

# 2008 Lake Champlain Action Plan



# LAC CHAMPLAIN 2008 PLAN D'ACTION

## APERÇU

«Au fur et à mesure qu'approchent l'année 2009 et les célébrations marquant l'arrivée de Samuel de Champlain au lac Champlain, nous entrons dans la phase finale quant à notre engagement de réduction considérable des nutriments. Nous sommes en mesure d'apporter une amélioration importante à la qualité de l'eau grâce aux subventions fédérales maintenant disponibles pour la réduction de la pollution agricole de source diffuse. Un soutien plus technique de la part de l'état permettra au grand nombre d'agriculteurs intéressés d'obtenir de l'aide plus rapidement et à un coût plus abordable.»

— Buzz Hoerr, Président,  
Comité Consultatif des Citoyens du Vermont (VTCAC)

L'objectif du plan d'action de l'an dernier pour le lac Champlain était de réduire la pollution causée par la pollution agricole de source diffuse par la mise au point de plans de gestion des fertilisants (PGF), à un coût estimatif de 5,9 M\$, pour toutes les exploitations agricoles à l'échelle de l'état tout entier. Selon les évaluations courantes, il y a 548 exploitations laitières de petite taille (SF0s) au Vermont qui sont situées dans le bassin versant du lac Champlain dont la majorité ont besoin d'un PGF. En plus de promouvoir les PGF, le VTCAC intensifie ses mesures de priorité élevée de 2008 pour inclure des améliorations sur des structures à la ferme tel que l'entreposage des fumiers et des eaux de laiterie et de contrôler l'accès des animaux aux cours d'eau. Plus de 22 M\$ est actuellement disponible avec le EQIP (Programme incitatif sur la qualité de l'Environnement) cependant 900 000 \$ par an pour deux ans est nécessaire pour le support technique à travers ce fond. Par le truchement de l'effort de coalition du VTCAC, cette hausse marquée du financement nous rapproche de notre objectif de réduction considérable des charges de phosphore de provenance agricole dans le lac Champlain.

En 2007, nos voisins du Québec ont lancé un projet pilote visant à réduire le déversement de phosphore dans la baie Missisquoi à partir de la rivière aux Brochets, la principale source de phosphore provenant du Québec. Financé par les gouvernements canadien et québécois et les agriculteurs et supporté scientifiquement par l'Institut de recherche et de développement sur l'agriculture (IRDA), le programme a recours à des incitatifs pour établir des bandes riveraines cultivables

## PRIORITÉS CAPITALES

1. Assurer, d'ici au 31 mars 2008, un revenu annuel de 900 000 \$ pour les deux années de soutien technique fourni par l'état, afin de mettre en œuvre 22 M\$ de fonds de EQIP.
2. Diminuer la pollution diffuse surtout du phosphore en mettant au point des plans de gestion des fertilisants (PGF) pour les exploitations agricoles des bassins hydrographiques défavorisés sur le plan agronomique dans le bassin du lac Champlain d'ici à 2009.
3. Protéger la faune, la flore et les communautés indigènes pour contenir la progression des espèces envahissantes, pour conserver et restaurer les habitats naturels et pour gérer la faune adaptative.

d'une largeur de 9 mètres dans des sous bassins de la rivière aux Brochets. La première phase du projet vise une soixantaine d'exploitations agricoles, et l'on entend se fonder sur les résultats obtenus pour façonner les politiques canadiennes en matière d'agriculture. Mentionnons que l'IRDA avait démontré que, après l'aménagement des bandes riveraines et des structures de contrôle de l'égouttement de l'eau, les concentrations de phosphore ont diminué de 25%. Le Programme de mise en valeur du lac Champlain (LCBP) coordonne ces efforts avec ceux des États-Unis.

