PART TWO: INTRODUCTION

Within its borders, Vermont has approximately 7,100 miles of rivers and streams, 300,000 acres of fresh water wetlands and 810 lakes and ponds (those at least 5 acres in size or those named on US Geological Survey maps) totaling 230,789 acres. Surface waters (not including wetlands) are classified as Class A or Class B with an overlay Waste Management Zone in Class B waters for public protection below sanitary wastewater discharges. Class A waters are managed for enjoyment of water in its natural condition, as public drinking water supplies (with disinfection when necessary) or as high quality waters which have significant ecological values. Class B waters, which are managed for high quality, may have minimal, minor or moderate change to aquatic biota or habitat according to the water's management type B1, B2 or B3.

There are approximately 165 miles of Class A rivers and streams and 1,736 acres of Class A lakes and ponds in Vermont (these figures do not include rivers/streams above 2,500 feet elevation which are also Class A). In addition, there are close to 6,935 miles of Class B rivers/streams and 229,053 acres of Class B lakes/ponds. Approximately 315 miles of the Class B rivers and about 15 acres of Class B lakes have a Waste Management Zone. The Waste Management Zone, similar in effect to a zoning overlay, is created on a site-specific basis to accommodate the direct discharge of treated sewage effluent to surface waters.

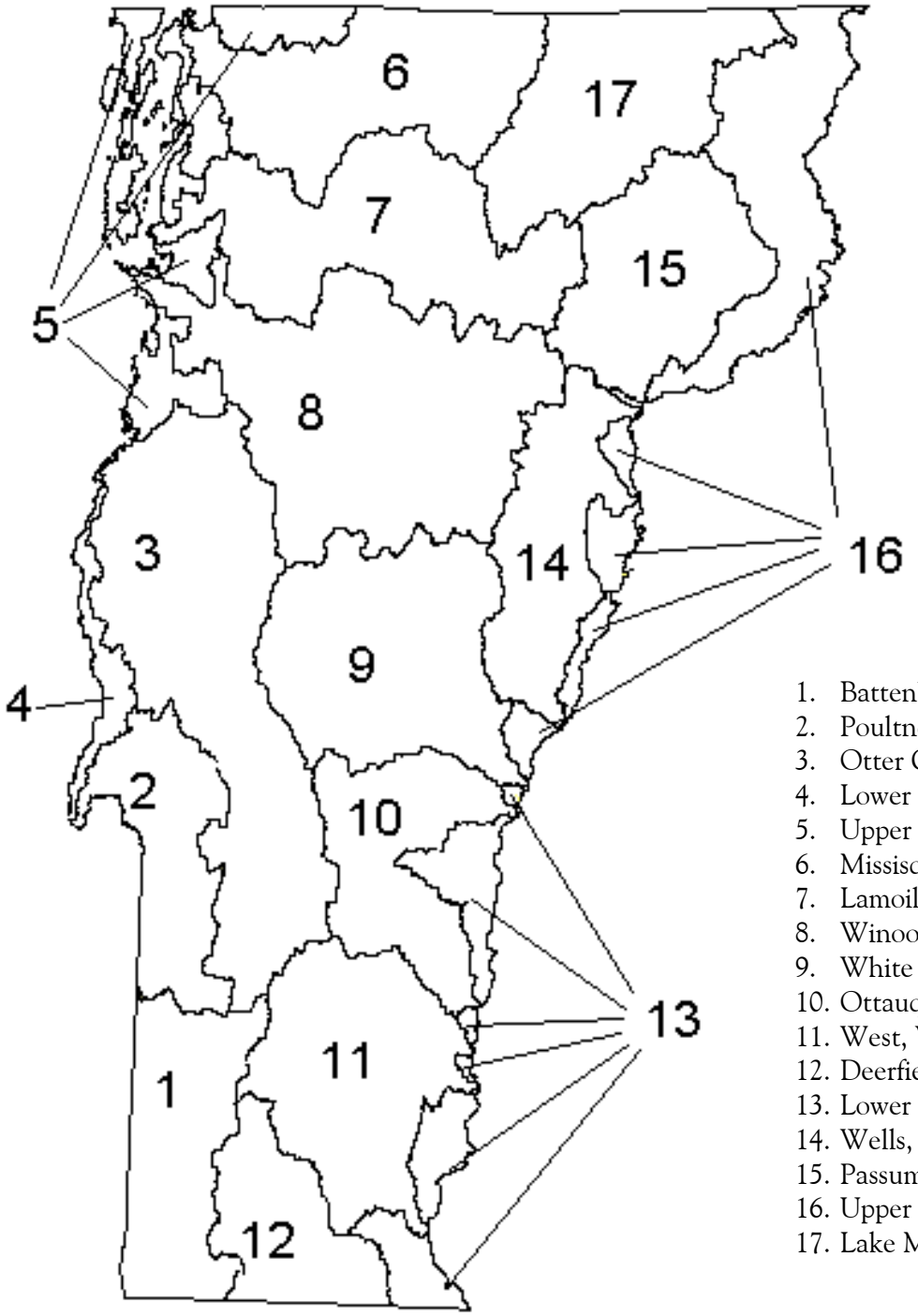
The Vermont portion of the Batten Kill along with the West Branch of the Batten Kill (totaling about 33 miles), the Lower Poultney River (about 22 miles), a 3.8 mile segment of the Ompompanoosuc River and a 1.3 mile segment involving Pikes Falls on the North Branch of Ball Mountain Brook have each been designated by the Vermont Water Resources Board as an Outstanding Resource Water (ORW). The 3.8 mile segment of the Ompompanoosuc was designated ORW in 1996. All other ORWs noted above were designated in 1991.

