CRJC Headwaters Subcommittee

Meeting Minutes
Thursday, January 30, 2020
7:00PM
Colebrook Town Office

Pittsburg			Northumberland	Edwin Mellett	✓
Pittsburg	Alan R Williams		Northumberland	Dale Covey	✓
Colebrook	Kevin McKinnon	✓	Bloomfield		
Colebrook			Bloomfield		
Stratford	Jamie Sayen	✓	Lemington		
Stratford	Clayton Macdonald		Lemington		
Clarksville			Maidstone		
Clarksville			Maidstone		
Clarksville (alt)	Alan Karg		Canaan	Tom Caron	✓
Stewartstown			Canaan		
Stewartstown			Brunswick		
Columbia	Kenneth Hastings	✓	Brunswick		
Columbia	Lucas Deblois	✓			

Tim Purrington (Great River Hydro)
Ben Copans (Watershed Coordinator, VTDEC)
Olivia Uyizeye (Staff, UVLSRPC)

1. **Welcome and Introductions**

Mellett opens the meeting at 7:05pm. The attendees introduce themselves.

2. **Speaker – Ben Copans, Upper Connecticut VT Tactical Basin Plan**

See PowerPoint slides. Supplementary comments have been recorded below.

Copans reviews the tactical basin plan update process for the Upper Connecticut basin. Copans emphasizes that he hopes to receive feedback from the local river subcommittee (LRS). This is particularly useful for this region of VT to identify and clarify concerns. The basin includes most of what drains into the Connecticut River above the Passumpsic watershed.

Copans highlights new land use data that shows some forest decrease and shrub/scrub increase, likely due to logging. Otherwise, it appears, from a high level, that the region is largely stable. Copans explains the classification of waters in Vermont. In the Upper Connecticut there are fewer water quality issues identified, allowing for a focus on protection. One limitation has been monitoring, with two years of data needed to be included in the basin plan.

Hastings notes a concern about sediment running out of Keiser and K Ponds into the Connecticut River, creating a kind of desert area about ¾ mile long. The impact of microbursts has been part of the cause of this increase. Hastings notes that he would like to see the area restored, but does not see how. Hastings offers to show Copans the area. Sayen asks if the cause is natural or human. Hastings notes that there is a human influence due to land use changes from development.

Copans explains that it is awkward how the state deals with the Connecticut River as there is shared responsibility with New Hampshire. NH performs most of the monitoring and works with the EPA

on listings. NH has identified river sections that are impaired by e-coli. Vermont has looked to update its e-coli data on the region, dated 2004/2005, however, this has not been done. Copans explains that e-coli has both human and natural causes and it can sometimes be difficult to differentiate the source. McKinnon shares that runoff from state drainage is one of the works culprits impairing the Connecticut River. Copans indicates that a main section in the region does not meet standards for swimming. Sayen expresses concern that people are not aware of the e-coli levels, especially noting that the LRS members themselves are not aware. Sayen indicates that this should be better known. Covey also expresses surprise at the e-coli issue. McKinnon notes that the data is 15 years out of date and conditions might have changed since then.

There is also an increasing phosphorus trend in three lakes in the region. This increase is largely due to the change of seasonal to year-round homes. The VT Shoreland Protection Act does limit new development, including replacement of any older homes where the building footprint is changed. Copans notes that there is focus on roads, getting them up to minimal standards when in proximity to water sources. There are some areas in the basin that lack data. McKinnon suggests working with the wastewater treatment plant in Canaan for water testing.

Sayen notes that many towns in their region are poor, making it difficult to implement protective and restoration measures. Copans shares details on available grants, as well as, online data tools. Copans invites the LRS to participate in topics of interest to them as he will be organizing meetings on different topics over the coming year with a draft plan expected near the end of 2020. Copans is willing to return to discuss the draft plan or a specific topic, such as e-coli. The LRS agrees to have updates and meeting notices sent to Uyizeye to include in LRS communications, allowing representatives to stay informed.

3. Approve Minutes – August 2019

Caron makes a motion to accepts the minutes, including spellchecking “glyphosate”
McKinnon seconds the motion.
The motion passes unanimous.

4. Permit Review – Snowmobile Club, Pittsburg

Mellett notifies the LRS of a permit that came through from the snowmobile club in Pittsburg. The permit was approved and the work has been finished since the last LRS meeting. Mellett and Caron concur that the club likely did a very good job.

5. NH Wetlands Permit Process Update

The modified NH wetlands review process is discussed, as per guidance documents from NHDES. Mellett describes the shorter timeline and slight increase in permits that will require LRS review.

Sayen makes a motion for Mellett to review and sign off on permits deemed unnecessary for full LRS review, and also require a signature before the next LRS meeting. Any permit that is decided to require full LRS review may be discussed at the next scheduled meeting or by request of a special meeting. All permits will be given review, whether or not signed off by Mellett at the next meeting.

McKinnon seconds the motion. The vote passes unanimous.

6. Updates and Other Business

a) Drainage Project

Mellett given an update that this permit was withdrawn to improve drainage on the Perras Rd parcel.

b) Herbicide & Pesticide Use

Mellett opens up discussion on a past issue – that of herbicide and pesticide use in the region, particularly glyphosate. There are multiple lawsuits presently underway on the health impacts of glyphosate. The chemical is used by local Christmas tree farmers, who have a difficult time growing enough without its use. McKinnon notes that the state uses glyphosate to kill knotweed. Sayen responds that some foresters think we should be realistic about invasives and not use toxics to kill them, only manual pulling. McKinnon notes that before we used heaver chemicals, like atrazine. Sayen comments that it is hard for small farmers to compete with agribusinesses after World War II.

Hastings comments that there is value in making a stance on the topic, emphasizing the need for a buffer. Covey argues that if the LRS were to set a policy, then the LRS should be clear, identify where, how and quantity to be limited. Hastings notes that there is variation of impact in relation to slope. Covey responds that there are best management practices that include slope in calculation of the application amount. Sayen says that it would be nice if there was a presumption against these types of chemicals. Hastings shares that he brought up this discussion at a recent CRJC Joint Commissions meeting and did not receive a significant response.

Uyizeye agrees to do some research on the topic and share any policies that are currently in use or under consideration in other watersheds.

7. Adjourn

McKinnon makes a motion to adjourn.
Hastings seconds the motion.

Meeting Adjourned at 8:44PM.

Next Meeting

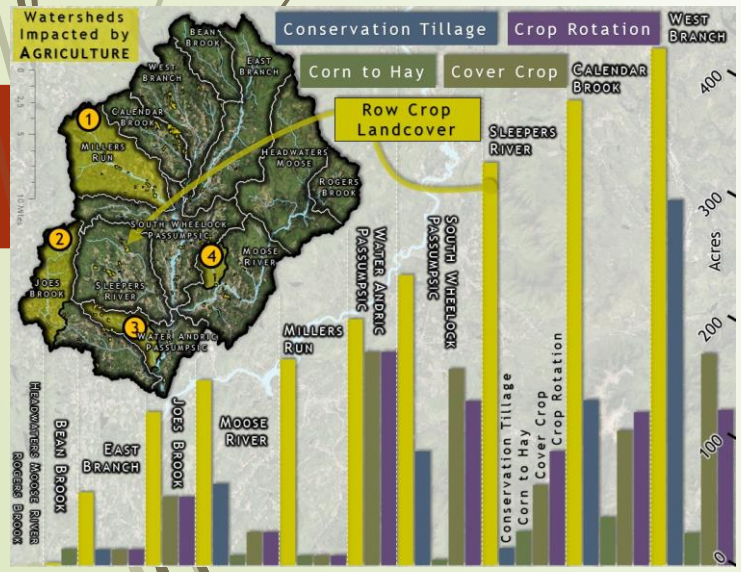
Thursday, April 23, 2020
Colebrook Town Offices
7:00 PM

Vermont Northern Connecticut River Basin planning update

VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION
WATERSHED MANAGEMENT DIVISION
MONITORING, ASSESSMENT & PLANNING PROGRAM

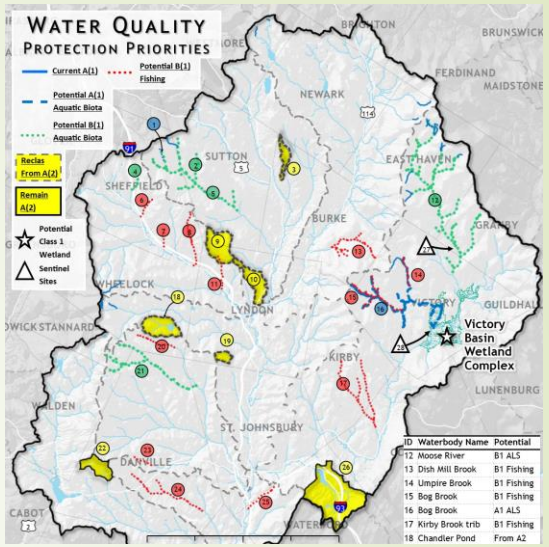
CRJC Headwaters committee
January 30th 2020

