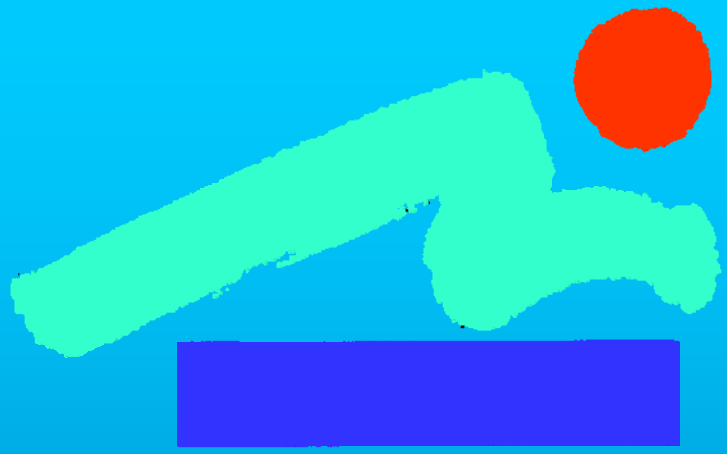


Lake Champlain Basin Program

LCBP Background, Issues and Actions

International Symposium on Freshwater Management

The Great Lakes – St Lawrence River Basin

Sorel-Tracy, QC

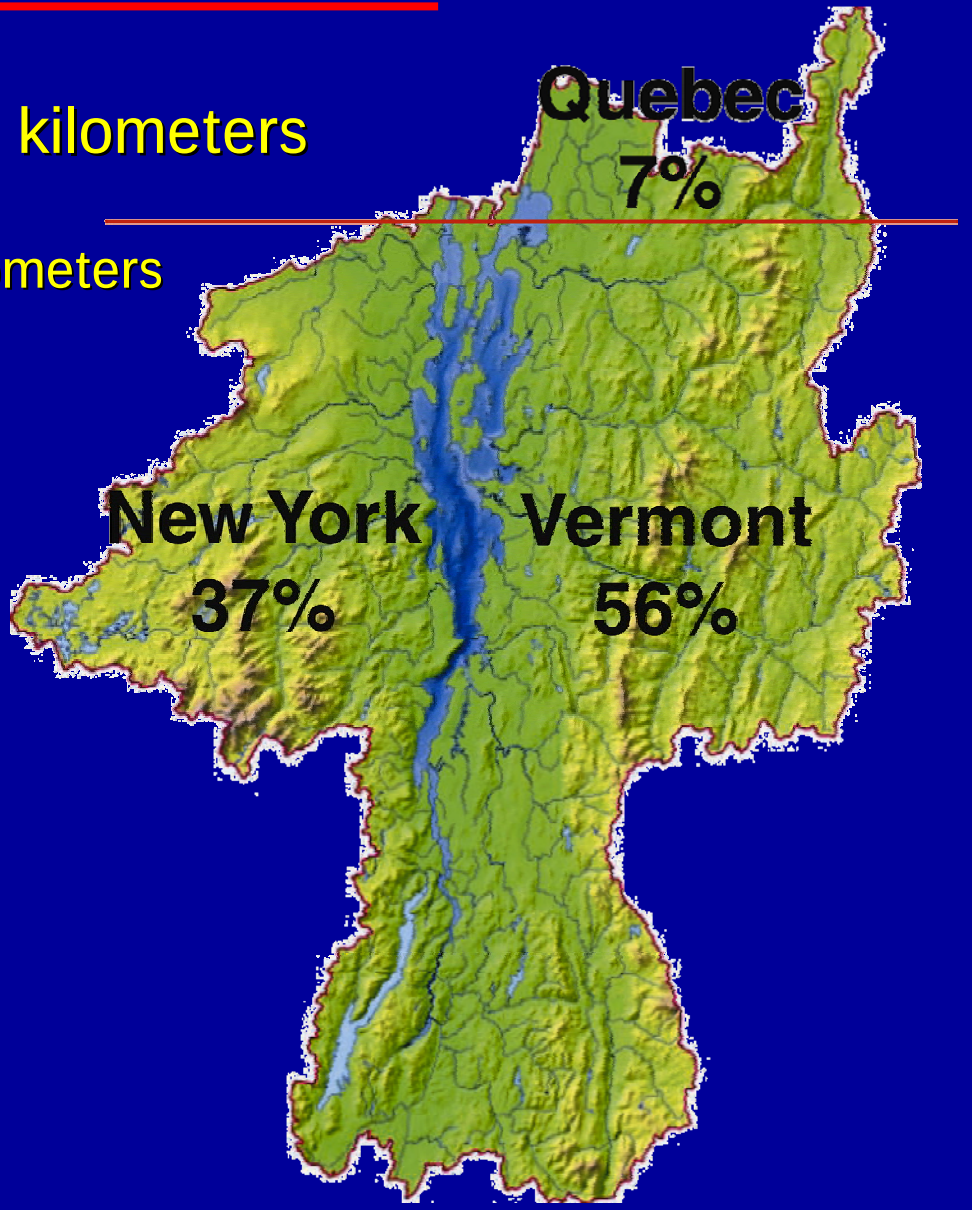
September, 2007

The Lake Champlain Basin

The Basin: – 21,326 square kilometers

The Lake: – 1,127 square kilometers

- Over 122 meters deep
- 965+ kilometers of shoreline
- 193 kilometers long



The Lake Champlain Basin Program

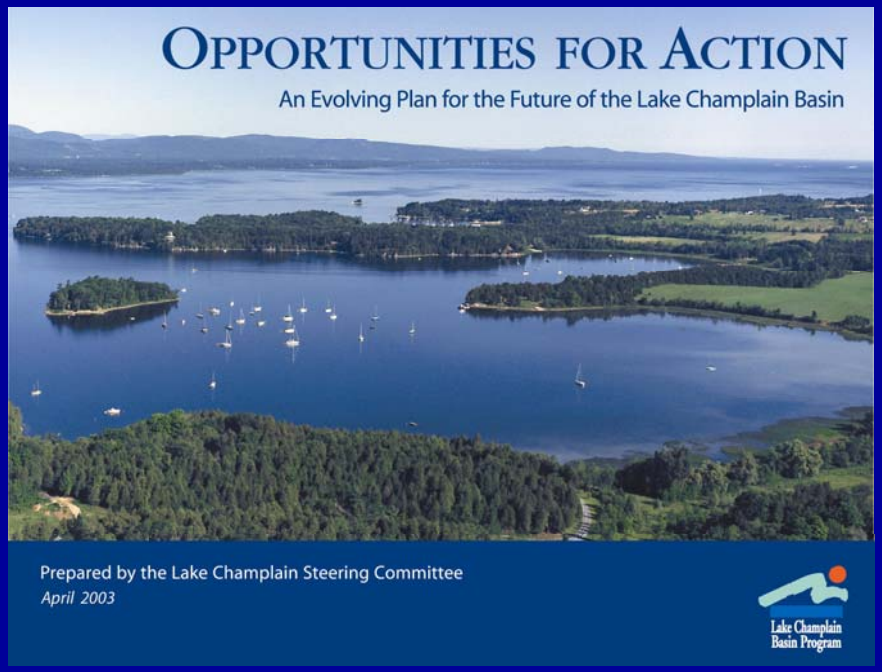
Origins of the Program – A Series of Steps

- **1988 – *Memorandum of Understanding*** (1992, 1996, 2001)
  Signed by NY & VT Governors & the Premier of Quebec
- **1990 – *Special Designation Act*** of US Congress
  Initiates planning for the future of Lake Champlain
- **1991 – *Lake Champlain Management Conference***
  Public Process of Plan Development - US EPA, VT, NY
- **1996 – *Opportunities for Action***, *Comprehensive Management Plan*
  Signed by NY & VT Governors & USEPA Regions I & II
- **2002 – *Special Designation Act* Reauthorized** *by the US Congress*
  Authorized $55 Million over 5 years
- **2003 – *Opportunities for Action***, *2nd Edition*
  Signed by NY & VT Governors & USEPA Regions I & II

Opportunities for Action

A Comprehensive Management Plan for the Lake Champlain Basin,

An International & Bi-state Partnership



- Water quality
- Living natural resources
- Recreation resources
- Cultural heritage
- Economics

Opportunities for Action

Highest Priorities for Action

1. ***Reduce phosphorus inputs***
2. ***Reduce toxic contamination***
3. ***Control the introduction, spread of nonnative nuisance species***
4. ***Minimize the risk from water-related health hazards***

Opportunities for Action also includes Priorities and Actions in *Recreation, Cultural Heritage* and *Regional Economy*

Lake Champlain Basin Program– Operating Structure: March, 2007

Lake Champlain Steering Committee

New York Members

- Dept. of Environmental Conservation
- Dept. of Economic Development
- **Local Govt. (Plattsburgh)**
- Office of Parks, Recreation and Historic Preservation
- Dept. of Agriculture and Markets
- **New York CAC Chair**

