

"The River is the Report Card of the Watershed"



Al Gore 9/25/96

- Environmental report card
 - Coordinate monitoring efforts
 - Guide decision-making
 - Account to the public



Report Card Goals

Environmental Baseline	Status
Decision-making Guide	ID problems Prioritize problems Geo-target problems ID threats ID remedial action groups
Public Accounting	Trends
Coordinate Monitoring	Information Inventory ID information gaps

Indicator Groups

Group	Water Use
1. Biology	Aquatic Life
2. Bacteria	Recreation
3. Aesthetics	Recreation
4. Fish Tissue	Fish Consumption
	Program
5. Chemistry	Wastewater
6. Sediments	Hazardous Waste
7. Habitat	Wetlands
8. Flow	Water Management

Historical Trends

● Chemistry

- Conventional - DO, pH, temperature
- Non-conventional - nutrients
- Priority pollutants - toxics



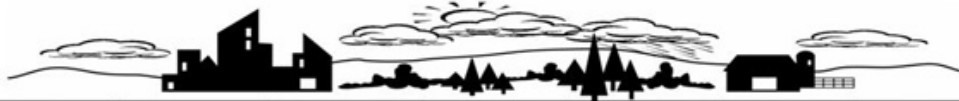
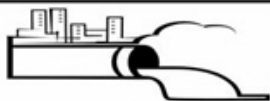
Millers River

WATER QUALITY REPORT CARD

2000

SEGMENT	POINT SOURCES		NON-POINT SOURCES						
	MUNICIPAL	INDUSTRIAL	STORM WATER	RESOURCE EXTRACT.	LAND DISPOSAL	SEDIMENT	HYDRO MODIFICA.	OTHER	UNKNOWN
MILLERS RIVER									
to Whitney Pond							WDL,IMP	ATM	
to Winchendon WWTF	CSO					SED*		ATM	
to Otter River	MTF				LDF	SED*		ATM	
to South Royalston						SED		ATM	
to Orange Center						SED	IMP,FLW	ATM	
to Erving WWTF						SED	IMP,FLW	ATM	
to Connecticut River					LDF	SED	FLW	ATM	
OTTER RIVER									
to Gardner WWTF			URB			SED*		ATM	
to Seaman Paper Co.	MTF,MS4		HWY	S&G		SED*		ATM	
to Millers River	MTF		HWY	S&G		SED		ATM	
TULLY RIVER									
East Branch					LDF	SED*	FLW	ATM	
Boyce Brook						SED*		ATM	
West Branch						SED*		ATM	
Lawrence Brook						SED*		ATM	
Main Stem						SED*		ATM	

COLOR KEY:
 ■ KNOWN SOURCE
 ■ SUSPECTED SOURCE
 ■ POTENTIAL SOURCE
 ■ N/A



Nashua River Watershed Water Quality 1973	Above Clinton WWTP	Below Clinton WWTP	Above Leominster WWTP	Below Leominster WWTP	Above Pepperell Pond	Below Pepperell Pond	Pepperell Pond	Nissitissit and Squannacook
I. Ecological Health	35	35	20	35	30	35	35	90
A. Biology	NS	NS	NS	NS	NS	NS	NS	S
B. Chemistry	NS	NS	NS	NS	NS	NS	NS	S
Baseline	NS	NS	NS	NS	NS	NS	NS	S
Nutrients	NS	NS	NS	NS	NS	NS	NS	S
Toxics	NS	NS	NS	NS	NS	NS	NS	S
C. Sediments	NA	NA	NA	NA	NA	NA	NS	NA
D. Hydrology	S	S	S	S	S	S	S	S
E. Habitat	NS	NS	NS	NS	NS	NS	NS	S
II. Public Health	65	65	30	30	30	50	40	80
A. Bacteria	NS	NS	NS	NS	NS	NS	NS	P
Swimming	NS	NS	NS	NS	NS	NS	NS	P
Boating	NS	NS	NS	NS	NS	NS	NS	S
B. Aesthetics	S	S	NS	NS	NS	P	NS	S
C. Toxics in Fish	NA	NA	NA	NA	NA	NA	NA	NA