Ben Copans
Watershed Planner



Meeting Overview

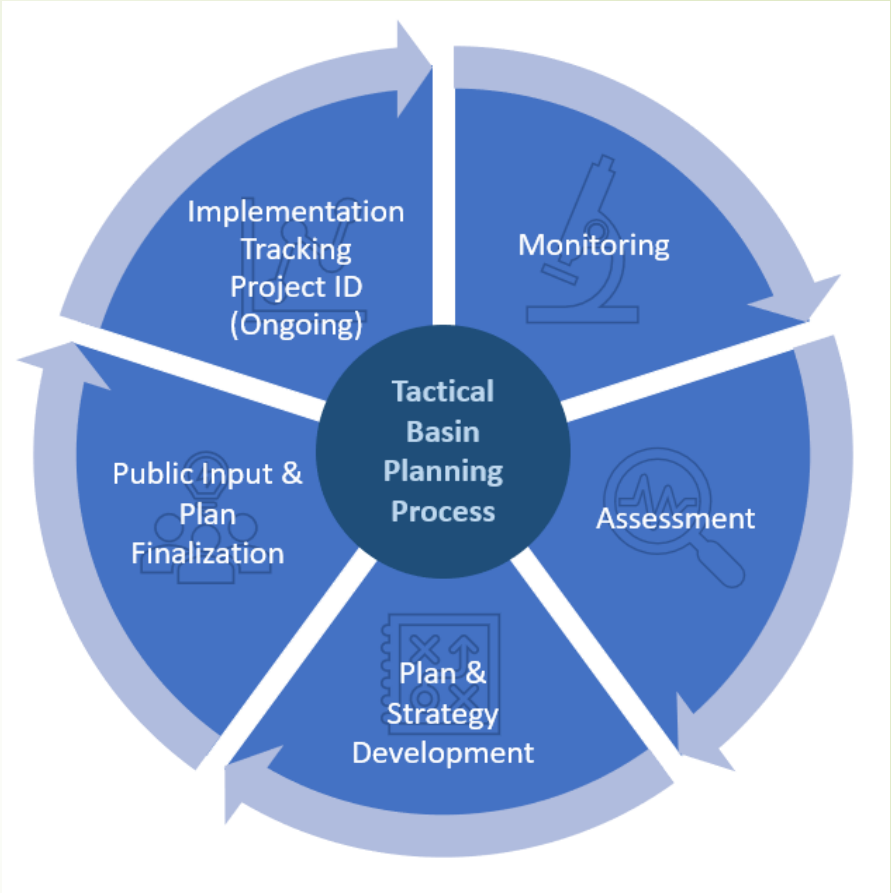
- Basin planning overview
- Northern Connecticut basin planning
  - Protection priorities
  - Water quality issues
  - Restoration approach
  - Planning timeline
- CRJC Headwaters engagement in planning process



Basin planning framework

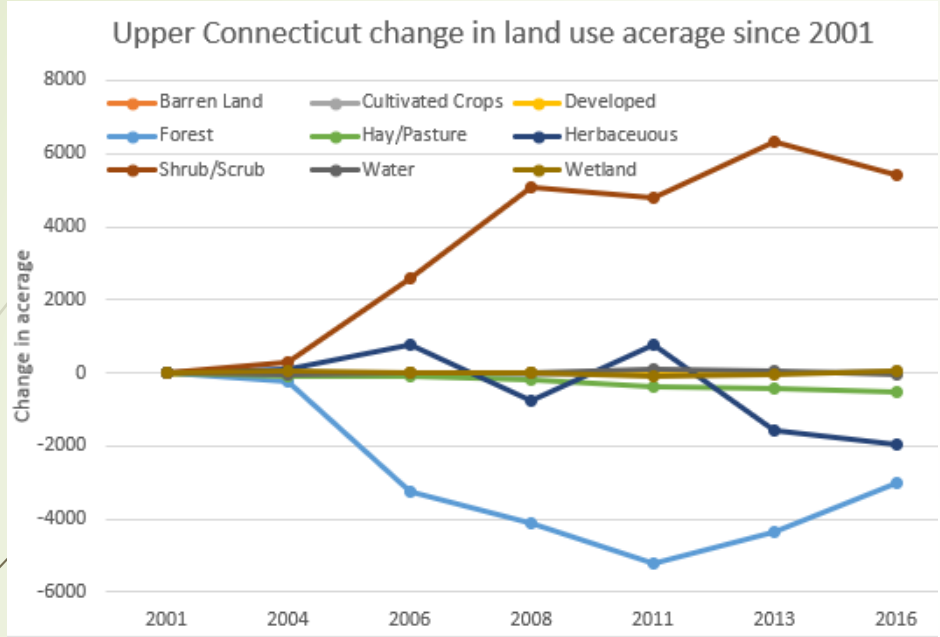
Plans are updated every 5 years and include:

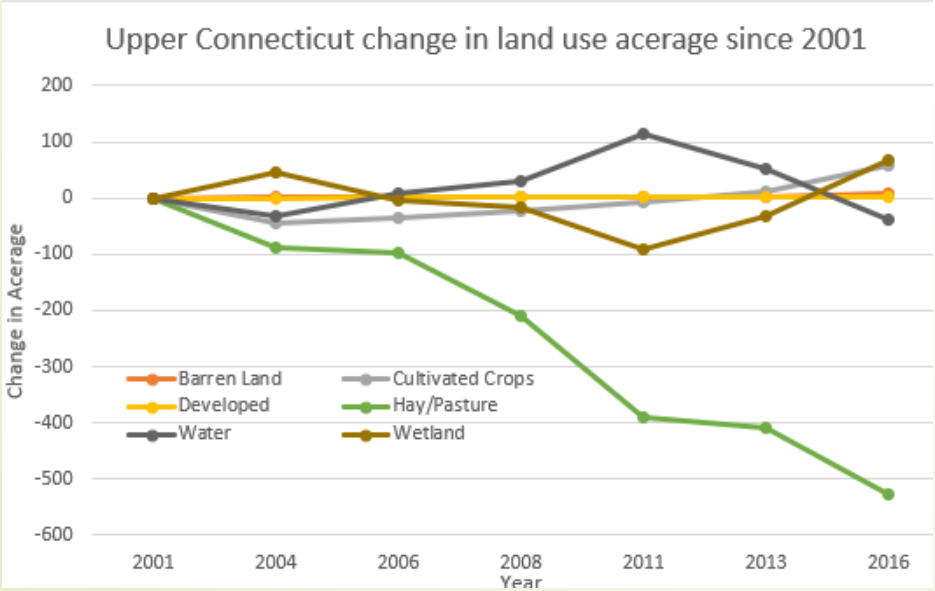
- Causes and sources of pollution
- Opportunities for protecting HQ waters
- Targeted restoration strategies that become priorities for technical support and funding
- Strategies to foster education and outreach
- Targeted lists of individual projects that are included in a watershed projects database

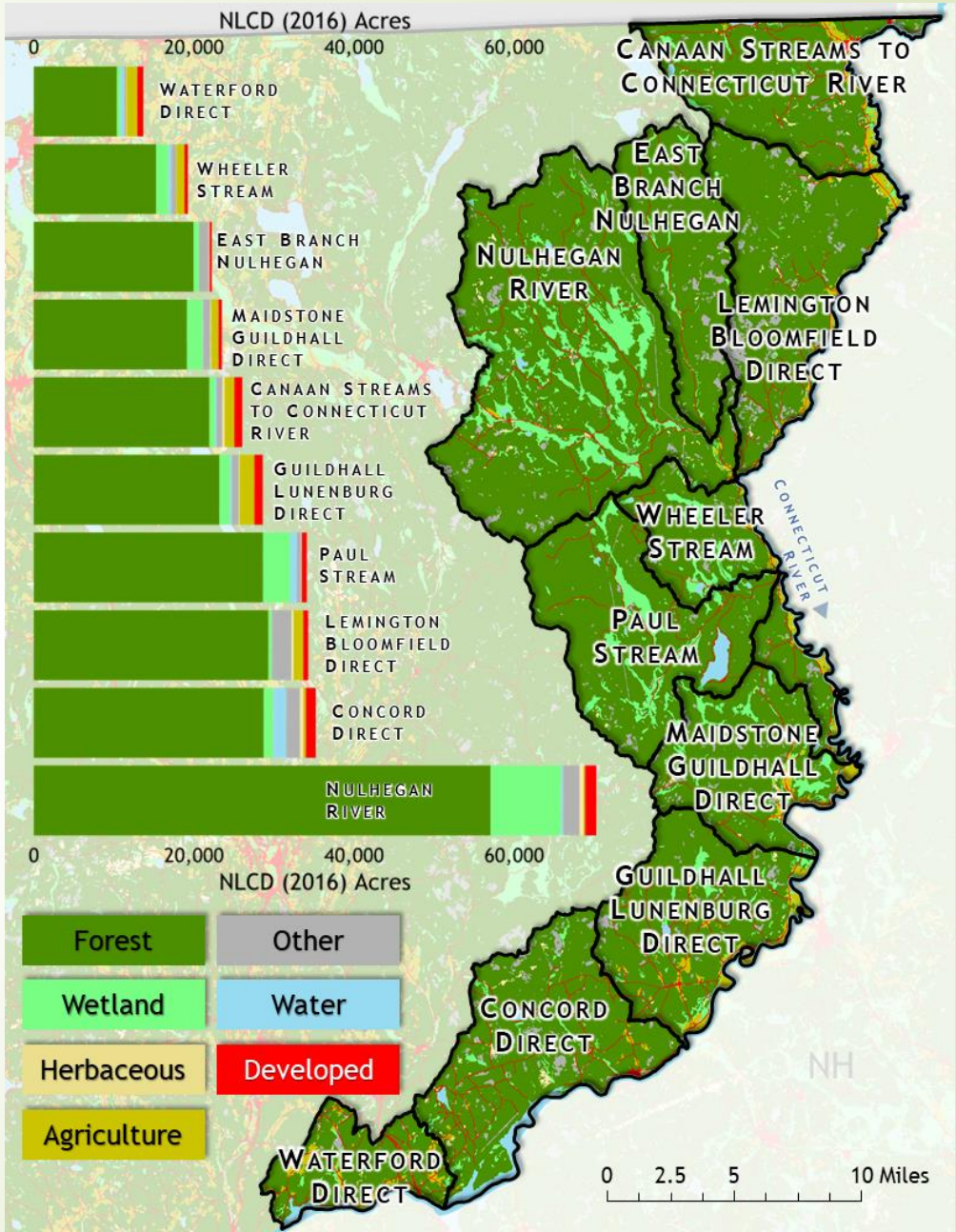


Plans serve as the strategic guidebook for protecting and restoring VT surface waters