Une nouvelle possibilité prometteuse pour le VTCAC s'est présentée en 2007. La Vermont Agency of Natural Resources et la Agency of Agriculture, Food and Markets ont établi conjointement le Center for Clean and Clear afin de cibler de façon plus soutenue les régions les plus polluées du lac Champlain. Ce Centre est actuellement en mesure de réagir aux priorités de réduction des charges de phosphore dans le lac Champlain et de rechercher de nouvelles sources de financement ainsi que des stratégies de contrôle encore inexploitées. Le VTCAC agit en partenariat avec le Centre pour faire avancer ces priorités.

— French translation by Claude Ghanimé

# LAKE CHAMPLAIN 2008 ACTION PLAN

## OVERVIEW

*“As we approach the 2009 celebration of Samuel de Champlain’s arrival to Lake Champlain, we are down to the wire on our commitment to significantly reduce nutrients. We are in a position to substantially improve water quality with increased federal funding now available for agricultural nonpoint source reductions. More technical support from the state will allow the large number of interested farmers to get assistance in a timely, affordable manner.”*

— Buzz Hoerr, Chair  
Vermont Citizens Advisory Committee (VTCAC)

The pinnacle of last year’s Lake Champlain Action Plan was to diminish nonpoint source pollution by developing comprehensive nutrient management plans (NMPs), at a projected cost of \$5.9 million, on all farms statewide. Current estimates indicate there are 548 dairy Small Farm Operations (SFOs) in Vermont counties within the Lake Champlain Basin, many of which need NMPs. In addition to developing NMPs, the Vermont Citizens Advisory Committee (VTCAC) is expanding its highest priority for 2008 to incorporate structural improvements on farms such as manure pits, silage leachate collection or fencing animals out of streams. Up to \$22 million is currently available through EQIP (Environmental Quality Incentive Program), but \$900,000 annually for two years is needed for technical support to implement these funds. Through the VTCAC’s coalition building, this major funding initiative brings us closer to significantly reducing agricultural sources of phosphorus to Lake Champlain.

In 2007, our Quebec neighbors launched a pilot program to reduce phosphorus entering Missisquoi Bay from the Pike River, the principal source of phosphorus from Quebec. Funded by the Canadian and Quebec governments, the Institute of Research and Development in Agriculture (IRDA) and farmers, the program uses incentives to establish continuous 9-meter riparian buffers along both sides of streams in the Pike River watershed. The first phase of the project includes nearly 60 small farms, and results are intended to shape Canadian agricultural policies. The IRDA has found that after buffers and runoff control structures are installed, phosphorus concentrations in streams drop 25%. The Lake Champlain Basin Program (LCBP) is coordinating these efforts with United States efforts.

## HIGHEST PRIORITIES

1. Secure up to \$900,000 annually for two years of state technical support by March 31, 2008 to implement \$22 million of EQIP funds.
2. Diminish nonpoint source phosphorus pollution by developing comprehensive nutrient management plans (NMPs) on farms in agriculturally impaired watersheds in the Lake Champlain Basin by 2009.
3. Protect native plants, animals and natural communities through invasive species spread prevention, habitat conservation and restoration, and adaptive wildlife management.

A promising new opportunity for action arose in 2007. The Vermont Agency of Natural Resources (VTANR) and the Agency of Agriculture, Food and Markets (VAAF) established the Center for Clean and Clear to aggressively target areas within the most polluted regions of Lake Champlain. This Center is poised to immediately respond to phosphorus reduction priorities and pursue untapped control strategies and funds. The VTCAC is partnering with the Center to bring these priorities to fruition.



The Quebec Ministry of Agriculture, Fisheries and Food (MAPAQ) implemented a pilot project in the Pike River watershed to install 9-meter buffers on both sides of streams.