US Federal Agency Members

- US EPA Regions I and II
- US Department of Interior (F&WS)
- US Department of Agriculture, NRCS
- US Army Corps of Engineers

Additional Members

- **Technical Advisory Committee Chair**
- **Education Committee Chair**
- **Lake Champlain Sea Grant Board**

Quebec Members

- Ministry Development durable, Environnment et Parcs
- Ministry of Agriculture, Fisheries & Food
- Agency of Wildlife and Parks
- **Local Govt. (Clarenceville)**
- **Quebec CAC Chair**

Vermont Members

- Agency of Natural Resources
- Agency of Transportation
- Department of Agriculture
- Agency of Commerce and Community Development
- **Local Govt (Burlington)**
- **Vermont CAC Chair**

Technical Advisory Committee

• Advises the Steering Committee, Comprised of technical experts and researchers from universities, state agencies, local management agencies and the private sector.

Executive Committee

•A subset of 11 Steering Committee members, the Executive Committee conducts the business of the LCBP between Steering Committee meetings and reports to the Steering Committee.

Basin Program Staff

(NEIWPCC, EPA, NY & VT)

Staff conduct the daily work of the LCBP and support all Committees as needed. ***NEIWPCC*** *handles the business operations.* ***NY*** *and* ***VT*** *employ LCBP State Coordinators.*

Cultural Heritage & Recreation Advisory Committee

•Advises the Steering Committee. Includes educators, planners, cultural heritage & recreation specialists and others.

Education & Outreach Advisory Committee

•Advises the Steering Committee. Comprised of educators, planners, communications specialists and others.

Lake Champlain Research Consortium

•Independent research consortium Provides coordinated research focus and networking support to the Technical Advisory Committee

Citizens Advisory Committees New York, Vermont, and Quebec

•Independent committees comprised of citizens representing recreation, tourism, farmers, business, cultural heritage, advocacy groups and including some legislative representation. *The CACs advise the Steering Committee and the public about lake issues and priorities of importance to the public. The VT CAC also prepares annual report to the VT legislature.*

