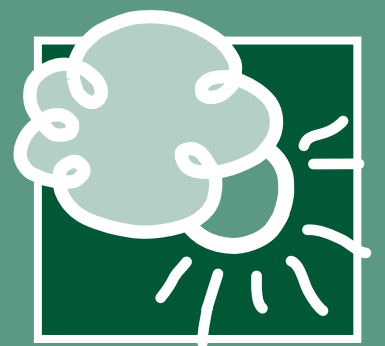




Vermont Outdoor Recreation Plan 2005-2009



Vermont Outdoor Recreation Plan 2005-2009

Submitted to:

National Park Service
Northeast Region,
Philadelphia, PA

The Statewide
Comprehensive Outdoor
Recreation Plan (SCORP)
for meeting the eligibility
requirements
of the Land and Water
Conservation Fund

Prepared by:

Vermont Department
of Forests, Parks and
Recreation
Waterbury, Vermont

Acknowledgments

The production of this plan was made possible through the cooperation and assistance of many individuals, organizations, and agencies. The State of Vermont thanks and appreciates the efforts of all who participated in this project. The plan is a better document as a result, and we are grateful for your input. Acknowledgement of individual efforts is not possible due to the large number of participants and organizations. Hopefully, these planning efforts will result in improvements to outdoor recreation in Vermont.

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This document is available upon request in large print, braille, and audio cassette.

Vermont Outdoor Recreation Plan, 2005-2009

State of Vermont
Agency of Natural Resources
Department of Forests, Parks and Recreation

July 31, 2005

Dear Vermonter:

I am pleased to present to you the Vermont Outdoor Recreation Plan, 2005-2009. The plan was prepared by the Vermont Department of Forests, Parks and Recreation and provides an assessment of Vermont's outdoor recreation resources, issues, and directions for the next five years. Hundreds of Vermonters participated in the preparation of this plan, ranging from being interviewed in surveys to attending meetings and offering comments. We should be particularly proud of the outdoor recreational achievements of the past decade, highlights of which are summarized in Chapter 2.

As we face the challenges of population increases and diversification, climate change, technological development, and increasing media attention, Vermonters will need to find creative ways of balancing recreational and economic demands with our natural resources, which provide the foundation for the superior outdoor recreation experiences offered here. We must plan to ensure the wise use, stewardship, and management of our recreational, scenic, cultural, and natural resources.

Therefore, I ask you to become involved in implementing the actions recommended in this plan. I wish you every success in this important work.

Sincerely,



Jonathan L. Wood, Commissioner
Department of Forests, Parks and Recreation

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Chapter 1: Introduction



In 2004 alone, a few of Vermont's outdoor recreation activities and suppliers have received national and, in some cases, worldwide recognition as follows:

- National Geographic's *Traveler* magazine ranked Vermont number six in the world on its Index of Destination Stewardship;
- The Moosalamoo Region, in the towns of Salisbury and Leicester, was one of 12 finalists in the World Legacy Awards;
- *Men's Journal* ranked East Burke number five in its "Top Ten Best Fall Mountain Bike Rides";
- National Geographic's *Traveler* and children's magazines recognized Stowe as one of America's five greatest destinations for family vacations on television's *Today Show*; and
- South Burlington was recognized in *Sports Illustrated* as the most outstanding town in the state for outdoor recreation.

In addition, advances in technology have made possible new equipment and resulted in the development of new activities and sports. Cross-country skating, disc golf, kite-surfing, and wakeboarding are just a few of these. Many more are in the process of being invented.

With all this attention and the development of new activities, is Vermont headed toward a "Love It to Death" destiny? When the word gets out that there's a great place to recreate and lots of people go there for the experience, there is a risk that the experience won't match the expectation due to overcrowding. Another risk is that the natural resources upon which that activity depends could be negatively impacted. Yet another risk is that the recreation infrastructure becomes overly stressed and developed facilities and trails suffer damage.

At 6.5 million acres (9,609 square miles), a small and rural state like Vermont faces many challenges in maintaining its reputation and living up to the expectations that are raised by recognition in the national media. Vermont's challenges include efforts to balance recreational pursuits with its premiere, yet fragile, natural resources base. With just 15

percent of its land in public ownership, Vermont faces the challenge of preserving its long-standing tradition of private lands being open for public use (map found at the end of this section). Vermont's constitution grants the public's right to hunt and fish on non-posted lands. As people continue to settle in the state from more urban and suburban places, the small town, rural culture of Vermont becomes increasingly threatened.

The fact that Vermont needs to increase its preparedness for more recreational use of its resources is demonstrated by the attention the state is receiving as well as by the limitations of being a small rural state. Vermont needs to find ways of improving the ability of its towns and agencies to be more pro-active in determining the appropriate locations, times, and frequencies for the increasing variety and intensity of outdoor recreational activities.

The people who offered comments for or worked on the preparation of this plan have participated in a process that is critical to Vermont's future in reconciling "all of the public's material, economic, and societal needs with the desire for high quality outdoor recreation in pristine, uncrowded spaces." These pertinent words come from the report submitted for this plan by the Central Vermont Regional Planning Commission. The report concluded with the observation that "never before in Vermont's history has the need to integrate land use planning and recreation planning been so important." The 1997 Action Plan by the Outdoor Task Force, as presented to the Vermont Department of Tourism and Marketing, recognized the need for adequate planning and infrastructure to meet the needs of increased outdoor tourism. The report recommended "a cohesive plan that will provide for the stewardship of our natural resources while simultaneously stimulating a healthy outdoor industry."

If Vermont's outdoor recreation successes of the past decade, many of which are presented in Chapter 2, are any indication, Vermont will not suffer the "Love It to Death" fate. The people of Vermont care deeply about its traditions, natural resources, and the recreational opportunities these provide. These sentiments will serve Vermont well as it forges the future offerings of its multi-million dollar, and growing, outdoor recreation industry. The creation and implementation of this plan are key components of this effort.

A. Purposes and Benefits of the Plan

The plan serves a number of purposes and provides some important benefits to the state, as follows:

- Guidance for communities, agencies, and organizations in providing for recreational and natural resource based activities throughout the state;
- Guidance for legislative financial support, including capital budgets and community matching funds;
- Reinforcement of decisions regarding land acquisition for public lands;
- Input to recreation policy development;
- Better understanding by agencies and organizations of the public's needs and concerns regarding outdoor recreation;
- Opportunities to build constituencies for agency and organizational recreation programs;
- Better understanding and coordination among agencies and interest groups regarding outdoor recreation concerns;
- Encouragement of recreational partnerships; and
- Ensures Vermont's eligibility to receive funding from the Land and Water Conservation Fund (LWCF). See section E of this introduction for more information.

B. Structure of the Plan and How to Use it

The scope of a statewide recreation plan is quite large, so it is not intended to be read from cover to cover. It provides guidance for outdoor recreation in Vermont for the next five years and serves as a reference document. This section describes the contents of each of the chapters and appendices.

The remainder of this introductory chapter includes how the public was involved in developing the plan, key findings of the plan, information about the Land and Water Conservation Fund grants program for municipalities, and a map of federal and state recreation lands in Vermont. The vision for and goals of this plan are found at the beginning of the Action Plan, Chapter 3.

Chapter 2 offers a summary of the progress Vermont has made in improving opportunities for outdoor recreation over the past decade or so. Readers of this chapter will discover that the number of new outdoor recreation funding sources, programs, infrastructure developments, and other initiatives that have taken place in recent years is impressive.

Chapter 3 contains the vision, goals (expressed as desired conditions), strategies, and many actions recommended in support of outdoor recreation in the state for 2005-2009. For each desired condition, a few introductory paragraphs summarize some of the concerns and issues that result in the need for improvement. These issues have been covered in more detail in other chapters and appendices of the plan. Chapter 3 provides strategies for all outdoor recreational pursuits except for trails and greenways related recreation (found in Chapter 4). As a result of staff and resource shortages, specific performance indicators or numbers were not developed for this plan.

Chapter 4 is the *Vermont Trails and Greenways Plan*. Federal funding guidelines require that each state have such a plan. This chapter begins with some strategies for developing and maintaining trail resources and concludes with an evaluation of those resources in Vermont.

Appendix A summarizes many of the trends and changes that could have impacts on outdoor recreation in Vermont.

Appendix B provides an evaluation of all outdoor recreation pursuits and suppliers with the exception of those related to trails and greenways (found in Chapter 4). Achievements of the past decade and current issues for each activity are listed. Consult the table of contents for the list of activities and how they are grouped into categories. This appendix in particular serves as an important reference document for recreationists and suppliers of non-trails related outdoor recreational opportunities.

Appendix C offers an update of the 1993 *Vermont Wetlands Conservation Strategy*, also a federal requirement of this plan.

Appendix D lists many of the publications used to develop this plan.

Vermont Outdoor Recreation Plan, 2005-2009 Flowchart of Major Tasks

2002 - 2003 **INFORMATION GATHERING**

Statewide survey of Vermont residents and findings of other surveys	Recreation and demographic trends analysis	1996 outdoor recreation inventory	Evaluation and public input from regional planning commissions
Informal surveys and interviews of parks, recreation, and public lands managers and representatives of watershed and landowner organizations		Vision prepared by Recreation Advisory Committee to the ANR Secretary	

January - May 2004 **EVALUATION & PUBLIC INPUT**

Derive achievements and issues from information gathered	Propose some overarching goals and related strategies	Hold 11 public meetings around the state regarding draft goals and actions
--	---	--

June - December 2004 **CREATION & REVIEW OF DRAFT PLAN**

Draft desired conditions (goals) and strategies sections	Hold one Vermont Interactive Television meeting covering 14 sites	Release and receive public comment on draft of entire plan
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- Vermont Trails and Greenways Council, quarterly meeting, May 8, 2003
- Vermont Woodland Association, board of directors meeting, November 21, 2003
- Vermont Outdoor Guides Association, annual meeting, April 3, 2004

Forty representatives of various trails groups and other organizations met for the morning of March 11, 2004 to discuss some draft goals, strategies, and actions regarding trails-related recreation concerns.

C. Public Involvement and Other Tasks Used to Develop the Plan

Starting in the fall of 2002 and continuing through January 2005, many activities involving the public took place toward the creation of this plan. These range from comparisons of recreational surveys of Vermont residents in 1992 and 2002 to an informal survey of members of a landowner organization; from meetings of the Recreation Advisory Committee to the Secretary of the Agency of Natural Resources to meetings of trails organizations throughout the state; and from questionnaires to municipal, state, and federal recreation managers to regional planning commission public meetings and reports.

Above, a diagram of major tasks that were done to develop the plan is shown. A brief description of each of the activities that involved the public follows.

Meetings

The Recreation Advisory Committee to the Secretary of the Agency of Natural Resources held three meetings. The committee is composed of representatives from a wide variety of organizations and perspectives on outdoor recreation in Vermont. An introductory meeting was held on 4/28/03. A discussion about the benefits of outdoor recreation and defining sustainable recreation took place on 6/24/03 and involved additional stakeholder representatives. A vision statement for outdoor recreation in Vermont was developed on 9/23/03.

Many regional planning commissions held public meetings regarding outdoor recreation in 2003, some announced via press releases, and each submitted a written report of outdoor recreational needs for their region.

Several presentations were given to recreation-related organizations from which input was obtained including the following:

Ten public meetings were held at locations around the state in the spring of 2004, primarily during the evening hours. These were designed to reveal information about organizations' current activities and future actions. The public was notified of these meetings via a press release to daily, weekly, and monthly publications.

On October 19, 2004, a public meeting was held simultaneously at 14 sites around the state on Vermont Interactive Television. This was publicized via a press release to daily, weekly, and monthly publications. Stakeholder group leaders and attendees of the previous public meetings were sent notice via email.

Surveys and Reports

2002 Vermont Outdoor Recreation Survey Report and an Analysis of Change since 1992, 2003

Statistically representative surveys of state residents regarding outdoor recreation concerns and attitudes were conducted by the University of Vermont's Center for Rural Studies in 1992 and October of 2002. Some questions from the 1992 survey were repeated in the 2002 survey. Such questions provide indication of changes in recreation resource opinions and concerns of Vermonters.

Regional Planning Commission (RPC) surveys of many towns and regional needs assessments

Each of Vermont's 12 (now there are 11) regional planning commissions (RPC) solicited input from the towns in their region regarding outdoor recreation. The RPCs reviewed town plans, and some conducted surveys and held public meetings in 2003.

Vermont Woodlands Association informal survey of members

In the November 2003 issue of the Vermont Woodlands Association newsletter, members were asked to respond to four questions regarding private lands management issues with respect to public recreation. Out of a mailing of 500, 50 responses were received to this informal survey.

Surveys of recreation professionals and town representatives

Questions about outdoor recreation were developed for recreation professionals and town representatives with assistance from Champlain Valley Chapter members of the Vermont Recreation and Parks Association. Responses were received from many towns, Vermont Agency of Natural Resources lands managers, Vermont Department of Environmental Conservation managers, federal agencies, and organizations, 2003.

National Survey of Recreation and the Environment (NSRE): Vermont and the Vermont Market Region, March 2004

The *National Survey of Recreation and the Environment* (NSRE) consisted of telephone interviews of Americans to learn about the outdoor recreation activities of people aged 16 and older in this country. Sets of surveys were conducted between 1994 and 1995 and again between 1999 and 2002. The highest percentage increases nationally in trails-related recreation occurred for backpacking at 50 percent and hiking at 48.3 percent. A summary and evaluation of the NSRE data for Vermont and for the Vermont market region was prepared in 2004 by the Outdoor Rec-



reation and Wilderness Assessment Group of the Southern Research Station of the U.S. Department of Agriculture's Forest Service in Athens, Georgia. The Vermont market region consisted of Vermont along with the adjoining states New York, Massachusetts, and New Hampshire.

Interviews Conducted

Many interviews of recreation professionals and representatives of recreational organizations were conducted via telephone, email, and U.S. mail.

Other Data Collected

Other survey data, including the U.S. Census, were collected and summarized on the website created for this plan.

Website Availability

Many of the reports, data, findings of surveys, drafts of the plan, and comments received at meetings were available on the website.

Draft Plan Comment Period

The formal comment period on the final draft of this plan occurred between December 9, 2004 and February 15, 2005. Hundreds of comments were received, and the majority of them were incorporated in various ways into the plan.

D. Key Findings of the Plan

As chronicled in Chapter 2, an impressive array of new revenue sources and increased agency, organizational, and volunteer efforts have been put toward developing and improving outdoor recreation opportunities in Vermont over the past decade. These accomplishments provided more opportunities for nearly every type of outdoor recreational

pursuit, including many water, public lands, local community, and trails-based activities, fishing, hunting, wildlife viewing, and recreational opportunities for people with disabilities. Despite these efforts, many factors are influencing the outdoor recreation industry in Vermont and beyond at this time. Vermont recreation providers need to be aware of these factors so that they may be considered when outdoor recreation projects are being developed.

Increasing Participation

The increasing popularity of and participation in outdoor recreation activities have created enormous demands that, in most situations, have outpaced efforts to make improvements.

- Dramatic increases in numbers of kayakers, snowmobilers, wildlife viewers, ATV riders, hikers, backpackers, bicyclists, cross-country skiers, and mountain bikers have led to user conflicts and resource degradation in some places.

- Many new outdoor recreation organizations have sprung up recently in the state including the Vermont ATV Sportsman's Association (VASA), Vermont Mountain Bike Association (VMBA), Vermont Trails and Greenways Council, Vermont Bicycle and Pedestrian Coalition, Northern Forest Canoe Trail, Lake Champlain Paddlers Trail, Keeping Track, Inc., Climbing Resource Access Group (CRAG), and Vermont River Conservancy.

- Conflicts have continued to occur between motorized and non-motorized recreation activities, especially between snowmobiles and cross-country skiers in winter and between users of personal watercraft and those who prefer more quiet experiences on lakes and ponds. There are many complaints throughout the state regarding illegal ATV use on both private and public lands and a call for better enforcement of the law in this regard.

Social Changes

Some social and demographic changes are contributing to the need for changes in outdoor recreation opportunities made available in Vermont.

- People over the age of 60 in Vermont increased by more than 13,000 individuals between 1990 and 2000, and this trend is expected to continue.

- The number of people with disabilities is expected to increase, especially with an aging population.

- U.S. Census figures indicate that 19,000 more individuals in Vermont were below poverty level in 2001 than in 1996.

- Changing lifestyles are resulting in more people desiring recreational experiences in a stress-free environment with better, more convenient services. Such demands are impacting the camping industry, for example, with need for more RV hook-ups and cabins.

- Hunting license sales provide a primary source of revenue and match dollars for the Vermont Department of Fish and Wildlife. The net decline of both resident and non-resident hunting license sales between 1994 and 2003 is projected to continue and, if it does, will negatively impact wildlife management by the state. Changes in family structure, the aging population, and increasing urbanization may prove challenging to the long-term survival of the sport of hunting in the U.S. as well as the culture of hunting in Vermont.

Limited Financial Resources

State support for managing recreation and public lands has not kept pace with land acquisition and public demand for recreation, and there is no prospect of it doing so in the near future.

- Major efforts should be made toward facilitating and coordinating activities of non-governmental organizations which provide and manage many of these opportunities.

- In 1998, the infrastructure improvements needed in the State Parks System were found to exceed \$31 million, with just \$4 million appropriated since that time for this purpose.

- There is need for improvement generally to analyze funding needs and allocations to determine where more emphasis is needed.

Use of Private Lands

Privately-owned lands represent about 85 percent of Vermont's land base. Given the insufficient state resources for acquisition and management of recreational opportunities and the increasing demand for these services, more efforts should be made to assure access to private lands.

- Additional efforts to make more landowners aware of Vermont’s liability protection would be helpful.
- Discouraging fragmentation of ownership of private land is of critical importance.
- A more consistent application of permits required for trail development is desirable.

Local Community Resources

The number of outdoor recreation participation days that occurs at the local level likely exceeds the numbers at the state and federal levels. More resources are needed to assist local communities in meeting their outdoor recreation needs.

Performance Indicators

Vermont outdoor recreation providers need to develop performance indicators or numbers to help measure progress in resolving outdoor recreation issues. At a minimum, some coordinated staff and volunteer resources need to be directed toward this purpose.

Balance between Demand for Use and Resource Conservation

A balance is needed between the demand for outdoor recreational opportunities and conservation of the natural resources which support these activities. Protection of lands along rivers and lakeshores is needed to provide scenic views, maintain water quality, offer diverse recreational opportunities, and conserve wildlife habitat.

Recreation Connections to Energy and Physical Fitness

Outdoor recreation is connected to energy and physical fitness concerns in a number of ways.

- Vermont needs to place more emphasis on developing facilities for walking and bicycling because transportation alternatives encourage physical fitness as well as reduce the need for commuting by motor vehicle.
- The possibility of using certain ANR lands for large-scale wind energy development has been the subject of much controversy and debate in Vermont. Issues included potential impacts on wildlife and degradation of mountain views.

E. About the Land and Water Conservation Fund

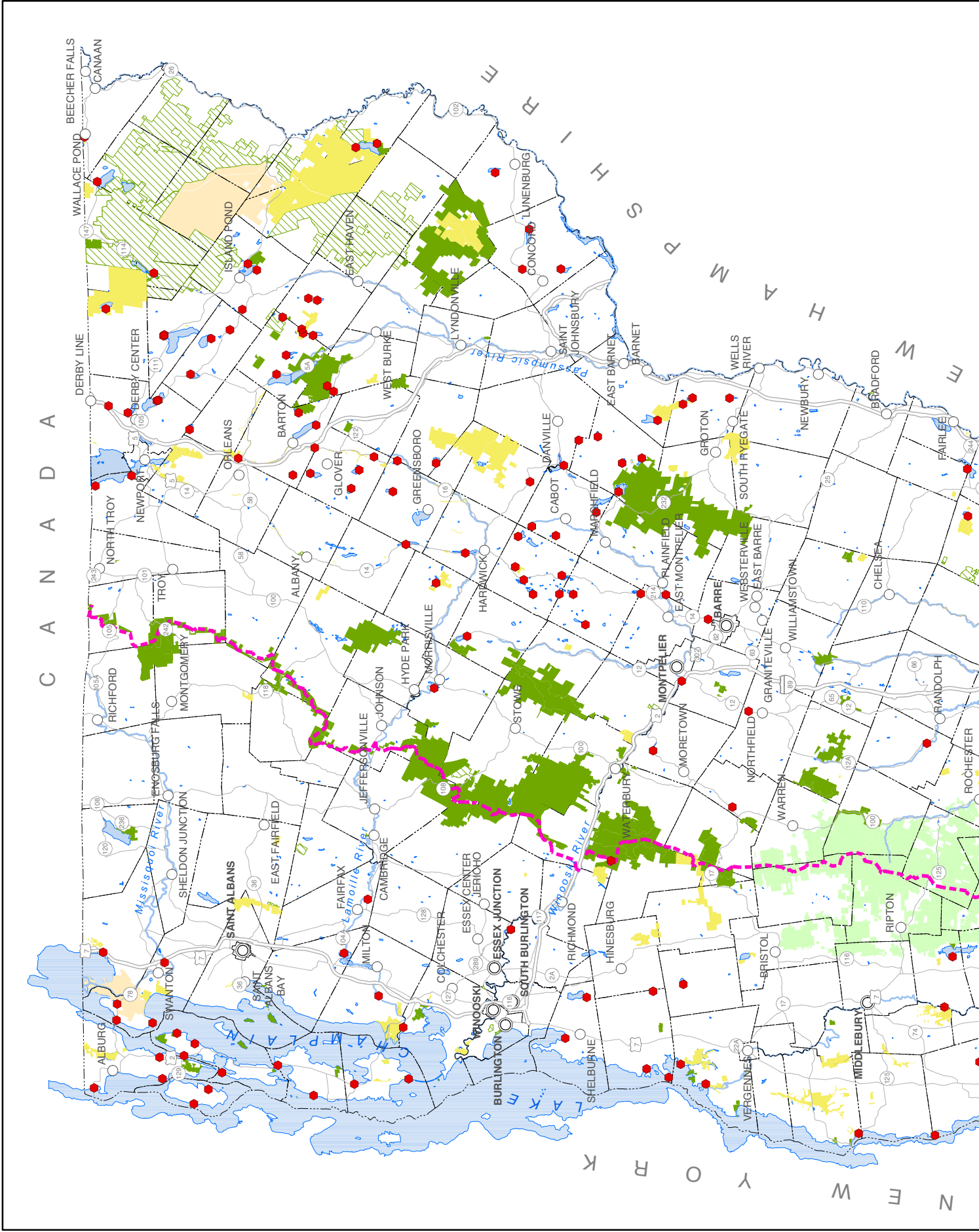
The Land and Water Conservation Fund (LWCF) was established by Congress in 1964 to create and improve recreational facilities as well as to protect environmentally sensitive areas for enhanced recreational experiences now and in the future. The LWCF provides a matching grants program that is managed by the National Park Service. Since 1965, more than 30 million LWCF dollars have been spent by Vermont municipalities, the state, and their partners to develop a wide variety of outdoor recreation projects.

