



The Clean and Clear Action Plan 2005 Annual Report

Executive Summary

January 2006



Explorer Samuel de Champlain
(Canadian Heritage Gallery)



Fly fishing on a restored reach of the Trout River
(Vermont River Management Program)

"Working with welcome, bipartisan support from the General Assembly, we are fully committed to accelerated reduction of phosphorus pollution in Lake Champlain and other state waters by 2009."

--Gov. Jim Douglas

From wetland restoration to stormwater management, programs in the Clean and Clear Action Plan attack sources of phosphorus loading in our rivers and streams which encourage growth of algae as well as the degradation of overall water quality. By their nature, Clean and Clear activities spur public/private partnerships and often create multiple environmental benefits from a single project.

Governor Douglas recommended, and the Vermont Legislature appropriated in 2005, a nearly 20 percent increase in the Clean and Clear budget for programs in the Agencies of Agriculture, Natural Resources and Transportation. This increase allowed for additional stream restoration projects, reduced a greater percentage of the backlog of expired stormwater permits, enabled the development of nutrient management plans on farms and more water quality management financial assistance, broadened the level of public participation in watershed planning and provided for more outreach so that the public will become more aware of phosphorus issues.

Agency of Agriculture, Food and Markets Programs

Best Management Practices and Alternative Manure Management

This program provides significant cost share dollars for structures designed to address discharges from the production area because the majority of milkhouse waste, silage and manure is stored there. The total estimate to fix all these major production area structural issues on Medium Farm Operations is \$15,433,200, and an additional \$880,716 is needed to assure all MFO farms have nutrient management plans, totaling \$16,313,916 for all MFO farm fixes to meet the proposed regulatory standards. AAFM estimates that to fix all of the manure waste storage, silage leachate, roof runoff and milkhouse waste issues on all farms would cost \$61,361,126. Five Alternative Manure Management projects have been approved for \$233,950, but contracts for them have not yet been written.



Technical and financial assistance to construct manure waste storage structures on farms is provided through the Best Management Program.

Conservation Reserve Enhancement Program

CREP encourages farmers to voluntarily install conservation buffers in riparian areas by offering rental payments in exchange for taking these strips of land out of production. The goal of CREP is to enroll 7,500 acres by 2009. After an initial spike in acreage enrolled which reflected pent up demand in 2002, CREP is showing slow, steady growth from 2003 through 2005. About 1,175 acres have been enrolled so far with 200 acres enrolled in FY 2005. Although there was a significant expansion of education and outreach efforts with additional staff, rental payments over the last few years had been too small to draw more enrollment. Rental payments have since increased which should increase enrollment.



CREP works with agricultural landowners to establish vegetative buffers along Vermont's waterways.

Nutrient Management Program

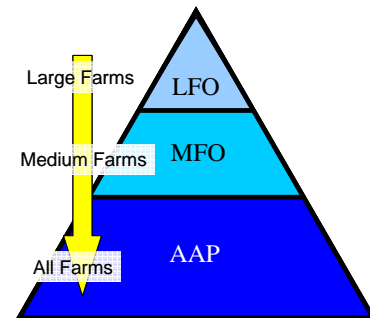
Nutrient Management Plans are part of the Integrated Crop Management Program (ICMP) and help bring soils to optimum phosphorus levels. Of the 205 Medium Farm Operations in Vermont, 105 do not have NMPs in place. The cost of implementing NMPs on these farms is \$880,716. Some 68 farms have signed up to receive cost share contracts, 30 in FY 2005 and 38 thus far in FY 2006. It is anticipated that as more farmers become aware of water quality issues and regulations this program will grow rapidly.



Nutrient management allows farmers to utilize the appropriate amounts of nutrients necessary for crop production while protecting against soil loss and nutrient runoff.

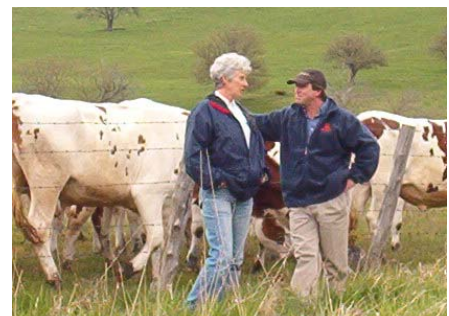
Regulatory Programs

Rules regarding Accepted Agricultural Practices, Medium Farm Operations and Large Farm Operations comprise the regulatory tiers of the Agricultural Water Quality Program and are designed to prevent discharges containing phosphorus and nitrogen. AAPs are a base level of management required of all farms. Proposed changes to AAPs include a mandatory 10 foot buffer on all riparian cropland. Other proposed changes include criteria for nutrient and pesticide storage, soil testing, riparian pasture management and more. MFOs will soon be subject to an increased level of management because of the potential impact that greater numbers of animals can have being confined in a single area. LFO revisions for nutrient management and waste storage structures will undergo rulemaking procedures in spring of 2006.