Quebec MDDEP

## ACTIONS TO IMPROVE WATER QUALITY

The Lake Champlain Basin Program (LCBP) published a new land use and land cover study in 2007, conducted by the University of Vermont, which demonstrates that urban land is now the largest source of phosphorus to Lake Champlain. While agricultural lands—14% of the land cover—contribute 38% of the phosphorus runoff to the Lake, urban and suburban lands—only 5% of the land cover—contribute 46%. Proportions vary significantly among the subwatersheds, especially in northern and southern reaches of the Lake, and agriculture still contributes 70% of the phosphorus in Missisquoi Bay. The LCBP is updating several documents vital to our comprehensive understanding of the lake basin. They are releasing an updated *State of the Lake* report in 2008 and are revising *Opportunities for Action—Lake Champlain’s long-term management plan* endorsed by Vermont, New York and Quebec.



Eric O. Young

*An impaired stream with an incised channel and no direct connection to its floodplain BEFORE treatment (Summer 2006).*



Eric O. Young

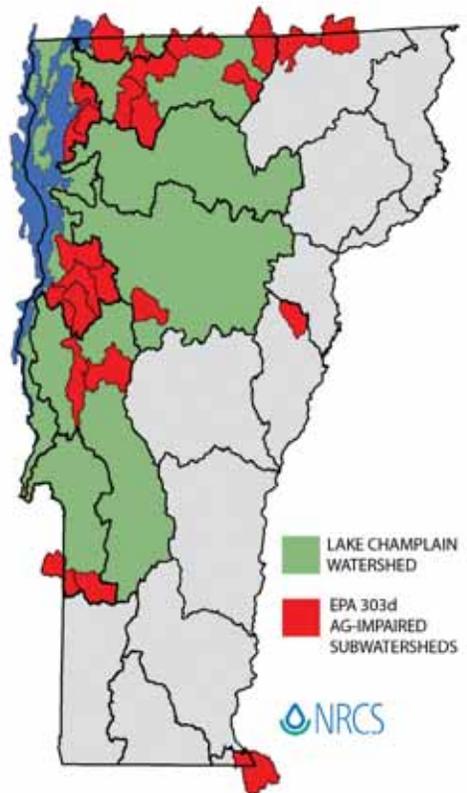
*The same stream AFTER treatment with its floodplain restored and riparian corridor protected (Summer 2007).*

## LEGISLATIVE ACTIONS

- **Secure up to \$900,000 annually for two years of state technical support by March 31, 2008 to implement \$22 million of EQIP funds**

Significant increases in EQIP (Environmental Quality Incentive Program) funding from the 2002 Farm Bill without equivalent increases in Natural Resource Conservation Service (NRCS) staffing have resulted in a backlog of nearly \$22 million for Vermont farm improvements. An NRCS analysis determined that within the next two years, they need the services of an additional three soil conservationists and four engineers to address the backlog of existing contracts (~\$14 million), and respond to nearly \$8 million in new 2008 contracts yet to be obligated. The VTANR and VAAFM need to commit up to \$900,000 annually for two years to meet this need. In combination with the pending 2008 Farm Bill, these state funds will leverage up to \$45 million to implement water quality improvement contracts on farms through 2012. This single action may have the largest impact on reducing agricultural nonpoint source pollution.

### Agriculturally impaired watersheds within major river basins in the Lake Champlain Basin



NRCS and Lake Champlain Basin Program

- **Develop comprehensive nutrient management plans (NMPs) on farms in agriculturally impaired watersheds in the Lake Champlain Basin by 2009**

The VTCAC urges the Governor and the Legislature to direct VAAFM to accelerate development of comprehensive NMPs on farms in agriculturally impaired watersheds in the Lake Champlain Basin. Focusing on critical source areas—areas with soils and terrain more likely to export phosphorus to surface waters—within agriculturally impaired watersheds is the most operationally feasible and timely means to attain phosphorus load reduction targets specified in the Lake Champlain Phosphorus TMDL (see table and map).

