Had not been assessed until 2005, when volunteer river assessment monitoring began at 14 sites. 2006 - all stations met WQ standards for dissolved oxygen , turbidity; and specific conductance; all but 2 for pH. Average water temperature varied from 15.5 °C. to 20.2 °C. 3.32 miles in Littleton impaired by E. coli. Aquatic habitat impaired due to low pH in 16.88 miles in Carroll, 10.61 miles in Bethlethem, 1.23 miles in Landaff Wild Ammonoosuc River (tributary) impaired for 7.88 miles by low pH.	SD049L (Woodsville)- phenanthrene, pyrene, fluoranthene, benzo(a)anthracene, chrysene, benzo(a)pyrene. Also found in very low concentrations, but at the highest levels found anywhere in the study, was the pesticide Dacthal.	50 miles long, approx. 400 sq mi watershed. River nominated into NH Rivers Program. Increasing development on the floodplain in Littleton prompted concern from the downstream communities of Lisbon, Bath, and Haverhill. Used for drinking water supply. Steep scenic watershed; peak flows can be similar to those on the Connecticut. Most erosion seems to be caused by ice. Important coldwater fishery.50% corridor is aquifer. Nearly all meets/exceeds Class B standards for WQ. One of NH's best whitewater rivers. Threatened by development boom. 5 functioning dams, 9 breached. Wild Ammonoosuc River, a tributary: Zinc could pose a problem for water supply or irrigation. Monitoring by a home school group at 5 sites, including macroinvertebrates, found excellent water quality. Gold dredging is still going on.
	Oliverian Brook	10 miles unsafe for swimming due to bacteria from unknown sources, Morris Brook	SD057L (1/4 mi. up from CT R.)- phenanthrene, pyrene, fluoranthene, benzo(a)anthracene, chrysene, benzo(a)pyrene, indeno (1,2,3-cd)pyrene	Complaint from neighbors about aerial manure spraying led to some water quality monitoring that showed that *E.coli*, conductivity, and phosphorus went up when spraying occurred. The group hoped to get the landowner to change practices and to do more monitoring, but did not get the funding for it. Becket School , a large landowner in this watershed, may set up a water quality monitoring program.
	Clark Brook	8.5 miles unsafe for swimming due to bacteria from unknown sources and impaired by low pH and aluminum		County Conservation District won Moose Plate Grant in 2007 that resulted in project to prevent feedlot contamination at Brian Stone Farm in N. Haverhill from entering tributary of Clark Brook

*2008 draft 303(d) List of Impaired Surface Waters
**2000 Upper Connecticut River Valley Sediment Study, US EPA, Region 1. Study of 100 sites on mainstem and inside mouths of tributaries, Pittsburg NH to Hartland VT

Vermont

TOWN where trib. enters CT R.	Tributary (watershed area)	STATE ASSESSMENT*	Sediment Quality**	Local Opinion
Guildhall	Neal Brook	not assessed	not assessed	
Lunenburg		not assessed	not assessed	
Concord		not assessed	not assessed	
Waterford		not assessed	not assessed	
Barnet	Passumpsic River	TMDL LIST: E. Coli contamination from St. Johnsbury CSOs contaminates this river from Pierce Mills Dam to 5 miles below Passumpsic Dam; also Lower Sleepers River. St. Johnsbury is working to fix CSOs Basin planning will begin in 2008. Straight pipe discharges and failed septic systems in E. St. Johnsbury have been cleaned up. Further assessment needed of effects of urban runoff. On the Sleepers River, further assessment is needed of elevated nickel and oil levels in sediment possibly associated with the Fairbanks-Morse foundry site.	SD042L (lower river)-no pollutants found above screening levels. Found in very low concentrations, but at the highest levels anywhere in the study, was the pesticide Pentachloroanisole. SD044L (upper river)-phenanthrene, pyrene, benzo(a)anthracene, benzo(a)pyrene, nickel	Direct discharge of gray water to the Moose River, a Passumpsic trib, in Concord village. The Passumpsic Valley Land Trust is conserving land
	Stevens River	Watershed is 68% forested, 17% agricultural. 1999- No reported water quality problems, although aquatic habitat in lowest mile is affected by fluctuations from McIndoe Falls dam. Major concerns are flooding, erosion, and nonpoint source pollution from landfills, septic systems, and poor logging. Roads are contributing to sediment runoff. A bridge and culvert survey is being done. Further assessment needed of instability between Route 5 and I91.	not assessed	Baseline info was collected and results met VT standards, although they went up with rainfall.
Newbury	Wells River	Watershed is 81% forested. 1999- From Groton to Wells River, 10 miles threats due to siltation, iron, some nutrients, other metals and organics from a large gravel pit, unlined landfill, loss of vegetation in areas where yards and pasture encroach on riparian zone, bridge and road runoff and maintenance. US Geological Survey 1993 sediment study in the town of Wells River found chromium, lead, nickel, and zinc at levels which might lead to biological effects. 2005 Wells River watershed council: runoff from winter salting and sanding, stormwater runoff, river straightening and floodplain filling for road construction, and undersized bridges and culverts..Road wash out contributing sediment. Major concerns are flooding, erosion, and nonpoint source pollution from landfills, septic systems, and poor logging. Monitoring is needed. Ticklenaked Pond in the watershed is on TMDL list for high phosphorus.	SD051L (Wells R. behind info ctr)- naphthalene, fluorene, phenanthrene, anthracene, fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(a)pyrene, indeno (1,2,3-cd)pyrene SD052L (above dam at Adams Paper Co.)- phenanthrene, fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(a)pyrene. Also found in very low concentrations, but at the highest levels found anywhere in the study, was the pesticide Lindane and the element beryllium.	

*2008 VT draft 303(d) List of Impaired Surface Waters and 2008 draft VT List of Priority Surface Waters Outside the Scope of Clean Water Act Section 303(d)

**2000 Upper Connecticut River Valley Sediment Study, US EPA, Region 1. Study of 100 sites on mainstem and inside mouths of tributaries, Pittsburg NH to Hartland VT