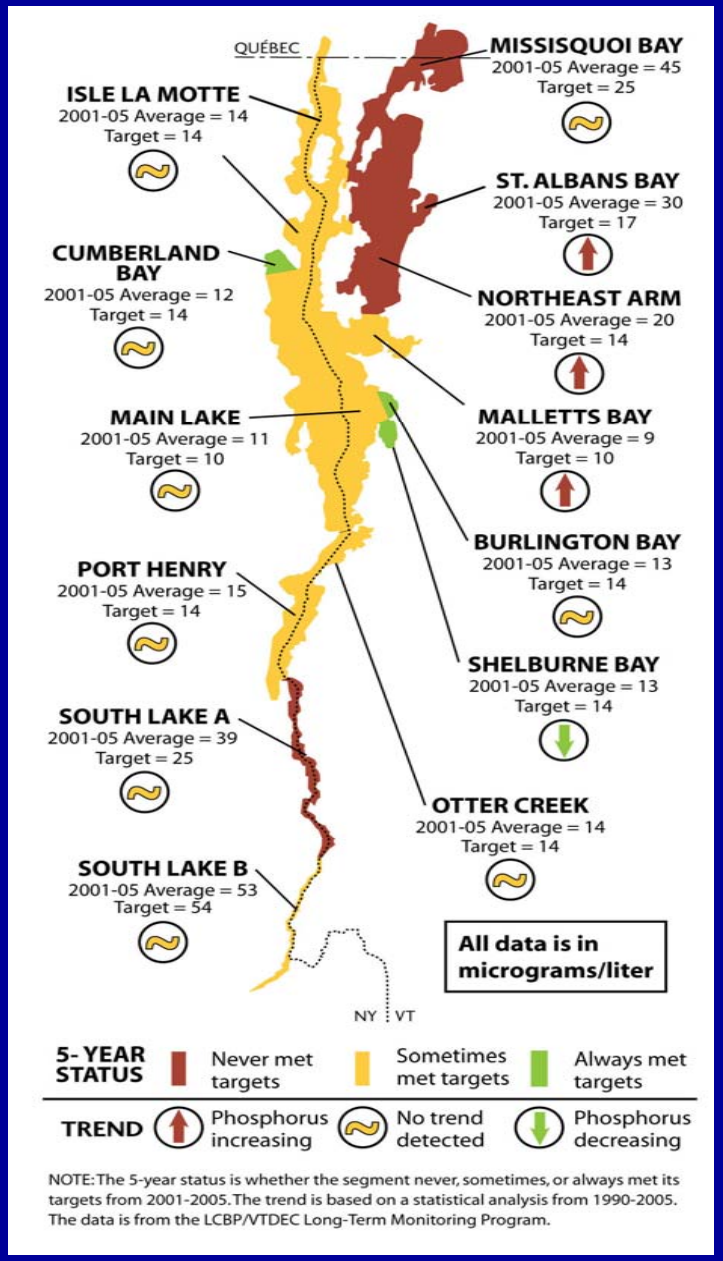
How is the Lake Doing?

***State of the Lake* report was released in the Summer of 2005**

- The Report Answers Frequently Asked Questions
- Lake Champlain is made up of FIVE Lake Segments
- Each Lake Segment has a Story – Each was Evaluated

Are Phosphorus Levels too high in the Lake?

- ***Yes*** **- Phosphorus levels are too high in much of the Lake due to human activities, especially in:** ***Missisquoi Bay Northeast Arm & South Lake.***
- ***But - The Main Lake Cumberland Bay Shelburne Bay Mallets Bay and Burlington Bay*** <u>are all very near their targets</u>
- ***Great reductions*** **have been made with Sewage Treatment Plant upgrades, but**
- ***Great challenges remain*** **from nonpoint source runoff**