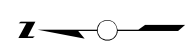
The Statewide Comprehensive Outdoor Recreation Plan (SCORP) ensures Vermont’s eligibility to receive funding from the LWCF. The SCORP identifies the state’s recreational needs and sets priorities for meeting those needs. In order to remain eligible, states must revise their outdoor recreation plan every five years. This plan, the *Vermont Outdoor Recreation Plan, 2005-2009*, serves as the SCORP for that period of time.

From 1965 until 1995, an annual apportionment of LWCF funds was provided to states to allocate out in grants for acquisition of land and/or development of outdoor recreation facilities. Then from 1995 to 1999, Congress zero-funded the stateside (as opposed to funds for federal projects) LWCF program. With great efforts at the community level, the stateside LWCF program was restored by Congress for the year 2000. As a result of the re-establishment of funding, Vermont’s 1998 (2000) SCORP was derived from pre-existing planning documents, which had undergone statewide public participation. This new plan covers the period 2005-2009, and it involved significant public participation directly applicable to this plan.

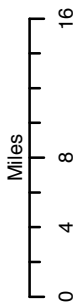
Project Applications

Applications for LWCF funding are received on an annual basis by the Department of Forests, Parks and Recreation. Applications go through an Open Project Selection Process (OPSP). This process includes public notification, review of project applications by a five-member advisory panel, and rating of projects based upon SCORP priorities and other selection criteria. The OPSP assures a fair and equitable evaluation of all applications and distribution of





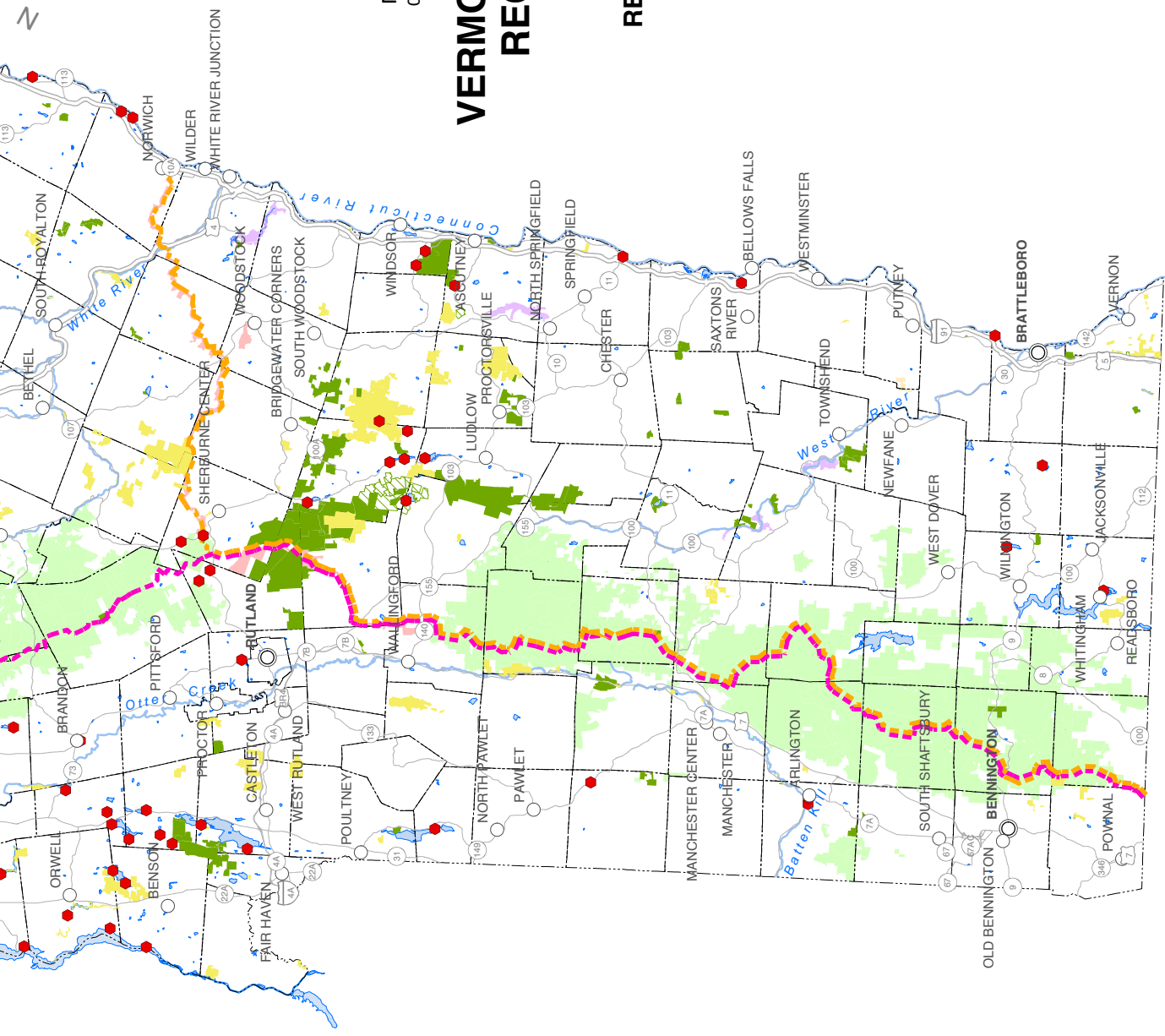
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VERMONT 2005 OUTDOOR RECREATION PLAN

PUBLIC LANDS AND RECREATION FACILITIES

- State Lands**
- Fish and Wildlife Access Areas
 - Wildlife Management Areas
 - State Park/Forest
 - Easements and Other Non-Fee Holdings
- Federal Lands**
- Fish and Wildlife Service
 - National Park Service
 - Forest Service
 - Army Corps of Engineers
 - Appalachian Trail
 - Long Trail



M A S S A C H U S E T T S

LWCF funds in a nondiscriminatory manner. The selection criteria for ranking LWCF applications may be modified after adoption of this SCORP in time for the next grant cycle.

National Evaluation of the LWCF Program

In 2003 the Office of Management and Budget (OMB) conducted a performance assessment of the statewide LWCF program using its newly-created Program Assessment Rating Tool (PART). This assessment was part of President Bush's Management Agenda to integrate performance information into the budget process and improve program effectiveness and efficiency. The assessment resulted in the development of performance goals and measures for the program, along with an implementation strategy to be in effect by October 1, 2005. As LWCF was conceived to be state-driven, the goals and measures are broad and uniform and focus on common LWCF program activities. This results in each state retaining the flexibility to focus on its individual specific needs.

Evaluation of Vermont's LWCF Program

The need for LWCF grants funding in Vermont is demonstrated clearly by the difference between grant

Application materials and guidelines for projects are available by contacting the Department of Forests, Parks and Recreation's grants staff, or by down-loading directly from the department's web site:

www.vtfpr.org/reclwcf/index.cfm

requests and grants awarded for the years 2002 and 2003. In each of those years, requests were made totaling approximately \$1.1 million. However the grants awarded totaled about \$500,000 in 2002 and just over \$400,000 in 2003.

Since the reinstatement of LWCF stateside funding in 2000, Vermont has made great progress in being able to assess the performance of its LWCF grants program. A comprehensive database has been created to facilitate the tracking of the 13 national, standard performance measures established in conjunction with the PART, including types of projects, acreages, locations, new versus rehabilitation projects, inspections done, and number of projects that exceed the 50 percent local match. Examples of Vermont's LWCF measures since reinstatement of funding in 2000 include the following descriptions of some of the 55 projects funded between 2001 and 2004:

- 21 projects exceeded the 50 percent match (38 percent);
- 20 playgrounds in 19 communities were rehabilitated;
- 11 new community parks were developed;
- two skateboard parks were installed; and
- one 3670-acre and one 403-acre parcel, including a pond, were conserved.

In addition, grants staff members developed and implemented some new actions to improve the efficiency and effectiveness of the Vermont LWCF program, including the following:

- Greater collaboration with the Vermont Division for Historic Preservation with regard to the Section 106 Archaeological Approval process;
- Offering grant workshops to potential applicants to improve the quality and completeness of applications;
- Better communication with state district staff members to improve administration of state-managed projects;
- Updating applications and improving guidance materials for project sponsors; and
- Developing the website for improved public awareness and to assist municipal applicants in applying for and administering projects.

Chapter 2: How Vermont is Doing: Evaluating the 1993 Outdoor Recreation Plan



Many significant achievements and new developments for outdoor recreation in Vermont have occurred during the past 10 years or so. These achievements help set the direction for the next five years, and many are mentioned here. Readers

should keep in mind that this section of the plan does not include every success story of the past decade. The achievements included here are intended to reflect the breadth and general direction of outdoor recreation in Vermont during that period. Also not included here are programs and activities that have been ongoing for many years, which, while not being new, are major achievements just because they're still flourishing.

This chapter includes many of the findings of a survey of Vermont residents in 2002, which are compared to the results of a similar survey conducted in 1992. Both surveys were conducted by the University of Vermont's Center for Rural Studies. They indicate changes in Vermonters' perceptions of recreation-related resources and activities for that period. The 2002 survey instrument and its 2003 report are available at the following website address: www.vtfpr.org/recreation/scorp/recsurrep.pdf

Readers should bear in mind that some of the achievements presented here could apply to more than one section but will appear only once.

The information is organized into four sections, as follows:

A. Maintaining Vermont's Unique Character

This section discusses how Vermont continues to maintain its unique character. The major elements which support the setting for outdoor recreational activities throughout the state are mountains, hills, and forests; lakes, streams, and wetlands; valley farmlands and other working lands; and historic village centers.

B. Providing Exceptional Recreational Opportunities

Elements discussed in this part include the natural environment, private and public ownerships, infrastructure including staffing, roads and trails, access for people with disabilities, and how well information is made available to people regarding recreational experiences they want to have.

C. Improving Public Awareness

This section presents highlights of efforts made toward improving people's awareness of the benefits of outdoor recreation and their respect for outdoor recreation facilities, the natural environment, and other users.

D. Economic Contributions of the Recreation Industry

This section contains some statistics that illustrate the importance of Vermont's outdoor recreation industry to the economy of Vermont.

A. Maintaining Vermont's Unique Character

People want to be outdoors in Vermont because it's a beautiful place to be in every season of the year. Scenic views abound in every town and are found around nearly every corner. The importance of scenery to the people of Vermont was indicated in surveys of Vermont residents in 1992 and 2002. The quality of the state's scenic landscape scored higher than any other recreation resource evaluated in both surveys. In addition, fewer Vermonters felt that the loss of Vermont's scenic landscape was a problem in 2002 than did in 1992.

A number of laws passed decades ago have contributed to Vermont's ability to preserve its unique character, including four mentioned here. The Outdoor Advertising Law, which banned billboards and other off-premise advertising signage, was enacted in 1968. Act 250, passed in 1970, has ensured the protection of natural resources, scenic areas, and historic sites in the state through guidelines for development. In 1973 Vermont was the second state after Oregon to pass a returnable container law, resulting in roadsides with very little litter. In 1977 the Vermont Scenic Road Law was passed to encourage maintenance of the physical character and condition of scenic roads.

More recent efforts to preserve Vermont's character include the following initiatives. In 1993 Governor Dean reconvened the Vermont Scenery Preservation Council to oversee the development of the Vermont Byways Program. A Vermont Byway is a highway or other public road, formally designated by the Vermont Transportation Board, that may have special scenic, historic, recreational, cultural, archeological, and/or other natural qualities. A program manual was published in 2000 to aid Vermont communities in identifying and establishing byways throughout the state. The Vermont Interstate Interchange Planning and Design Guidelines were developed in 2004 as a result of a 2001 executive order by Governor Dean to promote well-planned development that preserves Vermont's landscape.

According to the Vermont Smart Growth Collaborative (VSGC), implementing smart growth practices will forward the vision for Vermont of compact settlements separated by rural countryside and working landscapes. These are important for maintaining the scenic base for outdoor recreational experiences in the state. Smart growth issues related to outdoor recreation include pedestrian walkways and bicycling on roads. Vermont's use of Transportation Enhancement Grants favors smart growth due to many pedestrian improvements in downtowns and village centers. A 2003 report by the VSGC indicated that, between 1992 and 2001, Vermont ranked higher than most other states in its use of the \$26,732,559 it was granted in Transportation Enhancement monies during that period.

The following are some accomplishments of the past decade for the major elements that contribute to Vermont's unique character: mountains, hills, and forests; the landscape of farms and other working lands; lakes, streams, and wetlands; and historic village centers.

1. Mountains, Hills, and Forests

Whether people recreate during the foliage seasons of green or bright colors, or they're outdoors in Vermont's winter wonderland, they find that the majesty of these resources provides a scenic backdrop. In 1997 the U.S. Forest Service inventory found that 4.63 million acres of land in Vermont were forested, up from 4.45 million acres in 1983. The following are a few achievements that occurred during the past decade regarding forest resources in Vermont:

- Over the past decade, there was a significant increase in public lands conserved and available for various types of recreation and other purposes. More than 37,000 acres were added to the U.S. Forest Service's Green Mountain National Forest (GMNF) in Vermont between 1994 and 2003. During the same period, the Vermont Agency of Natural Resources (ANR) acquired more than 70,000 acres of lands in fee and conservation easements on an additional 120,000 acres. These public holdings comprise thousands of acres of forested lands on Vermont's hills and mountains.

- In January 1998 an ice storm across the northeastern U.S. impacted about 700,000 acres of forest in Vermont, mostly above 1500 feet in elevation. In response

to this, in 2000 the Vermont Department of Forests, Parks and Recreation and the University of Vermont's Extension Forester developed informational materials and workshops for forest landowners affected by natural disturbances. Although recreational use and aesthetics of some viewsheds were compromised by this natural event for a couple of years, most of the impacted areas have since recovered.

- The recognition in Vermont of six forest community types which dominate the landscape, referred to as matrix communities, is helping land managers better understand biological and geologic processes throughout the state. Comprehensive inventories of natural communities found on Agency of Natural Resources (ANR) lands began taking place in 2000 as the centerpiece of its state lands management planning process.

- In 2002 the Town of Williston added a ridgeline district to its zoning ordinances to regulate the placement of homes and protection of natural landscapes on higher elevation lots so that disturbances to these areas could be minimized.

- The Forest Resource Protection Section and the Insect and Disease Lab of the Vermont Department of Forests, Parks and Recreation responded to the influx or threat of introduction of new, exotic, and/or invasive insects and diseases into Vermont trees and forests. These include the Asian longhorned beetle, hemlock woolly adelgid, emerald ash borer, and pine shoot beetle. Survey and detection programs are now in place for woolly adelgid, emerald ash borer, pine shoot beetle, and sudden oak death disease.

2. Rural Working Landscape

People who participate in outdoor recreation activities in Vermont enjoy the rural working landscape provided by farmers and forest landowners working the land in every town. Green pastures with cows grazing on them and forested hillsides provide scenic views for which Vermont is famous. This landscape is threatened by development as well as by a decline in the number of farms in the state between 1950 and 1992 by nearly half, from 10,000 to 5,436. Over the past decade, many farmland and forestland programs are helping to keep intact the lands on which these livelihoods occur. Achievements with regard to conservation and other related initiatives include the following:

- Between 1993 and 2004, the Forest Legacy Program provided more than \$6.7 million toward the conservation of over 44,000 acres of forestland in Vermont. These federal monies covered the purchase of conservation easements on working forestlands and outright purchase of some forestlands, allowing sustainable forest management, protection of natural resources, and public access for recreation. Examples include 31,000 acres of privately owned Hancock lands and key tracts in the Plymouth/Mt. Holly wildlife corridor.

- Between 1994 and 2003, the Vermont Land Trust acquired conservation easements on more than 105,000 acres of farmland. Funding for many of these farmland conservation projects was provided at least in part through grants from the Vermont Housing and Conservation Board (VHCB). The VHCB, in partnership with the Upper Valley Land Trust, conserved 5,788 acres of farmland with 22 individual farm projects between 1994 and June 2004.

- A variety of other approaches are being taken to support farming, including the Vermont Seal of Quality Program and diversification, which may provide additional sources of income. Diversification of farming, through such means as maple production, agritourism, organic farming, tours, and community supported agriculture, are a few initiatives that are helping encourage farmers to stay in the industry.

- Vermont's Use Value Appraisal (UVA) program, which began in 1980, continued to have steady growth as more landowners decided to manage their forest land through the program. UVA offers a more equitable tax structure for lands where trees are grown for timber. As a result of the passage of Act 60 in 1997, which included a full reimbursement to towns for municipal taxes not received from lands in the UVA program, funding to support this program became more stable. By 2004 1.5 million acres (or 10,000 parcels) were being managed under this program, also known as Current Use.

- In 1997 The Nature Conservancy and the Vermont Land Trust acquired 26,789 acres of working forestland in the northern Green Mountains, known as the Atlas Timberlands Partnership (ATP). The ATP actively manages its timber holdings, protects biological resources, and maintains traditional public recreational uses.

- The Vermont Farms! Association was formed in 1999 to help promote farm-based tourism in the state. Agritourism activities include farm tours, chore experiences, and interactions with farmers and animals.

- As a result of Champion International's sale of 130,000 acres of its holdings in the Northeast Kingdom of the state in 1999, 84,000 acres in parts of 14 towns continued to be privately held and managed by the Essex Timber Company, subject to public access and working forest easements.

- In 2000 the Vermont Agritourism Initiative was funded for three years by a USDA Rural Development grant. One result of this initiative was the free 2003 publication *The Agritourism Handbook* for Vermont agricultural enterprise owners. In 2004 another free publication along the same lines, *Taking the First Step: Farm and Ranch Alternative Enterprise and Agritourism Resource Evaluation Guide*, was published nationally.

- The 2003 publication *Cultural Heritage Tourism Toolkit* contains information to assist in developing cooperative projects among agritourism, recreation, historic, and other cultural resources that will showcase and help sustain agricultural, natural, and uniquely Vermont human-made landscapes. One of the itinerary themes proposed in the toolkit was "Agricultural Vermont."

3. Lakes, Streams, and Wetlands

According to the surveys of Vermont residents conducted in 1992 and 2002, Vermont residents' perceptions of some aspects of the state's water resources have improved, while others have stayed the same or declined. These surveys suggested that Vermonters' perceptions of the quality of Vermont's lakes and ponds improved between those years. Vermonters indicated that the loss of wetlands was less of a problem in 2002 than in 1992. However, when asked about invasive aquatic plants, more Vermonters in 2002 than in 1992 found this to be problematic. Over the past decade, Vermont has accomplished a great deal towards improving its valuable water and wetland resources, including the following:

- From 1991 to 2001, the U.S. Fish and Wildlife Service's Partners for Wildlife Program, with many partners, restored 935 acres of wetlands and 102 miles of streambanks across Vermont.

- In 1996 minimum flow standards for streams were established so that development operations can maintain sufficient water in streams to protect aquatic habitat and organisms. By 2004, five ski areas had snow-making systems that met these standards.

- The Federal Agricultural Improvement and Reform Act of 1996 authorized the creation of the Wildlife Habitat Incentives Program (WHIP). WHIP provides cost-share funds to landowners to develop wildlife habitat on their property.

- Recommendations for shore land and streamside (vegetated) buffer protection, as developed for the 1997 Connecticut River Corridor Management Plan, were adopted by some towns on both the Vermont and New Hampshire sides of the river.

- In 1998 the Department of Environmental Conservation created a Rivers Management Section with the addition of eight full-time staff positions by 2004. The section developed a protocol for stream geomorphology and physical habitat assessment to evaluate and restore rivers using a variety of bioengineering techniques.

- Native plant nurseries began producing plants to restore riverbanks and floodplain forests. Examples include the Vermont Riparian Project of the Intervale Foundation's Conservation and Restoration Program, which began in 2001, and the Champlain Valley Native Plant Restoration Nursery, which began in 2002 by The Nature Conservancy and the Poultney-Mettawee Watershed Partnership.

- In 2002 the Vermont Agency of Natural Resources adopted a procedure whereby river corridors may be protected from development that could cause flooding. With this procedure, limits of floodways became a consideration under Act 250 criterion 1(D).

- In 2002 Vermont adopted a quarantine regulation for noxious weeds. The movement, sale, and distribution of 32 designated noxious weeds, including some invasive aquatic plants, became illegal. These include Eurasian watermilfoil, water chestnut, purple loosestrife, and common reed (non-native phragmites).

- In 2003 the state adopted a Clean & Clear Water Action Plan to foster efforts, including finding financial resources, to ensure that Vermont's waters meet high water quality standards.

- The legislature passed an act in 2003 to encourage private and municipal dam owners to remove their dams voluntarily, where appropriate. There was growing recognition that dams can impede streams' ability to transport flow and sediment, cause streambank erosion and flooding problems, alter fisheries habitat, create barriers to migratory fish passage, and degrade water quality.

- New lands acquired by the Vermont Agency of Natural Resources, the U.S. Fish and Wildlife Service's Conte National Wildlife Refuge, the Green Mountain National Forest, and other organizations over the past decade collectively have conserved thousands of acres of wetlands.

4. Historic Village Centers

Vermont's store of historic treasures includes archeological sites, architecturally significant buildings and other structures, and assemblages of historic buildings in downtowns and village centers that can be seen while traveling around the state. These downtowns and village centers are part of the landscape setting that recreationists appreciate as they engage in their activities.

For years Vermont has been maintaining its historic settlements and promoting the character of communities and downtowns. The Division for Historic Preservation's Vermont Downtown Program was created in 1995 to promote sustainable development, including revitalization of downtowns and village centers. Formalized in 1998 through the passage of the Downtown Development Act, many towns in Vermont have a citizen-based organization overseeing the process. This has resulted in rehabilitation of many historic buildings and increased vitality of communities. In 2002 the act was changed to include a "village center" designation to address the special needs of smaller communities.

These efforts are partly responsible for Vermont's recognition by National Geographic Explorer, the world's most widely read travel magazine, in 2004 as one of the top travel destinations in the world. The magazine's "Index of Stewardship" criteria included the condition of historic buildings and archeological sites as well as the outlook for the future.

Other major new efforts of the past decade which have influenced the preservation of historic villages and downtowns include the following:

- The historic preservation plan, *Keeping Vermont A Special World: The Vermont Historic Preservation Plan*, was prepared by the State Archeologist in 1997. It presents many strategies for revitalizing and maintaining Vermont's historic downtowns "as the commercial and social heart of Vermont life."

- The 2003 publication *Cultural Heritage Tourism Toolkit* contains information to assist in developing cooperative projects among agritourism, recreation, historic, and other cultural resources that will showcase and help sustain agricultural, natural, and uniquely Vermont human-made landscapes. One of the itinerary themes proposed was "19th Century Downtowns on the National Register of Historic Places," including county seats, mill villages, and railroad downtowns.

- Since 1991 the Urban and Community Forestry grants program, administered by the Vermont Department of Forests, Parks and Recreation, awarded more than \$815,000 to 43 cities, towns, and villages to conduct tree inventories, set up tree boards, and create management plans and ordinances for trees for their streets, parks, and town greens.