Wetlands within Vermont are classified as Class One, Class Two or Class Three. Class One wetlands are considered exceptional or irreplaceable in their contribution to Vermont's natural heritage and are afforded the highest level of protection. Class Two wetlands are considered significant. Class One and Class Two wetlands are those shown on the National Wetlands Inventory maps. Class Three wetlands are areas that do not appear on the maps. The majority of wetlands within Vermont are Class Two.

Surface water quality monitoring undertaken by the Department during the 2004 305b reporting period (January 1, 2002 through December 31, 2003) continued to support an assortment of water program activities. Long-term monitoring programs are designed to assess trends in water quality, as well as to generate baseline water quality information. DEC also maintains a strong presence on Lake Champlain and conducts a variety of short-term lake and stream-specific monitoring projects. Monitoring data is used to manage and protect Vermont waters in a pro-active manner. The reader is referred to Part Four of the report for a more detailed description of DEC's surface water quality monitoring program and for the results of monitoring and assessment activities. Appendix C contains DEC's Assessment and Listing Methodology.

For the wide range of water quality management and planning purposes, there are 17 major river basins found in Vermont. These rivers drain into one of four large regional drainages: Hudson River, Lake Champlain, Lake Memphremagog and the Connecticut River. A map illustrating the 17 basins is provided on the following page.

Vermont's Watersheds



1. Battenkill, Walloomsac, Hoosic
2. Poultney-Mettawee
3. Otter Creek, Little Otter, Lewis
4. Lower Lake Champlain
5. Upper Lake Champlain
6. Missisquoi
7. Lamoille
8. Winooski
9. White
10. Ottauquechee, Black
11. West, Williams, Saxtons
12. Deerfield
13. Lower Connecticut
14. Wells, Waits, Ompompanoosuc
15. Passumpsic
16. Upper Connecticut
17. Lake Memphremagog

PART THREE: BACKGROUND

An Overall Description of Vermont's Water Quality & Surface Water Resources

Summary Description of Vermont's Water Quality

The water quality of all Vermont's rivers and streams and lakes and ponds is considered good. This overall water quality rating has not changed from the overall rating level that was reported in the 2002 305b Report. The US Environmental Protection Agency (EPA) has requested states to also assess the state's water quality considering the fish consumption advisory for mercury which was issued in June 1995 and most recently revised in June 2000. The advisory was issued as the result of fish tissue sampling that showed mercury in the tissue of all fish, particularly in walleye and lake trout, and also PCBs in lake trout[1] in Lake Champlain (see updated advisory as Appendix B). Taking the fish consumption advisory into consideration, the overall water quality of all the state's waterbodies would be rated as fair. A statewide assessment of mercury in sediments, waters, and biota of Vermont lakes was completed during the reporting period. Results of this project are discussed in Part Four.

With regard to Vermont's wetlands, their water quality is believed to be generally good. Since Vermont does not have a specific program of assessing and monitoring wetland water quality, this characterization is somewhat speculative. It has been incumbent upon the state's limited resources to insure important wetland functions and values are protected from being lost to development or other destructive practices.