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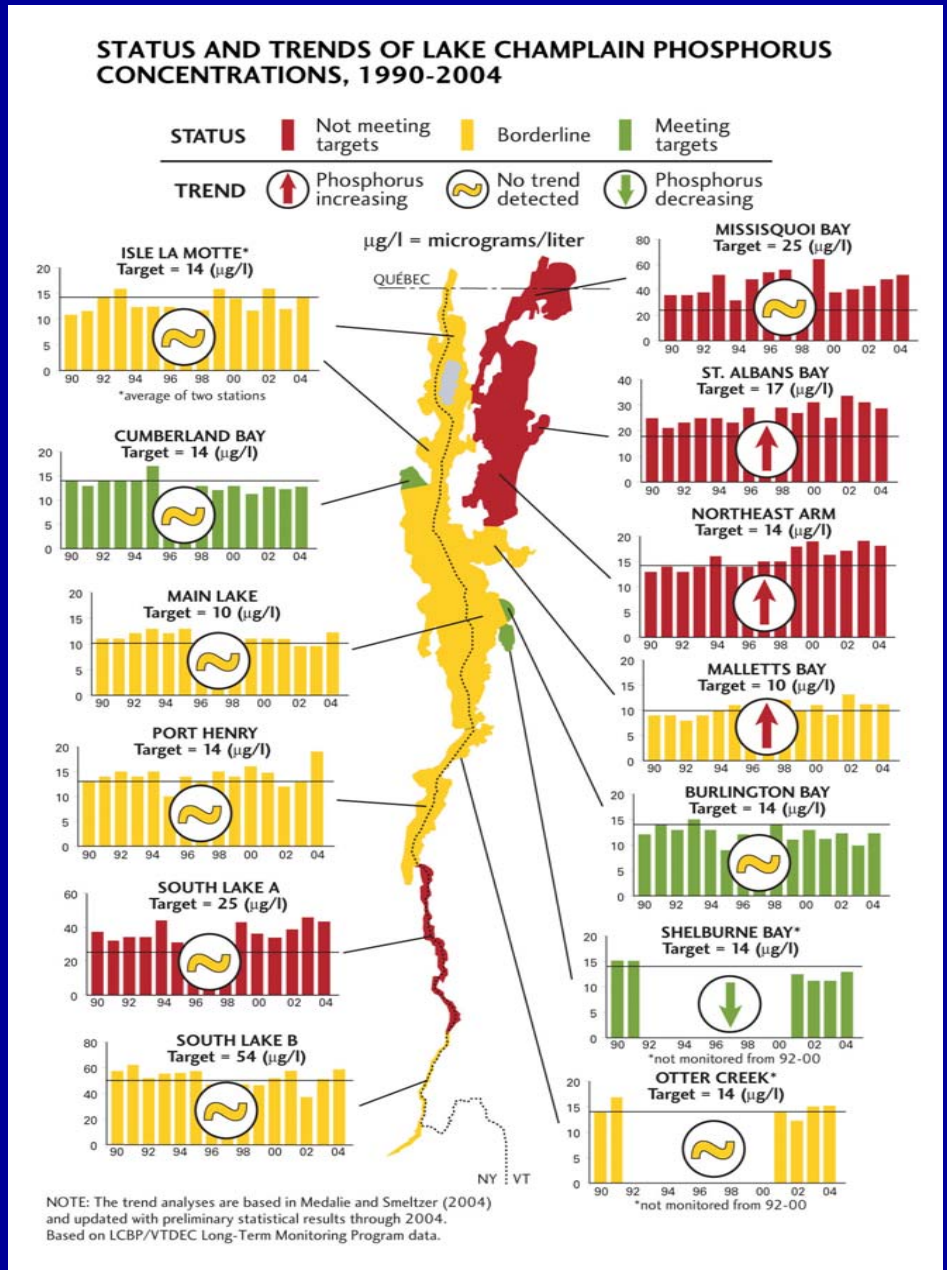
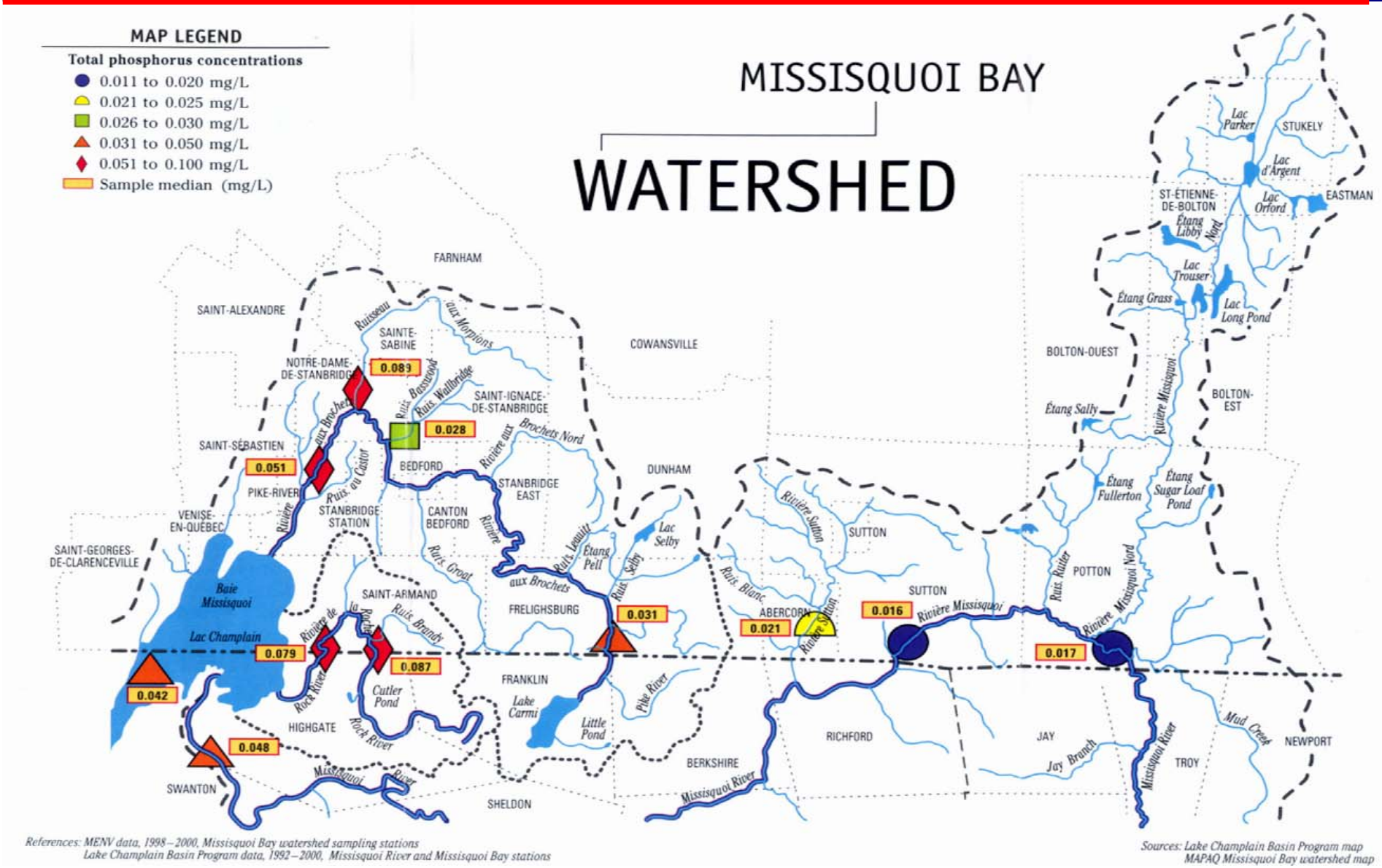


What are the Pollution Trends in our Rivers?

- Tributary Rivers Carry most of the Phosphorus to the Lake.
- Now less than 10% of the Phosphorus entering the Lake comes from Treatment Plants and Industries.
- Of the 90% of Phosphorus entering the Lake from Nonpoint Sources:
  - *39% comes from agriculture*
  - *53% comes from developed land*
  - *8% comes from forests*

- Only the LaPlatte R. (VT) meets target load
- Seven tributaries are reducing phosphorus
- Three tributaries are increasing phosphorus
- Eight tributaries show no trend

A Trans-boundary Challenge - Phosphorus



References: MENV data, 1998–2000, Missisquoi Bay watershed sampling stations
Lake Champlain Basin Program data, 1992–2000, Missisquoi River and Missisquoi Bay stations