B. Providing Exceptional Opportunities for Recreation

Vermont has a great deal to be proud of when it comes to improvements in its outdoor recreation offerings of the past decade or so. This section presents some highlights of accomplishments by Vermont during that period toward providing exceptional outdoor recreation experiences. Examples found in this section include achievements related to the natural environment, private and public ownerships, infrastructure including staffing, roads, and trails, access for people with disabilities, and public information regarding outdoor recreation.

1. Public Lands and Facilities

Public lands represent approximately 15 percent of the land in Vermont. The recreational achievements by public resource providers that are included in this section are categorized into federal, state, and municipal agencies. Achievements regard-

ing publicly provided resources for trails, including roads, are included in a separate heading later in this section. Fish and wildlife achievements are included under a similar heading.



a. Federal Providers

Noteworthy projects and acquisitions related to outdoor recreation on federal properties during the 1990s and early 2000s include the following:

- In 1992 the Proclamation Boundary of the U.S. Forest Service's Green Mountain National Forest (GMNF) was extended into the Taconics region of the state, encompassing all of Bennington County. Since that time, some lands have been added to the forest, which include Dorset and Grass mountains. About 37,000 acres total were added to the GMNF between 1994 and 2003.

- Vermont's single national park, the Marsh-Billings-Rockefeller National Historical Park, opened in Woodstock in 1998. Besides tours of the mansion, the estate features a 550-acre forest. Working in partnership with the Billings Farm and Museum, it chronicles three generations of stewardship and the emergence of a national conservation ethic.

- In 1999 26,250 acres were added to the Silvio O. Conte National Fish and Wildlife Refuge. The new refuge lands in Vermont are known as the Nulhegan Basin Division and provide public access for wildlife-based recreation on previously private lands.

- The U.S. Army Corps of Engineers added trails and shelters and implemented the National Recreation Reservation System for its impoundments at Union Vil-

lage Dam, North Hartland Lake, North Springfield Lake, Townshend Lake, and Ball Mountain Lake.

b. State of Vermont Provider: Vermont Agency of Natural Resources

Noteworthy projects and acquisitions related to outdoor recreation on land and properties managed by the Vermont Agency of Natural Resources (ANR) during the 1990s and early 2000s are included below. The ANR consists of the following three departments: Environmental Conservation; Fish and Wildlife; and Forests, Parks and Recreation. See the fish and wildlife-based recreation section for achievements related to those resources and the trails-based recreation section for achievements related to roads and trails.

- Between 1991 and 2003, the ANR acquired about 80,000 acres of lands in fee and 121,000 additional acres with conservation easements, most of which enhanced the state's recreational land holdings. Noteworthy additions to the Vermont State Parks System include Alburg Dunes, Green River Reservoir, and Niquette Bay State Parks.

- Beginning in 1999, State Park day areas and State Historic Sites were opened free to the public for one weekend in June.

- After a 1998 assessment of Vermont State Parks, the legislature appropriated over \$4 million to begin remediating the \$31 million infrastructure improvement needs.

- The Vermont Department of Environmental Conservation investigated use of a shredder machine to more efficiently cut water chestnut in Lake Champlain and piloted a water chestnut composting program on Champlain Valley farms. By 2001, after five years of consecutive funding, the dense water chestnut population in Lake Champlain that required mechanical harvesting was reduced by 40 miles.

- A Lands and Facilities Trust Fund was created in 2001 to assist the rehabilitation and management of ANR properties. Expenditures from the trust fund are expected to begin in 2005.

- In 2004 the Vermont Department of Fish and Wildlife created a lands management biologist position to oversee habitat management projects on 131,000 acres of wildlife management areas owned by the department.

c. Municipal Recreational Opportunities

Some notable achievements related to outdoor recreation on municipal properties are briefly described in this section.

- In 1997 the towns of Barnard, Bridgewater, Stockbridge, and Killington appointed town representatives to develop a plan to conserve about 60,000 acres of public and private lands where the towns meet, known as the Chateaugay No Town Area.

- The City of Barre's after-school program Cityscape was recognized in 1998 by the Mott Foundation as an exemplary school-community collaboration.

- Beginning with one school in 1999 to 17 in 2003, students from across the state celebrated International Walk to School Day, which educates children, parents, and motor vehicle operators about keeping walkers safe.

- Over the fiscal years of funding from 2000 to 2004, the Land and Water Conservation Fund (LWCF) program awarded more than \$1.7 million in grants to over 53 cities and towns for acquisition, conservation, and development of public parks and outdoor recreational facilities.

- In 2002 the Burlington Department of Parks and Recreation became responsible for the Burlington Conservation Legacy Program, which was designed to maintain and acquire natural areas including parks, gardens, and shoreline along Lake Champlain and the Winooski River.

- In 2002 the Vermont Recreation and Parks Association (VRPA) hosted a National Playground Safety Institute, as a result of which 35 people were certified to conduct playground safety audits and inspections.

- Royalton surveyed local children to help determine how to develop a new playground in 2003. The custom design equipment cluster included all eight components voted most desirable by the children.

- In 2003 an additional source of funds for recreation facility development became available to municipalities and not-for-profit organizations for three years--the Recreational-Educational Facilities Grants

Program from the Vermont Department of Buildings and General Services, providing more than \$500,000 during that period towards such projects.

- The Town of Brighton and the Northern Vermont Resource Conservation and Development Program collaborated for 12 years towards the 2003 dedication of the Island Pond Pedestrian Timber Bridge.

- The Burlington and Colchester Trail Bridge across the Winooski River near the mouth of Lake Champlain connected the two towns in 2004 for recreational purposes and handicapped access.

2. Private Landowners

Private lands comprise about 85 percent of lands in Vermont. It's been a long-standing Vermont tradition for private landowners to allow the public access to their land for hunting and fishing. People have the constitutional right to hunt and fish on unposted private lands throughout the state. Many private landowners do not post their land, thereby allowing such access. The following are some major achievements in providing assistance to landowners who allow non-commercial access to their properties:

- The Vermont Woodlands Association (VWA) was organized in 1996 as a merger of the Vermont Timberland Owners Association, founded in 1915, and the Vermont Woodland Resources Association, founded in 1993. Its membership more than doubled between 2002 and 2004 from 127 to 358.

- Revisions made to Vermont's Landowner Liability statute took effect in 1998 and enhanced protection to private landowners who allow non-commercial public recreational access. Brochures and newsletters with information about the law were made available by the state and user groups after the law was passed.

- Beginning in 2001, the Vermont Department of Fish and Wildlife created a seasonal technician position to manage nuisance beavers. The assistance has proven helpful to landowners who provide wetlands or trails in lowland areas for recreation.

- Some user groups have raised money for landowners who may need to defend themselves against

recreationists who falsely claim a landowner is liable for injury sustained on the owner's property. For example, the Vermont Mountain Bike Association (VMBA) established their Landowner Support Fund in 2003.

- Forest landowners received assistance from the Insect and Disease Laboratory of the Vermont Department of Forests, Parks and Recreation in identifying forest pests including four exotic species against which the state needs to protect its forests: hemlock wooly adelgid, emerald ash borer, sudden oak death, and pine shoot beetle.

3. Commercial Recreation Providers

There are many businesses that provide services and equipment designed to enhance outdoor recreational experiences in Vermont. These include campgrounds, outdoor guides, commercial tour outfitters, retail outfitters, and lodging and inn facilities. Some landowners allow recreational use of their land or property for which they charge a fee. Liability issues differ for landowners who charge a fee and those who allow free access. The following are a few major achievements related to commercial providers of recreational opportunities:

- The Vermont Agency of Natural Resources (ANR) adopted "Uses of State Lands" as a policy in 1999. This policy provides criteria and guidelines for commercial use of ANR lands. On an annual basis, the Lands Division issues or oversees over 100 licenses and special use permits for appropriate uses of ANR lands, including compatible commercial uses.

- In 2003 the University of Vermont Extension and School of Natural Resources hosted and published proceedings from "Managing Woodlands for Recreational Enterprises," a workshop for landowners who would like to charge user fees.

- In 2004 the Vermont Ski Area Association created the Friend of the Industry Award. The first recipient was Cabot Creamery's Senior Vice President for Marketing Roberta MacDonald. Her achievements include 20 years of identifying and strengthening the Vermont brand, forging an alliance between the agriculture industry and winter tourism, enabling efficient media buying for Cabot and Ski Vermont, developing the Skiing is Fundamental program for seventh and eighth graders, and establishing agriculture appreciation days at Vermont ski areas.

4. Trails- and Roads-Based Recreation

Trails- and roads-based recreation in Vermont received a boost from a few programs that provided significant funds for these activities, as follows:

- The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) and its amended reauthorization, the Transportation Equity Act for the 21st Century (TEA-21), provided funds for trails, rail-trails, and alternative forms of transportation, including bicycling and walking. ISTEA and TEA funds were distributed as block grants to the state through Surface Transportation Program (STP) funds. At least 10 percent of STP funds must be spent on 12 eligible enhancement categories, of which three categories include provisions for bicycling and walking facilities and conversion of railway corridors for use as trails. From 1992 to 2001, Vermont received \$26.7 million in Transportation Enhancement Funding, about half of which went to projects that contained some element of bicycle or pedestrian improvements.

- Unlike the required 10 percent of STP funds for bicycling and walking as above, other ISTEA and TEA monies are provided to states on a discretionary basis. The Vermont legislature began providing funding for the Bicycle and Pedestrian Program (formerly the Transportation Path Program) in 1991. Cumulatively \$21.4 million, encompassing 72 projects, was awarded between 1994 and 2005 for projects of this program.

- The Vermont Trails Act of 1994 established the Vermont Recreation Trails Grant program, which awarded more than \$4.6 million to at least 557 projects during the period 1994-2003. Thousands of miles of trails were restored or maintained, including grooming of snowmobile trails in winter.

- Between 1990 and 2004, the Vermont legislature appropriated \$4.4 million from the capital budget for protecting the Long Trail, a 270-mile mountainous footpath traversing the state, while Green Mountain Club (GMC) raised an additional \$4.5 million from other sources. From 1994 to 2003, 25 miles of the Long Trail and three miles of side trails, representing 47 projects, were permanently protected through acquisition. As a result of state funding, most of the land GMC acquires is

transferred to public ownership as part of a state forest.

The following are some examples, by activity, of Vermont's trails-related recreational accomplishments during the period 1993 to 2004, unless otherwise stated.

- Throughout the 1990s, Vermont ranked tenth in the nation in average annual per capita expenditures for bicycling and walking trails at \$1.13.

- The statewide snowmobile trails system increased from 2,700 miles in 1993 to 4,600 miles in 2003. This system, created and maintained by the Vermont Association of Snow Travelers (VAST), was repeatedly recognized nationally as one of the top five trail systems in North America.

- More than half of the Cross Vermont Trail (CVT), 44 of its 75 miles, was officially designated between 1993 and 2004. The CVT is envisioned as a continuous multi-use trail spanning the state from east to west and connecting Newbury on the Connecticut River and Burlington on Lake Champlain.

- In 1994 a 350-mile bicycle route around the lake using existing roads along Lake Champlain and the Richelieu River was identified as the Lake Champlain Bikeways.

- In 1998 the Vermont Agency of Transportation (VTrans) adopted a bicycle and pedestrian plan to “provide all residents and visitors a safe, efficient, and accessible transportation system.”

- The Vermont ATV Sportsman's Association (VASA) was founded, and in 1999 the legislature allocated a portion of ATV registration fees and violation penalties to be used for trails on private property, insurance, and law enforcement services.

- The Catamount Trail Association made progress in protecting sections of the 300-mile Catamount Trail, the nation's longest Nordic ski trail, spanning the state north to south. Nearly 50 of the 180 miles of the trail located on private land were protected.

- The Long Trail, a 270-mile mountainous trail traversing the state from north to south, was recognized

by *Backpacker Magazine* in 2000 as one of the top five hiking trails in the U. S. overall.

- *Men's Journal* ranked East Burke number five in 2004 in its "Top Ten Best Fall Mountain Bike Rides."

- According to the draft 2003 Habitat Recovery Plan for Vermont Alpine Natural Communities, rare alpine natural communities on Mount Mansfield, Camel's Hump, and Mount Abraham appeared to be recovering as a result of trail modifications through use of scree walls, cairns, puncheons, brush piles, and rope. These techniques helped keep hikers on designated trails, which reduced trampling of vegetation off the trail and increased its chances for recovery.

5. Opportunities for People with Disabilities

The 1990 Americans with Disabilities Act (ADA) and the Federal Rehabilitation Act of 1973 specify that no qualified person with a disability, on the basis of disability, should be excluded from participation in, be denied the benefits of, or be subject to discrimination for any program or activity. Examples of achievements to aid people with disabilities in participating in outdoor recreational activities in Vermont during the past decade include the following:

- In 1998 access by people with disabilities to lands managed by the Vermont Agency of Natural Resources (ANR) was enhanced. Reasonable accommodations included limited use of all-terrain vehicles by qualified people with disabilities for recreational access to certain ANR lands.

- ADA accessibility was improved at facilities of private campgrounds, the Green Mountain National Forest, and State Parks. Improvements include lean-tos, ramps, water fountain platforms, restrooms, access roads, and paths.

- At Camel's Hump State Park in Duxbury, the handicapped-accessible Camel's Hump View Trail was created in 1990. This .8 mile easy access, low elevation loop offers spectacular views.

- Some criteria, which allow more points to be awarded to the score of applications that meet or exceed the needs of physically challenged, elderly, low income,

and other special population groups, were added to applications for Vermont Recreation Trails Program grants starting in 2000. From 2000 to 2004, each of the 55 outdoor recreation projects funded with Land and Water Conservation Funds included ADA accessibility components.

- A new day camp for youths age 12-21, Partners in Adventure Camp, was founded in 2000 and stresses a community learning experience. Non-disabled students attend the camp as co-existing participants, not helpers.

- A 12-foot high tree house was built in 2004 at Oakledge Park in Burlington with an ADA compliant ramp with wheelchair bumpers and rails.

- In 2004 the not-for-profit Vermont Adaptive Ski and Sports began serving as the Vermont chapter for Paralympic, a branch of the International Olympics for people with disabilities.

6. Fish- and Wildlife-Based Recreation

For the purposes of this plan wildlife-based recreation refers to fishing, hunting, trapping, and observing, feeding, or photographing wildlife. Significant new funds have been made available for wildlife-related projects, including many with recreational ties, from conservation license plates and federal wildlife grants. From 1998 to 2004, Vermont's Conservation License Plate program made available to not-for-profit organizations and other entities more than \$350,000. In 2001 the State Wildlife Grants program began providing federal dollars to support conservation aimed at preventing fish and wildlife from becoming endangered. Vermont has received more than \$2.5 million under this program. Recent efforts have resulted in improvements for the wildlife species and habitats that people enjoy while recreating in Vermont, including the following:

- Common loons, ospreys, and peregrine falcons are uncommon birds in Vermont and were considered endangered in the state during most of the past decade. All three species improved in the number of chicks produced overall during the 1990s and early 2000s.

- Vermont's first moose hunting season was held in 1993 in certain areas of the state. The season was extended from four to six days in 2003.

- The “Trophy Trout” regulation was put into effect in the mid-1990s to provide good fishing on stretches of Otter Creek and the Black (south), Lamoille, and Winooski Rivers.

- The number of resident turkey hunting licenses sold increased steadily between 1994 and 2002.

- In 1999 the Vermont Department of Fish and Wildlife hired an aquatic habitat biologist, whose primary responsibilities include providing outreach and technical assistance to landowners, conservation groups, and local communities on the protection and restoration of aquatic habitats and working with other government agencies on policies and programs that affect aquatic habitats.

- Lake Champlain International (LCI) started a number of new initiatives: in 1994 the All Season Tournament, in 2000 the LCI Lake Champlain Bass Open; in 2001 the LCI Little Anglers; and in 2001 “It’s All about the Fish” fundraising raffle.

- In 2001 and 2002 respectively, birding trails began in the Champlain Valley and along the Connecticut River. The Lake Champlain Birding Trail was featured in *Audubon* magazine in the fall of 2002 as a top birding destination in the country.

- New baitfish regulations were enacted in September 2003 to decrease the chances of exotic species, which could negatively impact native species, being introduced to Vermont waters.

- In 2003 the Winooski River was determined to be a major producer of sea lamprey. The control program was expanded to include the Winooski River up to the Winooski One Dam in 2004.

- A reciprocal license agreement began in 2004 so that anglers who held a fishing license from either New York or Vermont were able to fish in most of Lake Champlain.

- A ban on the sale of lead sinkers in the state will go into effect on January 1, 2006. A ban on the use of lead sinkers for taking of fish in Vermont waters will go into effect on January 1, 2007.

7. Water-Based Recreation

Water-based recreational activities in Vermont received a boost from a few programs that provided significant funds for these activities, as follows:

- A new entity for managing Lake Champlain, the Lake Champlain Basin Program (LCBP), was created in 1991 as a partnership of government agencies from New York, Vermont, and Quebec, private organizations, communities, and individuals. Millions of dollars have been administered and issued by the LCBP for projects to help prevent pollution and restore the lake.

- Since the inception of the Connecticut River Partnership Program in 1992 through 2004, the Connecticut River Joint Commissions disbursed more than \$1 million to support 373 local projects, including improvements to water quality and recreational experiences throughout the watershed.

- In 1993 the Vermont legislature established the Motorboat Registration Fund to enable motorboat registration fees and penalties to contribute to the protection and maintenance of the state’s water resources. These funds supported the Vermont Department of Environmental Conservation’s Aquatic Nuisance Control Grants-in-Aid Program. In 2002 the Vermont legislature instituted a surcharge on motorboat registrations to provide additional funds for this program.

- From 1998 to 2004, Vermont’s Conservation License Plates program made available to towns and not-for-profit organizations a total amount in excess of \$350,000 for projects to improve the quality of Vermont’s waters and water-based recreational activities.

There are many examples of accomplishments in Vermont that have improved water-based recreational opportunities. Highlights of these include the following:

- Over the past decade the Green Mountain National Forest acquired two water bodies used for a variety of recreational activities. These were the 674-acre Chittenden Reservoir and the 50-acre Blueberry Lake in Warren.

- The 80,000 (fee) acres added to public lands managed by the Vermont Agency of Natural Resources

since 1991 included Alburg Dunes State Park on Lake Champlain in 1996, 10 ponds in the 22,000-acre West Mountain Wildlife Management Area and Green River Reservoir State Park in 1999, Round Pond State Park in North Hero in 2001, and Bingham Falls in Stowe in 2003.

- In 1995 the Vermont River Conservancy (VRC) was formed to conserve lands adjacent to streams and lakes. From then until 2003, they took the lead or supported the purchase and/or conservation of 1,200 acres. These projects included Lyman Falls State Park on the Connecticut River, Buttermilk Falls in Ludlow, Twenty Foot Hole in Reading, and Lower Clarendon Gorge, all now managed by the Vermont Agency of Natural Resources. The VRC coordinated the Berlin Pond Watershed-Irish Hill Conservation Project with the Montpelier and Berlin Conservation Commissions.

- Effective January 1, 1995, the Vermont Use of Public Waters Rules changed the standards that the Water Resources Board (now the Natural Resources Board) would apply in evaluating petitions for regulations. The addition of standards that involve “enjoyment of aesthetic values” and “quiet solitude of the water body” broadened the criteria to be considered.

- The Vermont Use of Public Waters Rules were changed to prohibit use of personal watercraft on Vermont lakes, ponds, and reservoirs having a surface area of less than 300 acres as of May 1, 1997. This prohibition was enacted on some larger waterbodies as a result of petitions to the Water Resources Board, including Caspian Lake, Lake Fairlee, Great Averill Pond, Little Averill Pond, Lake Morey, Norton Pond, and Somerset Reservoir.

- Most of the Mad River Greenway, a recreation trail, was located a fair distance from the river. The trail’s surface is cultivated grass that is mowed to minimize impacts on the river.

- The Lake Champlain Paddlers’ Trail began taking shape in the early 1990s. By 2004 there were 30 locations providing campsites or day-use sites for paddlers on the lake.

- By 2004 the Lake Champlain Underwater Historic Preserve was expanded to include seven shipwreck sites for SCUBA divers to explore.

- American Whitewater’s website posts flow levels on 57 reaches of 45 separate rivers in Vermont. The information is updated multiple times each day throughout the year so that the thousands of whitewater boaters who travel to Vermont are aware of current conditions.

8. Distribution of Information

A number of developments in technology have occurred in the past decade, and these have brought significant improvements in communication and in the dissemination of information. Advances in computer technology via the World Wide Web made it possible for people to access unlimited amounts of information from their home computers. Global Positioning System (GPS) and Geographic Information System (GIS) technologies made possible more accurate maps with data associated with geographic locations.

Vermont seems to have made good use of such developments. In 1992 and 2002 surveys of Vermont residents, the most significant improvements reported between those years pertained to recreational information. Both the “lack of information on the availability of recreational opportunities” and the “lack of information on recreational issues” were found to be of less concern in 2002 than 1992. Those developments and others of particular interest to the outdoor recreation industry in Vermont include the following:

- In 1996 legislation was passed (Act 190) so that ten agencies could coordinate marketing activities for Vermont resources by maximizing economic efficiencies.

- In the mid-1990s, following the direction of new brand studies, the Vermont Department of Tourism and Marketing began a promotional focus based on five themes: Agricultural Heritage; Natural Heritage; Cultural Heritage; Quality Vermont Made Products; and Four Seasons Outdoor Recreation.

- An Intelligent Transportation System (ITS), which uses technology to assist travelers throughout the state, was begun in 1997. Components include a website, signage, and the 511 telephone number, which provides directional information from either cell or landline phones. By 2003 the Welcome Centers in Guilford and Fair Haven offered computer terminals for travelers to get directions to places throughout the state.

- As part of Vermont's Intelligent Transportation System (ITS), the Vermont Tourism website, the Vermont Travel Planner, was officially launched in 2001. It is one feature of www.VermontVacation.com, which averages about a half million page views per month.

- In 1999 the Vermont Department of Forests, Parks and Recreation published the *Vermont Outdoor Recreation Inventory Summary Report*, which summarized the availability and accessibility of outdoor recreational opportunities provided by both the public and private sectors.

- In the early 2000s, the Vermont Outdoor Guide Association launched its website designed to coordinate recreation offerings around the state.

C. Improving Public Awareness

This section presents some highlights of efforts made toward improving people's awareness of the health benefits of outdoor recreation and the need for respect for outdoor recreation facilities, the natural environment, and other users.

1. Educational Centers, Programs, and Activities

Many organizations responded to the growing need in Vermont during the past decade for expansion and development of outdoor recreational and environmental programs, events, and activities. These were geared toward improving people's awareness of and respect for facilities, the natural environment, and other users. Examples include the following:

- In 1994 Bicycle Safety Fairs were introduced in Vermont. At these events, students learn to ride safely on a model street network. The Governor's Highway Safety Council funded the first training.