Northern Connecticut River Basin – Land Use







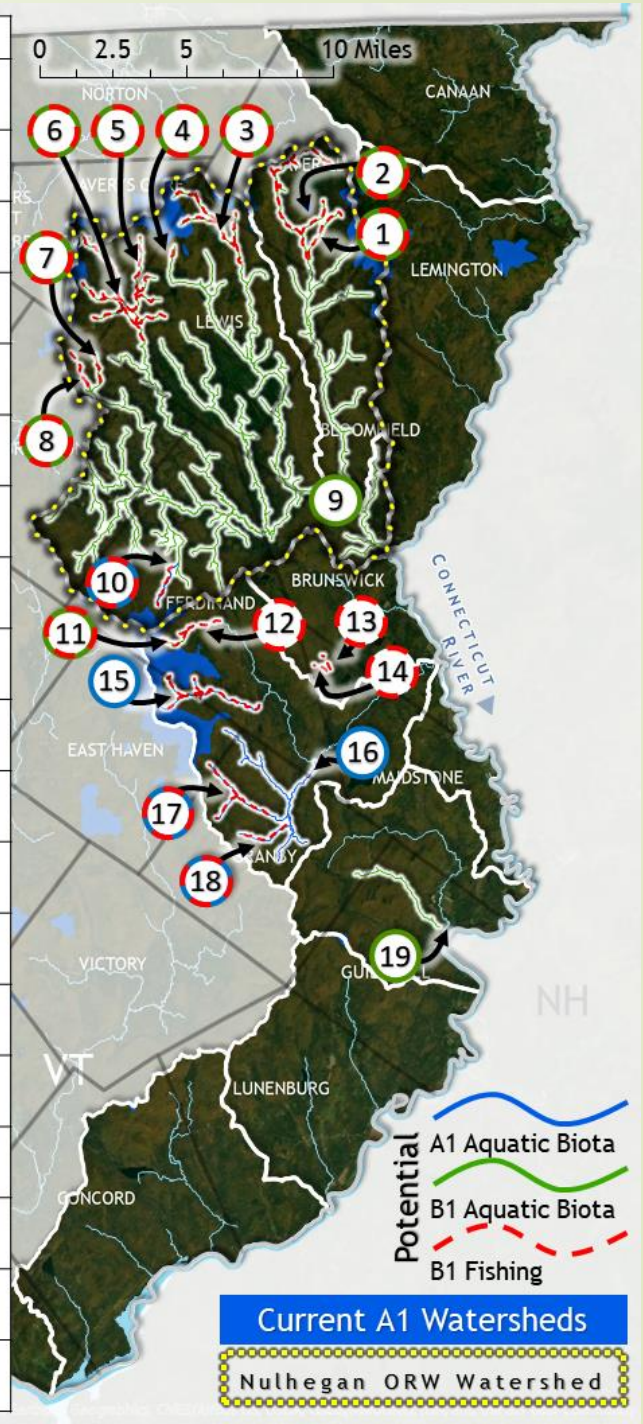
Water quality protections though reclassification

Use	A1	B1	B2
Aquatic Biota	Excellent - Natural Condition	Very Good - minor change	Good - moderate change
Aquatic Habitat	Natural Condition	Very Good - minor change	Good - moderate change
Aesthetics	Natural Condition	Very Good	Good
Boating	Excellent - maximum extent without degradation	Very Good - maximum extent with no more than minor degradation	Good - meets hydrological criteria
Fishing	Salmonid population in Natural Condition	Salmonid population in Very Good Condition	Salmonid population in Good Condition
Public Water Supply	(A2) Uniformly excellent character, highly suitable	---	Suitable with treatment
Swimming	Excellent	---	Good

Potential waters for reclassification/ORW

- Madison, Granby Stony and Tolman Brooks are potential A1 waters for aquatic biota
- Nulhegan River, and Washburn Brook are potential B(1) for aquatic biota
- Nulhegan River is a potential Outstanding Resource Water
- 15 Streams are identified as potential B1 for fishing use
- Dennis Pond wetlands is an existing Class 1 wetland and Yellow and Moose Bogs are two other potential Class 1 wetlands

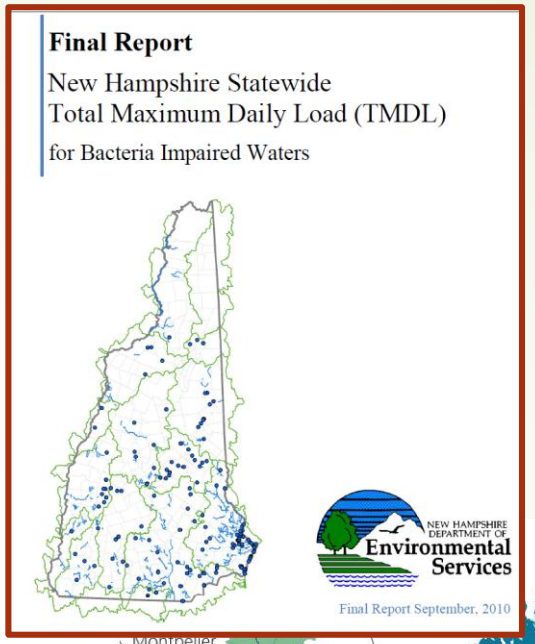
Map ID	Stream Name	Reclassification
1	Spaulding Brook	B1 Fishing B1 Aquatic Biota
2	Upper E. Nulhegan	B1 Fishing B1 Aquatic Biota
3	Black Branch Nulhegan	B1 Fishing B1 Aquatic Biota
4	Logger Brook	B1 Fishing B1 Aquatic Biota
5	Tim Carroll Brook	B1 Fishing B1 Aquatic Biota
6	Upper N. Nulhegan	B1 Fishing B1 Aquatic Biota
7	Clay Hill Brook	B1 Fishing B1 Aquatic Biota
8	Tuffield-Willey Brook	B1 Fishing B1 Aquatic Biota
9	Nulhegan River	B1 Aquatic Biota
10	Murphy Brook	B1 Fishing A1 Aquatic Biota
11	Upper Paul Stream	B1 Fishing B1 Aquatic Biota
12	Paul Stream	B1 Fishing
13	W. Mtn. Brook, North	B1 Fishing
14	W. Mtn. Brook, South	B1 Fishing
15	Madison Brook	B1 Fishing A1 Aquatic Biota
16	Granby Stream	A1 Aquatic Biota
17	Stony Brook	B1 Fishing A1 Aquatic Biota
18	Tolman Brook	B1 Fishing A1 Aquatic Biota
19	Washburn Brook	B1 Aquatic Biota

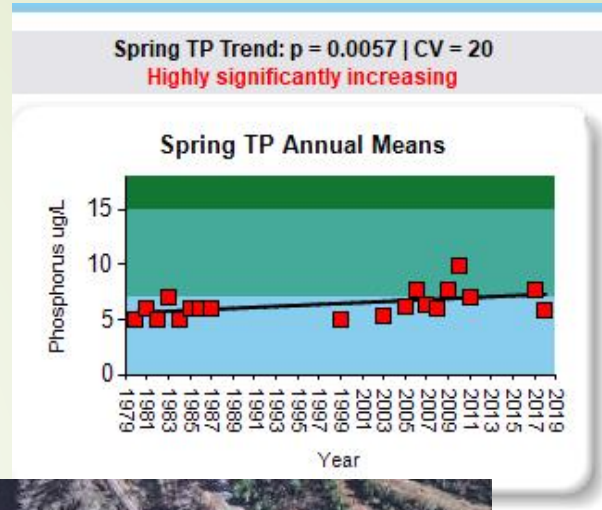


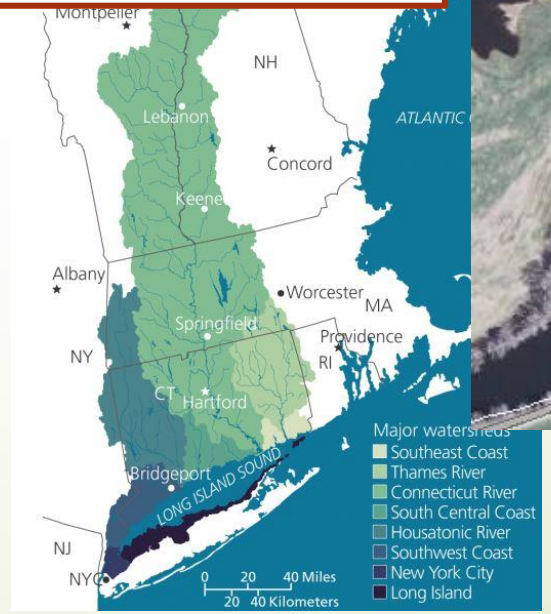
Northern Connecticut River Basin Planning priorities