Sources: Lake Champlain Basin Program map
MAPAQ Missisquoi Bay watershed map

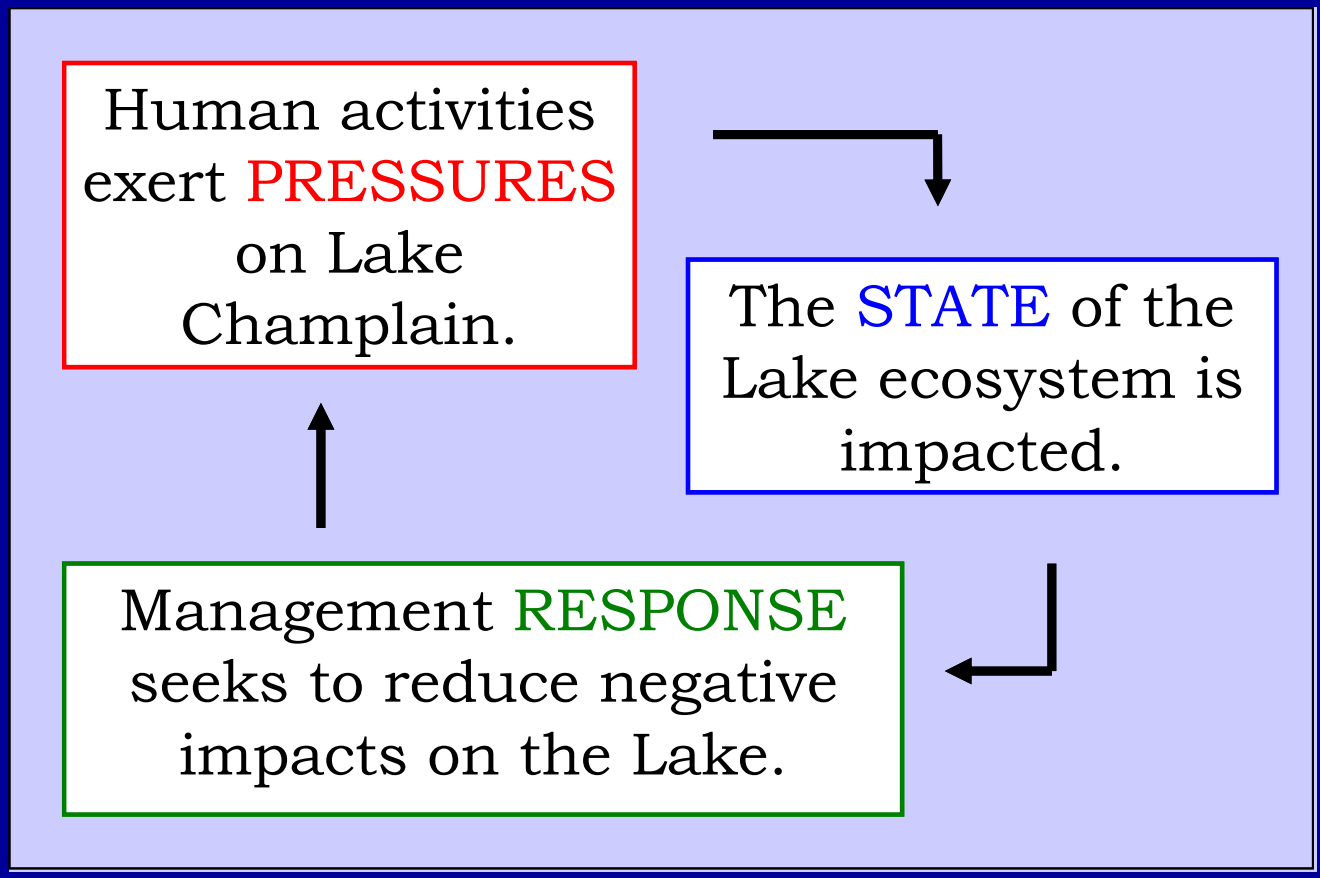
Monitoring the *State of the Lake*

Systematic Long Term Monitoring tracks key indicators of the *State of the Lake*.

- Tends to follow the same workplan year after year –
  - — ***Biweekly and storm event measurements of*** Total and Dissolved Phosphorus, Total Nitrogen, Alkalinity, Secchi Depth, Chlorophyll-a, Temperature, Dissolved Oxygen, pH, Conductivity… *et cetera*
- Workplan developed by LCBP's TAC as basis for contracts.
- Deliverables are TAC-reviewed prior to acceptance.
- Results inform LCBP management decisions and are reported to the public.