Conservation District Outreach and Technical Assistance Program

Vermont's Conservation Districts provide direct technical assistance to farmers to help them: 1.) establish compliance with AAPs, 2.) apply for help with conservation practices, 3.) apply for exemptions from winter spreading bans, and 4.) conduct assessments of groundwater contamination and to provide agricultural representation in ANR Basin Planning. The Winooski District hired two new technicians who provide land treatment planning services in watersheds targeted by the Federal Watershed Protection Act.



Conservation District staff work directly with farmers.

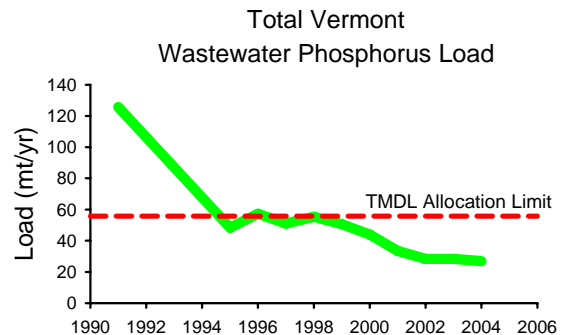
Basin Planning

Agriculture is recognized as a major source of non point source pollution in many of Vermont's basins, or watersheds. The Winooski Natural Resource Conservation District has been awarded a grant of \$100,000 to write and provide research for agricultural elements of seven basin plans which are required by state law. Monthly reports are due from WNRCD throughout 2006 and 2007, when the basin agricultural chapters will be drafted.

Agencies of Natural Resources and Transportation Programs

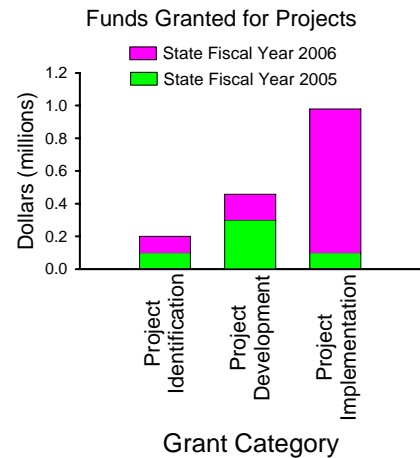
Wastewater Discharges

Dramatic progress has been made over the last several years in reducing the level of phosphorus in wastewater discharges. Under Clean and Clear, the reduction of more than 3.3 metric tons per year of permitted phosphorus discharge was funded in FY 2005-2006 for the Richford and Troy/Jay facilities. Funding of similar projects in Hardwick and Waterbury in FY 2007 will lead to reductions of another 5 metric tons of permitted phosphorus in discharges.



River Management

The Vermont General Assembly provided a major boost to the River Management program during the 2005 session, appropriating \$1.25 million in capital funds for projects most of which are underway. Clean and Clear funds were also used to leverage \$1 million in FEMA grants for mapping of erosion hazards which, when addressed, will help prevent transport of phosphorus laden sediment. More than 3,000 miles of stream have been assessed by River Management staff and our partners since Clean and Clear began in 2004, generating data for more “on the ground” implementation projects in 2005.



Better Backroads

The Better Backroads Program helps control phosphorus runoff by assisting towns with improved road maintenance and construction techniques and grants to implement them. Grants pay for bank and ditch stabilization, and culvert upgrades, all of which stem erosion and decrease the transport of phosphorus. More

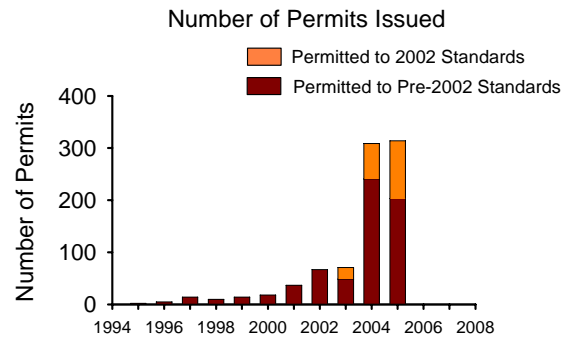


A stabilized road ditch.

than 30 towns participated for the first time in the Better Backroads Program in 2005 due to a significant boost in Clean and Clear grant awards, which totaled \$328,486. Five towns and two organizations were awarded grants for road inventory and evaluation projects. Some 41 towns and 3 organizations got grants to correct an erosion problem. The program stabilized 5.8 miles of roadside ditches in 2005, up from 4.0 miles in 2004. Forty-five culverts were stabilized in 2005; nearly double the 23 from 2004. On-site assistance is crucial to getting towns to participate in the program.