No comprehensive studies have been completed on the quality of Vermont's groundwater. In most cases it is believed that groundwater quality meets drinking water standards. A thorough evaluation of groundwater is needed, however, to provide a factual characterization of this important resource.

Atlas/Total Waters

Vermont has approximately 7,100[2] miles of rivers and streams, 230,790 acres of lakes, reservoirs and ponds and 300,000 acres of freshwater wetlands. The surface area of lakes, ponds and wetlands represent approximately 828 square miles of water or about 8.6% of the state's total 9,609 square mile area.

Vermont's border waters include the Connecticut River on the east (border with New Hampshire), Lake Memphremagog on the north (partial border with the Province of Quebec) and the Poultney River and Lake Champlain on the west (border with New York).

There are 17 major river basins in Vermont, which drain to one of four large regional drainages: Lake Champlain, the Connecticut River, Lake Memphremagog, or the Hudson River. Additional surface water resource information is contained in Table 3.1 below.

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[1] Still in effect is the 1989 advisory for PCBs (polychlorinated biphenyls) in Lake Champlain.

[2] Source of 7,100 mile figure is EPA's Total Waters Database. Earlier 305b reports relied upon Don Webster's list of Vermont waters prepared in 1962 that showed a total of 4,936 miles. A number of omissions have been discovered in Webster's listing with many small streams overlooked and the lengths of some rivers and streams significantly underestimated. The total mile figure is likely to change once the Vermont Hydrography Dataset becomes functional.

Table 3.1. Atlas.

State population	608,827 (2000 Census)
State population change (1990 - 2000)	8.2 % increase
State surface area	9,609 square miles
State population density	63.36 persons/sq mi
Number of water basins	17
Miles of perennial rivers & streams[3]	7,099
Border miles of shared rivers/streams (subset)[4]	262
Number of lakes, reservoirs & ponds (at least 20 acres)	287
Number of lakes, reservoirs & ponds (at least 5 acres but less than 20 acres)	317
Number of significant, lakes, reservoirs & ponds (less than 5 acres)	206
Acres of lakes, reservoirs & ponds[5]	230,813
Acres of freshwater wetlands[6]	300,000

There are no coastal waters, estuaries or tidal wetlands in Vermont. However, due to the size of Lake Champlain (approximately 120 miles long and 12 miles wide at its widest), the lake is considered an inland sea by residents of Vermont, New York and Quebec. The Atlantic Ocean and Inland Waterway are accessible to the south from Lake Champlain via the New York Barge Canal. The Richelieu River, St. Lawrence River and the Atlantic Ocean are accessible to the north through Canada.

Effectiveness of Pollution Control Programs

The Vermont Department of Environmental Conservation (DEC) within the Agency of Natural Resources has been designated as the lead water quality management agency for the State of Vermont. In that role, DEC administers a wide variety of programs that are intended to control, reduce or prevent pollution from point and nonpoint sources to the State's surface and ground water resources. These programs are effective at maintaining, protecting and restoring water quality and aquatic habitat conditions. For the purpose of describing water program effectiveness, DEC's water pollution control programs can be summarized into three categories: General, Point Sources and Nonpoint Sources.

GENERAL PROGRAM

Water Quality Standards

The Water Quality Standards are the foundation of the state's water pollution control and water quality protection efforts. The Water Quality Standards (Standards or WQS) are promulgated by the Vermont Water Resources Board and provide the specific criteria and policies for the management and protection of Vermont's surface waters. The classification of waters (rivers, streams, lakes and ponds) as Class A, Class B or Class B with Waste Management Zone are the management goals to be attained and maintained. The classification also specifies the designated water uses for each class. Class A

[3] Includes the Connecticut River.

[4] Connecticut River - 238 miles; Poultney River - 24 miles.

[5] Figure includes the Vermont portion of Lake Champlain, some private waters and some waters less than 5 acres in size. This figure also accounts for two large CT River impoundments, Moore and Comerford Reservoirs, which are 1,255 and 777 acres in size, respectively. These were not previously tracked in Vermont's Lake Inventory Database.