- In 1996 the Vermont Department of Fish and Wildlife started the Let's Go Fishing program to reach new constituents and offer enhanced learning experiences.

- In 1996 the Vermont Department of Fish and Wildlife started the Becoming an Outdoors Woman (BOW) program. It is designed for women with little or no experience in traditional outdoor activities and offers hands-on learning in a safe, supportive, and non-competitive environment.

- In 1996 the Vermont Institute of Natural Science opened its North Branch Nature Center on 28 acres in Montpelier along the North Branch of the Winooski River.

- In 1997 the Connecticut River Watershed Council initiated an annual Source to Sea Cleanup day. The watershed-wide, trash-collecting frenzy is enjoyed by people of all ages.

- In 1998 Audubon Vermont opened High Pond Camp, a residential summer camp in Brandon for 11 to 18 year olds. More than 100 campers attend its four 10-day sessions.

- The University of Vermont Extension's annual Outdoor Family Weekend was first held in 1998 at Grotton State Forest to provide families the opportunity to camp together and build wildlife-related outdoor skills.

- From 2000 to the present, the Green Mountain Club (GMC) has had five staff persons trained as Leave No Trace master educators. GMC offered dozens of workshops and brought the Leave No Trace curriculum to hundreds of Vermont school children, scouts, and campers.

- In 2001 the Vermont Department of Fish and Wildlife instituted the Advanced Trapper Weekend to communicate skills and best management practices to trappers beyond their mandatory basic class.

- In the fall of 2002, the National Wildlife Federation brought together interested parties from a wide spectrum of opinions for a "Conversation on the Conservation of Wildlife."

- In July 2003, a nature center was opened at Molly Stark State Park in the Town of Wilmington.

- A cooperative venture between the Vermont Department of Fish and Wildlife and the University of Vermont's Cooperative Extension resulted in 4-H Shooting Sports being added to 4-H offerings in Vermont. In 2004 45 Vermont boys and girls aged 8-18 competed at the National Jamboree in rifle, shotgun, muzzleloader, archery, and wildlife hunting.

2. Health-Related Achievements

The following activities provide a sampling of many recreational efforts to improve the health of Vermonters:

- In support of cleaner air and getting more exercise, citizens of the Lake Champlain Basin were encouraged by the Lake Champlain Committee in 1993 to “Curb Your Car” and take alternate transportation for a day. The spring of 2003 marked the tenth anniversary of Curb Your Car Day when 6,816 participants statewide prevented 19,187 pounds of carbon dioxide emissions by saving 1,066 gallons of gasoline. Governor Douglas declared May 3-7, 2004 as Way to Go Week, a spin-off of the single day event.

- In 1999 some schools around the state began sponsoring the Girls on the Run® program for third to fifth graders. This is an 8- to 12-week experiential physical training program, culminating in a 5-kilometer run or walk event. By 2004, 500 girls participated.

- In 2000 the annual “Bike the Bed” event was instituted by the Twinfield Union School on part of the Cross Vermont Trail on an abandoned rail bed between Plainfield and Marshfield. In 2003, nearly 100 students “biked the bed” to and from school.

- In 2001 the Run Girl Run! program, free to middle-school aged girls for leading healthy, active, and outgoing lives, created a survey entitled “Is Your Town a Heart-Healthy Town?”

- In 2003 the Upper Valley Trail Alliance received a five-year grant to support “Upper Valley Trails for Life,” a local partnership to encourage healthier life styles. The initiative is part of Active Living by Design, a national program established to create and promote environments that make it safe and convenient to be more physically active.

- The Upper Valley Community Tennis Association’s vice president Laurie Selby won the 2004 National USA Team Tennis (Adult) Volunteer of the Year Award. In 2001 she began coordinating a USA Team Tennis Recreation League in 11 towns in the Upper Valley. The effort began with 17 women playing informal matches and has grown to 23 teams with 233 men and women participating.

- In 2004 the Safety and Health Promotion Program of Vermont League of Cities and Towns sponsored a step-counting initiative “Adventure.” About 1,800 employees and family members from 74 municipalities participated.

- In 2004 the Governor’s Council on Physical Fitness and Sports, the Vermont Department of Health, Blue Cross Blue Shield of Vermont, and the Vermont Health Plan initiated the statewide program “Get Moving Vermont!” The program encourages people to get at least 30 minutes of physical activity most days of the week.

3. Recent Publications

Many brochures and other publications have assisted, either directly or indirectly, the outdoor recreation industry in the state. The list below includes many of the documents referenced in this plan and provides a partial listing of the documents that could be referenced here. As this list is relatively short, these publications are listed alphabetically by title.

Aquatic Invaders of the Lake Champlain Basin, Lake Champlain Basin Program, 2004.

Backcountry Sanitation Manual by the Green Mountain Club for the Appalachian Trail Conference, 2001. It is used as a resource document throughout the eastern U.S. by backcountry land managers.

“Community Tool Box,” information sheets to help people implement projects, National Park Service Rivers & Trails Program, 2002.

Conserving Vermont’s Natural Heritage: A Guide to Community-Based Planning for the Conservation of Vermont’s Fish, Wildlife, and Biological Diversity, Vermont Department of Fish and Wildlife, 2004.

Ecosystem Management Symposium Proceedings, T. J. McEvoy, ed., University of Vermont School of Natural Resources, 1994.

“Get the Lead Out” brochure by the Vermont Department of Fish and Wildlife to discourage anglers from using lead sinkers which water birds can ingest and be poisoned to death, 1998.

Healthy Vermonters 2010, a blueprint for improving the health of Vermonters, Vermont Department of Health, 2000.

“Hiking with Your Dog” brochure by the Green Mountain Club, 2003.

Managing Natural Disturbances of Forest Ecosystems in Vermont, Vermont Department of Forests, Parks and Recreation, 2000.

Managing Woodlands for Recreational Enterprises, Workshop Proceedings, University of Vermont Extension and Rubenstein School of Environment and Natural Resources, 2003.

Opportunities for Action: An Evolving Plan for the Lake Champlain Basin, Lake Champlain Basin Program, 1996 and updated version in 2003.

“Saving Our Open Landscape: Effects of Development and Sprawl on Vermont’s Fish and Wildlife,” Vermont Department of Fish and Wildlife, 2000.

Shipspace Shores and Waters: A Handbook for Marina Operators and Recreational Boaters, U.S. Environmental Protection Agency, 2003.

Shoreline Stabilization Handbook for Lake Champlain and Other Inland Lakes, Northwest Regional Planning Commission, 2004.

Vermont Bicycle Commuter’s Guide: An Introduction to the Fun and Rewards of Bicycle Commuting, a 16-page booklet by the Bicycle and Pedestrian Program of the Vermont Agency of Transportation (VTtrans), 2004.

Vermont Outdoor Recreation Inventory: Summary Report, Vermont Department of Forests, Parks and Recreation, 1999.

Vermont Pedestrian and Bicycle Facility Planning and Design Manual provides guidelines for designing cost-effective and well-constructed facilities, VTtrans, 2003.

Vermont Trails and Greenways Council, series of brochures on environmental concerns for siting bicycle trails, 1994.

Vermont Wildlife Viewing Guide, Cindy Kilgore-Brown, Falcon Press Publishing, 1994.

Vermont’s Natural Heritage: Conserving Biological Diversity in the Green Mountain State, A report from the Vermont Biodiversity Project, Elizabeth Thompson, 2002.

Wetland, Woodland, Wildland: A Guide to the Natural Communities of Vermont, Elizabeth Thompson and Eric Sorenson, The Nature Conservancy and the Vermont Department of Fish and Wildlife, 2000.

D. Economic Contributions of the Recreation Industry

This section presents some annual contributions to the economy of the state, totaling nearly \$1.5 billion, by just a few sectors of Vermont’s recreation industry. Although participation and spending for outdoor activities are often dependent upon weather conditions, these figures provide evidence of the general viability of the industry in Vermont. Please note that the numbers are not directly comparable with each other.

- In 2001 the state ski industry figures estimated that the sport contributed \$750 million annually to the economy in direct expenditures.
- A Johnson State College study reported on the direct and indirect contributions of snowmobiling to the state’s economy in 1995 and 2001. The results showed an increase of about 316 percent from \$162 million in 1995 to \$511.8 million in 2001.
- The 2001 National Survey of Fishing, Hunting and Wildlife-Association Recreation revealed that residents and visitors spent \$386 million in Vermont to enjoy wildlife-association recreational activities. Those who observed, fed, or photographed wildlife spent \$204 million; anglers spent \$111 million; and hunters spent \$71 million.
- A University of Vermont study found the direct annual economic impact of Vermont State Parks to be more than \$58.8 million in 2001.
- A 1997 study by the National Wildlife Federation revealed that water-based recreation in Vermont is at least a \$109 million per year business, creating up to 3,600 jobs (in the peak season) and generating approximately \$5.5 million in tax receipts.

Other regional studies suggest that roadless areas in national forests in the Northeast and whitewater recreation may have economic benefits for Vermont. A 2001 University of Maine study reported that the economic benefits of whitewater activities on the Kennebec River in Maine

totaled \$35 million. A Colorado State University study in 2000 estimated the annual recreation benefits, passive use values, and numbers of jobs provided from preserving 42 million acres of national forest roadless areas. Figures for the Northeast indicated nearly \$21.5 million in recreational benefits, more than \$1.9 million in passive use values, and 849 jobs provided.

Another noteworthy financial phenomenon is the burgeoning of outdoor activities, events, and competitions, which raise money for Vermont charities. One example involves local Vermont Association of Snow Travelers (VAST) clubs, which donate the equivalent of about \$88,000 in cash and volunteer time annually to a variety of charities and local fire and rescue squads. A 320-mile border-to-border ride from Massachusetts to Canada engaged about 200 riders each year in 2003 and 2004. A total of \$173,000 was raised for the Cystic Fibrosis Foundation and the Donna Crandall Foundation, created in memory of a woman with the disease.



Chapter 3: Where Vermont is Headed: The Action Plan, 2005-2009



This Chapter presents Vermont's vision, goals, strategies, and actions that will guide outdoor recreational opportunities in the state during the next five years. This plan offers ten overarching goals, which are referred to as "Desired Conditions," an alternative

phrasing of goal statements. Strategies and actions are proposed for each goal. The desired conditions, strategies, and actions are not presented in any particular order of importance.

Information about trails-, roads-, and greenways-related recreation appears in Chapter 4 as the Vermont Trails and Greenways Plan. Trails-related recreation is presented as a separate chapter because each state is required to have a trails and greenways plan to meet federal funding guidelines.

The recommended actions rely heavily on comments received from public meetings held around the state in April and May of 2004. Other supporting documentation for this chapter is found in Appendices A and B, including results of various recreation surveys and censuses. There are frequent references in this chapter to the 1992 and 2002 surveys of Vermont residents regarding their opinions about recreation concerns. These were conducted by the Center for Rural Studies at the University of Vermont.

Because Vermont's recreation services are provided by diverse organizations, without central coordination, it was not always possible to identify who should be responsible for implementing each action. Therefore it is recommended that all outdoor recreation-related organizations and agencies refer to this chapter to identify the actions pertinent to each.

As this plan focuses on issues of statewide importance, goals and projects of individual towns and organizations are not specifically included here. Some regional projects are presented because these may have significance to a wide number of users throughout the state. In addition, please note that many of the actions could apply to more than one desired condition.



Vision

The following vision for outdoor recreation in Vermont was developed by members of the Recreation Advisory Committee to the Secretary of the Agency of Natural Resources. The committee is composed of representatives from a wide variety of organizations and perspectives on outdoor recreation in Vermont. The desired conditions resulted from a number of inputs, including the 1993 *Vermont Recreation Plan* and comments received from attendees of public meetings and from drafts of this document.

*Vermont offers
outstanding opportunities for outdoor
recreation, which support the state's economy and
the well-being of its visitors, people, and communities.
Vermont is kept well-connected to nature through
thoughtful, careful use and enjoyment of its
natural and cultural resources.*

Desired Conditions

- A. Everyone who wishes to participate in appropriate outdoor recreation activities in Vermont has an opportunity to do so.
- B. Vermont's natural resources base, which provides the foundation for outdoor recreational pursuits, is conserved and enhanced.
- C. The quality of Vermont's existing outdoor recreation facilities, programming, and operations is high.
- D. Vermont meets increasing needs for outdoor recreation by making more resources and diverse programming available.
- E. Vermont outdoor recreation providers and users develop creative solutions for resolving outdoor recreation conflicts.
- F. The majority of private landowners in Vermont continues to allow access to their land for public recreation.
- G. Outdoor recreationists in Vermont appreciate nature and the natural resource base and treat private and public resources and other users with respect.
- H. Outdoor recreationists in Vermont experience health benefits while recreating, and Vermont communities that emphasize outdoor recreation in their development become healthier.
- I. Information about Vermont's outdoor recreation opportunities is provided in user-friendly ways and directs people to appropriate places.
- J. There is strong administrative support for Vermont's outdoor recreation industry.

The remainder of this chapter consists of a summary of many of the concerns and issues that prompt the need to state each desired condition. These concerns and issues have been covered in more detail in other chapters and appendices of the plan. This chapter is the primary resource of the plan for all outdoor recreational pursuits except for trails and greenways related recreation, which is the subject of the next chapter.

Desired Condition

A. Everyone who wishes to participate in appropriate outdoor recreation activities in Vermont has an opportunity to do so.

The demographics of the people of Vermont and visitors to the state are changing. People from more diverse ethnic groups increasingly choose to live in Vermont. The number of people below poverty level in Vermont increased between 1996 and 2001. The median age of Vermont and the nation continues to climb. The number of people with disabilities continues to increase and makes up nearly 19 percent of the U. S. population of 281 million. Many people with disabilities participate in physical activities.

A small and, for the most part, rural state like Vermont has many challenges to overcome to provide outdoor recreational opportunities for all its citizens and visitors. People with special needs, such as the elderly, those with disabilities, people living in poverty, and people from other countries, may require additional or different services than those required by the general population. Agencies now struggle to help many people with their basic needs, including meals, housing, assisted living, and transportation for medical treatment. The costs of operating these types of services may leave little, if any, funding to support outdoor recreational opportunities. Another concern is that public transportation doesn't exist in many areas of the state. In addition, the costs of retrofitting outdoor recreation facilities or constructing new ones are enormous.

Surveys indicate a need for more affordable and accessible outdoor recreational facilities. In comparing the results of the 2002 recreation survey of Vermonters to a similar 1992 survey, fewer Vermonters felt that the lack of outdoor recreational opportunities for special populations was a problem in 2002 than in 1992. Still, more than 68 percent in 2002 thought this was a problem. Additionally, informal surveys of recreation professionals identified as major concerns the lack of public transportation and the need for more outdoor recreation facilities to accommodate people with disabilities. Many Vermont residents surveyed in 2002 identified the high costs of outdoor recreation as a concern. Nearly 48 percent thought that the high cost for use of public outdoor recreation areas was a problem, while more than 67 percent thought that the high cost for use of commercial outdoor recreation areas was a problem.

STRATEGY:

Organizations and agencies at all levels provide outdoor recreational experiences at various degrees of difficulty for people at different developmental levels.

Actions:

- Agencies assess existing resources with regard to degree of difficulty in accessing and participating and make modifications so that various levels of challenge are available.
- Volunteers and staff are trained to provide special programs and to assist special populations with outdoor recreational activities.
- More facilities are built or modified to accommodate handicapped access.

STRATEGY:

Outdoor recreational experiences are made available to special populations in an efficient and cost effective manner.

Actions:

- Facilities and programs are located in or near areas of population concentrations.
- Organizations and agencies recruit and train volunteers to deliver services.

STRATEGY:

Costs to special populations for outdoor recreation are minimized.

Actions:

- Providers and user groups arrange for vans, car pooling, and accessible public transportation to popular sites and programs.
- Providers and user groups offer sliding fee scales and develop funds for people who cannot afford to pay to attend programs.
- Low-cost recreation programs are designed specifically for lower income Vermont residents.

STRATEGY:

Information regarding sites and programs for outdoor recreation that are available for special populations is disseminated.

Actions:

- Agencies and organizations network with each other and supply information to each other's constituents.
- Program and site information is made available in formats that are easily accessed by people with disabilities.

STRATEGY:

The outdoor recreation experiences of people with special needs are integrated with those of the community at large.

Actions:

- Special needs representatives are included in planning efforts for recreation projects and programs.
- Local agencies and organizations offer programs where people with special needs and other participants engage in activities side-by-side.

Desired Condition

B. Vermont's natural resources base, which provides the foundation for outdoor recreational pursuits, is conserved and enhanced.

As noted in Chapter 2, great strides have been made in maintaining and improving the state's natural resources throughout the past decade. The fact that Vermonters' opinions of many environmental quality factors for recreation improved or stayed the same between the 1992 and 2002 resident recreation surveys is significant. Despite this positive trend, the majority of residents when surveyed in 2002 noted significant problems, and many of these are presented in the next few paragraphs.

Conversion of land from forest and agricultural uses poses threats to Vermont's natural resource base, especially in Chittenden County, the most highly developed and rapidly growing area of the state. Many wildlife species depend on farm and forest lands that are not fragmented. More than 84 percent of Vermonters believed in 2002 that the destruction of wildlife habitat was a problem, and nearly 70 percent thought loss of wetlands was a problem.

Development, other land uses, and some recreational uses may have negative impacts on the quality of streams and lakes. When surveyed in 2002, Vermont residents expressed concern about such impacts on natural resources: 83.7 percent of Vermont residents thought that development along lake and pond shores was a problem; 84.3 percent of respondents noted destruction of fish habitat as a problem; 84.6 percent said the presence of nuisance (invasive) aquatic animals was a problem; and 85.5 percent noted the presence of nuisance (aquatic) plants as a problem.

Certain types or locations of development may impact the scenic beauty of landscapes or result in the loss of historic resources. When surveyed in 2002, 76.1 percent of Vermonters thought the loss of Vermont's scenic landscape was a problem.

Another problem that recreation managers need to be increasingly concerned about is the effect of climate change, especially on the natural resource base upon which outdoor recreational experiences depend.

STRATEGY:

The conversion of forested and agricultural lands to development is minimized.

Actions:

- Local, regional, state, and federal agencies in Vermont coordinate growth planning efforts as well as the development of growth management policies to determine the best places for growth to occur.
- Regional commissions provide assistance to towns and municipalities in developing land use plans that encourage the conservation of forests, aquatic resources, and open space.
- Public agencies and nonprofit organizations protect important forested and agricultural lands from development by acquiring conservation easements on them.

STRATEGY:

Overuse and misuse of Vermont's natural resources are avoided.

Actions:

- Outdoor recreation providers and user groups promote and abide by a good land ethic whereby water quality, site productivity, and native biological diversity are maintained or enhanced and the spread of invasive exotic species is discouraged.
- Agencies and organizations monitor recreational activities and their potential impacts on natural resources.
- Manufacturers produce equipment that is energy efficient and minimizes noise and air pollution.
- Communication occurs between natural resources managers and recreational users when overuse and other impacts on natural resources are anticipated or occurring.
- Strategies are in place for modifying recreational uses when impacts on natural resources occur.
- Information about minimizing impacts on the natural resources that recreationists use is made available to them.

STRATEGY:

Management efforts that improve Vermont's natural resources are encouraged.

Actions:

- Existing resources within communities are leveraged to address common goals regarding natural resources and associated recreational opportunities.
- Efforts to improve water quality by minimizing siltation, undesirable bacteria, phosphorus, and invasive species continue and accelerate.
- Shoreland protection programs and activities are encouraged, including adequate building setbacks, protection of riparian buffers, and shoreline stability.
- Landowners, agencies, and recreational organizations participate in habitat restoration programs such as retaining large woody debris in streams,

releasing apple trees, and restoring river corridors, wetlands, and other habitats.

- Property taxes on private lands are in line with the ability of the land to produce income.
- Landowners are rewarded for providing recreational experiences for others on their lands.
- Natural resource managers learn how to make adjustments in management due to impacts from climate change.
- The actions of the Vermont Wetlands Conservation Strategy, as presented in Appendix C, are implemented.

Desired Condition

C. The quality of existing outdoor recreation facilities, programming, staffing, and operations is high.

Nearly 85 percent of Vermont residents, when surveyed in 2002, agreed that the outdoor recreation opportunities now offered in the state satisfy their needs. Some of Vermont's outdoor recreational experiences are receiving national and international recognition for their quality. However, there are some indications that Vermont needs to better care for some of its outdoor recreation infrastructure.

Studies of resource needs by each of the state's 12 regional planning commissions in 2003 revealed the need for maintenance of existing facilities as a major issue for towns in every region. State parks infrastructure needs were assessed in 1998 and were found to be in excess of \$31 million. Requests for grant monies from the Land and Water Conservation Fund (LWCF) to repair and improve existing municipal and state facilities routinely exceed available funds. Likewise requests for funds from the state's Aquatic Nuisance Control Grants-in-Aid Program, the Conservation License Plates, and other sources exceed the funds that are available.

Vermonters' opinion of the quality of public recreational resources and services improved between 1992 and 2002. However, the sustainability of outdoor recreation resources is a priority for Vermonters. In the 2002 survey, more than 70 percent indicated there was inadequate funding for public recreation in the state. Vermonters also indicated their preference to spend available outdoor recreation funds on maintaining existing recreation lands, facilities, and programs. More than four times as many Vermonters indicated that spending money to maintain current facilities was more important than creating new ones. More than twice as many Vermonters would like to see money spent to maintain existing programs than to create new ones.

The same survey showed that more than 60 percent of Vermonters believed that safety was an issue when recreating in the outdoors. A greater percentage of women responded that safety was an issue than did men. Through informal surveys for this plan, many recreation providers and users mentioned some problems with safety as well.

Highly visible, safe, and well-operated programs and facilities are among the best ways recreation providers receive support for their operations. If Vermont hopes to keep its image as a great place to recreate outdoors, it must insure that related facilities are kept in good repair and that they are clean and safe.

STRATEGY:

Outdoor recreation providers and user groups apply a variety of methods to support their operations and programming needs.

Actions:

- Organizations and agencies seek additional funds by submitting applications to grant sources for monies dedicated to operations and improved programming.
- Public agencies and private businesses work together to ensure that recreational services complement one another and meet community needs.
- Recreation user fees are instituted where appropriate and feasible.

- Recreation providers and stewards adopt standards for quality of their operations and facilities and assist other providers in meeting and exceeding those standards.
- Communities adopt national standards for appropriate conduct for youth sports, including behaviors for coaches and parents.
- Inquiries and feedback about outdoor recreation activities that are received by agencies, businesses, and organizations are shared with each other, so that all can adjust their offerings to meet user needs.
- Recreation providers ensure that staff and volunteers receive adequate and appropriate training for the tasks they do.
- Agencies work more closely with outdoor recreation-related businesses of Vermont rather than seek out-of-state providers.
- Businesses, agencies, towns, and organizations seek efficiencies in insurance coverage through group applications.