- **Support the mission of the VTANR Center for Clean and Clear**

Establishing the Center for Clean and Clear was the first priority for the ongoing reorganization of the VTANR. During several public meetings about the Center’s draft action plan, two major changes were suggested: a more obvious demonstration of action over planning, and a focus on the most critically affected lake segments, including the South Lake. In officially endorsing the Center’s mission, the VTCAC strongly requests that Missisquoi Bay, the Northeast Arm and

Alburgh Passage, St. Albans Bay, and the South Lake—four lake segments experiencing the greatest water quality degradation—receive priority for action.

- **Shift the emphasis in Act 43 currently directed towards additional wastewater treatment practices towards nonpoint source pollution reduction**

Efforts to reduce phosphorus loads in Lake Champlain must target the largest sources, not only those easiest to regulate or measure. Nonpoint sources of phosphorus constitute more than 90% of the load to Lake Champlain. Perceptible water quality improvements in the future will occur only by addressing nonpoint source pollution. Concerns surrounding implementation of the Lake Champlain Phosphorus TMDL can be addressed by continually evaluating and adapting management practices as knowledge and experience is gained, and do not require reopening the TMDL as recommended in Act 43. Further reducing phosphorus from wastewater discharges throughout the Basin would provide a small increment of the load reduction needed to improve water quality at a disproportionately high cost. However, additional phosphorus removal beyond current requirements should be considered on a case-by-case basis for wastewater treatment facilities discharging into impaired areas of the Lake or where local water quality conditions indicate it is needed.

**Number of Vermont farms needing nutrient management plans (NMPs) and costs, February 2008<sup>1</sup>**

Farm Classification	Number of Farms	Number of Farms Needing NMPs	FY2005-2008 NMP Incentive Grant Program Funds Allocated So Far	FY2009 NMP Incentive Grant Program Proposed Funds	Cost Needs to Complete NMPs on Remaining Farms
<b>SFO</b> Small Farm Operations <200 animals	~933 <sup>2</sup>	~606 or 65%	\$643,605	to be determined	\$3,959,400
<b>MFO</b> Medium Farm Operations 200-699 animals	155	6	\$954,909	to be determined	\$71,700
<b>LFO</b> Large Farm Operations ≥700 animals	18	needs met	\$191,068	needs met	needs met
<b>TOTAL</b>	~1,106 <sup>3</sup>	~612	\$1,789,582	\$675,000	\$4,031,100 <sup>4</sup>

<sup>1</sup> Source: VAAFM

<sup>2</sup> Inventory in progress

<sup>3</sup> LFO & MFO figures include dairy & other operations, SFO figure includes dairies shipping milk

<sup>4</sup> Cost estimates for 2008 based on acreage and number of animals

## ACTIONS TO PROTECT NATIVE PLANTS, ANIMALS AND HABITAT

With 81 fish species, 14 mussel species, robust water bird colonies, and many distinct habitat types, Lake Champlain is among the most ecologically intact and diverse lakes in North America. Our enjoyment and use of the Lake and the long-term viability of its ecosystem requires us to protect aquatic communities and, when possible, restore individual species and habitat. New threats to species and habitat emerge nearly every year. A serious new fish disease, Viral Hemorrhagic Septicemia (VHS), has recently spread through the Great Lakes killing hundreds of thousands of fish. While VHS has not been found in Lake Champlain yet, it can be spread easily from one lake to another by moving fish or water in boats or bait buckets. Overall sea lamprey control strategies still need to incorporate effective alternatives to chemical treatment of rivers. A new LCBP initiative in 2007, the Boat Launch Steward Program, worked with boaters at Lake Champlain launches to ensure that nuisance species were not in or on boats, trailers or equipment.