[6] Figure does not include wetlands found on agricultural lands that are actively used for agricultural purposes.

waters are either A1 (ecological waters) or A2 (public water supplies). Class B waters fall within one of three water management types (B1, B2 or B3) after consideration by the Water Resources Board. The current Vermont WQS (go to www.state.vt.us/wtrboard, click on "Rules") were adopted June 10, 1999 and became effective July 2, 2000.

The Vermont WQS establish narrative and numeric criteria to support designated and existing uses. Designated uses, as established in Sections 3-02(A), 3-03(A) and 3-04(A) of the Standards, mean any value or use, whether presently occurring or not, that is specified in the management objectives for each class of water. The following table serves to indicate applicable designated uses.

Table 3.2. Designated Uses for Water Classifications.

Designated Uses	**Class A(1) – Ecological Waters**	**Class A(2) – Public Water Supplies**	**Class B Waters**
Aquatic Biota, Wildlife & Aquatic Habitat	√	√	√
Aesthetics	√	√	√
Swimming & Other Primary Contact Recreation	√		√
Boating, Fishing & Other Recreation Uses	√		√
Public Water Supplies		√	√
Irrigation of Crops & Other Agricultural Uses			√

Class A Re-classifications
The 1986 "Pristine Streams Act" created the opportunity for any waterbody supporting habitat that is ecologically significant and has water quality that meets at least Class B standards to be re-classified to Class A. A re-classification is a rule making procedure before the Water Resources Board where a public interest determination must be made pursuant to Vermont's Water Pollution Control Statute, Title 10 VSA Section1253. No streams have been re-classified to Class A since the 1998 305b Report.

Outstanding Resource Waters
An overlay of both Class A and Class B waters is the designation of Outstanding Resource Water (ORW). ORWs are waters of the State designated by the Water Resources Board as having exceptional natural, recreational, cultural or scenic values. To gain an ORW designation, the petitioners must, in a contested case hearing before the Board, provide evidence and testimony that the waters in question have exceptional natural, cultural, scenic, or recreational values. The following waters have been designated as ORWs: the Batten Kill and its West Branch, Pikes Falls on the North Branch of Ball Mountain Brook, the lower Poultney River and Great Falls on the Ompompanoosuc River. No ORWs were designated during the 2004 reporting period.

Watershed Approach
Vermont has adopted and is implementing a watershed approach to surface water quality planning. The DEC-prepared document, *Guidelines for Watershed Planning* (refer to 2002 305b report or to www.vtwaterquality.org) calls for basin surface water plans to be developed on a periodic basis.

The watershed planning process is an inclusive public process that takes into account current and past assessment, planning, and implementation activities at the state and local levels. Assessments are followed by the basin plans that will summarize current and past (within five years) water pollution or water quality management activities. This rotational planning process will also identify topics or areas of special importance in the basin, identify available management tools to address those topics, and make specific recommendations on how to address key topics, including recommendations for

continuing community-based planning or implementation action. Each basin plan updates previous basin plans. Each basin is unique in its problems and opportunities. Nevertheless, assessment, planning and implementation are constantly occurring at many different levels from the activities of landowners to municipal, state and federal levels and evolving with public participation. The *Guidelines for Watershed Planning* looks at all of these activities including the condition of the waters in a given point in time and makes conclusions and recommendations for the future.

For a summary update on progress of activities in the six river basins where water quality management plans have been or are being developed, the reader should refer to Appendix A.

POINT SOURCE CONTROL PROGRAM

Vermont administers a well-planned and comprehensive direct discharge water pollution control program, consisting of planning loans and advances, construction grants and loans, permitting and compliance monitoring. In March 1974, Vermont received from EPA the delegation authority to administer discharge permits under the National Pollutant Discharge Elimination System. Within Vermont there are 33 facilities considered as “major” and 132 “minor” facilities.

With the construction of the state's last originally identified municipal waste water treatment facility (WWTF) and completion of the upgrades from primary to secondary, the program has continued to place emphasis on refurbishment of existing WWTFs, the completion of phosphorus reduction upgrades (refer to Appendix B, Table B.1), advanced waste treatment, correction of combined sewer overflows (CSO) (see Appendix B, Table B.2), control of toxics, pollution prevention activities and facility enlargements.

During the reporting period, construction commenced on CSO corrections, sewer line rehabilitations and extensions, sewer system improvements, wastewater treatment plant upgrades, and phosphorus reductions. Various new projects, located in three of the four major drainages within Vermont, received funding from state, federal and local sources in 2002 and 2003, totaling approximately $26 million in new funding (refer to Table 3.3 below). Many projects that received funding during the reporting period are also under continued construction.