Water Quality 1993	Above Clinton WWTP	Below Clinton WWTP	Above Leominster WWTP	Below Leominster WWTP	Above Pepperell Pond	Below Pepperell Pond	Pepperell Pond	Nissitissit and Squannacook
I. Ecological Health	90	75	65	70	70	90	90	85
A. Biology	S	P	NS	NA	NS	S	NA	S
B. Chemistry	S	P	NS	NA	NS	S	S	S
Baseline	S	S	S	S	S	S	S	T(pH)
Nutrients	S	P	S	S	S	S	S	S
Toxics	?	P	NS	NA	NS	S	S	S
C. Sediments	NA	NA	NA	NA	NA	NA	NA	NA
D. Hydrology	S	S	S	S	S	S	?	S
E. Habitat	S	S	P	S	S	S	?	S
II. Public Health	95	70	50	95	80	95	75	95
A. Bacteria	S	NS	NS	S	P	S	S	S
Swimming	S	NS	NS	S	P	S	S	S
Boating	S	S	NS	S	S	S	S	S
B. Aesthetics	S	S	P	S	S	S	S	S
C. Toxics in Fish	S	S	NA	NA	S	S	NS	S

Millers River Sampling Plan

	Millers River Mainstem					Otter River			Beaver Brook	Priest Brook	West Branch Tully Brook	East Branch Tully Brook	Lawrence Brook	Tully River
	MA 35-01	MA 35-02	MA 35-03	MA 35-04	MA 35-05	MA 35-06	MA 35-07	MA 35-08	MA 35-09	MA 35-10	MA 35-11	MA 35-12	MA 35-13	MA 35-14
I. Ecological Health	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
A. Biology	NA	NA	NA	NA	NA	T	NS	NS	NA	NA	S	NS	NS	NA
B. Chemistry	S	NS	NA	NA	NA	S	NS	NS	NA	NS	NA	NA	NA	NA
Baseline	T (pH)	NA	NA	NA	NA	T (DO)	NS	NS (DO)	NA	NA	NA	NA	NA	NA
Nutrients	S	NA	NA	NA	NA	S	NS	NS	NA	NA	NA	NA	NA	NA
Toxics	T	NS	NA	T	S	S	NA	NS	NA	NS	NA	NA	NA	NA
C. Sediments	NA	NA	NS	NS	NS	NA	NA	NS	NA	NA	NS	NS	NS	NA
D. Hydrology	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
E. Habitat	NA	NA	NA	NA	NA	S	S	S	NA	NA	S	S	S	NA
II. Public Health	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
A. Bacteria	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Swimming	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Boating	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B. Aesthetics	NA	NA	NA	NA	NA	S	NA	NS	NA	NA	NA	NA	NA	NA
C. Toxics in Fish	NS	NS	NS	NS	NS	S	S	NS	NS	NS	NS	NS	NS	NS

	305b Report Recommendations
	Additional SMART Recommendations

Report Card Summary

Status	Color codes / Response indicators for water uses
ID problems	Colors/ Causes card
Prioritize problems	View Columns
Geo-target problems	View Rows
ID threats	Color coded in yellow
ID remedial action groups	Indicators / Sources card
Trends	Multiple years / indicators better than uses
Information Inventory	Metadata card
ID Data gaps	

A vertical strip on the left side of the slide shows a topographic map of a river valley. The map features contour lines, a river channel, and various terrain features. The colors range from light green to brown, indicating different elevations and land cover. The river flows from the top left towards the bottom left.

Report Card Uses

- Four page 305b report
- Water quality managers
- Group discussions (planning)
- Priorities for grant funding
- Coordinating with other monitoring groups
- Outreach (general public)

Coordination in Development

● Indicator Groups

- Intergovernmental Task Force on Monitoring

● Causes

- EPA/305b guidance

● Sources

- EPA/303d guidance

● Criteria for color codes

- My own (305b/WQS)