Water Quality Issues:

- **E. *coli* along northern reaches of Connecticut River**
- **Increasing phosphorus trends on Maidstone Lake, Miles Pond and Wallace Pond and shoreland degradation on several lakes**
- **Nitrogen Loading to LIS**
- **Riparian, wetland and aquatic habitat degradation along the Connecticut River and historically logged stream networks**
- **Limited data on Water Quality conditions on several streams**







E. *coli* impairment and TMDL

I 3: Connecticut River – Canaan Hydro

AUID: NHIMP801010305-01

Characteristics: freshwater, class B designation, not designated beach, primary contact recreat

Impairment: *E. coli*

Water Quality Criteria & TMDL for E. coli:
Geometric mean: 126 CTS/100mL
Single sample: 406 CTS/100mL

Percent reduction to meet TMDL:
Geometric mean: *4%*
Single sample: *72%*

Data: 2004 - 2005 (inclusive) from NH DES, 2008 TMDL cycle

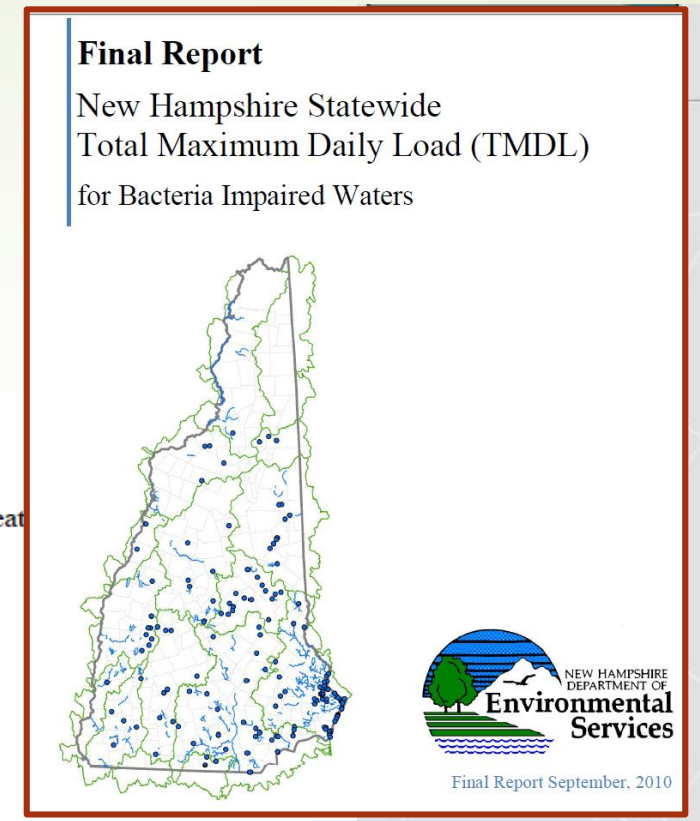
Single sample *E. coli* results (CTS/100ML)

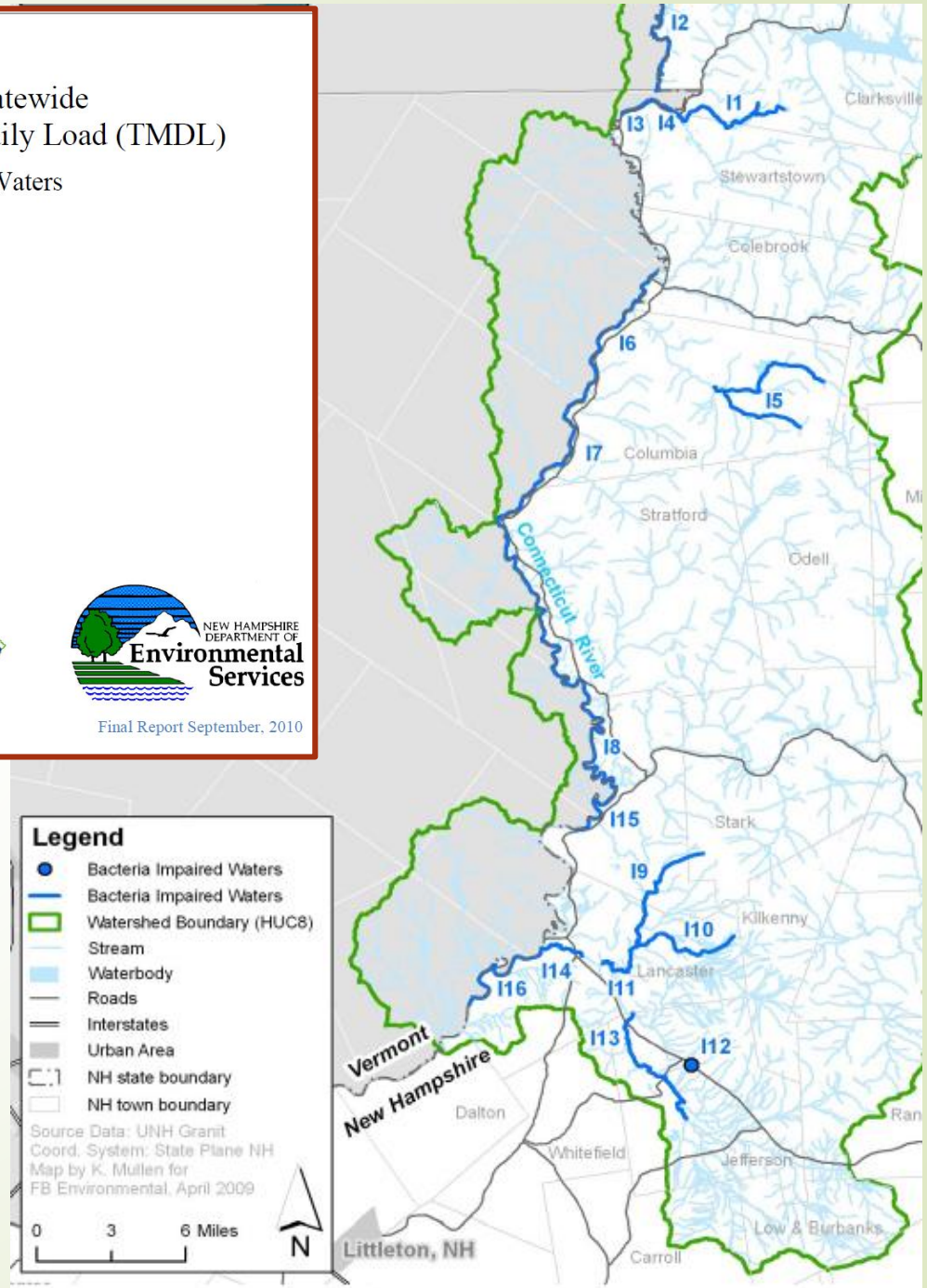
Station ID	Station Name	Date		Result	Wet/dry
72-CNT	RR BRIDGE UPSTREAM OF CANAAN DAM	6/8/04	*	10	no data
72-CNT	RR BRIDGE UPSTREAM OF CANAAN DAM	7/15/04	*	30	no data
72-CNT	RR BRIDGE UPSTREAM OF CANAAN DAM	7/21/04	*	40	no data
72-CNT	RR BRIDGE UPSTREAM OF CANAAN DAM	8/13/04	*	1690	no data
72-CNT	RR BRIDGE UPSTREAM OF CANAAN DAM	9/9/04	*	140	no data
72-CNT	RR BRIDGE UPSTREAM OF CANAAN DAM	7/6/05	*	70	no data
72-CNT	RR BRIDGE UPSTREAM OF CANAAN DAM	8/3/05	*	40	no data
72-CNT	RR BRIDGE UPSTREAM OF CANAAN DAM	8/31/05	*	300	no data
72-CNT	RR BRIDGE UPSTREAM OF CANAAN DAM	9/13/05	*	22	no data