Of the 31 facilities with planned phosphorus reduction projects in the Vermont portion of the Lake Champlain basin, 30 have been or are close to being completed. Phosphorus reduction projects required in the Vermont portion of the Lake Memphremagog drainage basin were completed by 2001.

Of the 33 planned CSO correction projects, 24 have been completed, 5 are underway and 4 are pending.

Vermont’s TMDL planning for Lake Champlain, including a new lower tier of phosphorus limits, anticipates over $5 million in new construction projects at existing municipal wastewater treatment plants in the coming years.

Approximately $26.5 million dollars were spent during the 2002 - 2003 reporting period on waste water treatment facility upgrades, combined sewer overflow corrections, sewer line extensions and rehabilitations and other waste water treatment system improvements in nine communities.

NONPOINT SOURCE (NPS) CONTROL PROGRAM

Vermont has been able to effectively target areas, design work plans, compete for and capture funding and implement NPS projects directed at restoring and protecting water uses and values. In the fourteen years of Clean Water Act Section 319 NPS implementation funding (1990-2004), Vermont has received about $16 million to implement a variety of activities. The goal of the NPS management program is to encourage the successful implementation of best management practices (also referred to as "BMPs") by diverse interests such as farmers, developers, municipalities, lakeshore residents, landowners and riparian landowners in order to prevent or reduce the runoff of pollutants. Effective BMPs can be structural or vegetative, regulatory or advisory.

Some notable activities carried out with Section 319 funding during this 305b reporting period include youth-based watershed restoration efforts, enabling nutrient management services for farm operators, further water quality characterization to remediate elevated temperatures on one waterbody, locally-led efforts to improve water quality for Allen Brook, the West River and Gully Brook and funding assistance targeted at municipalities for reducing sediment runoff from unpaved backroads.

Because of the diffuse but widespread nature of NPS source pollution, there are several other important aspects that are prominent features of Vermont's nonpoint program. Some management elements are part of DEC while others elements are conducted outside of DEC. Examples of the former include construction sediment and erosion control, hazardous and solid waste management, spills and leaks and control of stormwater. Examples of the latter include logging erosion control carried out by the Vermont Department of Forests, Parks and Recreation and agricultural runoff control by the Vermont Agency of Agriculture, Food and Markets. The US Department of Agriculture is an important partner in both forestry and agriculture arenas.

Specific details regarding the NPS program and project activities are available from DEC. The Department has maintained a listing of 319-assisted project titles by funding year. Vermont will continue to pursue and apply Section 319 NPS funding in targeted areas that are likely to result in the successful implementation of BMPs and programs and in the improvement of water quality.

Nature & Extent of Nonpoint Sources of Pollutants

Pollution from nonpoint sources of pollutants continues to be the major source of water use impairment to Vermont surface and ground water resources. It is estimated that close to 90% of the miles and acres of the state's impaired surface waterbodies are the result of NPS pollution. Water quality impacts due to NPS and the threat of impact from NPS are apparent in each of Vermont's 17 drainage basins. The reader is referred to Part Four (Surface Water Monitoring and Assessment) and Part Seven (Groundwater Monitoring and Assessment), for further details regarding the causes and sources of NPS pollution within Vermont.

Environmental Impact/Economic & Social Costs/Economic and Social Benefits of Effective Water Programs

Point Sources

The total expenditure of state, federal and local funds for all municipal wastewater treatment facilities and appurtenances to date has been approximately $560 million. These facilities have improved the quality of 58 rivers and 3 lakes for such uses as swimming, fishing, boating and aquatic life. The $560 million figure includes the $26.5 million in improvements constructed during the 2004 305b reporting period. The reader is referred to Table 3.3 below for the location and estimated cost of these improvements.

Table 3.3. Municipal Pollution Control Project Starts.