STRATEGY:

Outdoor recreation providers and user groups apply a variety of methods to support the maintenance of existing outdoor recreation facilities.

Actions:

- Recreation providers seek assistance from volunteers who may assist with maintenance tasks when appropriate.
- User groups serve as stewards for existing recreation resources.
- Funds are raised to provide mitigation opportunities for damages caused to recreation resources by illegal uses and behaviors.
- Additional funding sources are sought for facilities upgrades and maintenance.

- When rehabilitating existing structures for handicapped accessibility or making repairs to buildings, recreation providers maintain the historic character of buildings as well as incorporate energy conservation measures.

Desired Condition

D. Vermont meets increasing needs for outdoor recreation by making more resources and a wider variety of programs available, especially for public lands and facilities.

There are a number of factors that prompt the need for Vermont to continue to expand its outdoor recreation opportunities. The human populations of Vermont and the nation will continue to grow, leading to expected higher numbers of tourists recreating in the state. Shorter vacation trips using motor vehicles are increasing, and Vermont is less than one day's drive away for tens of millions of people. Outdoor recreation is becoming more popular, and new types of recreational activities are being created. Nature-based recreational activities are now recognized as a source of economic and community development.

Studies of resource needs by each of the state's 12 regional planning commissions in 2003 (11 after 2003) revealed the need for more access to all types of outdoor recreational resources as a major issue for many towns in every region. Likewise, respondents to informal surveys and participants at public meetings for this plan identified lack of access to recreational resources as an ongoing and serious problem in the state.

Finally, more demands are being made for recreational uses of the 15 percent of land in Vermont that is publicly owned. When asked in a 2002 survey to choose between lands, facilities, or programs as their number one priority for spending outdoor recreation funds, 50 percent of Vermont residents responded that lands were the top priority.

STRATEGY:

Suitable lands and properties are acquired for the public, new facilities are built, and new programs are created to meet public recreation needs, especially in areas of high demand.

Actions:

- Recreation providers and user groups participate in regional recreational needs assessments, including cost-benefit analyses, which are used to set

STRATEGY:

Outdoor recreation providers and user groups apply a variety of methods to maintain safe facilities, operations, and programs.

Actions:

- Strategic plans of organizations and agencies that provide recreation resources highlight the importance of maintaining these resources in safe condition.
- Managers conduct research to better understand user safety concerns.
- Providers establish life-cycle maintenance schedules for facilities and tie them to their operational budgets and capital improvement plans.
- Through background checks and other methods, recreation providers and user groups ensure that staff and volunteers have suitable experience, training, and credentials.
- Staff and volunteers receive proper training in safety procedures.

STRATEGY:

Access to existing water and land resources for outdoor recreation is improved.

Actions:

- Agencies and organizations identify and suitably publicize access locations.
- Work with private landowners in securing access locations, especially where public resources can be accessed only from private land.

priorities for new recreational facilities, programs, and open spaces.

- Outdoor recreation projects reflect state, regional, and local recreation planning processes.

- Communities plan for the conservation of outdoor space and natural areas for outdoor recreation in or near areas of population concentration.

- Recreation providers offer more access to outdoor recreational sites, where needed and appropriate.

- Leaders in every town understand the tax and economic benefits and consequences of conserving land in their town.

- Outdoor recreation acquisitions and projects help relieve pressures for use in areas where there are user conflicts or where demand is excessive or anticipated to become so.

- Public access and use are secured through acquisition of property and land and rights to use of land.

activities, including recruitment and training, organizing friends groups for parks, watersheds, and other recreational resources, obtaining insurance, and publicizing volunteer “job” descriptions in a central database for all levels of agencies and organizations.

- Providers find alternative funding sources, including grants and funds from state and federal agencies that support the development of new facilities and programming efforts.

STRATEGY:

Traditional recreational offerings are expanded to other venues and to coincide with special events.

Actions:

- Providers establish partnerships for providing complementary and expanded recreation programs, services, and resources.

- Providers expand program opportunities to include related resources, such as historic and agricultural, which may be of interest to some recreationists.

STRATEGY:

The benefits to the environment and future generations are considered in the development of outdoor areas, facilities, and programs.

Action:

- Providers and user groups identify linkages between existing recreational resources to determine where to focus new acquisitions, which may serve multiple functions such as conserving wildlife and preserving historic resources.

STRATEGY:

Funding and staff are available for expanding recreational facilities and programming.

Actions:

- Statewide coordination is provided for volunteer

Desired Condition

E. Vermont outdoor recreation providers and users develop creative solutions for resolving outdoor recreation conflicts.

Through this planning process, some major conflicts of statewide and/or regional significance have been identified by users and suppliers of recreational opportunities. Examples of recreational conflicts include the following three types:

- (1) Conflicts between recreational users;
- (2) Situations where demand for recreation may strain the capacity of natural resources or the recreation infrastructure to provide for such use; and
- (3) Circumstances where other uses besides recreation may negatively impact recreational opportunities.

Interest in a number of outdoor recreation activities has increased dramatically over the past decade. Such increases in participation can result in situations that are difficult to resolve in a short amount of time.

STRATEGIES:

Whenever recreation issues are to be discussed or services changed, all stakeholders should be involved in those discussions so that potential conflicts can be resolved as early in the process as possible.

Vermont should build on the successful resolutions of conflicts that have occurred here and should look for other models to follow when needed.

Protocols should be developed for examining the ecological, economic, and social impacts of recreation proposals.

Participants who engage in recreational activities that use the same resources or locations are encouraged to find ways of sharing, including usage on alternating days or adjustments for time-of-day.

Desired Condition

F. The majority of private landowners in Vermont continues to allow access to their land for public recreation.

With about 15 percent of the state being publicly owned, private lands are a critical resource for outdoor recreation in Vermont. When surveyed in 2002, more than 62 percent of Vermonters responded that the posting of private land against the public interest was a problem.

There are a number of reasons for landowners posting their lands. (1) One is that some landowners come from other states with different customs than Vermont. (2) Another reason is the lack of respect for private property. More than 84 percent of Vermonters, when surveyed in 2002, thought that the lack of respect for private property by those who use it for recreation was a problem. (3) Yet

another concern involves liability of landowners for injuries to recreationists. In 1998 Vermont passed revisions to its landowner liability law which enhanced protection to private landowners who allow non-commercial public recreational access. Vermont landowners can be held liable for an injury to a user of their land only if a landowner was found to have committed willful or wanton misconduct. Despite the passing of this landmark legislation, surveys of residents revealed that more Vermonters were concerned about this issue in 2002 than in 1992.

STRATEGY:

Barriers to allowing public access on private lands are minimized.

Actions:

- Law enforcement improves its effectiveness in apprehending trespassers.
- Landowners understand Vermont law(s) that protect them against liability for injuries to recreationists on their property when the landowner did not purposely cause the injuries.
- Organizations raise money to help landowners have unsubstantiated liability suits dismissed.
- User groups are reliable in making repairs to damage to recreational resources caused by their activities.

STRATEGY:

Incentives or benefits are offered to landowners who allow public use of their lands for recreation.

Actions:

- User groups help landowners manage their property in exchange for allowing recreational uses.
- The legislature considers making adjustments to the existing tax structure in support of recreation-related businesses.
- User groups and/or the legislature consider making payments to or reducing taxes of landowners

on a per acre basis for recreational use of woodland and pastureland.

STRATEGY:

Landowners understand various options available to them for allowing use of their lands for recreation.

Actions:

- Landowners understand access easements and other easements.
- Landowners understand how to post their land against certain uses, not all uses.
- Landowners understand how to charge fees for use of their lands for recreation, as well as the implications of doing so, if they so choose.
- Landowners with recreation-related businesses share their expertise with others, perhaps through a list of technical assistance organizations.
- Landowners look for partnerships with other businesses and organizations to increase their viability, e.g. through joint marketing opportunities and better pricing for insurance and products purchased.

Desired Condition

G. Outdoor recreation participants appreciate nature and Vermont’s natural resources and treat private and public resources and other users with respect.

Our way of life keeps changing, and the pace continues to increase. Advances in research and technology have led to new ways of communicating and learning and have resulted in radically different transportation and economic systems on a global scale. New recreational equipment and activities are being invented. The human population “explosion” of the past few decades is expected to continue and will affect natural and recreational resources, perhaps even those in Vermont. These developments challenge our ability to manage for change, respect other users, and appreciate the wildness and traditions of Vermont.

The 2002 recreation survey of Vermonters revealed that 89 percent thought the lack of respect for public recreation facilities was a problem, while more than 84 percent thought that lack of respect by recreationists for private property was a problem.

New sports equipment allows people to travel faster and farther into remote areas. Inappropriate and illegal use of some equipment is damaging natural resources. Some manufacturers and retailers are not encouraging responsible use of their products.

Youth sports have become more formally organized and competitive. Some problems that have developed as a result of increased competition include lack of unstructured play time for children, overly aggressive parents, untrained league administrators, and win-at-all-cost coaches.

On the other hand, many efforts have been undertaken to help us connect with nature and do a better job of respecting each other, following Vermont traditions, and protecting the natural resource base and recreation infrastructure. Vermont can use some of the following strategies and actions to continue making progress with these efforts.

STRATEGY:

Youths experience the natural environment and Vermont traditions and engage in fair play.

Actions:

- Towns and neighborhoods provide safe play-grounds and natural areas for unstructured exploration and play for young children.
- Public school and after-school curricula include outdoor exploration, managing wildlife species, Vermont traditions, and ethical and appropriate behavior.
- Special schools and summer camps continue to offer a variety of outdoor experiences including hunting and fishing education, adventure, and competitive sports.
- Communities operate youth sports programs

that follow the National Standards for Youth Sports and work towards hiring a professional youth sports administrator.

- Educational programs in schools and by agencies and organizations target correct use of appropriate equipment.

STRATEGY:

Outdoor recreationists participate legally, ethically, and respectfully in their activities.

Actions:

- Manufacturers and retailers provide information about legal and appropriate locations for use of their products.
- Organizations and providers promote the use of programs such as Tread Lightly, Leave No Trace, and Carry In/Carry Out.
- User groups thank and show appreciation for landowners who allow access for recreation.
- Providers and user groups encourage members to be sensitive to landowners' concerns.
- Educational programs in schools and by agencies and organizations target responsible behavior and knowledge of existing laws and penalties.
- Signs placed in strategic locations remind people of appropriate behavior, including illegal dumping and places to avoid due to negative impacts.
- Providers ensure that appropriate training is promoted when permits are required for an activity.

STRATEGY:

Users engage in safe and proper uses of their equipment.

Actions:

- Manufacturers, retailers, and activity leaders provide information about safe practices for using their equipment.
- User groups encourage members to use proper equipment.

Desired Condition

H. Outdoor recreationists in Vermont experience health benefits, and Vermont communities that emphasize outdoor recreation in their development become healthier.

Although nearly all Vermonters participate in some outdoor recreation activity at some point during the year, there is a growing need to emphasize the connections between outdoor recreation and the good health of individuals and communities. In 2003, two-thirds of Vermont students reported exercising aerobically three or more times per week. Yet in the same survey, 35 percent said they spent three or more hours per school day watching television, playing video games, or using a computer for fun. In 2003 11 percent of Vermont students were considered overweight, and 26 percent in grades 8-12 were above what is considered a healthy weight. A 2001 report by the Surgeon General of the U.S. included treatment and prevention of obesity as a national priority.

The numbers of deaths in the U.S. attributed to poor diet and physical inactivity rose between 1990 and 2000. The Center for Disease Control estimates that nearly two-thirds of deaths of adults over the age of 25 in the U.S. are caused by chronic disease: heart disease and stroke (41 percent) and cancer (24 percent).

Vermont's communities don't always consider the impacts of development on the health of their residents. Most Vermont towns still do not have professional staff dedicated to recreation activities. Nor do they have resources to hire someone who is evaluating whether development patterns are promoting more motor vehicle use or decreasing the amount of open space, or who is developing opportunities for residents to get from home to town via open space and their own physical power as opposed to driving. The following strategies and actions may help in this regard.

STRATEGY:

Better health through recreation is promoted via partnerships between involved agencies and organizations.

Actions:

- Youth-oriented organizations, such as the state-wide Vermont Coordinated School Health program and Vermont Out of School Time Network (VOOST), and drug use prevention programs incorporate outdoor recreational opportunities for youths.
- People are encouraged to participate in fundraising activities involving outdoor recreational activities.
- Organizations work together to promote outdoor physical activity as part of other programs.
- Businesses promote outdoor recreation for their employees.
- Schools provide outdoor recess or physical education activities for their students.

STRATEGY:

Communities expand their knowledge about the roles of community design and the built environment in facilitating more healthy residents and economic benefits.

Actions:

- Regional commissions collaborate with towns and agencies to develop community wellness strategies.
- Communities assess whether their policies, zoning, recreational facilities and programs, schools, and transportation system encourage people to be physically active.
- Towns promote outdoor recreation networking and opportunities within neighborhoods.
- A list of successful programs to be used as models for facilitating healthy communities and residents is circulated to towns.

Desired Condition

I. Information about Vermont's outdoor recreation opportunities is provided in user-friendly ways and directs people to appropriate places.

The quality of Vermont's outdoor recreation resources increasingly is being recognized nationally and internationally. In order to preserve the natural resource base for the long-term, make the best use of recreational facilities, have satisfied users, and maximize economic returns, it's important that people are able to access the recreational experiences they desire. Directing users to the sites where they can have the experience they desire has the added benefits of improving safety and minimizing conflicts with other users.

Vermont has made great progress over the past decade in improving its recreation promotion efforts to out-of-state audiences, coordinating promotion efforts between agencies, and making information available on the World Wide Web. Through surveys, the lack of information regarding the availability of recreation opportunities was reported by Vermont residents as less of a problem in 2002 than in 1992. However, in the 2002 survey, nearly half the respondents still thought this was a problem. Also noteworthy is the fact that, when surveyed in 2002, only six percent of Vermonters got information about recreation opportunities in Vermont from a website, while nearly 25 percent relied on publications and brochures.

Comments received for this plan from a variety of sources have identified a number of needs in this regard: mechanisms for determining and monitoring the carrying capacity of recreational resources; a system which communicates overuse problems to providers so that management practices can be adjusted, especially at highly popular sites; user-friendly maps on websites that provide locations of Vermont's recreational resources; and maps that offer information specific to locations, including the type of experience found there and other services available nearby such as lodging, historical resources, entertainment, and events.

STRATEGY:

Agencies and organizations continue to develop and disseminate accurate and comprehensive information about outdoor recreational opportunities.

Actions:

- Vermont develops more linked, user-friendly websites that give potential users helpful information about Vermont's outdoor recreation resources.
- Low power FM band radio stations provide more information about outdoor recreational opportunities.
- Information for tourists is available at convenient facilities that have adequate parking and user-friendly displays and handouts.
- Recreation providers map their facilities and resources using Geographic Positioning Satellite (GPS) technology and sell, publish or share the information.
- Recreation providers continue to create, update, and distribute brochures about recreational opportunities, especially to Vermonters.

STRATEGY:

Recreation providers have accurate and up-to-date information about experience types and user trends at Vermont recreation sites.

Actions:

- Providers use evaluation systems, such as the Recreation Opportunity Spectrum and the Water Recreation Opportunity Spectrum, to document and evaluate recreational experiences that occur at all of Vermont's recreation locations.
- Recreation providers monitor and report site conditions to a central location.

Desired Condition

J. There is strong administrative support for Vermont's outdoor recreation industry.

Vermont's outdoor recreation industry has helped raise awareness for natural resources as well as encouraged both healthy citizens and healthy communities for decades. In addition, this growing industry is expected to continue contributing millions of dollars to the state's economy every year. However, in the 2002 survey of Vermont residents, more than 70 percent responded that funding for public recreation was inadequate, and 64 percent believed that the lack of responsiveness of public agencies to the recreation needs of Vermont was a problem. In addition, if a measurement of Vermonters' participation in outdoor recreation on public lands were to be made, activity days at the local level would be likely to exceed activity days on both the state and federal levels.

Through informal surveys developed for this plan, recreation organizations, professionals, and volunteers have identified some tasks that would result in better management for recreational growth and would prevent the increasing threat of negative impacts on natural resources and infrastructure by recreational use. Concerns included these needs: staff dedicated to managing recreation in the majority of Vermont's towns; more resources for coordinating regional recreation planning efforts; a central source for networking, training, statewide planning coordination, and marketing; articulation of policy and research needs; and documenting the implementation of this plan.

STRATEGY:

Statewide coordination is provided for centrally-required functions in support of the recreation industry.

Actions:

- A budget increase allows the re-instatement of full-time recreation positions within the Vermont Department of Forests, Parks and Recreation. Alternatively, other funding is developed for statewide recreation coordination functions.
- Outcomes and measurables for each of the desired conditions of this plan are developed so that implementation of this plan may be tracked and documented on a statewide basis.

- Recreation services and systems are coordinated among levels of government and private providers, especially functions that already overlap one another.

- This plan's strategies and actions are presented to the legislature, state, and regional and local entities.

- Recreational planning efforts between agencies and regional planning commissions are better coordinated.

- Information-sharing and funding sources, including recreation-based educational information, have a central source and are presented as a "tool-kit" for recreation providers.

- Vermont's develops a centrally coordinated outdoor recreation website, which provides links to related sites of interest.

- Training for recreation-related businesses and organizations regarding liability and other insurance requirements, identifying the carrying capacity of resources, marketing strategies, professional certifications, grant applications, and related subjects of interest to recreation suppliers is provided.

- Economic and geographic data to assist users and providers are updated and made available.

- Tools (targets and priorities) are developed to measure the effectiveness and efficiency of Vermont's Land and Water Conservation Fund program.

- Centralized copies of inventories and maps of recreational sites and opportunities are kept updated.

STRATEGY:

Recreation services and systems are coordinated among levels of government and private providers.

Actions:

- State and local governments work together to identify and meet the outdoor recreation needs of local communities.

- The Recreation Advisory Committee (RAC) to the Secretary of the Agency of Natural Resources, consisting of representatives from a wide variety of outdoor recreation providers and activities, meets regularly to oversee implementation of this plan.

- Members of the RAC collaborate regarding outdoor recreation opportunities and partnerships and establishing goals and priorities.

STRATEGY:

Town and regional planning commissions coordinate efforts to plan for and manage outdoor recreation facilities and opportunities.

Actions:

- Towns expand their funding sources for outdoor recreation projects and administrative support.

- Regional planning commissions are funded to coordinate recreation planning efforts and improve communications about recreational opportunities between towns.

Chapter 4: Vermont Trails and Greenways Plan



This chapter of the 2005 Vermont Outdoor Recreation Plan represents the Vermont Trails and Greenways Plan, devoted to trails-related recreation. It is a requirement for each state to have a trails plan to meet federal funding guidelines. This plan

represents one chapter of the Vermont Outdoor Recreation Plan, a larger document which includes all other outdoor recreation activities in the state. The reader may be referred to sections of the broader plan and appendices while reading this plan for trails.

Roads, retired rail beds, greenways, and formally designated trails provide thousands of miles of recreational opportunities for Vermonters and its visitors. Greenways are vegetated strips of land or corridors that are protected from development. Sometimes found on ridgelines or along rivers, the benefits of establishing greenways that provide recreational opportunities, as opposed to development, include preserving wildlife habitats, maintaining the integrity of water courses, and protecting water quality.

The focus of this trails plan is on land-based activities. Paddling trails are found in the water-based recreation section of Appendix B. Birding trails are included in the wildlife-based recreation section of the same appendix. This chapter includes all other land-based trails, roads, shared-use paths, and greenways-related recreational activities known at this time. For the rest of this chapter, the use of the word “trails” refers to all these activities, unless otherwise stated.

More information may be included about some activities that are relatively new or may be misunderstood. As this is a statewide plan, organizations mentioned represent the entire state or are regional organizations with statewide significance. Overlaps occur with many activities and resource suppliers, and efforts have been made to avoid duplication. Organizations included here would be the first to credit the many partnerships and collaborations that are needed to make things happen, but all these cannot be mentioned in this plan.

Contents

The four major sections of this chapter, along with more details of the contents of section D, are as follows:

A. Vision, Desired Conditions, and Strategies: The Action Plan

1. Strategies for Protecting Existing Trail Resources
2. Strategies for Developing Trail Resources
3. Strategies for Managing and Maintaining Trail Resources
4. Strategies for Using Trail Resources
5. Strategies for Providing Support for Trail Resources

B. Process Used to Develop this Plan

C. The Increasing Demand for Trails-Related Recreation

D. Trails-Related Resources and Suppliers: Achievements and Issues

1. Some Statewide Achievements
2. Funding and Other Support for Trails-Related Activities
3. Downhill (Alpine) Ski Areas
4. Other Winter Trails-Based Activities
Examples: Snowmobiling, Cross-Country Skiing, Snowshoeing, Dog Sledding
5. Trails Related to Towns and Roadways and Occurring Primarily in Developed Areas
Examples: Shared-use Paths, Rail Trails, Bicycling, Class 4 Roads, Walking, and Running and Jogging
6. Trails-Based Activities in Forested and Back-Country Areas
Examples: Mountain biking, Horseback Riding, Off-Road Recreation including ATVs, Hiking, and Backpacking

Please note that the grouping of activities in subsections 4 to 6 of D reflects the fact that various uses may be occurring on resources at the same time. Issues of participants engaging in these may be similar, or there may be conflicts between them.

Section A provides the future direction for the next five years for trails-based recreation in Vermont. Sections B through D contain information that was used in the creation of Section A.

A. Vision, Desired Conditions, and Strategies: The Action Plan

This section of the Vermont Trails and Greenways Plan presents a vision and strategies for improving trails-

roads-, and greenways-related recreational opportunities in the state in the next five years. The vision was developed from ideas expressed in the 1993 *Vermont Recreation Plan* and from comments received at meetings for and drafts of this plan. The ten desired conditions are the same as those from the previous chapter but have been re-phrased to be more pertinent for trails-based recreation. Then strategies, which have been grouped into five categories and are geared toward implementing the vision and desired conditions, are presented.

Vision

Vermont has a statewide trails, roads, shared-used paths, and greenways network to provide a variety of recreational opportunities for residents and visitors to the state. These opportunities offer a wide variety of choices to people of all ages and abilities, in their communities as well as in remote places. Recreational development and use does not damage important ecological and environmental resources. Users respect each other's interests and work together to resolve conflicts. Recreation providers and users encourage appreciation and stewardship of Vermont's natural resources and recreation infrastructure.

The ten desired conditions (or goals) shown below provide models to be considered when developing, using, protecting, and managing trails-related resources in Vermont. The reference in these conditions to trails resources refers not only to trails but also to roads, shared-used paths, and greenways.

Desired Conditions

- A. Everyone who wishes to participate in appropriate trails-related recreational activities in Vermont has an opportunity to do so.
- B. Vermont's natural resources base, which provides the foundation for trails-related outdoor recreational pursuits, is conserved and enhanced.