Stormwater Management

Substantial progress in reducing the backlog of expired stormwater permits combined with an increasing number of sites coming under permit control indicates that overall stormwater treatment is improving in Vermont. The number of individual or general permits for new developments or redevelopment projects has increased from 68 in 2004 to 111 in 2005. All new permits require stormwater treatment systems



consistent with the state of the art standards in the 2002 Vermont Stormwater Management Manual. The first of 17 TMDLs for stormwater impaired watersheds will be submitted to the EPA for approval in early 2006, with more expected later in 2006.

Erosion Control at Construction Sites

With additional staff provided by Clean and Clear, there has been considerable improvement in permit processing, education and outreach and permit compliance. The overall rate of compliance is still too low. However, projects in impaired watersheds with Individual Permits have generally shown better compliance records. Despite a significant increase in outreach and education efforts, there were many cases where contractors were not aware of their obligations under Construction General Permits. After explaining the program, compliance at many of these sites showed improvement. As of November 2005, the number of CGP applications authorized in 2005 was 119, up from a total of 79 in 2004. The number of acres of construction disturbance regulated by the program increased from 998 acres in 2004 to 1,290 acres in 2005.



Erosion control practices in place at a large construction site.

Despite a 50% increase in permit activity, the increase in staff funded by Clean and Clear has allowed for a 92% rate of meeting Permit Expediting Process (PEP) time standards in 2005, up from 66% in 2004.

Local Municipal Actions

This program places a Water Quality Specialist at the Vermont League of Cities and Towns to encourage towns to adopt water quality regulations not covered by state law. The program began in early 2005 with the specialist delivering four presentations at the Town Officer Education Conferences. However, the specialist left the VLCT. A new person was recruited and began work in December, 2005.

Wetland Protection and Restoration

Because wetlands are such a valuable resource in the battle against phosphorus loading, this program seeks to restore wetlands damaged or destroyed by development and agriculture. An \$80,000 contract to develop a restoration plan for wetlands in the Lake Champlain Basin was awarded in 2005. Working with the Vermont Land Trust, the Hinesburg Land Trust and the Trust for Public Lands, ANR has committed \$120,000 to restore the natural hydrology to approximately 120 acres of wetland along the LaPlatte River. Clean and Clear also contributed \$39,000 to a project in Benson. Partnering with the Nature Conservancy, 50 acres of wetland along the Hubbardton River which had been altered for farming will be restored, which will eliminate an active source of phosphorus loading.



Typical ditched wetland area and floodplain at the planned wetland restoration site in Hinesburg.

Forest Management

With forested areas covering over 75 percent of the state and yielding some 900,000 cords of wood per year, there is some concern about sediment discharges from silvicultural practices. Stream crossings are often the most likely to create a discharge, so loggers and landowners are being encouraged to use skidder bridges and other Best Management Practices.

A watershed forester has been hired to facilitate these efforts and will begin work in February 2006. In 2004, the last year for which statistics are available, technical advisory teams investigated 34 cases of discharges from silvicultural activities. In all cases, discharges were brought under control and site restoration was achieved quickly in 30 cases.



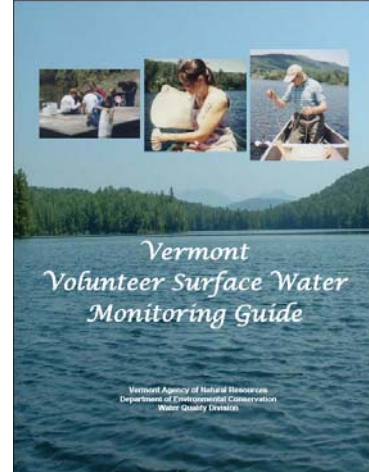
A skidder bridge workshop.

Monitoring

Monitoring of water quality and land use is necessary to determine whether the goals of the Lake Champlain TMDL implementation plan are being met. Four segments of the lake are not meeting their in-lake phosphorus standard and six others are borderline. Three segments are seeing increasing phosphorus levels and almost all of the lake's major tributaries exceed allowable limits. Development of land that had been in forested or agricultural use could increase phosphorus runoff which could offset some of the gains from the management activities of Clean and Clear.

Citizen volunteers sampled 16 stations in Lake Champlain and 52 other lakes in 2005 as part of the Vermont Lay Monitoring Program, which this year produced a new Vermont Volunteer Surface Water Monitoring Guide.

A study of St. Albans Bay has concluded that there is an abundant supply of phosphorus in the sediments of the bay which is likely to nourish algae for many years to come. It is time to consider treatment options to counter this.



Watershed Action Plans

Watershed Planning educates citizens about what they can do to reduce pollution, coordinates pollution reduction activities and invites the public to help establish priorities for management projects. Under Clean and Clear, two additional Watershed Coordinator positions were recruited, giving the program five such positions in the Lake Champlain Basin and two in the Connecticut River Basin. Watershed Coordinators, working to develop consensus through Watershed Councils, were the catalysts for dozens of water protection activities in 2005 involving more than 3,500 people.



Breakout groups at a public forum in Swanton.