(January 1, 2002 to December 31, 2003)

Community	Description	Est. Project Cost
****** LAKE CHAMPLAIN DRAINAGE ******		
Colchester	Subsurface drainage system for Belwood Park subdivision.	$1,034,000
Milton	Extension of wastewater collection system along U.S. Route 7.	$3,378,000
Montpelier	Septage and leachate receiving facilities and headworks improvements.	$3,170,000
Montpelier	Combined sewer overflow abatement; Phase 2, Contract 8.	$1,437,000
Montpelier	Combined sewer overflow abatement; Phase 2, Contracts 9 & 10.	$2,086,000
Northfield	Upgrade of wastewater treatment facility for phosphorus removal improvements.	$6,924,000
Shelburne	Pump stations, force mains and gravity sewers for the Shoreline, Route 7 and Falls Road Cemetery areas.	$1,645,000
Stowe	Village area force main extension.	$590,000
Warren	New sewers, subsurface and on-site disposal systems.	$4,399,000
****** LAKE MEMPHREMAGOG DRAINAGE ******		
Newport	Fyfe Drive and Gateway pump stations.	$275,000
****** CONNECTICUT RIVER DRAINAGE ******		
Randolph	Sewer extensions to 4 areas of Town; School & Brook Streets, Randolph Avenue, Pearl & Shattuck Streets and Montague golf course.	$1,557,000
TOTAL COST		**$26,495,000**

Nonpoint Sources

Quantifying the financial resources expended on nonpoint source control of pollutants is not as easy to determine or link to specific river miles/lake acres of improvement as contributions of resources occur from various state, federal and local agencies as well as from landowners, volunteer groups, foundations, businesses and even corporations. There are, however, two Clean Water Act (CWA) programs under DEC administration and a single state-funded program that address nonpoint source pollution control which can be highlighted. The CWA programs are the Section 604b Pass Though Program and the Section 319 Program and the state-funded program is the Vermont Conservation License Plate Program. Funding for the two CWA programs from 1989 through 2004 has amounted to approximately $780,000 (604b) and over $16 million (319). The 604b Program has assisted the 12 Vermont regional planning commissions conduct a wide variety of water quality planning related activities. A portion of the 319 Program has provided funding assistance to a wide variety of governmental and non-profit organizations to carry out nonpoint source implementation efforts. In the six years of its existence (1998-2004), the Vermont Conservation License Plate Program has awarded close to $352,000 to many diverse groups. Many of the funded license plate projects provide water quality and/or habitat benefits. As a way to offset some of these cost-benefit uncertainties, the

remainder of this section is devoted to mentioning five recently conducted socio-economic evaluations related to recreational water use or water quality conditions.

In the fall of 2002, the Center for Rural Studies at the University of Vermont conducted a survey of 1,338 Vermont households regarding their opinions of recreation resources. The survey[7] was done for the Vermont Department of Forests, Parks and Recreation as one component for the 2005 Vermont Outdoor Recreation Plan. Noteworthy water and water quality-related findings from the survey are summarized below:

Quality of Resources

* Almost 85% of Vermonters agreed that the outdoor recreation opportunities now offered in Vermont satisfy their needs. However, nearly 66% of Vermonters agree that additional public access to natural swimming areas need to be developed.

* The average grade for the quality of Vermont's recreation resources is a "B." Both recreation resource categories of lakes and ponds and rivers and streams were graded as "B-" in 2002. The mean grade point value for lakes and ponds, however, showed a significant improvement between 1992 and 2002.

Recreational Issues

* The top two issues that were indicated to be a "big problem" by the largest percent of Vermonters in 2002 were the presence of nuisance (aquatic) plants and the presence of nuisance (invasive) aquatic animals at 69% and 66%, respectively. The former was also considered to be more of a problem in 2002 than in 1992.

In the Year 2000 Vermont Angler Survey[8], about 83% of Vermont residents believed that access to fishing was not a problem and about 45% thought that contaminant levels in fish was either not a problem or a minor problem. In the survey, Vermont residents also believed excessive aquatic plant growth, poor water quality, barriers to fish migration, over-fishing and erosion/silation were the top five factors affecting fish health and fishing quality. The average number of days that Vermont resident anglers go fishing has not changed between 1990 and 1999 (open water is 27 days, ice fishing is 11). Finally, overall fishing satisfaction levels (on a scale of 1 to 4) held by resident and non-resident anglers were found to have increased since 1991 to 2.51 and to 2.92, respectively.