### LEGISLATIVE ACTIONS

- **Commit to long-term success of water chestnut control**

Over the last decade, annual funding combined with a strong regional partnership led to a long-term success story in Lake Champlain. Mechanical harvesting reduced dense water chestnut populations along 40 miles of Vermont and New York shores. These areas now need only handpulling and ongoing monitoring. *The 2007 harvesting season achieved additional milestones: harvesting advanced as far south as Red Rock Bay for the first time in 27 years; 99% of water chestnut plants collected were composted, up from only 19% in 2004; and rapid response actions occurred at all three newly confirmed infestation sites.* For continued success, \$1.33 million annually

for at least 10 years is needed to reduce water chestnut mats in the entire Lake. Afterwards, an annual commitment of \$250,000 for on-going monitoring and handpulling could maintain mat-free conditions lake-wide. Long-term funders of this initiative include VTANR, LCBP, New York State Department of Environmental Conservation (NYSDEC), US Army Corps of Engineers, the Nature Conservancy, New York Canal Corporation and many others.

- **Endorse the Aquatic Invasive Species Rapid Response Protocol**

The LCBP has convened a team of state, federal and non-government experts in Vermont, New York and Quebec to develop the Aquatic Invasive Species Rapid Response Protocol. Once invasive plants and animals become established, the likelihood for eradication quickly diminishes with time, and management costs rise. At least five new aquatic invasive species entered the Lake Champlain Basin in the last five years. State agencies in Vermont and New York, and Quebec and federal agencies need mechanisms in place to initiate swift decisions and actions necessary for halting new invasions. Cooperating across jurisdictions, expediting permits, sharing resources and equipment, and finding immediate funds to eradicate nuisance species as they are discovered are vital steps for success.

### STATE AGENCY ACTIONS

- **Continue bi-state discussions about a canal barrier to aquatic invasive species in the Champlain Canal**

The Champlain Canal is a known vector for aquatic invasive species introductions to Lake Champlain. The *Feasibility of Champlain Canal Aquatic Nuisance Species Barrier Options* report investigated six potential methods to prevent the movement of species through the canal and recommended physical or mechanical modifications as most effective at stemming the flow of canal-borne invaders. Potential modifications include overland boat hoists for recreational vessels and graving (dry) docks for commercial traffic, or even operational changes such as requiring permits for passage. Engineering studies are needed to predict viability and associated costs of physical and procedural modifications. While the Champlain Canal is physically located in New York, it is vital that Vermont and New York legislators and resource managers continue discussions about funding for engineering needs and take pre-emptive action to reduce immense costs of controlling aquatic invasive species once established.

*Participants in the 2007 Champlain Basin Education Initiative (CBEI) program learn to identify native plants and fish.*

Lake Champlain Basin Program



Lake Champlain Basin Program



- **Protect Lake Champlain's rare or sensitive species by implementing Wildlife Action Plans**

Wildlife Action Plans developed by the Vermont Fish and Wildlife Department and NYSDEC provide a roadmap for conserving rare or sensitive species and addressing conservation threats. Much of the funding, technical assistance and conservation planning is directed to the Lake Champlain Basin. Thirty-four fish are listed as species of greatest conservation need, and most are found in Lake Champlain, including lake sturgeon, muskellunge, Atlantic salmon, and walleye. These species need access to rivers or flooded wetlands to complete their life cycles. Opportunities to restore and enhance aquatic habitat connectivity for these species by removing barriers to fish passage will support their conservation. Other threats to species and their habitats are outlined in Wildlife Action Plans. The VTCAC supports implementing these plans.

## ACTIONS TO ENHANCE RECREATION AND CULTURAL HERITAGE RESOURCES

Next year, Vermont, New York and Quebec will commemorate the 400<sup>th</sup> anniversary of Samuel de Champlain's arrival to the Lake. Like last year's 400<sup>th</sup> anniversary of the Jamestown settlement, the event will increase international attention on the Lake Champlain region. While the Vermont Lake Champlain Quadricentennial Commission relies on the Champlain 400 Legacy Fund, Inc., a 501(c)(3) corporation to raise funds from private sources, state funding is essential to attract private investment. In 2007, Vermont signed a landmark memorandum with France to actively cross-promote tourism over the next three years with a primary focus on the Quadricentennial. The Quadricentennial Celebration provides an opportunity to both celebrate and protect Lake Champlain's cultural, ecological and recreational resources and safeguard them for future generations.