- C. The quality of Vermont's existing trails-related facilities, programming, and operations is high.
- D. Vermont meets increasing needs for trails-related recreation by making more resources and diverse programming available.
- E. Vermont outdoor recreation providers and users develop creative solutions for resolving trails-related conflicts.
- F. The majority of private landowners in Vermont continues to allow access to their land for trails-related recreation.
- G. Recreation participants of all ages appreciate Vermont's natural resources, act as good stewards of natural resources and the trails-related infrastructure, and treat private and public resources and other users with respect.
- H. Trails-related recreationists in Vermont experience health and well-being benefits, and communities that provide outdoor trails become healthier.
- I. Information about Vermont's trails-related recreational opportunities is provided in user-friendly ways and directs people to appropriate places.
- J. There is strong administrative support for trails-related recreation in Vermont.

There are numerous strategies that may be used to implement the vision and desired conditions for trail resources in Vermont. Although entities that will implement this plan are not mentioned specifically in each strategy, they include government at all levels; other providers such as private landowners, businesses, and nonprofit organizations; user groups; and recreationists themselves. These strategies are not presented in any particular order of importance, and please note that some strategies could apply to more than one category.

1. Strategies for Protecting Existing Trail Resources

The following strategies may help Vermont keep its existing trail resources:

- Landowners who allow public access to their lands understand the liability protections for and benefits of doing so.
- Landowners understand the advantages they gain by granting access or conservation easements for use by trails recreationists.

- New landowners are provided information about land use traditions in the state.
- Providers and user groups appropriately publicize trails and release maps about trail resources, keeping in mind the sensitivity of trails as well as the concerns of private landowners.
- Landowners understand how “posting land” works in Vermont.
- User groups compensate private landowners for allowing trails on their land.
- Towns protect and manage Class 4 roads and legal town trails as places for walking and riding and to provide vital connections to trail systems and other public lands.
- Trails of local and statewide significance are permanently protected through land acquisition or purchase of rights in land.

2. Strategies for Developing Trail Resources

Providers and user groups employ the following strategies when developing new trails:

- Coordinate with pertinent town, regional, and transportation plans.
- Determine the types of trail-related experiences that are being provided and where trails may be sited to ensure a wide variety of experiences throughout the state, using the Recreation Opportunity Spectrum evaluation system.
- Cooperate with each other and form partnerships to gain more funding options and to resolve siting issues and other concerns.
- Minimize impacts to wildlife and habitats, waters, and other natural resources.
- Minimize disturbances to historic and cultural resources when siting trails.
- Consider the needs of people with disabilities, youths, elders, those with low incomes, and people from a variety of ethnic groups, for example.

- Maintain the scenic character of the area through which the trail is located.
- Follow laws and procedures for siting trails in safe locations, using proper materials and signage.
- Make sure trail resources have adequate access.
- Design trails for the degree of anticipated use, or greater capacity, by that user group.
- Assist private landowners with permits and other requirements that may be needed for trails on their lands, e.g., Act 250 and storm water runoff.
- Encourage towns, which charge impact fees for development, to earmark some of those funds for outdoor recreation projects.
- Modify the requirement that small bicycle and pedestrian improvement projects require a conceptual alignment analysis, providing more flexibility and less expense.
- Recognize and reward cooperating landowners.

3. Strategies for Managing and Maintaining Trail Resources

Providers and user groups employ the following strategies when managing and maintaining trail resources:

- Encourage shared use of trail resources and designate multi-use trails wherever possible, where appropriate, and by considering the interests of all users.
- Ensure the safety of trails through the use of effective trail design standards, education of users, and by keeping trails in good condition.
- Maintain trails, including Class 4 roads, in good condition so that impacts to natural resources, including adjacent waters, are minimized.
- Encourage participation of volunteers in managing and maintaining trails.

- Monitor trail use and condition, determine the carrying capacity of trails, and set up a reporting system for heavily-used and/or popular trail resources.
- Retire or rest overused areas and/or divert use to other areas.
- Find additional funds for law enforcement to police trails.
- Promote the use of environmentally-friendly equipment and maintenance techniques.
- Recognize and reward cooperating landowners.
- Coordinate activities with other users and user groups.
- Anticipate conflicts and involve all stakeholders in seeking solutions.
- Maintain scenic character of surrounding areas by discouraging development where vistas from trails are located.
- Publicize trail resources appropriately so that overuse does not occur, damage to fragile natural resources is avoided, and people are directed to the experience(s) they prefer.
- Coordinate with emergency service providers when needed.
- Institute user fees where appropriate and feasible.

4. Strategies for Using Trail Resources

Providers and user groups employ the following strategies when using trail resources:

- Follow laws and safety rules regarding proper equipment, attire, side of road, speed, number of users in a group, and the time of year and season.
- Stay on legally designated trails that are appropriate for the activity.

- Encourage and show respect for land, landowners, facilities, and other users.
- Motorized vehicle user groups require that their members have adequate insurance and proper registration, pass safety courses, respect non-motorized trails and users, adopt suitable trail standards, and enforce the rules.

5. Strategies for Providing Support for Trail Resources

The following strategies may help enhance support for Vermont's trail resources:

- Statewide coordination is provided for mapping, information dissemination, website services, and training for grant writing and marketing, for example, for providers and user groups.
- There is adequate law enforcement to deter illegal trail-related behavior.
- User groups have support from and endorsement of the state and other partners when providing information to the public.
- More funding sources are sought and made available to trail providers and user groups for trail protection, development, management, and use.
- User groups receive assistance from the state for mandatory liability insurance for trails.
- Better communication is facilitated between and within agencies and user groups, and mediation services are used when needed to resolve conflicts.
- The benefits of Vermont Trail System designation are clarified, and these trails receive more recognition.
- Awareness is raised regarding trails-related issues, such as the public's right to access Class 4 roads; the value for public access of old, unused roads that were authorized up to 200 years ago, not built, but never legally discontinued; appropriate

times to use trails and trails to use; treating resources and other users with respect; and safety.

B. Process Used to Develop the Trails and Greenways Plan

Input was solicited and received from many sources toward development of this draft plan. These included a statewide recreation survey of Vermont residents, results of other surveys and trends data, analyses of the recreational needs of towns from the 12 regional planning commissions, personal contacts and interviews, and responses from a variety of surveys and evaluations.

In addition, the Vermont Trails and Greenways Council, which consists largely of trail user groups, sponsored a meeting on March 11, 2004 involving landowner representatives of both public and private resources. Forty people attended this meeting to review draft strategies and actions for this plan.

This chapter also relies heavily on comments received from public meetings held around the state in April and May of 2004 and through comments received during and after a statewide meeting at 14 sites on Vermont Interactive Television held on October 19, 2004.

Please refer to the public involvement section of Chapter 1 for more detailed information about involving the public in developing all aspects of the 2005-2009 plan.

C. The Increasing Demand for Trails-Related Recreation

In this section, many indicators of the increasing demand for trails-based recreation are presented. These include the media attention that some of Vermont's trails have received as well as national and regional user trends. For more information on trends that affect outdoor recreation, please refer to Appendix A.

One way that interest in trails-based recreation gets created is through the media. Some of Vermont's trails have received national recognition in recent months or years. It is likely more people will be drawn to Vermont for these experiences as a result of the attention focused on them, including the following examples:

- The national publication *Men's Journal* with circulation of 660,000 in 2004 ranked East Burke number five in its "Top Ten Best Fall Mountain Bike Rides." The organization Kingdom Trails, with many partners, manages trails in that region.

- The VAST trail system has been repeatedly recognized nationally over the past several years as one of the top five trail systems in North America.

- In 2000, *Backpacker Magazine* compiled a "Guide to the Land's Greatest Hikes" wherein the Long Trail was ranked one of the top five hiking trails in the U. S.

- The editors-in-chief of National Geographic's *Traveler* and children's magazines recognized Stowe, Vermont as one of America's five greatest destinations for family vacations on the Friday, May 28, 2004 Today Show.

The growing popularity of trails-based recreational pursuits has been documented in many places. National and regional data include the following references:

- The National Survey of Recreation and the Environment (NSRE) consisted of telephone interviews of Americans to learn about the outdoor recreation activities of people aged 16 and older in this country. Sets of surveys were conducted between 1994 and 1995 and again between 1999 and 2002. The highest percentage increases nationally in trails-related recreation occurred for backpacking at 50 percent and hiking at 48.3 percent.

- A summary and evaluation of the NSRE data for Vermont and for the Vermont market region was prepared in 2004 by the Outdoor Recreation and Wilderness Assessment Group of the Southern Research Station of the U.S. Department of Agriculture's Forest Service in Athens, Georgia. The Vermont market region consisted of Vermont along with the adjoining states New York, Massachusetts, and New Hampshire. The highest percentage changes for trails-related recreation for people in this region were snowmobiling at more than 88 percent (970,000 to 1.83 million) and backpacking at 63.8 percent (1.63 to 2.67 million). Trails-related activities for which the percent change in participation by people in the Vermont market region between 1995 and 2003 exceeded

participation nationally and for which data were available included backpacking, off-road driving, and bicycling.

There are also indications that trails-based recreational activities are becoming more popular in Vermont, as illustrated by the following items:

- Membership in the Vermont Association of Snow Travelers (VAST) increased by more than 200 percent from 18,000 in 1993 to more than 45,000 in 2003.
- Membership in the Green Mountain Club (hiking the Long Trail) nearly doubled between 1994 and 2003 from 4,085 in 1994 to 8,125 in 2003. The Columbus Day weekend of 2003 set the all-time, one-day and one-weekend records for hikers on Mt. Mansfield and Camel's Hump.
- Membership in the Catamount Trail Association (cross-country skiing through Vermont) increased by more than 200 percent between 1994 and 2003, from 532 to 1650.
- In the 1990s number of new statewide trails-based organizations got started including the Vermont Trails and Greenways Council, the Vermont Association of ATV Sportsmen, Vermont Mountain Bike Association, and the Vermont Bicycle and Pedestrian Coalition.

D. Trails-Related Resources and Suppliers: Achievements and Issues

This section contains a summary of various trails-related activities, some achievements, and many of the issues that have been identified by those who participate in them or supply opportunities to engage in them. Many challenges facing Vermont's trails-related activities will be articulated and discussed here. While considering these challenges, it's also important to keep in mind that nearly 85 percent of Vermont residents, when surveyed in 2002, agreed that the outdoor recreation opportunities being offered in the state satisfied their needs.

Opportunities to recreate on trails, roads, shared-use paths, and greenways are found in every town in Vermont. Based on numbers of trail miles estimated in 1993 and 1997, there should be well over 6,000 miles of trails

in the state. However, there is no official count. New mapping technologies and the development of more centralized coordination would enable this information to become more accurate and more readily available in the future.

This section of the trails plan is divided into six major topics. Please note that the grouping of activities in subsections 4 to 6 reflects the fact that various uses may be occurring on resources at the same time. Issues of participants engaging in these may be similar, or there may be conflicts between them. The groups are described as follows:

In subsection 4 regarding winter activities, snowmobiling, cross-country skiing, dog sledding, and snowshoeing are discussed. Although snowshoeing and cross-country skiing also may occur off trail, they are included in this chapter of the larger plan.

In subsection 5, trails, roads, and greenways refer to those that people can access near their homes and which already do, or ultimately are intended to be able to, connect local trails with others that span across the countryside and the entire state. The activities presented include biking, walking, running, shared-use paths, and Class 4 roads.

In subsection 6 entitled "Trails-Based Activities in Forested and Back-Country Areas," the activities discussed include mountain biking, horseback riding, ATVs, hiking, and backpacking.

Please note that, in this chapter, issues related to activities are sometimes included with each activity and, at other times, are summarized at the end of the section.

1. Some Statewide Achievements

Over the past decade, Vermont has seen a virtual explosion of trails and road enhancements available for a variety of recreational pursuits. There were many reasons for this, including new funding sources that became available. Other factors included the start-up of many trails-based organizations; the expansion of existing organizations with the creation of new trail networks and increased membership; the creation of many town recreation and trails committees; and development of trails by town conservation commissions. Organizations throughout the state put thousands of dollars and major amounts of staff and volunteer time toward ongoing efforts to preserve and maintain existing recreation trails and corridors.

Results of a 2002 survey of Vermont residents indicated that these efforts were worthwhile. The survey asked Vermonters to assign a grade-point average of A, B, C, D, E, or F to the quality of various types of trail-related activities. Hiking trails received an overall B+ grade, with 76.3 percent of residents giving them an A or B grade. Cross-country and snowmobile trails each received a B grade overall, with 54.7 percent of cross-country trails receiving an A or B grade and 54.5 percent of snowmobile trails receiving the same. Bike paths received an overall grade of B-

New trail opportunities of the past decade include the following:

- The statewide snowmobile trails system increased from 2,700 miles in 1993 to 4,600 miles in 2003.
- Funded by the VTrans Bicycle and Pedestrian Program between 1993 and 2004, nearly 65 miles of new rail trails, shared use paths, pedestrian facilities and sidewalks, and on-road improvements for bikers were completed. At the same time more than 29 miles were under development.
- Since 1998, 29 miles of new trail were added to the Catamount Trail for traversing the length of Vermont on skis.
- Many privately-owned facilities for mountain biking and cross-country skiing have opened for business or created or expanded their trail systems over the past decade. Some of these are now at downhill ski areas as they expand their offerings.
- Many regional and town trails have increased in mileage and have connected with sections of existing trails such as the Cross Vermont Trail and the 18-mile Trail around Middlebury.
- Thousands of acres of formerly private land are now managed for public use through acquisition by the Vermont Agency of Natural Resources, the U.S. Fish and Wildlife Service, and the Green Mountain National Forest. Many trails will be maintained and developed in appropriate areas on these lands.

2. Funding and Other Support for Trails-Related Activities

There are many sources of funding for trails-related recreation in Vermont. Some trail development funding sources in Vermont are dedicated to a certain type of trail recreation, and the funds are distributed via competitive grants programs. Other trail corridor acquisition projects have benefited from state capital funding. An example of this is the \$4.4 million from the capital budget that the Vermont legislature appropriated between 1990 and 2004 for the Long Trail. It should be noted that the Green Mountain Club raised an additional \$4.5 million from other sources for this purpose during that period.

The three statewide sources of funds that are discussed in this section are the Vermont Recreation Trails Grant Program, the Bicycle and Pedestrian Program, and the Transportation Enhancements Program.

Vermont Recreation Trails Grant Program

The Vermont Recreation Trails Grant Program is comprised of both federal (National Recreation Trails Fund) and state (Vermont Recreation Trails Fund) monies. Congress allows federal funding for this program through the Federal Highway Administration's (FHWA) Surface Transportation Act as an assistance program of the U.S. Department of Transportation's FHWA. The Vermont Trails Act of 1994 established the Vermont Recreation Trails Fund. State trails funds are derived from the transfer of state gas taxes paid on non-highway recreation fuel used by off-highway vehicles. These include snowmobiles and all-terrain vehicles (ATVs). This grant program provides funds for the development and maintenance of recreational alternative transportation pathways in Vermont. The fund's grant program awarded more than \$4.6 million to at least 557 projects during the period 1994 through 2003. Projects included construction and maintenance of roads, trailhead development and maintenance, and educational programs and publications.

The Vermont Department of Forests, Parks and Recreation (FPR) administers the grants program via an annual application process. The availability of application forms is announced in September. A workshop to assist applicants is offered in November at Vermont Interactive Television (VIT) locations. Applications are due in mid-January. To score each project, a five-member ranking committee

uses criteria established in coordination with this trails section of the outdoor recreation plan (also referred to as “SCORP” for Statewide Comprehensive Outdoor Recreation Plan) and through the advice of the Vermont Trails and Greenways Council. Applicants recommended for funding are notified in mid-May, and their applications are sent to FHWA for final approval. In addition, potential projects submitted by state agencies are selected by the FPR Management Team based on demonstrated need and priorities addressed by the SCORP.

Transportation facilities assistance, including Bicycle and Pedestrian and Transportation Enforcement programs.

In 1997, the Vermont Agency of Transportation (VTrans) created the Local Transportation Facilities (LTF) Section as a part of its efforts to institute a project manager form of project oversight. LTF was created specifically to manage projects that were more local in nature which would afford municipalities an opportunity to manage the projects directly with limited oversight provided by VTrans. Six specific programs, including the bicycle and pedestrian and transportation enhancements programs, are located within LTF. The 1997 organizational changes resulted in a substantial increase in staffing for administering both the Bicycle and Pedestrian Program and the Transportation Enhancements Program.

In addition to the creation of LTF, federal guidance since the early 1990s has been directing state transportation organizations to be more proactive in addressing the needs of bicyclists and pedestrians. In response, VTrans has adopted policies and guidance which strongly encourage the inclusion of facilities for bicycling and walking in all transportation projects. These projects and improvements occur independently of the Bicycle and Pedestrian and Enhancement Programs.

Bicycle and Pedestrian Program

In 1991 the Vermont legislature first provided funding for the Bicycle and Pedestrian Program (formerly the Transportation Path Program). From 1991 to 1993, the project selection process was administered by the Vermont Department of Forests, Parks and Recreation (FPR) under the name of “Transportation Path Program.” FPR was responsible for selecting the projects, while implementation of the projects was retained by VTrans.

In the early years, the program provided technical as-

sistance for the following functions: obtaining funds to conduct environmental review; acquiring rights-of-way; and constructing shared use paths and rail trails. In 1994 the program was expanded to encompass pedestrian facilities, and VTrans began administering and implementing the program under the name “Bicycle & Pedestrian Program.” Over the years, the program has undergone many changes in response to shifting federal guidance and increased public demand. However the core mission of the program has remained the same: provision of bicycle and pedestrian facilities.

Since 1991 under this program, 65 miles of new rail trails, shared use paths, pedestrian facilities, sidewalks, and on-road bicycle facilities have been constructed. Currently, an additional 29 miles of the same are under development. Cumulatively \$21.4 million, encompassing 72 projects statewide, has been awarded between 1994 and 2005 for projects in this program.

Transportation Enhancements Program

The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) and its amended reauthorization, the Transportation Equity Act for the 21st Century (TEA-21), provide funds for projects in 12 categories of eligibility including the conversion of former railroads to rail-trails, bicycle and pedestrian facilities, and safety education programs. These federal funds are distributed via block grants to the state through the federal Surface Transportation Program (STP). At least 10 percent of STP funds, which amounts to approximately \$3 million annually in Vermont, must be spent on transportation enhancements eligible activities. From 1992 to 2001, Vermont received \$26.7 million in Transportation Enhancement funding and ranked higher than most other states in its obligation of those funds during that period.

Vermont’s commitment to both the Bicycle and Pedestrian and Transportation Enhancements programs is demonstrated by the fact that, between 1990 and 1999, the state ranked tenth in the nation in average annual per capita expenditures for bicycling and walking at \$1.13.

Other examples of funding sources and statewide supports for trails-related recreation in the state, as well as a three-year change in Act 250 jurisdiction over trails in the statewide trail system, are presented next.

Vermont Trails and Greenways Council

The Vermont Trails and Greenways Council (VTGC) is a statewide organization that was established by the Vermont Legislature in 1993. Its primary purpose is to advise the Vermont Agency of Natural Resources regarding trails and public access for recreation issues. Organizations that represent a variety of trail use activities--statewide, regionally and locally--make up the council.

Ongoing functions of the council include quarterly meetings and networking sessions, recommending criteria for selecting projects to be funded by the Vermont Recreation Trails Fund Program; reviewing applications and recommending trails for the Vermont State Trails System; providing workshops at the annual Governor's Conference on Recreation; revising a trails manual for the state; advocating for legislative initiatives; and publishing a newsletter.

Council Achievements

Led the effort which resulted in the 1998 changes to Vermont's landowner liability law, providing additional protection to those who allow access by the public to their land;

Kept updated and provided on a website information about trails grants and the Vermont Trails System,

Worked on definition of multiple-use trails;

Assisted in developing standards for rail trails;

Sponsored workshops for towns regarding Class 4 road issues;

Published a booklet on Landowner Liability, guides for landowners and users, and assisted in development of resource sheets addressing vegetated buffers for rivers, wildlife, and wetlands for trail developers; and

Added ADA provisions to criteria for trails grants.

Vermont Trail System

The 1994 session of the Vermont Legislature recognized the value of trails for recreational and transportation purposes by passing the Vermont Trail System Act. This law included provisions for establishing the Vermont Trails System. The system consists of trails recognized by the Vermont Agency of Natural Resources (ANR) with the

advice of the Vermont Trails and Greenways Council. The criteria used for recognition of single-use and shared-use trails are determined by the ANR with the advice of the council.

Act 250 Jurisdiction for the Statewide Trail System

Beginning in 2003 and for two years, the Vermont legislature exempted from Act 250 jurisdiction any trail development, maintenance, and improvements to any portion of a statewide trail system below 2500 feet that was not already under Act 250 jurisdiction. The rule identified the "statewide trail system" to be VAST trails, the Long Trail, and the Catamount Trail only. The rule is to be re-evaluated in 2005.

General Trails Issues

The Vermont Trails and Greenways Council would like more support from the state to provide better coordination of their efforts.

The benefits to those trails that are recognized as part of the Vermont State Trails System need to be clarified, especially with respect to landowner liability protection for public access and Act 250 exemption.

There is a need to communicate to lawmakers the benefits of the Transportation Enhancements program and how it makes use of smart growth principles to implement the vision of Vermont with town centers and open countryside.

Act 250 has been applied inconsistently to trails around the state. The fact that private landowners may need to get an Act 250 permit for trails on their property has made them less willing to allow trails.

Landowners who allow trails on their properties may be less likely to do so if federally-mandated stormwater rules go into effect. These rules will make it more costly to repair trails, and the landowner will be legally responsible for any problems. Many agree that the regulations were not intended for this type of land use but instead for more urban areas with impervious surfaces like parking lots.

3. Downhill (Alpine) Ski Areas

The downhill or alpine ski industry in Vermont represents the top winter outdoor recreational activity in terms of numbers of participants and dollars generated. A 2001 study found that the alpine ski industry provides \$750

million direct revenue annually to the state and an additional \$715 million of indirect revenue. Currently there are sixteen downhill ski areas located through the state. Five are located in the northern part of the state, six are in the central area, and five are in the southern section. Winter outdoor activities at these areas include downhill (alpine) skiing, snowboarding or riding, cross-country (Nordic) skiing, and glade skiing.

Between 1994 and 2004, Vermont averaged four million skier visits per year. The range of visits (3.0- 4.5 million) suggests that the sport of skiing, or more specifically, the winter usage of ski area facilities, has been relatively flat during the past decade. Demographic studies have shown some increases in participation by children and the over 45 year old age groups. The continuing boom in the sport of snowboarding may account for some of the increases in participation, but this has not pulled the numbers out of the level trend.

When surveyed in 2002, 26.2 percent of Vermonters indicated downhill skiing as one of their top two outdoor activities between November and April. This was the activity mentioned by the greatest number of residents. Snowboarding was mentioned by 6.7 percent of residents as one of their top two winter activities.