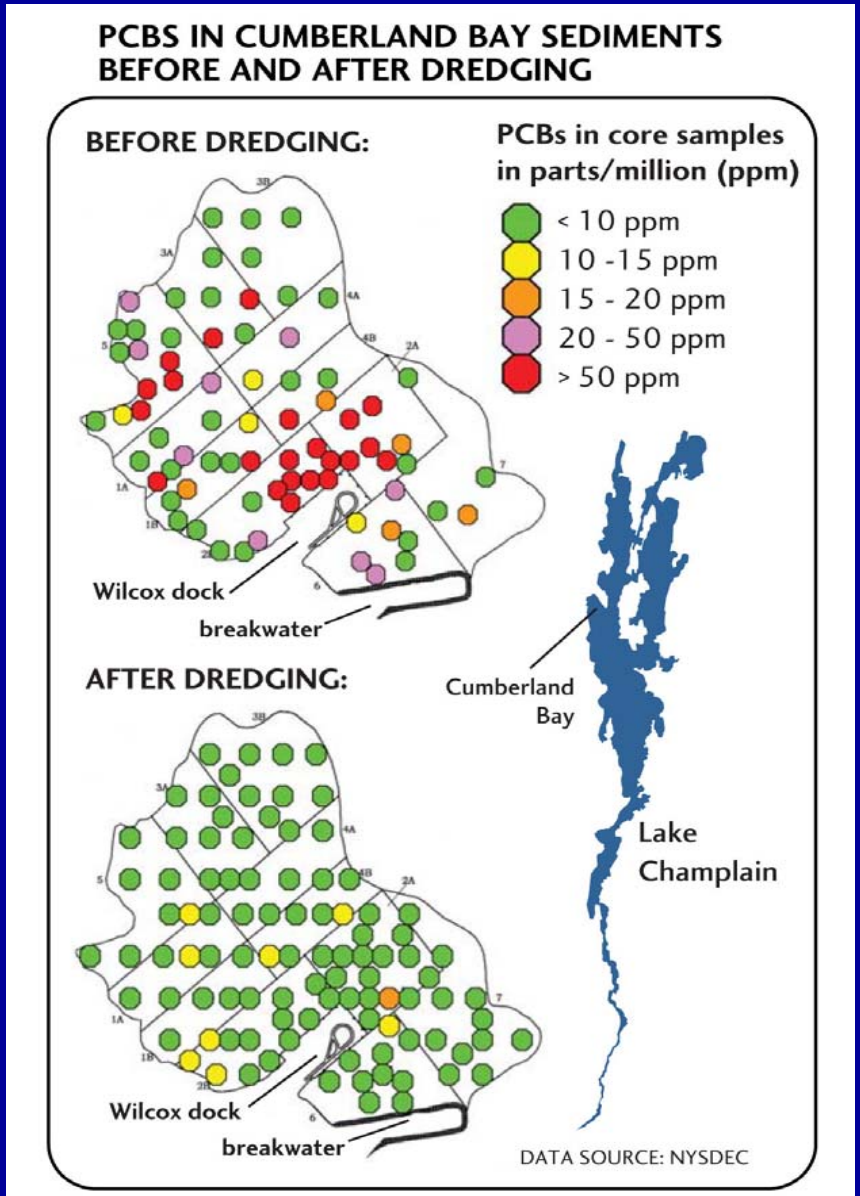
Looking Ahead – *LCBP Monitoring*

Future Monitoring will support **Ecosystem Indicators** in a *Pressure-State-Response* Model