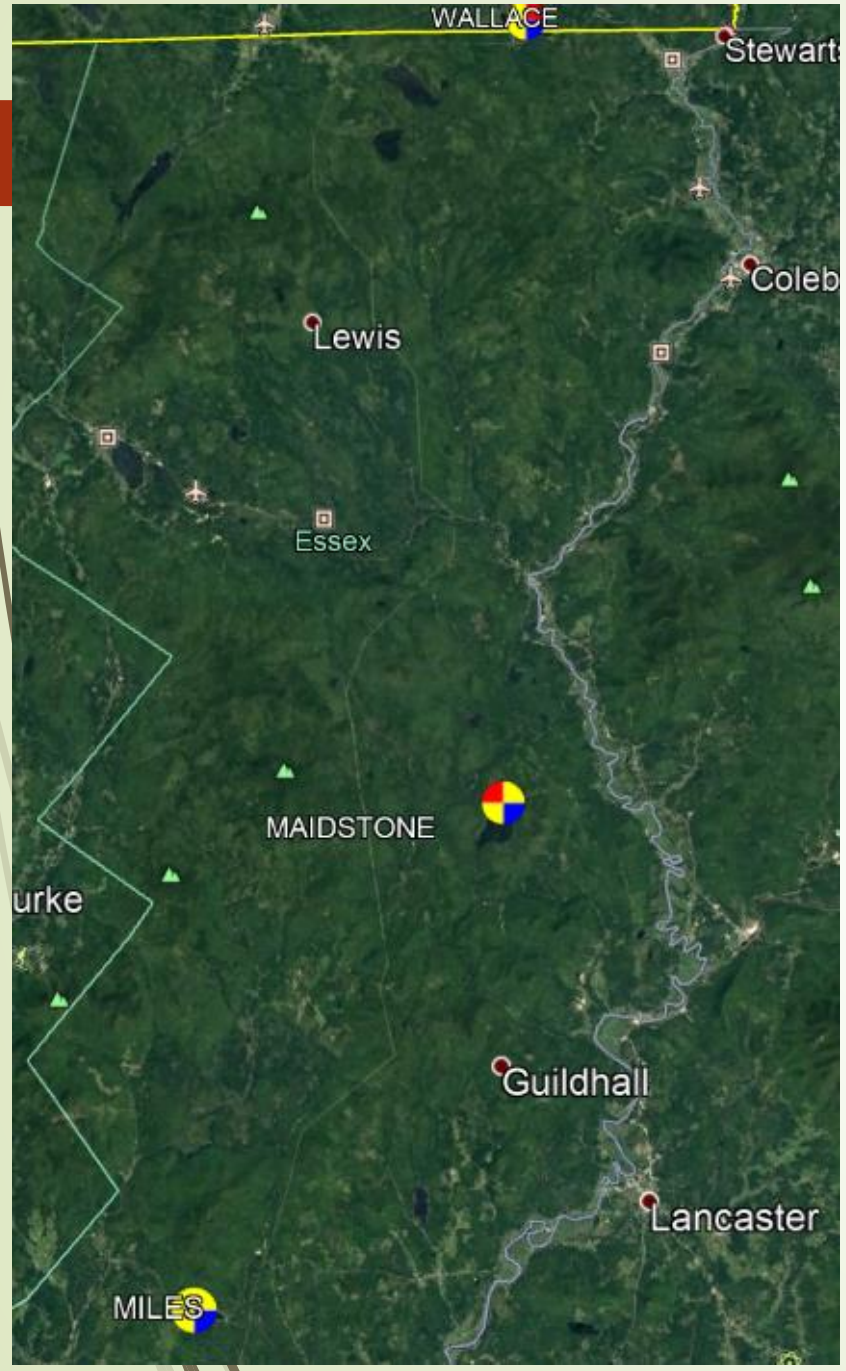
Shaded cells indicate exceedance of water quality criteria

Geometric mean *E. coli* results (CTS/100ML)

Date	Result
7/21/04	22.9
9/9/04	130
8/31/05	94.4
9/13/05	64.2

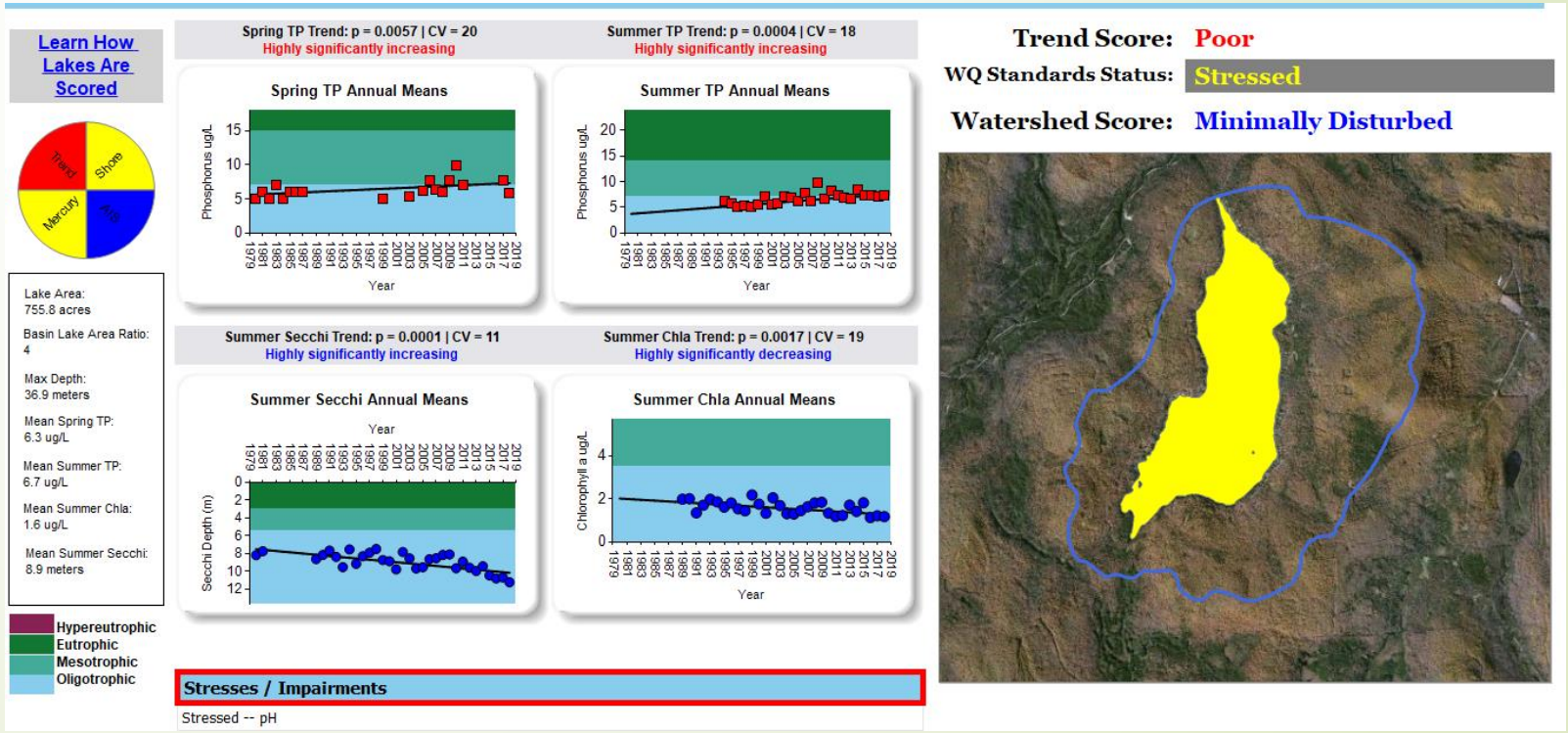






Lake water quality concerns

- Increasing phosphorus trends for Miles, Maidstone and Wallace Ponds.
- Developed shoreland impacts habitat on Miles, Maidstone and Wallace Ponds.
- Primary potential source of impacts are from shoreland development, roads and logging.

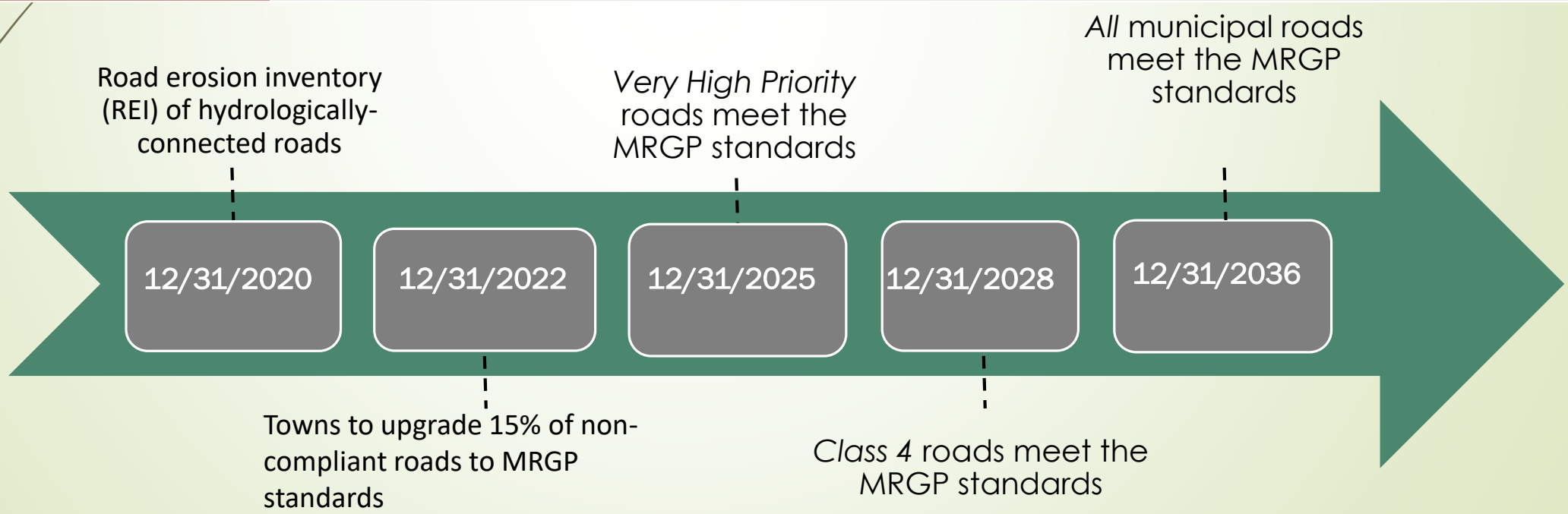


Natural resource Restoration - Lakeshore

Focus Areas	Potential Strategies
Wallace, Maidstone, Miles	• Support Lake Wise planning, assessment and implementation • Support Aquatic Invasive Species spread prevention efforts