According to the Year 2001 National Survey[9], fish and wildlife continue to be important to Vermont residents (and visitors) and greatly contribute to the state's economy. Nationally, Vermonters ranked second to Alaskans in enjoying wildlife resources. About 67% of the state's population was reported to have gone fishing, hunting or wildlife watching (or a combination of these) as compared to 70% of Alaskans. Vermont's economy receives a major boost from sportfishing. Resident and non-resident anglers fished slightly over 2.3 million days in Vermont during 2001 – an average of 14 days per angler – and spent a total of about $92.5 million in fishing expenses. Between 1991 and 2001 there were no significant changes in total anglers, fishing days, expenditures and the number of Vermont resident anglers. Between 1996 and 2001, while fishing expenditures by Vermont anglers decreased, the number of Vermont resident anglers was reported to have markedly increased.

In an article appearing in the fall 2003 issue of *LakeLine*[10], Boyle and Bouchard examine property sales prices and water quality relationships of lakes in 3 New England states (ME, NH, VT) to provide some understanding of the social value of environmental quality and the risk of degraded environmental

7 Center for Rural Studies. 2003. The 2002 Vermont Outdoor Recreation Survey Report and An Analysis of Change Since 1992. University of Vermont. Burlington, VT.

8 Vermont Department of Fish & Wildlife. 2000. The 2000 Vermont Angler Survey. Prepared by the University of Vermont, School of Natural Resources. Waterbury, VT.

9 US Fish & Wildlife Service. 2003. 2001 National Survey of Fishing, Hunting and Wildlife-Associated Recreation in Vermont. Washington, DC.

10 K.Boyle & Bouchard.R. 2003. Water Quality Effects on Property Prices in Northern New England. LakeLine. Journal of North American Lake Management Society. Pages 24-27.

quality. Using 336 observations (involving 29 lakes from the Northeast Kingdom, Rutland County and separate bays near St. Albans), the authors found that the property price effects from a one-meter increase (i.e. improvement) in minimum water transparencies ranged from increases of 1.7% (Northeast Kingdom) to 5.9% (St. Albans). A one-meter decrease in transparency was predicted to result in negative price effects ranging from 2% to 4.6%. While results may have been expressed as losses and gains in property value, the study does serve to indicate the benefits to protect and maintain good water quality rather than to experience a decline in clarity and suffer economic loss.

In 2002, a report was issued describing a study of visitors to Vermont State Parks.[11] The study was conducted to improve current knowledge of the values and functions of the 47-state park system. Notably, the gross annual value of Vermont State Parks is $58.8 million. The most popular recreation activities of surveyed campers were reported as camping, hiking, swimming and picnicking while the most popular activities of day visitors were picnicking, swimming, hiking and boating. Water and water related recreational opportunities contributed to park popularity by campers and day visitors.

Strategy to Achieve Comprehensive Monitoring & Assessment Coverage

DEC has completed an initial draft of a comprehensive water quality program monitoring strategy. This strategy consists of ten parts, addressing major elements necessary for monitoring the quality of ambient waters for the purpose of water quality assessment, planning and management. As of January 31, 2004, the strategy document has been provided to EPA as a draft for comment.

Following an introductory section, there is narrative related to the regulatory justification for the strategy and a series of goals and associated objectives. Designated and existing uses are discussed in this section as they relate to Vermont Water Quality Standards (Standards or WQS). The next section discusses monitoring designs used in Vermont to achieve comprehensive coverage and includes subsections describing project designs, current projects within the monitoring program, emerging threats, and partnerships with non-DEC entities. This and each subsequent section also presents relevant strategies and recommendations. Section 4 of the strategy discusses core and supplemental indicators of water quality, and discusses how these indicators relate to Vermont's Standards. A section on quality assurance provides information on how DEC assures that monitoring data are of sufficient quality for making attainment decisions, and for achieving the other objectives established by the strategy. A section on data management discusses how DEC archives water quality data and how it manages those data, along with other information tracking databases, to support the goals of the strategy. Section 7 elaborates on how data are analyzed, how waterbodies are assessed in light of the core and supplemental indicators, and how these data are used to support listing of waters under Section 303d of the Clean Water Act and Vermont priority waters lists. Reporting of assessment findings are discussed in the next section of the strategy, which describes, among other reports and documents, this Integrated Report. Section 9 of the strategy provides for periodic strategy review, while Section 10 discusses general program and infrastructure support needs.

The monitoring strategy is written with a ten-year lifespan and includes annual and mid-term progress evaluations. Strategy implementation is envisioned to begin during 2004.

11 A.Gilbert & Manning.R. 2002. Economic and Social Values of Vermont State Parks.