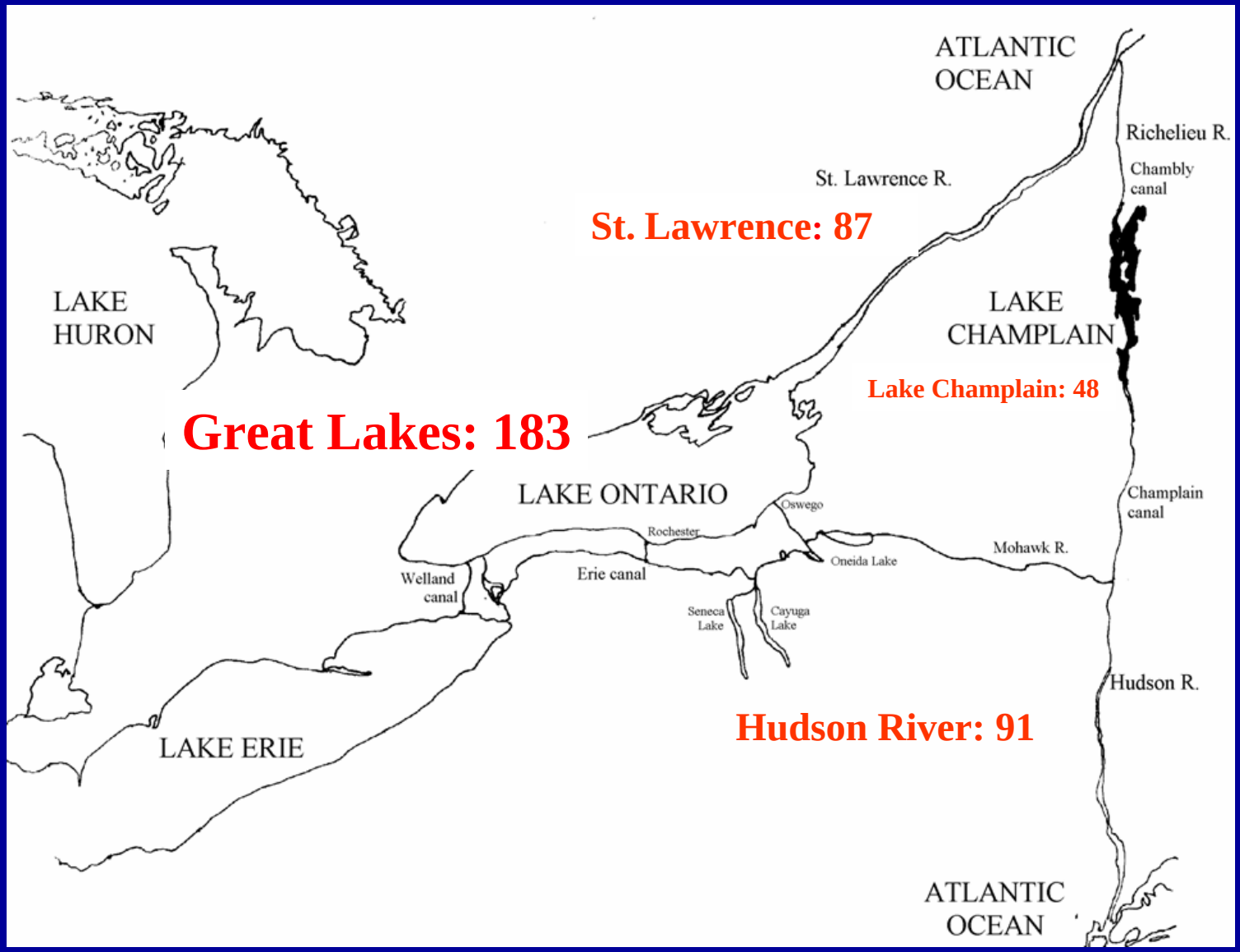


PCBs – *A Success Story about Toxic Wastes in Cumberland Bay*

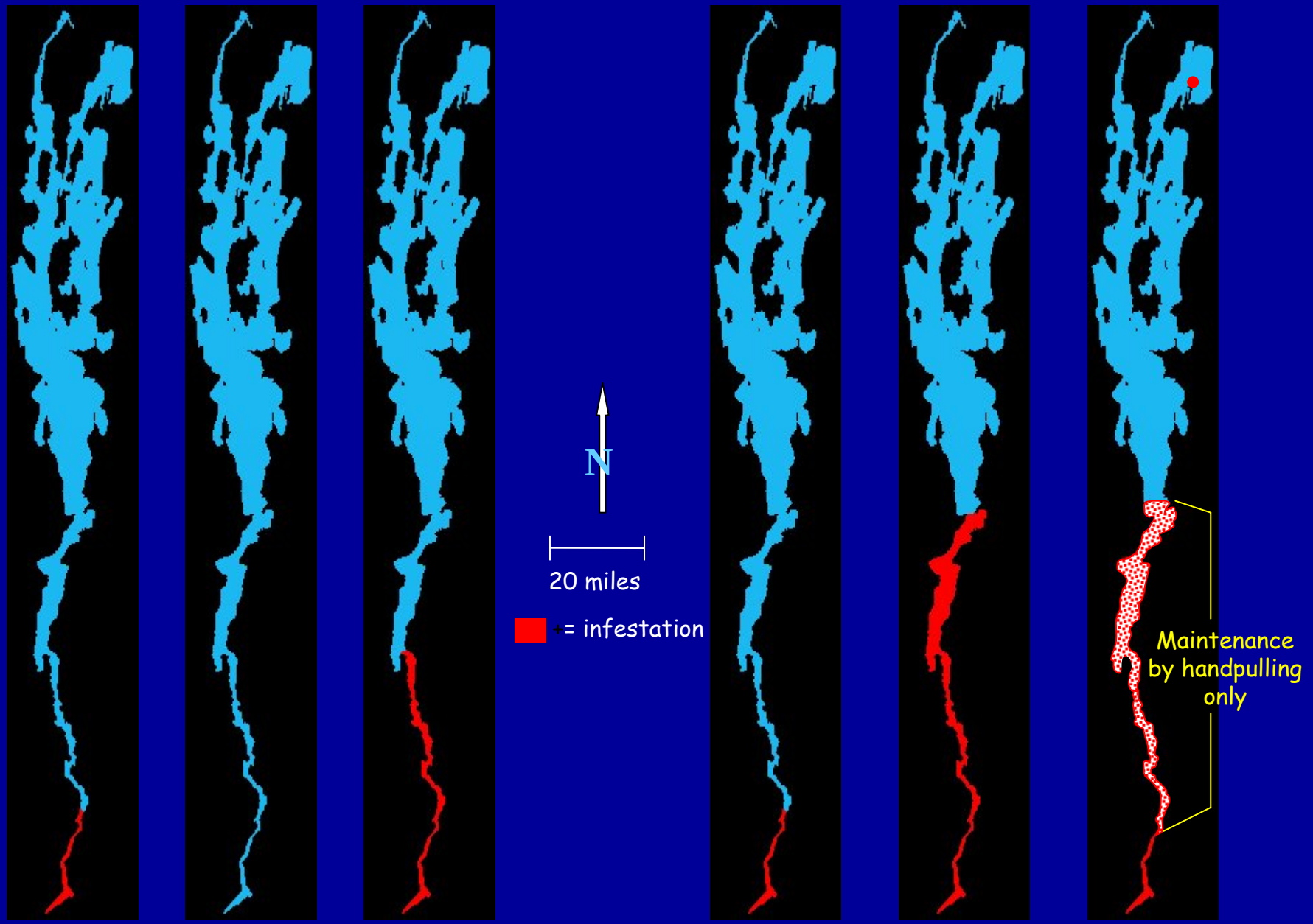
- LCBP Research Identified contaminated sediments in Cumberland Bay
- NYS DEC and local paper company negotiated funding plan for site remediation
- NYS DEC supervised remediation, ($40,000,000) over two years.