Infrastructure improvements and development have been ongoing at Stratton, Okemo, Smugglers Notch, and Jay Peak as well as other ski areas around the state. These have focused on improvements to lifts, snowmaking, and resort accommodations and amenities. Most of Vermont's ski resorts have been expanding their operations to include year-round services. Major four season resort expansions are currently under way at Okemo, Jay Peak and Stowe. Some resorts offer golf, mountain biking, and swimming, as well as amenities such as spas and shopping located at the resort. Some resorts also offer summer camps for children.

Achievements

Since 1995 the Vermont Department of Forests, Parks and Recreation completed several land exchanges or transactions with ski areas that lease land from the department. These transactions provided for a net increase in state-owned conserved lands while improving the economic viability of the ski areas.

- At Killington the ski area obtained additional land, while approximately 2,900 acres of critical wildlife habitat were added to Coolidge State Forest, including the Parker's Gore tract.

- At Okemo the ski area expanded, while several hundred acres of critical wildlife habitat were added to both Okemo State Forest and Tiny Pond Wildlife Management Area.

- In the Stowe Mt. Resort transaction, approximately 1,100 scenic acres were added to Mt. Mansfield State Forest including a new campground at Smugglers' Notch in exchange for land to expand the resort.

Partnerships with environmental agencies, including the Vermont Agency of Natural Resources, and various organizations have resulted in the development of innovative energy and water conservation, recycling, and public transportation plans and techniques. These include the development of Guidelines and Best Management Practices used for trail construction at high elevation levels. These were the first to be developed in the nation.

In 1996 the Vermont Ski Areas Association cooperated with the Vermont Agency of Natural Resources in developing minimum flow standards for streams. These allow ski operations to maintain sufficient water in streams to protect aquatic habitat and organisms when using water for snowmaking. By 2004, five ski areas had snowmaking systems that met these standards.

Many ski school programs have improved and expanded to include snowboarding and telemark skiing.

Statewide industry standards and practices for workers and skiers have been implemented. These include innovative and comprehensive safety programs such as the Lift and Tramway apprenticeship program. In addition, an extensive skier-rider safety and publicity program was promoted.

Ski areas provide community support through programs designed for school children, seniors, and Vermonters with disabilities. Ski areas have been longtime supporters of scholarship programs and charitable foundations such as Make a Wish and the Special Olympics.

In 2000 Vermont ski areas initiated an innovative collaborative marketing campaign “The Drive to 5.5.” The goal of this campaign is to return skier visits to the state to 1980s levels of 5.5 million.

Issues

“Weatherproofing” resorts with up-to-date snowmaking capabilities is a constant need.

State permitting processes are sometimes redundant, which increases costs.

Workers compensation and energy costs are much higher in Vermont than other states with similar resorts.

Rising insurance rates have a big effect on operating costs.

There is a need to develop better marketing strategies.

It is important to keep Vermont competitive in the marketplace by providing a wider array of vacation amenities as demanded by the public.

Ski areas whose snowmaking operations do not meet minimum flow standards for streams need to comply.

4. Other Winter Trails-Based Activities

Snowmobiling, cross-country skiing, snowshoeing, and dog-sledding are trails-based winter activities that are becoming more popular in Vermont. This section contains a short description of each activity and achievements related to it. Then, at the end, many of the current issues related to these activities are presented. Refer to the winter recreational activities section in Appendix B for information about backcountry skiing and snowboarding.

Snowmobiling and the Statewide Snowmobile Trail System (SSTS)

Snowmobiling has become more popular in recent years. The change in participation in snowmobiling by residents in the combined states of Vermont, New York, New Hampshire, and Massachusetts was determined by using National Survey on Recreation and the Environment data from 1995 and 2003. These results indicated an 88 percent increase in this activity over that period by people from those states. Members of the Vermont Association of Snow Travelers (VAST) increased from 18,000 in 1993 to over 45,000 in 2003.

Indicators of current participation are available from other sources. In a survey of Vermont residents in 2002, 15.2 percent said that snowmobiling was one of their household’s two most frequent outdoor recreation activities between the months of November and April. The Vermont Tourism Data Center’s 2002 survey indicated that four percent of winter visitors to Vermont had snowmobiling as their primary purpose. Other surveys indicate that 40 percent of snowmobilers are over 50 years of age. This percent might change with the aging of the population.

VAST created and maintains the Statewide Snowmobile Trail System (SSTS). The number of miles in the system increased from 2,700 in 1993 to 4,600 in 2003. Tax on gasoline has provided many dollars for the system. Three-quarters of one percent of Vermont’s gas tax, not to exceed \$370,000 annually, goes to the Vermont Recreation Trails Fund. The law has indicated that 40 percent of that money (which would not exceed \$148,000) gets passed through the Vermont Department of Forests, Parks and Recreation to VAST.

VAST has been in existence since 1967, making it one of the oldest non-profit, private groups in the United States devoted to the sport. The State of Vermont requires trail riders to buy a pass known as the Trail Maintenance Assessment (TMA) and belong to a local club.

Private land represents 80 percent of Vermont’s SSTS, and local clubs must obtain permission from landowners to ride on their land. VAST trails are intended for snowmobile use only during the season from mid-December through April, snow permitting. However, in Vermont the trails are considered a community resource and, in some places, are shared by skiers and snowshoers.

All riders in Vermont over the age of 12 must pass a course in safe riding given by certified snowmobile instructors at various locations. Children who are 11 years of age may attend an approved safety course and receive certification.

In 2003 snowmobile operators were required to have minimum liability insurance of \$25,000 for one person, \$50,000 for two or more persons killed or injured, and \$10,000 for property damages in any one accident.

Achievements

Vermont's SSTS as maintained by VAST has been repeatedly recognized nationally as one of the top five trail systems in North America.

In a 2002 survey, Vermont residents were asked to assign a grade-point average of A, B, C, D, E, or F to the quality of various types of trail-related activities. Approximately 54 percent of residents assigned snowmobile trails in Vermont an A or B grade.

VAST has been recognized as a national model due to its grassroots, volunteer-based operations with more than 140 local clubs throughout the state.

Using a variety of methods, including training workshops, VAST encourages riders to respect landowners' rights, keep the landscapes free of litter, be alcohol free, and other topics.

VAST contributes funds to law enforcement to police problem areas and run safety checks.

VAST reported in 2002 that the economic benefits to the state due to snowmobiling here had grown to \$550 million annually.

VAST's Safety Education and Responsible Riding Committee developed an action plan in 2002-2003. The plan described ways the organization would deliver safety and other messages to its members at meetings, events, in the media, and on the trail.

Local VAST clubs donate the equivalent of about \$88,000 in cash and volunteer time annually to a variety of charities and local fire and rescue squads. A 320-mile border-to-border ride from Massachusetts to Canada engaged about 200 riders each year in 2003 and 2004. A total of \$173,000 was raised for the Cystic Fibrosis Foundation and the Donna Crandall Foundation, created in memory of a woman with the disease.

Manufacturers are producing 4-cycle engines with considerably reduced noise and pollution.



Issues

VAST estimates that snowmobiling in Vermont costs over \$100 more annually per person than engaging in this activity in New Hampshire, Maine, or New York. This is due to the cost of trail passes, club fees, and required insurance in Vermont. In 2002 VAST proposed that a combination of alternative funding methods cover the cost of insurance. These include the state's self-insured fund, 15 percent of registration fees, and the state's general fund.

Major complaints about snowmobiling are noise, odor, excessive speed, littering, relocating trails without landowner permission, and inappropriate behavior. These are being addressed in a variety of ways as mentioned in the achievements section.

The costs are high when trails need to be re-routed. Reasons include loss of landowner permission to recreate and impacts on wildlife such as deer wintering areas.

Cross-Country (Nordic) Skiing and the Catamount Trail

Nordic or cross-country skiing involves a number of different skiing styles and equipment. Classical skiing is done on groomed tracks. Skate skiing is often the racing version of the sport and is done on groomed snow without tracks. Back-country skiing is done where no grooming has been done and requires sturdier gear with wider skis. Telemark skiing uses a binding similar to cross-country where the binding connects the boot to the ski at the toes only. The turning technique involves a staggered position of the skis with bent knees and weight equally divided between the two legs.

Although some recent national surveys suggest that interest in cross-country skiing is waning, there are other indicators that show it thriving in Vermont. In the recreation survey of Vermont residents in 2002, 24.4 percent said that cross-country skiing was one of their household's two most frequent outdoor recreation activities between the months of November and April. Participation in this activity was exceeded only by downhill skiing.

The National Survey on Recreation and the Environment (NSRE) conducted between 1999 and 2004 indicated that annual participation levels for Vermonters participating in cross-country skiing were 108,793 individuals, representing 22.7 percent of the population. A 2003

Outdoor Industry Foundation study estimated that 16.7 percent or more than 80,000 Vermonters participated in cross-country skiing.

Media interest is growing, as evidenced by articles about the Catamount Trail in national magazines, including *National Geographic Adventure* in the winter of 2004, and an article in *Vermont Life* in 2001 about the 2002 Craftsbury Cross-Country Ski Marathon. The increasing numbers of Nordic skiing teams for youth, known as the Bill Koch League, which compete statewide at local ski clubs and facilities, also confirm the growing popularity of this sport in Vermont.

Cross-country ski trails in Vermont are found on three different resource bases: at commercial ski areas, including both alpine and nordic areas; on public lands; and on shared-use trails. Most ski areas groom their trails and provide track for both diagonal stride skiers and a lane for skating skiers. Some areas have ungroomed trails for a back country experience. State and federal lands also provide opportunities for back country skiing since they provide an undeveloped forested land base and miles of roads that are not plowed or groomed. Multiple-use snow routes include Class 4 roads, legal trails, unplowed roads, and VAST snowmobile trails on state, federal, and some private lands.

The Catamount Trail Association (CTA), founded in 1984, is a statewide group dedicated to establishing and maintaining winter trails for public skiing and snowshoeing throughout the state. CTA is responsible for the creation of the 300-mile Catamount Trail, the nation's longest Nordic ski trail, which spans the state north to south. The Vermont Legislature appropriated monies twice to the CTA to help pay for the acquisition of trail access easements from willing landowners for the trail where it crosses private property: once in 2001 for \$15,000, then again in 2004 for \$15,000.

Achievements

In a 2002 survey, Vermont residents were asked to assign a grade-point average of A, B, C, D, E, or F to the quality of various types of trail-related activities. Cross-country trails received a B grade overall, with 54.7 percent of Vermonters assigning them an A or B grade.

Membership in the Catamount Trail Association increased by more than 200 percent between 1994 and 2003, from 532 to 1650.

Over the past decade, the CTA made progress in protecting sections of the Catamount Trail. Nearly 50 of the 180 miles of the trail located on private land were protected during that period.

The Craftsbury Cross-Country Ski Marathon has become so popular that it is now limited to 600 participants.

The CTA produces a highly acclaimed guidebook, the eighth edition of which was produced in 2003.

Snowshoeing

Using snowshoes for walking in winter is a popular activity among Vermont residents. Snowshoeing enables people to walk efficiently across the snow-covered landscape. The 2002 recreation survey of Vermont residents revealed that 20.9 percent said snowshoeing was one of their household's two most frequent outdoor recreation activities during the months of November through April. Snowshoeing was the third most often mentioned winter activity, after downhill and cross-country skiing.

The National Survey on Recreation and the Environment (NSRE) conducted between 1999 and 2004 indicated that annual Vermont participation levels for snowshoeing involved 115,024 individuals, representing 24 percent of the population. A 2003 Outdoor Industry Foundation study estimated that 10 percent or 47,927 Vermonters participated in snowshoeing.

Issues

Many skiers and snowshoers prefer a quiet experience without motorized activity. However, approximately one-third of the Catamount Trail miles are shared with the motorized trails of the Vermont Association for Snow Travelers (VAST).

Need to complete and enhance trail routes via well-marked signs and bridges for passage on the Catamount Trail.

Need to secure permanent access to the Catamount Trail via easements granted by cooperative landowners or through outright purchase of land.

Dog Sledding and Skijoring

The Vermont Mushers Association defines mushing as any dog-powered sport whether on snow or on dry land. This includes dogs pulling sleds, bicycles, wheeled rigs, or anything that rolls, plus people on skating- or classical-style cross-country skis (called skijoring), roller blades or roller skis, skate boards, scooters, or even while running (called cani-cross). Skijoring and cani-cross are the segments of mushing that are growing the fastest. This is due in part to the fact that you need only one or two dogs for these activities. Competitive racing opportunities are available in the state for most of these activities. The number of skijorers who race grows larger each year.

Mushing can be done during any season, provided that it is not so hot the dogs overheat. The term "sled dog" is generally used as a generic name for several breeds. These are the purebred American Kennel Club-recognized northern breeds of Siberian Husky, Samoyed, and Alaskan Malamute as well as the non-AKC cross-bred Alaskan husky or Euro-hound. This is a cross between the northern breeds and pointer and hound breeds for the most part. There are also a few other traditional northern breeds that are used for mushing such as the American and Canadian Eskimo dogs, Inuit dogs, and Chinooks. However practically any breed can be used. The requisites are a healthy dog weighing over 35 pounds with a sound back and hips, a desire to pull, and ability to respond to training and verbal commands.

The modern-day beginning of organized racing and mushing in New England is generally considered to be 1924, when the New England Sled Dog Club (NESDC) was started. This club is actually the oldest continually active club in the nation. Vermont's racing history can be traced to the early 1950s when the New England Championship was hosted in Lyndonville. In later years, races were also held in Shelburne, Stowe, and Berlin. Vermont currently hosts four races: sprint races as part of the NESDC circuit in Eden, Island Pond and Waitsfield's New England Championship (currently on hiatus for economic reasons); and the Green Mountain Distance Mushers race in Craftsbury. Until recently, a NESDC race was held for years at Lake Elmore but has been discontinued.

The number of mushers in Vermont is currently unknown but estimated to be more than one hundred. Inter-

est in mushing has grown over the past ten years and is still growing. The Waitsfield Sled Dog Races held in 2001 and 2003 had more than a thousand spectators on each day. More than 105 dog teams registered for racing in that event, the largest number for any New England race. The Waitsfield race has drawn spectators from all over Vermont, New England, the Northeast tourist corridor, and beyond.

Many mushers report that more people want to experience riding on a sled. Some mushers offer dog sled rides or tours for a fee. These include short rides, half-day or full-day tours, and overnight touring experiences of either winter camping or staying in lodges or inns.

Issues Related to All the Winter Trails-Based Recreation Types

Maintaining access to trails by keeping the trails open when land changes ownership and finding funds to purchase easements from landowners.

Reducing the number of shared-use trail miles due to safety issues and user preferences where both motorized and non-motorized uses are occurring.

More support from the state for assistance with advertising and reaching new markets.

Finding agreeable terms of using trails when there are opportunities for shared use, such as dog sledding and snowmobiles.

More funding is needed to maintain trails, conduct training workshops, and for law enforcement efforts.

Anticipated difficulties with stormwater regulations if they pertain to these types of trail.

5. Trails Related to Towns and Roadways and Occurring Primarily in Developed Areas

The land-based trails, roads, and greenways discussed in this section are those that people can access in their town or near their home and which connect local trails and roads with others that span across the countryside and the entire state.

When surveyed in 1992 and 2002, Vermont residents' attitudes toward two trails-related concerns did not change.

These were (1) the perception that there are too many people on trails and recreation paths and (2) that there is a lack of trails and greenways linking towns and recreation areas. In the 2002 survey, approximately 42 percent said that having too many people on trails and recreation paths was not a problem, and 39.1 percent said it was a small problem. In that survey, approximately 30 percent of Vermonters said that a lack of trails and greenways was not a problem, and 42.8 percent said it was a small problem.

In 1998 the Vermont Agency of Transportation (VTrans) adopted a bicycle and pedestrian plan to "provide all residents and visitors a safe, efficient, and accessible transportation system." In 2002 VTrans released the *Pedestrian and Bicycle Facility Planning and Design Manual*, which provides guidance on specific design details for pedestrian facilities, on-road bicycle facilities, shared use paths, and rail trails, along with guidance on multi-use/multi-season trail design considerations.

Shared-Use or Multi-Use Paths

Shared-use or multi-use paths are off-road facilities that are enjoyed by a wide variety of users, including bicyclists, pedestrians, joggers, in-line skaters, skateboarders, cross-country skiers, and sometimes snowmobilers. These paths are distinct from "trails," which are usually not paved and have more of a back-country orientation. However, some shared-use paths are referred to as trails, such as the Cross Vermont Trail, the Missisquoi Valley Rail Trail, and the Delaware and Hudson Rail Trail.

Achievements

The development of shared-use paths has been the primary activity of the VTrans Bicycle and Pedestrian Program. In 1997 Vermont adopted design standards for roadway construction, reconstruction, and rehabilitation projects. These address shoulder width guidelines for on-road facilities.

Issues

Competing for funds when viewed against the needs of other transportation projects.

Securing rights-of-way from private landowners.

Environmental review and acquiring permits.

Rail Trails

Many miles of retired rail beds in Vermont also provide opportunities for shared-use trails. Due to their use for transportation purposes, these usually begin and end at logical points and travel through villages and other developed areas. Their benefits include a pre-existing right-of-way, a sub-base that is usually strong and well-maintained, and an historic context within the community. Rail trails often serve snowmobilers and equestrians as well as bicyclists and pedestrians.

In 1963 Vermont was the first state to use public funds to preserve many of its rail lines. Of the more than 700 miles of active rail line in the state, about 300 miles are in state ownership. About 150 miles of these corridors have been converted into multiple-use trails by the Vermont Agency of Transportation or the Vermont Agency of Natural Resources and are listed in the table below.

Issues

Need for coordination between the Vermont Agencies of Transportation and Natural Resources, in the form of a task force, to create a long-term strategy for rail trail management and maintenance.

Need for assistance to organizations who manage these trails in finding funding options.

Railroads that ceased operation after the passage in 1983 of the National Trail System Act (also known as the Rail Banking Act) offer the best potential for use as trails. However the right-of-way for rail banked railroad corridors permits them to be used as trails as an interim use and ensures their future use for railroad operation in the event railroad operation is deemed viable.

Bicycling

Data from the 1995 and 2003 National Surveys on Recreation and the Environment (NSRE) showed an increase in participation in bicycling by residents in the combined states of Vermont, New York, New Hampshire, and Massachusetts. These results indicated a more than 50 percent increase in this activity over that period by residents of those states, from 5.9 million to 8.89 million. The NSRE conducted between 1999 and 2004 indicated that annual Vermont participation levels for bicycling were 231,006 individuals, more than 48 percent of the population. In the 2002 recreation survey of Vermont residents, more than 15 percent said that bicycling was one of their household's two most frequent outdoor recreation activities between the months of May and October. In the 2002 recreation survey, Vermont residents were asked to assign a grade-point average of A, B, C, D, E, or F to the quality of various types of trail-related activities. Bike paths received an overall grade of B-.

Rail Corridors Currently Used as Multi-Purpose Trails and Paths in Vermont

Name of Trail or Path	Length	Location
Alburg Recreational Rail-Trail	3.5 Miles	Alburg Village to East Alburg
Cross Vermont Trail	12 Miles 14 Miles	Marshfield to Groton Non-contiguous segments in Newbury, Groton, Ryegate, Peacham, Marshfield, Plainfield, E. Montpelier, Berlin, Montpelier
Delaware and Hudson (D&H) Recreational Trail	20 Miles	Castleton to Poultney and from West Pawlet to West Rupert
Dover Valley Trail	5 Miles	Dover to Wilmington
Graniteville Trails	1.4 Miles	Websterville to Graniteville
Island Line Rail Trail	13 Miles	Burlington Waterfront to South Hero on the former Rutland Railroad Island Line
Missisquoi Valley Rail Trail	27 Miles	St. Albans City to Richford
Beebe Spur Rail Trail	43.8 Miles	From Prouty Drive in Newport to the U.S.-Canadian border in Derby
Toonerville Trail	3 Miles	Springfield to Charleston, NH
West River Trail	15 Miles	South Londonderry to Townshend

As many roads in Vermont have scenic views and little traffic, bicycle touring remains a popular activity and attracts people from all over the world. Of the approximately 14,000 miles of public roads in the state, about 400 miles of state highway have paved four-foot shoulders for safe bicycle touring. Since these roads were not constructed initially with bicycles in mind, more accommodations for bicycles are being made when roads are repaired. For more information on this, refer to the Transportation Assistance part of Section 2 above which presents information about related Vermont Agency of Transportation programs. A few communities in Vermont have designated and signed their own bicycle routes. These include Burlington, Colchester, and Woodstock.

Rail trails provide hundreds of miles of off-road bicycling opportunities, and these are described in the previous section. In addition, many communities have recreation paths which allow bicycling.

Competitive road bicycle racing has been increasing in recent years. American cyclist Lance Armstrong, who battled cancer and won the Tour de France title six times in the past decade, has increased interest in the sport.

The Vermont Bicycle and Pedestrian Coalition is the non-profit organization that represents bicycling interests on a statewide scale.

In the future for purposes of keeping healthy and limiting pollutants, bicycles may become more important as an alternative form of transportation because they require one-tenth to one-fifth as much space per rider as do cars, make no noise, and produce zero emissions.

Achievements

In 1994 Bicycle Safety Fairs were introduced in Vermont. At these events, students learn to ride safely on a model street network. The Governor's Highway Safety Council funded the first training.

In 1994 the Lake Champlain Bikeways was designated as a 350-mile bicycle principal route around the lake using existing roads along Lake Champlain and the Richelieu River in Vermont, New York, and Quebec.

Between 1995 and 2003, 49 percent of all funded Transportation Enhancement Program projects included some

type of bicycle and pedestrian facilities. Funding for safety and education related to bicyclists and pedestrians became available starting in 1999.

The Vermont Safe Kids Coalition sponsored bicycle safety rodeos throughout the state in 2002 and 2003 and two additional trainings are planned for 2004 and 2005.

Annually, the Vermont Safe Kids Coalition provides 2000 reduced-cost bicycle helmets to schools and community outreach organizations.

Under a contract with VTrans, the VT Bicycle and Pedestrian Coalition trained bicycle safety instructors in the BikeSmart safety curriculum, which emphasizes four core skills related to dress and safety and ties into the Vermont Framework for Education. Twenty schools participated in BikeSmart in the pilot year 2003-2004. The initial solicitation for the 2004-2005 academic year yielded applications from over 60 schools.

Three new publications were released by the Vermont Agency of Transportation: the *Vermont Pedestrian and Bicycle Facility Planning and Design Manual* in 2003 and the *Vermont Bicycle Commuter's Guide: An Introduction to the Fun and Rewards of Bicycle Commuting* in 2004. A "Guide for Sharing Vermont's Roads for Bicyclists, Pedestrian, Motorists and Others," often referred to as the "Share the Road" brochure, was released.

In July 2004, the "side path" law was repealed which results in bicyclists having the legal right to decide whether to ride on a road or a bike path. The old law required bicyclists to ride on an adjacent path, if one existed.