*Winter on Lake Champlain invites seasonal sports such as skating and ice fishing.*

## LEGISLATIVE ACTIONS

- **Provide seed money for the Lake Champlain Quadricentennial Celebration**

The Lake Champlain Quadricentennial is expected to draw people from all over the world to Vermont. The US National Park Service estimates that developing a 400<sup>th</sup> anniversary celebration could generate more than \$100 million in additional revenues in the Champlain Valley over the next five years. State seed funding of \$500,000 is needed for the Vermont Department of Tourism and Marketing to implement preparatory projects.

- **Support the Lake Champlain booster license plate**

Legislation supporting the booster license plate achieved legislative "crossover status" in 2007 and will be acted on in the 2008 session. The plate will commemorate the 400<sup>th</sup> anniversary of Samuel de Champlain's arrival to the Lake in 1609. The legislation will allow the design, purchase and sale of commemorative motor vehicle plates bearing the message "Vermont Lake Champlain Quadricentennial 1609-2009." Similar to the Vermont Bicentennial booster plate, the Quadricentennial plate can be displayed on the front of any vehicle registered in Vermont for a two year period (2008-2010). Once costs for the development and production of the plate are met, the balance of revenues will fund anniversary projects and programs.



Lake Champlain Basin Program

## VERMONT CITIZENS ADVISORY COMMITTEE (VTCAC) ON LAKE CHAMPLAIN'S FUTURE

The VTCAC is a diverse group of citizens, lake advocates, business representatives, farmers, and legislators united through their interest in a clean, healthy Lake Champlain. The VTCAC members are appointed by the Governor or by the Vermont Legislature for two or three year terms. They are charged with submitting an annual report to the Vermont Legislature that maps out recommended actions to protect the future integrity of the Lake ranging from ecological and educational to recreational and cultural heritage aspects. The Vermont, New York and Quebec CACs each hold a seat on the Lake Champlain Steering Committee, the governing board for the Lake Champlain Basin Program (LCBP). The VTCAC members provide input on the LCBP's annual budget and outreach programs, and guide the selection of annual Partnership Program grants.

**Buzz Hoerr, Chair**

*Business Owner  
Colchester  
hoerrfam@msn.com*

**Jan Peterson, Vice Chair**

*Educator  
North Hero  
janpeterson132@aol.com*

**Senator Claire Ayer**

*Addison County & Brandon  
cayer@leg.state.vt.us*

**Eric Clifford**

*Dairy Farmer  
Starksboro  
clifford@together.net*

**Larry Dupont**

*N. Lake Champlain Advisory Committee  
North Hero  
lwdupont@aol.com*

**James Ehlers**

*Business Executive  
Colchester  
james@elkpublishing.com*

**Lori Fisher**

*Lake Champlain Committee  
Burlington  
lorif@lakechamplaincommittee.org*

**Paul Hansen**

*Business Owner  
Alburgh  
shop13@verizon.net*

**Peter Kreisel**

*CPA/Business Consultant  
Burlington  
peter@kreiselsegear.com*

**Sandy Kuehn**

*Teacher  
West Haven  
kuehns@hughes.net*

**Representative Dexter Randall**

*North Troy  
drandall@leg.state.vt.us*

**Senator Ginny Lyons**

*Chittenden County  
vlyons@leg.state.vt.us*

**Ted Tyler**

*Resort Owner  
Highgate Springs  
edward.tyler@verizon.net*

**Representative John Zenie**

*Colchester  
jzenie@leg.state.vt.us*

**Michaela Stickney**

*Vermont Lake Champlain Coordinator  
Lake Champlain Basin Program  
(802) 241-3619 • michaela.stickney@state.vt.us*

*For more information:*

**Lake Champlain Basin Program**  
(800) 468-5227 (VT & NY) • (802) 372-3213 • [www.lcbp.org](http://www.lcbp.org)