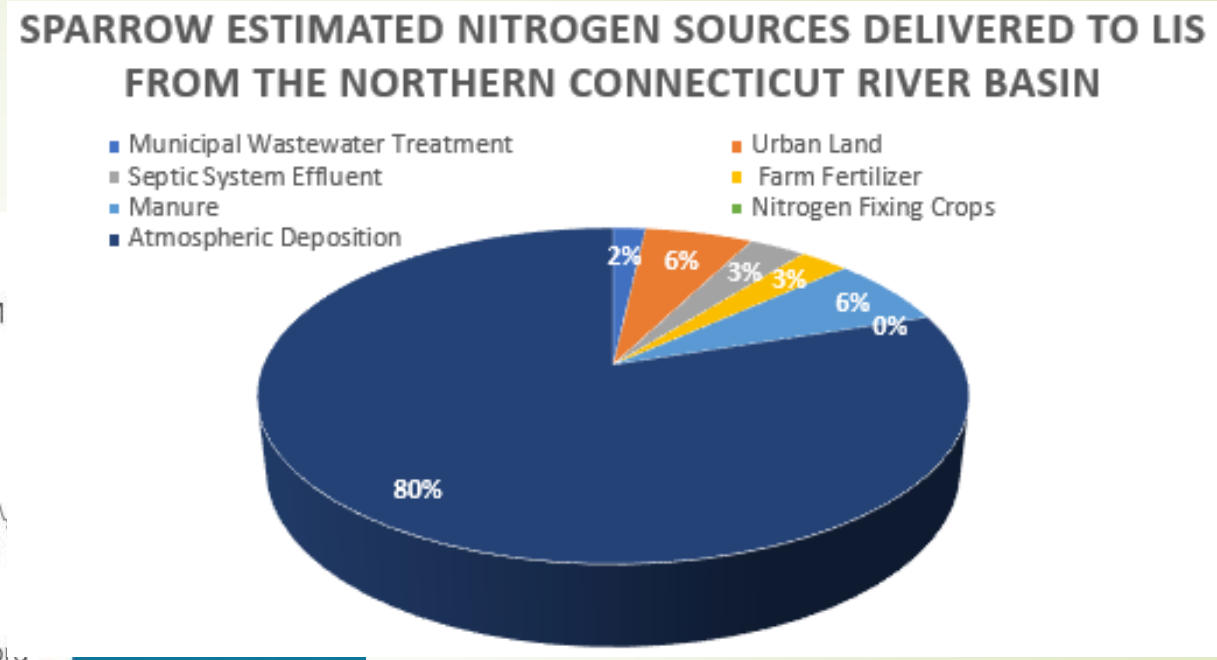
Developed Lands Roads - Implementing the Municipal Roads General Permit

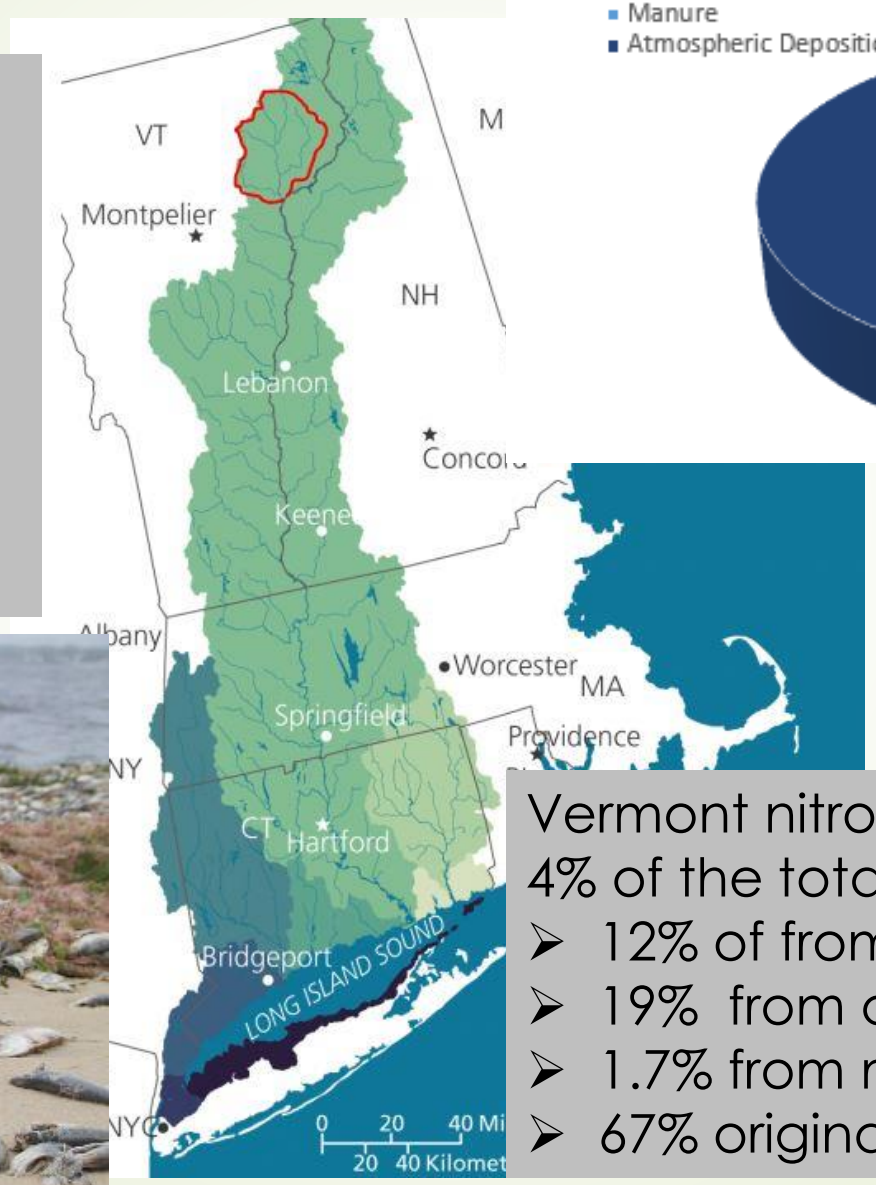
Focus Areas	Potential Strategies
Wallace Maidstone and Miles Pond watersheds	• Complete REI's and provide technical support for towns to use. • Support for towns in applying for funding to target WQ issues • Address Class 4 WQ issues with support from NWSC • Host Workshops and Peer to Peer sharing on BMP's • Shared equipment programs with towns



Nitrogen Loading in Long island Sound..

Loading of Nitrogen from tributaries to the Long Island sound including the Connecticut River lead to low oxygen levels which impact the biological communities in the sound.

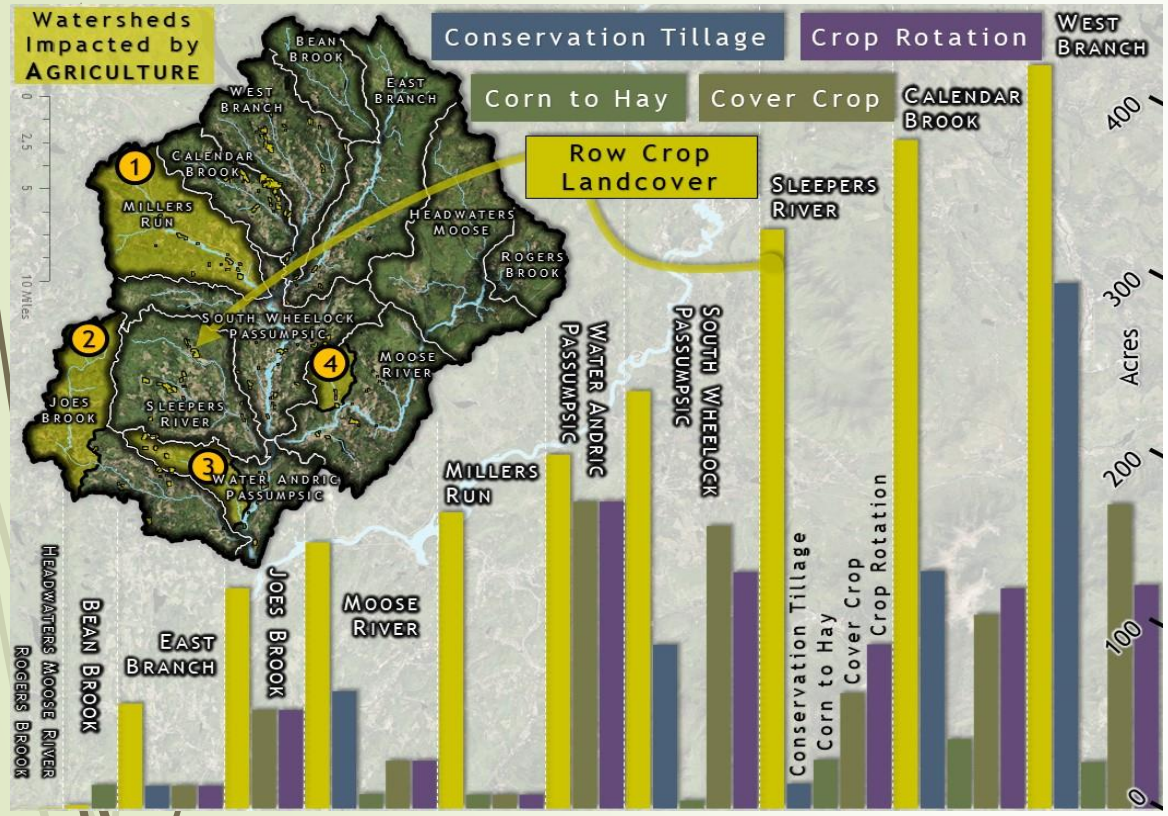




Vermont nitrogen export is estimated to be 4% of the total load to the Sound of which:

- 12% of from agriculture
- 19% from developed areas (septic/urban)
- 1.7% from municipal Wastewater
- 67% originates as atmospheric deposition.