Aquatic Nuisance Species - *Invasion Pressures*

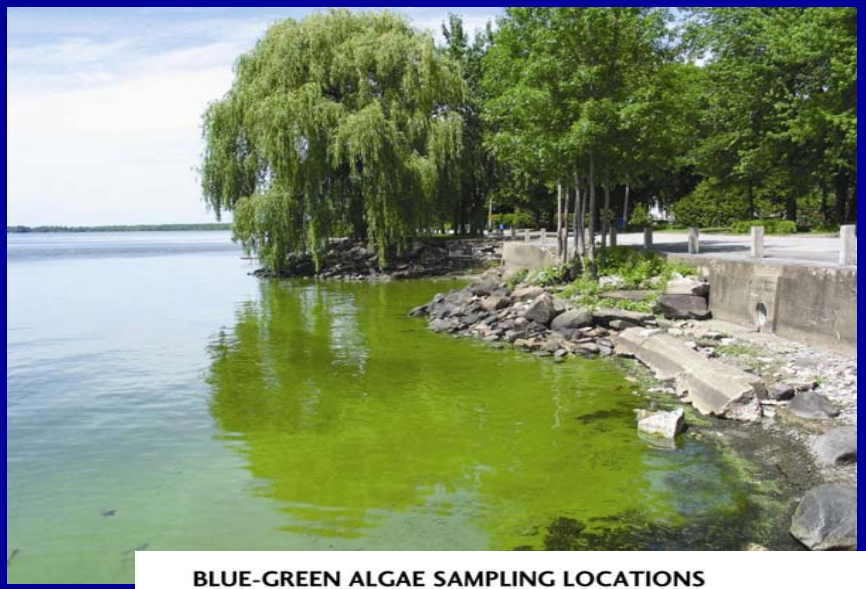


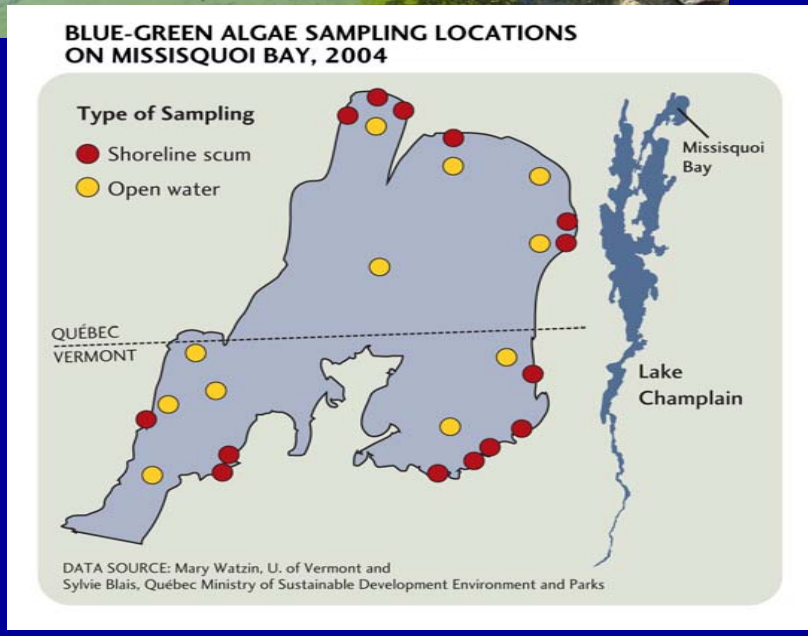
Lake Champlain Water Chestnut Infestation 1960-2006



Blue-green Algae Blooms
Human Health Risks?

- *Yes*, <u>especially in Missisquoi Bay</u>, St. Albans Bay, and smaller northeastern bays
- Most of Lake Champlain has never had a dense blue-green algae bloom
- Dense blooms can produce toxins that can irritate skin at low exposure levels.
- If ingested in quantity, toxins can cause gastrointestinal problems and can seriously damage the liver and nervous system.
- <u>An Alert System</u> relies on collaborative research funded by LCBP and the Province of Quebec.

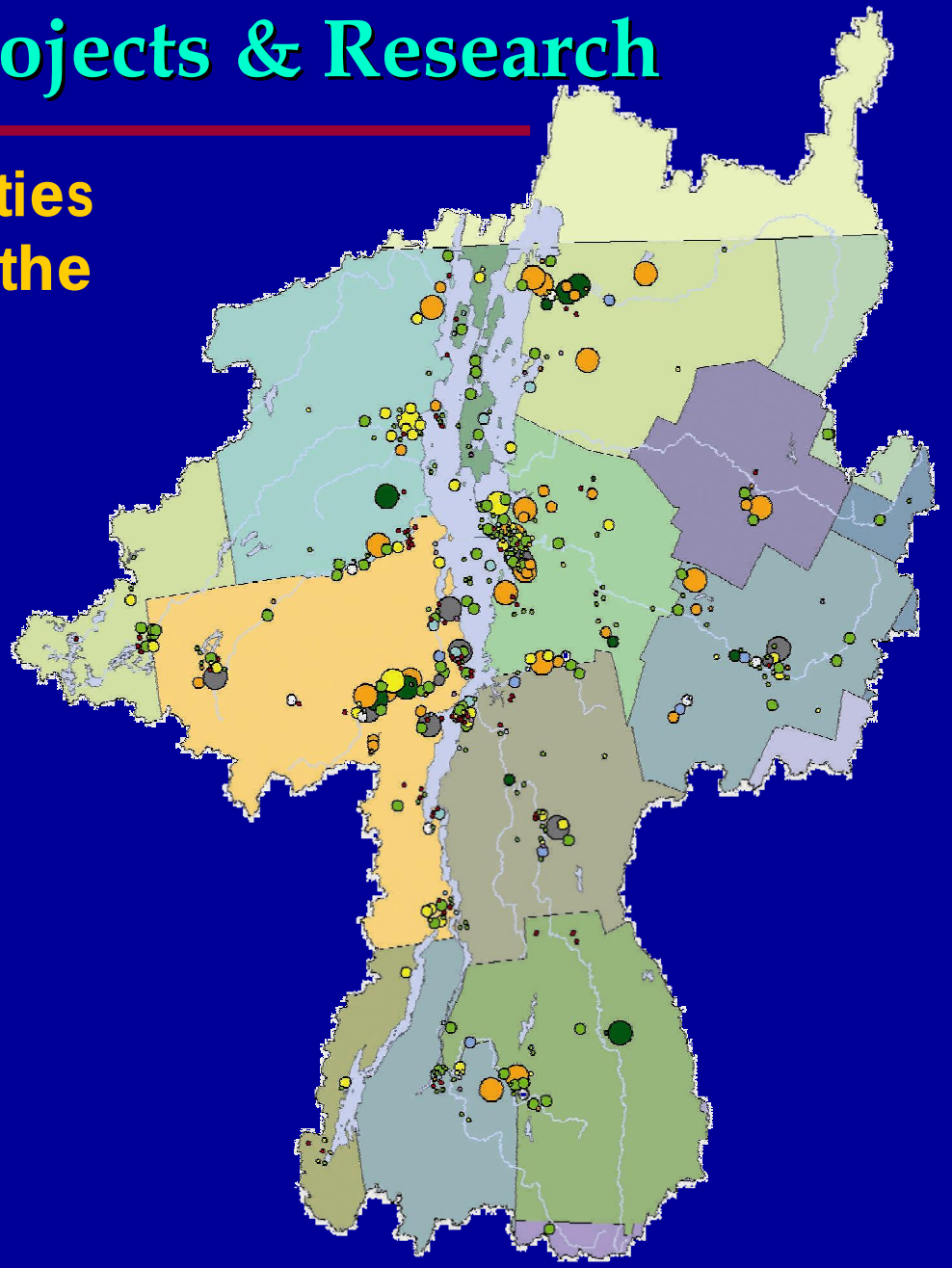




PROGRESS: Local Projects & Research

Grants to local communities and NGOs to implement the Management Plan

- More than *$3,000,000*
- Over *600* local projects since 1993
- More than *50* targeted research projects have been funded



Comments & Questions

Lake Champlain Basin Program

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Near Appletree Bay Photo: B.Wang

Lake Champlain Basin Program