Agricultural Strategies



Focus Areas	Potential Strategies
Connecticut River floodplain	• Support regional agricultural working group • Hold annual soil health, BMP and/or RAP workshops for farmers • Support farmers in developing and implementing Nutrient Management Plans (NMPs) • Initiate a regional equipment sharing program to support cover cropping • Increased buffers, river corridor and wetland restoration outreach and implementation • Water quality monitoring to understand nitrogen source areas

Northern Connecticut River Basin Planning priorities

Water Quality Issues:

- **E. *coli* along northern reaches of Connecticut River**
- **Increasing phosphorus trends on Maidstone Lake, Miles Pond and Wallace Pond and shoreland degradation on several lakes**
- **Nitrogen Loading to LIS**
- **Riparian, wetland and aquatic habitat degradation along the Connecticut River and historically logged stream networks**
- **Limited data on Water Quality conditions on several streams**

Meetings will be held with key partners over the winter on the following topics:

- **Agricultural Workgroup** meeting (E. *coli*, nitrogen loading to LIS – floodplain and wetland restoration)
- **Lake** focused discussion to address increasing nutrient trends and shoreland habitat (Lake watershed implementation plans – Lake Wise restoration efforts)
- Addressing sediment runoff form **Roads** through implementation of the MRGP – and addressing barriers to aquatic organism passage.
- **Water quality sampling** to better understand water quality conditions
- **Riparian, wetland and aquatic habitat restoration** along the Connecticut River
- **Upland restoration of stream habitat** and historically logged stream networks through strategic wood addition – addressing AOP issues on forested lands, supporting forestland BMPs.

Project Listing

Export to CSV

No-Till Grain Drill
Project Type: Agricultural Pollution Prevention - Equipment
Program: AAFM Capital Equipment Assistance Program - Agency of Agriculture Food & Markets
County: Caledonia, Essex, Orange, Windham, Windsor
Basin: Connecticut
Funded SF: 2018
Completion SFY: 2018
State Funds: $29,100

Injectors w/ Flow Meter
Project Type: Agricultural Pollution Prevention - Equipment
Program: AAFM Capital Equipment Assistance Program - Agency of Agriculture Food & Markets
County: Caledonia, Essex, Orange, Windham, Windsor
Basin: Connecticut
Funded SF: 2018
Completion SFY: Ongoing
State Funds: $45,600

Haybar w/ Flow Meter
Project Type: Agricultural Pollution Prevention - Equipment
Program: AAFM Capital Equipment Assistance Program - Agency of Agriculture Food & Markets
County: Caledonia, Essex, Orange, Windham, Windsor
Basin: Connecticut
Funded SF: 2018
Completion SFY: Ongoing
State Funds: $22,500

Nutrient Management Planning Education and Outreach
Project Type: Education & Outreach
Program: AAFM Farm Agronomic Practice Program - Agency of Agriculture Food & Markets
County: Statewide
Basin: Statewide
Funded SF: 2016
Completion SFY: 2016
State Funds: $9,485

Education and Outreach
Project Type: Education & Outreach
Program: AAFM Farm Agronomic Practice Program - Agency of Agriculture Food & Markets
County: Statewide
Basin: Statewide
Funded SF: 2017
Completion SFY: 2017
State Funds: $1,000

Education and Outreach
Project Type: Education & Outreach
Program: AAFM Farm Agronomic Practice Program - Agency of Agriculture Food & Markets
County: Statewide
Basin: Statewide
Funded SF: 2017
Completion SFY: 2017
State Funds: $9,500

Clean Water Project Explorer

Project Status

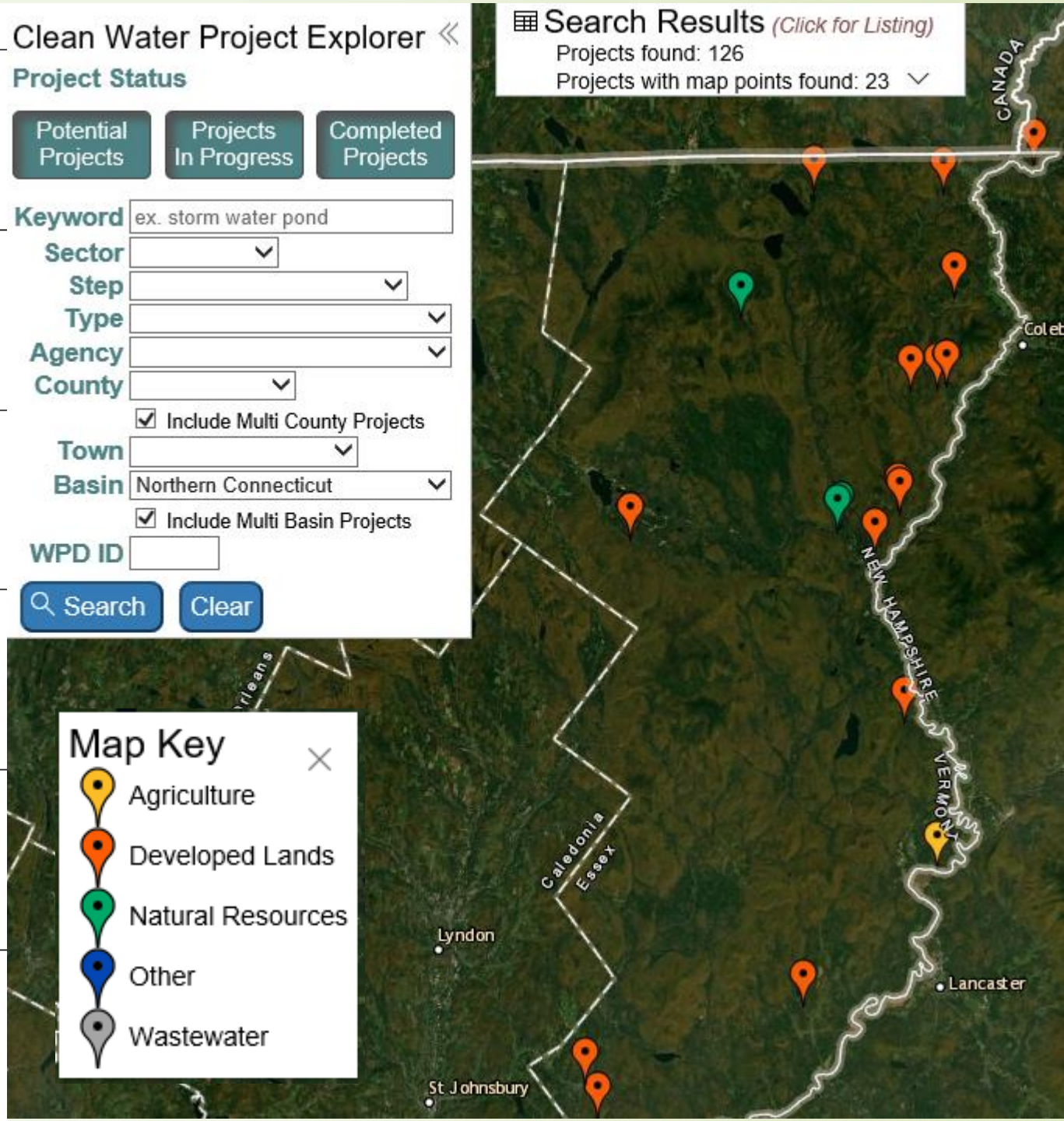
Potential Projects | Projects In Progress | Completed Projects

Keyword: ex. storm water pond
Sector:
Step:
Type:
Agency:
County:
☑ Include Multi County Projects
Town:
Basin: Northern Connecticut
☑ Include Multi Basin Projects
WPD ID:

Search | Clear

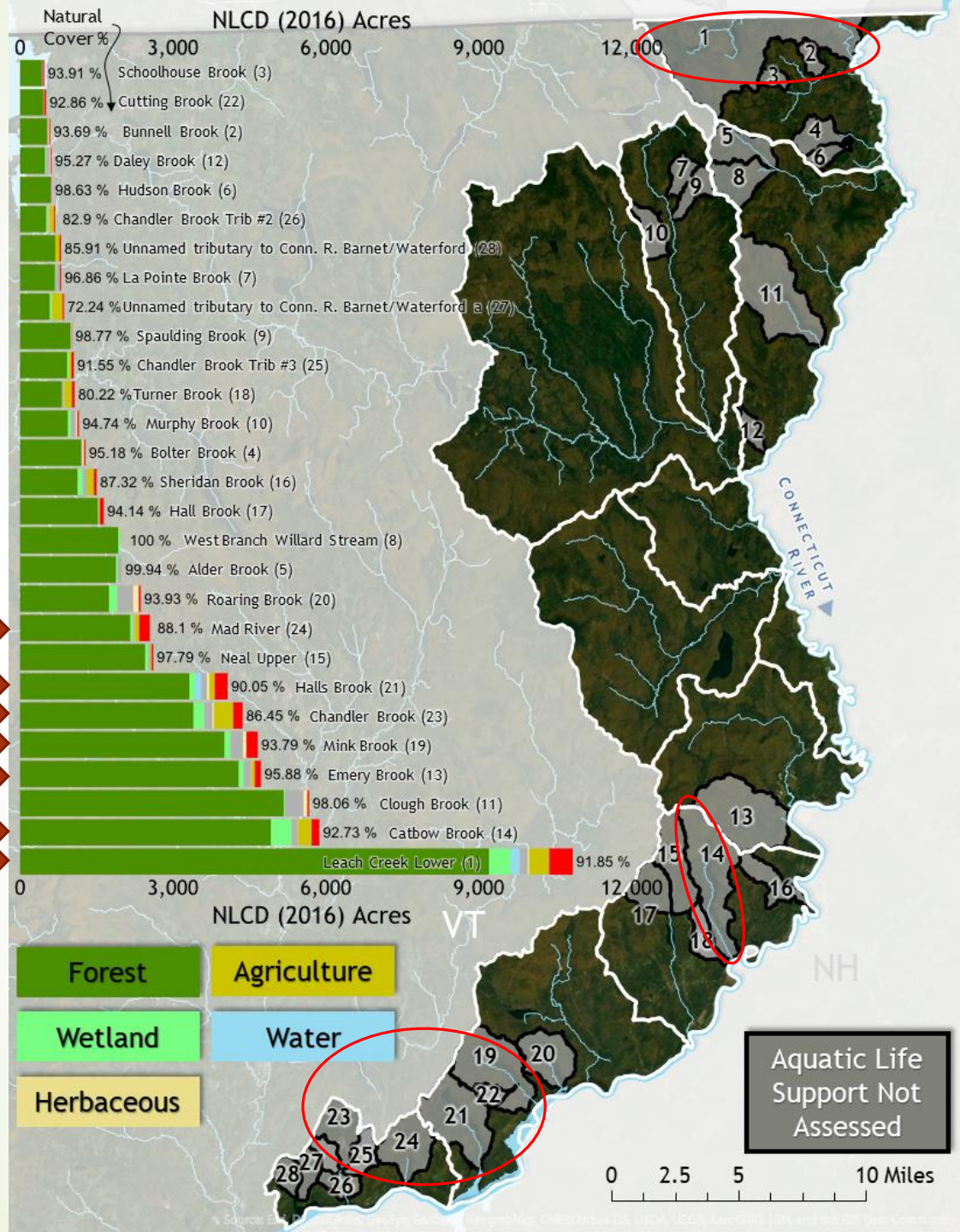
Search Results (Click for Listing)

Projects found: 126
Projects with map points found: 23



Water quality assessment needs:

- Watersheds without recent biological assessments shown in map
- Priorities are those that have higher levels of agricultural or developed land use or waters that are reclassification targets
- Identifying nitrogen source areas
- ID E. *coli* source areas along the upper reaches of the Connecticut River and associated tributaries where the Connecticut River is listed as impaired
- ID source areas to lakes with increasing nutrient trends.
- Invasive species monitoring to support rapid response efforts



Data is widely available online in several formats – google "Vermont water quality data" or: https://dec.vermont.gov/watershed/map/data

Lake Water Quality Reports

Data summaries that help provide an overall assessment of a lake.

River Corridor & Floodplain Maps

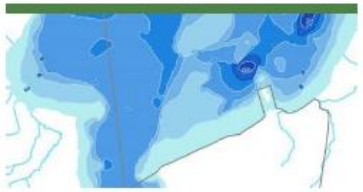
Stream Geomorphic Assessment Data Viewer

USGS science for a changing world

USGS water resources of New Hampshire and Vermont

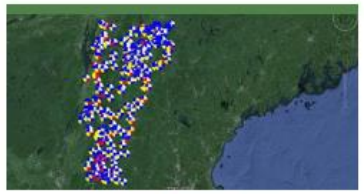
LakeWise Map

View a map of LakeWise participants around the state and lake-specific participation



Depth Charts

Bathymetric maps of Vermont lakes and ponds



Lake Score Card

Find out how your lake is doing based on an analysis of monitoring data

Cyanobacteria Tracking Map

Department of Health's interactive cyanobacteria (blue-green algae) status map

Lake Champlain Chemical and Biological Data

Lake Champlain Long-Term Water Quality and Biological Monitoring Project data (1992 to present)

Lake Champlain Multi-Probe Sonde Profiles

Lake Champlain Long-Term Monitoring Project multi-probe sonde profiles (1992 to present)

Lake Champlain Tributary Chemical Data

Lake Champlain Long-Term Water Quality and Biological Monitoring Project tributary data (1990 to present)

Lay Monitoring Data

Lay Monitoring Program data (1979 to present)

NWQMC

National Water Quality Monitoring Council Data

Spring Phosphorus Data

Vermont EPSCoR Streams PROJECT

Vermont EPSCoR Streams Project Data

V-IWIS VERMONT INTEGRATED WATERSHED INFORMATION SYSTEM

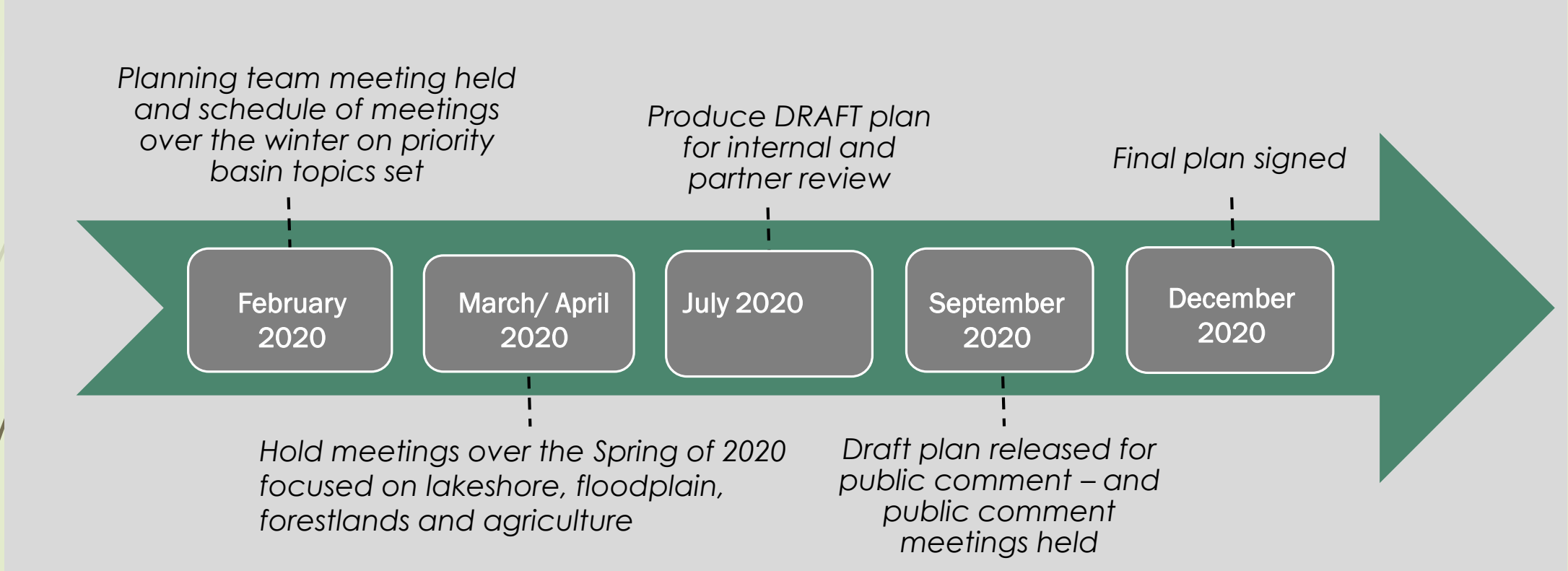
Water Quality Information

Access all data through the Vermont Integrated Watershed Information System

Aquatic Invasive Species Map

View aquatic invasive species distribution, location of Public Access Greeter Programs, VIP surveyed lakes and more

Northern Connecticut River Basin planning timeline



Opportunities for CRJC to participate in Tactical Basin Planning Process

- Now is the time to identify potential issues or topics for discussion
- CRJC members could attend steering committee or meetings on certain topics of interest
- I can come back to committee for review of Draft Plan for public comment
- I can add committee members to email list with updates on planning process with opportunities for input.
- I am open to ideas and suggestions as to how to best include CRCJ Headwaters Committee?

Ben Copans
Watershed Planner
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