A community-based bicycle and pedestrian safety program "Safe Routes to School" was piloted in Chittenden County schools in 2004-2005. Hinesburg Community School, C.P Smith in Burlington, and Camels Hump Middle School in Richmond participated.

Issues

The safety of bicyclists on roads is a major concern. Though bicycles outnumber cars 2 to 1 in the world, only 2 percent of traffic fatalities involve bicycles. However, of those fatalities, 90 percent result from collision with cars.

Need for better planning for sidewalks, bike lanes, or separate bike paths on roadways or in village centers that are heavily used by bicycles and pedestrians.

Need to integrate shoulder widening into the Bicycle and Pedestrian Program so that road shoulders are paved when roads are paved and so that they are maintained and kept clean.

Need for signs along roads used as bicycle routes to alert motorists to the presence of bicyclists within the roadway.

Need for more school programs that educate children and adults regarding responsible bicycle and motor vehicle operations, including the Safe Routes to School program.

Better enforcement of speed limits and other motorist and bicycling violations.

There is a concern that too many riders will be attracted to dirt roads that towns struggle to maintain, as a result of unauthorized publications and maps.

Class 4 Roads, Legal Trails, and Ancient Roads

Class 4 roads often provide an important opportunity for various types of recreation, including motorized and non-motorized activities. They are designated by town selectboards under V.S.A. Title 19, Section 302(4). The table below shows the number of miles of Class 4 roads in Vermont by county in the years 1993 and 2003. This indicates a net decrease in miles available of 2.2 percent from 1993 to 2003.

Sometimes these public rights-of-way are lost to public use. The loss may be inadvertent, due to neglect, or through legal action, when a town “throws a road up” causing the right-of-way to revert to abutting landowner(s). These highways are not eligible for state funds and usually are not maintained for winter use by road vehicles.

Legal trails are described in V.S.A. Title 19, Section 301 (8). These are public rights-of-way, as opposed to highways, and are not the responsibility of the town for construction, maintenance, repair, or safety.

A few towns in Vermont in recent years have asserted town rights over ancient roads and rights-of-way. These may have the potential to provide trail-related recreation opportunities. The towns are charged with protecting all the public assets, including town roads. Some of these

Class 4 Roads, Miles by County			
County	1993	2003	% Change
Addison	93.16	86.85	-6.8
Bennington	54.26	55.67	2.6
Caledonia	158.67	155.25	-2.2
Chittenden	37.07	38.26	3.2
Essex	64.01	65.19	1.8
Franklin	97.8	87.42	-10.6
Grand Isle	0	3.49	NA
Lamoille	91.11	97.16	6.6
Orange	242.82	222.47	-8.4
Orleans	151.86	142.8	-6.0
Rutland	126.6	125	-1.3
Washington	161.51	155.31	-3.8
Windham	99.78	102.52	2.7
Windsor	193.85	200.96	3.7
Total	1572.5	1538.35	-2.2

Source: Vermont Agency of Transportation

roads may have been laid out as far back as the 1700s and, though no longer used by members of the traveling public, were never formally discontinued. However, title searches that are conducted when property transfers take place are only required to go back 40 years, which is the statutory limit for private property claims. In order to continue covering property owners in the state, title insurance companies doing business in Vermont need more predictability regarding the status of ancient roads.

Achievements

During the past decade, both the Vermont Trails and Greenways Council and the Vermont League of Cities and Towns made available model policy language regarding Class 4 roads and legal trails that encourages towns to make these available for recreational purposes.

The Vermont Trails and Greenways Council created a position statement in support of the right of the public to identify and retain ownership of ancient and historic highways. The Vermont Legislature is expected to act on these and other recommendations during the period of this plan.

Issues

Not all towns are aware of the importance of Class 4 roads in providing trail recreational opportunities.

Due to demand for more trail resources, user groups or towns need to learn how to maintain Class 4 roads so that impacts on natural resources are minimized.

The definition and legal status of ancient roads and rights-of-way in Vermont need more clarification.

Walking

Please note that the issues for walking are combined with those of jogging, which is discussed next. Walking has become more popular as an outdoor activity in recent years. Data from the 1995 and 2003 National Surveys on Recreation and the Environment (NSRE) showed an increase in participation in walking by residents in the combined states of Vermont, New York, New Hampshire, and Massachusetts. These results indicated a more than 36 percent increase in this activity over that period by residents of those states, from 13.58 million to 18.51 million.

The NSRE conducted between 1999 and 2004 indicated that annual Vermont participation levels for walking were 435,625 individuals, nearly 91 percent of the population. In a survey of Vermont residents in 2002, 11.3 percent said that walking was one of their household's two most frequent outdoor recreation activities between the months of May and October. For the months of November through April, 15.2 percent said that walking was one of their household's two most frequent outdoor recreation activities.

Besides occurring on sidewalks in neighborhoods, on many different types of trails, and in parks and other natural areas, people may walk through museums and farms and visit historic neighborhoods and sites. Examples of historic roads for walking are described in the historic resources section of Appendix B.

Walking is being promoted as a healthy form of exercise for Vermonters as demonstrated by the following initiatives:

- In 2004 the Safety and Health Promotion Program of Vermont League of Cities and Towns sponsored a step-counting initiative "Adventure." About 1,800 employees and family members from 74 municipalities par-

ticipated. Some walked the average four miles per day it would take to complete the Vermont segment of the Long Trail in ten weeks.

- In 2004 the Governor's Council on Physical Fitness and Sports, the Vermont Department of Health, Blue Cross Blue Shield of Vermont, and the Vermont Health Plan initiated the statewide program "Get Moving Vermont!" The program encourages people to get at least 30 minutes of physical activity most days of the week. A Blue Cross Blue Shield program created walking maps for some Vermont towns with mileage and points of historic or cultural interest. About 2,600 Vermont state employees walked a total of 656,000 miles in a 2004 program. Other area spin-offs included "Get Moving Champlain Valley" and "Get Out!"--the Central Vermont Community Walking Program.

- Each October, millions of children, parents, teachers, and community leaders across the globe walk to school to celebrate International Walk to School Day and, since 2003, International Walk to School Week. The event focuses on the importance of physical activity, safety, air quality, and "walkable" communities. Walk to School Day has been promoted in Vermont since 2001 by the Vermont Agency of Transportation and the Vermont Department of Health. This event grew in Vermont from five schools and 800 students in 2001 to 33 schools and 4800 students in 2004.

Running and Jogging

The sport of running continues to be enjoyed by a large percentage of the population of Vermont. Results of the National Survey on Recreation and the Environment (NSRE) conducted between 1999 and 2004 found that annual participation by Vermonters is more than 37 percent of the population or 178,766 individuals. National running publications estimate the per capita participation in the state to be among the highest, if not the highest, in the U.S. Echoing the running boom of the 1970s, the sport experienced a second growth spurt in the 1990s both nationwide and in the state.

While some runners appreciate the competitive aspects of the sport, many new participants take up the sport for recreation, social interaction, and the obvious health benefits (both physical and mental). Numbers of participants

are rising in all age and demographic groups, but especially among people aged 35 years and up.

A plentiful supply of back roads, trails, and paths provide participants with easy access to the sport. In urban areas around Vermont, there are well developed networks of municipal (community) recreation paths and facilities away from high (automobile) traffic areas. Despite the sometimes difficult climate, the sport of running continues to flourish and grow around the state.

Achievements

In 1999 some schools around the state began sponsoring the Girls on the Run® program for third to fifth graders. This is an 8- to 12-week experiential physical training program, culminating in a 5-kilometer run or walk event. By 2004, 500 girls participated. The Run Girl Run! Program offers a similar program free to middle-school aged girls.

Over 75 organized races/events are held around Vermont each year.

Numerous ongoing fun runs, trail races, and workouts are sponsored by running clubs.

Marathons and races have become major fundraising vehicles for charities and not-for-profit organizations. The Vermont City Marathon in Burlington is considered one of the top 20 marathons in the U.S. Organizers have brought younger and disadvantaged participants into the sport by working with community organizations such as the King St. Center in Burlington.

Issues

Logistical and legal challenges faced by race and event organizers due to liability, safety, the permitting process, and other cost concerns of communities hosting races.

Developing more multi-event races and challenges such as triathlons and relays to encourage greater participation (such as running one leg of a race) and increasing the health benefits for a wider range of the population.

Continuing the current efforts to promote running among all age and demographic groups, especially children and “at risk” youth, as a positive and healthy activity for life and for raising awareness and money for charities.

6. Trails-Based Activities in Forested and Back-Country Areas

There are many activities that occur in forested and back-country lands in Vermont during the months without snow cover. Among these are mountain biking, horseback riding, trekking, off-road recreation such as ATV riding, and hiking.

Mountain Biking

The sport of mountain biking can be dated back to the 1940s, when individuals used bicycles with wide tires to ride around the forest. The mountain biking that people experience today started about 25 years ago. Mountain biking appeals to people of all ages. Formed in 1997, the Vermont Mountain Bike “Association,” formerly “Advocates,” (VMBA) is the statewide organization dedicated to promoting the sport in the state.

Resource managers report increasing use of trails by mountain bikers. Results of the National Survey on Recreation and the Environment (NSRE) conducted between 1999 and 2004 found that annual participation by Vermonters is 35 percent of the population or 167,743 individuals. There are an estimated 200,000 mountain bikes owned in the state with well over 100,000 mountain bike visits to the state annually.

There are many mountain biking opportunities throughout the state on various ownerships of land as follows:

- Opportunities to bike on private lands include many offered at alpine and nordic ski areas and facilities.
- Trails available for mountain biking on Vermont Department of Forests, Parks and Recreation (FPR) lands include gravel-surfaced roads, rail trails, state park roads outside of the regular operating season, and other roads and trails specifically designated for use by mountain bikes. In addition to these areas, there are two pilot projects where mountain biking is being allowed on wooded trails where it previously was not allowed but occurred illegally. These two areas are managed in cooperation with local clubs and received the required approval of the Commissioner of Forests, Parks and Recreation.

- On the Green Mountain National Forest (GMNF), mountain bikes and other bicycle uses are limited to an approved system of travelways. The Wilderness, Primitive, and Special Areas of the forest are closed to bicycle use.

- Biking is not permitted on the Appalachian Trail or the Long Trail.

The 2002 recreation survey of Vermont residents found that nearly 56 percent agreed or strongly agreed that more trails should be opened up on public lands for riding mountain bikes.

Achievements

The Vermont Mountain Bike Association (VMBA) chapters and members built more than 60 miles of new single track trail in 2003.

VMBA established their Landowner Support Fund in 2003. It provides money to landowners, who allow free access of their lands, to cover legal costs associated with defending a claim for injury brought by a mountain biker.

VMBA offers the Sprockids program to towns so that children can learn how to ride safely and keep their bikes in good repair.

An update of the *Central Vermont Back Roads Bike Tour Guide* was published in 2004. It was sponsored by Onion River Sports and written by the Central Vermont Regional Planning Commission.

For the past ten years Mount Snow hosted major competitions, which draw mountain bikers from all over the world.

The Kingdom Trail Association (KTA) in the Northeast Kingdom of Vermont has one of the most successful community-based trail systems in the nation. As a result of KTA's efforts, *Men's Journal* ranked East Burke number five in 2004 in its "Top Ten Best Fall Mountain Bike Rides."

Issues

Limited access to public and private land is an ongoing problem.

More off-road (dirt), loop, and single track trails are desired by many riders.

There is a need to increase public awareness of the benefits of mountain biking to dispel misinformation and prejudice about bike impacts on the land.

Increased use of undesignated trails and riders looking for the challenges of gullies, roots, rocks, and water have resulted in user conflicts and negative impacts to natural resources in some areas.

Clubs and agencies lack a labor force to build and maintain bike trails to standards of the International Mountain Biking Association (IMBA).

Horseback Riding

Horseback riding has become more popular in recent years. The change in participation in this activity by residents in the combined states of Vermont, New York, New Hampshire, and Massachusetts was determined by using National Survey on Recreation and the Environment (NSRE) data from 1995 and 2003. These results indicated a 28 percent increase in this activity over that period by residents of those states.

The NSRE showed Vermont participation levels for horseback riding generally at 39,300 and for horseback riding on trails at 33,069. These data also revealed that there are many equestrians with an interest in trail riding, and some groups in the state have indicated that some of their members are interested in competitive trail riding as well.

The majority of horseback riders use trails developed on private property, Class 4 roads, legal trails, rail trails, and logging roads. There are limited designated trails on state and federal lands for horseback riding. A 2002 recreation survey of Vermont residents found that 74.3 percent agreed or strongly agreed that more trails should be opened up on public lands for horseback riding. Horseback riding is prohibited on both the Appalachian Trail and the Long Trail.

The Vermont Horse Council is the statewide organization dedicated to promoting horseback riding in Vermont.

Achievements

Horse camping is being encouraged at a few Vermont State Parks.

The Vermont Horse Council was approved as the corridor manager for designated equestrian trails on West Mountain Wildlife Management Area.

Issues

Trails involving high potential for erosion, high speed, or heavy use need to be constructed to road standards, which include a crowned road bed, ditches, culverts, and hardened fords or waterbars.

Horses are often uncomfortable crossing bridges, so fords need to be built to appropriate standards.

More suitable parking areas are needed.

Trekking with Pack Animals

Although the numbers of people who trek with pack animals is not being tracked, this activity appears to be increasing in popularity. Llamas are a popular animal for this, and there are many llama farms in the state. Their padded feet are easy on delicate trails.

Trails available for trekking with pack animals on Vermont Department of Forests, Parks and Recreation (FPR) lands include gravel-surfaced roads, forest highways (skid roads), rail trails, and state park roads outside of the regular operating season.

Off-Road Recreation including All Terrain Vehicles (ATVs) and Off-Road Vehicles (ORVs)

Off-road recreation is an increasingly popular and widespread form of outdoor recreation for Vermonters and out-of-state visitors. Motorized trail-based recreation uses Off-highway Vehicles (OHVs), which includes All-Terrain Vehicles (ATVs) and Off-Highway Motorcycles (OHMs). Trucks and Jeeps are not included here as they are primarily on-highway vehicles, which may or may not have been modified for use off road. In addition their power and weight put them in a class of vehicles distinct from OHVs, most of which are specifically designed for off-highway use.

Data from the 1995 and 2003 National Surveys on Recreation and the Environment (NSRE) showed an increase in participation in off-road driving by residents in the combined states of Vermont, New York, New Hampshire, and Massachusetts. These results indicated a 33.7 percent increase in this activity over that period by residents of

those states, from 1.98 to 2.92 million. The NSRE conducted between 1999 and 2004 indicated that annual Vermont participation levels for off-road driving were 90,102 individuals or 18.8 percent of the population. In the 2002 resident recreation survey of Vermonters, off-road driving did not appear as one of the top ten outdoor recreation activities that residents engage in between May and October.

In the early 2000s, industry figures from the Motorcycle Industry Council estimated that there were about 100,000 ATV and OHM units in the State of Vermont. The number of units in the New England region was higher. Between the mid-1990s and mid-2000s, national ATV sales (excluding OHMs) reached 5.4 million vehicles.

There are several forms of OHV recreation, which include competitive and non-competitive events, organized group rides, small group exploration, and solo excursions. For people with physical limitations, riding an OHV provides a chance to get outdoors with families and friends and take part in recreation that they could not take part in on foot.

Machines designed for non-competitive recreation have modern four-stroke engines which are both quiet and good performers. State and federal standards for this type of recreation are tighter for this kind of equipment than for vehicles used in competition. The term “scrambler” or “quad” is often used to describe a two-wheel drive ATV designed for closed course competition. In general “scramblers” tend to have two-stroke motors with both a higher performance and a higher decibel sound output than non-competitive models.

OHMs are intended to be dual sport--to be used on and off roads. Many OHM models are Department of Transportation (DOT) legal as they are able to be registered and inspected for highway use. Non-DOT compliant models may be modified to include required equipment, such as lights and mirrors, to be registered for road use. Sound emissions from dual sport machines have markedly decreased in recent years as manufacturers have concentrated their engineering efforts on reducing sound emissions while maintaining performance.

ATVs may have three, four, or six wheels and may be two-wheel or all-wheel drive. ATVs need two tracks and have a vehicle width of no more than 58 inches. At present all

but a very small number of models are designed for single passenger (operator only) usage. Rider training emphasizes that ATVs are single-person machines, in all but a very few cases.

OHMs use a single track and are about 32 inches wide. While OHMs have a potential for higher trail speeds, as they are more agile than an ATV, the non-competitive OHM trails speeds are the same as for ATVs. The skills required to operate an ATV are substantially less than those required to operate an OHM. Good ATV terrain and trails are similar to those for OHMs, and variety is the key.

In Vermont any ORV owner who wishes to ride anywhere except his or her own land must register their vehicle. Properly registered ORVs may be used on any public road not plowed during the snow season or on plowed public roads that are posted to allow ORVs. On State of Vermont lands held by the Agency of Natural Resources (State Forests, State Parks, and Wildlife Management Areas), ORV use can occur only where approved by the Secretary of the Agency. At the time of this plan, ORV use was prohibited on nearly all public lands in the state except for frozen public bodies of water with the exception of Amity Pond, Levi Pond, Marsh Pond, Waterbury Reservoir, Bear Pond, Sterling Pond, and Lake of the Clouds.

A 1997 survey of Vermonters regarding the conservation of Vermont Agency of Natural Resources (ANR) state lands found that nearly 30 percent of Vermonters thought it important or very important “to provide opportunities for motorized recreation.” However, 67 percent of respondents to that survey thought it unimportant or inappropriate for ANR lands to be used for motorized recreation. The 2002 Vermont recreation survey of residents found that 67 percent agreed or strongly agreed that designated areas for all-terrain vehicles should be established on public lands. Per a similar survey conducted in 1992 when compared to the 2002 results, more Vermonters wanted designated areas for ATVs established on public lands in 2002 than did in 1992.

The Vermont Woodlands Association (VWA), the state’s largest organization of private forest landowners, conducted an informal survey of their members in 2003. Sixty percent of respondents to the VWA survey thought that public land in Vermont should not be made available for ATV use, while 12 percent thought that it should. The

majority of VWA survey respondents did not want ATVs ridden on their properties, were not comfortable with their liability insurance protection, and regarded ATV use as the most frequently observed unauthorized use of their properties. Roughly half of VWA members who returned surveys reported having received requests for permission to use land for snowmobiling, hiking, and horseback riding, while slightly over a quarter reported receiving a similar request for ATV use. Two-thirds of survey respondents noted unauthorized uses of their properties, and the most common problems included trail erosion and litter.

Achievements

The Vermont ATV Sportsman’s Association (VASA) was founded in 1999. The legislature allocated a portion of ATV registration fees and violation penalties to be used for trail construction and maintenance, insurance, and law enforcement. These funds pass through the Vermont Department of Forests, Parks and Recreation to VASA.

VASA recognizes that unmanaged use of ORVs can have negative impacts on natural resources and other recreational uses. Through the development of appropriate recreational opportunities for ATV users, VASA encourages people to use legal trails and keep off illegal trails.

VASA is developing trail signage protocols and maps to communicate where legal trails can be found throughout the state.

Sound emissions from dual sport machines and closed course machines have markedly decreased in recent years as manufacturers have concentrated engineering efforts on reducing sound emissions.

VASA representatives have begun participating in the Vermont Trails and Greenways Council.

Governor Douglas appointed a study committee in 2004 to look into the issues related to ATV use and develop recommendations for resolving them.

Issues

Every year improper and unapproved ORV use causes damage to roads and trails on both private and public land. Landowners spend thousands of dollars to repair the damage, and the situation has resulted in ill will directed toward the ORV community as a whole.

Many potential trail sources, such as town rights of way, roads, state and federal land holdings, and conserved lands, were categorically precluded from managed ORV trail development for about 20 years prior to this plan. However, the Governor's All Terrain Vehicle (ATV) Collaborative in 2004 recommended the development of a long-term and sustainable ATV trail system for the state. When ecologically sensitive and other incompatible sites are avoided, short corridors may be possible on public lands to offer connections between trails on private lands.

Meaningful inclusion of ORV recreation in the mix of Vermont recreational opportunities has not occurred. A commitment by the professional recreation community is necessary for the development of a trail system for ORV users.

Better coordination in the development of Vermont's overall trail system could significantly reduce illegal trespass and the general lack of stewardship by a minority of ORV riders.

Many manufacturers and dealers of OHVs at the time of sale encourage riding without mentioning concern for impacts to natural resources or the importance of riding responsibly and legally.

To provide meaningful experiences, ORV trails need to "go somewhere." Most of the trails currently available in Vermont are not connected with each other.

Hiking

Findings from a variety of surveys indicate that hiking is a very popular activity and is increasing in popularity. National surveys show a 41.2 percent increase over the period 1992-2002 and a 51.3 percent increase between 1994 and 2000. A survey by the Outdoor Industry Foundation in 2003 indicates that the number of hiking participants in Vermont at 223,817 represents a national ranking of 6 in per capita participation.

In a survey of Vermont residents in 2002, 43 percent said that hiking was one of their household's two most frequent outdoor recreation activities between the months of May and October. A 2003 survey by the Vermont Tourism Data Center of visitors to Vermont from all locations indicated that 7.4 percent engaged in hiking. Among visitors to Vermont from New England states, another survey found at VisitNewEngland.com indicates that 21 percent are hikers.

In a 2002 survey, Vermont residents were asked to assign a grade-point average of A, B, C, D, E, or F to the quality of various types of trail-related activities. Hiking trails received an overall B+ grade, with 76.3 percent of residents giving them an A or B grade.

Hiking trails are used for both day and overnight trips and include a variety of types such as long-distance, historic, interpretive, and nature trails and walking paths. There are many established foot trails throughout Vermont in state parks, state forests, town forests, the Green Mountain National Forest, and other public and private lands.

Vermont's statewide trail resources for hiking include the following:

Appalachian National Scenic Trail (Appalachian Trail or AT)
The Appalachian National Scenic Trail (AT) was established as the first National Scenic Trail by Congress with passage of the National Trails System Acts in 1968. The AT is a continuous marked footpath extending approximately 2,160-miles across the Appalachian Mountains from the summit of Springer Mountain in Georgia to the summit of Katahdin in Maine. The AT forms a greenway that connects numerous public land areas in fourteen (14) states. The AT is a component of both the National Trails System and a unit of the National Park System. In Vermont the AT is coincident with the Long Trail for about 100 miles from the Vermont/Massachusetts border to Killington, and then veers east to New Hampshire through Norwich, Vermont.

The AT is managed by a decentralized, volunteer-based partnership program involving many levels of federal and state government, the non-profit organization Appalachian Trail Conference (ATC, in 2005 to be called the AT Conservancy), the Green Mountain Club, and private citizen volunteers. Annually, more than 4,000 volunteers contribute more than 175,000 hours of effort to the AT. A survey of AT users in 1999 revealed that many thought the Vermont sections, when compared with those in other states, were the best.

Long Trail and the Green Mountain Club

The Long Trail, a 270-mile mountainous trail traversing the state from north to south, was recognized by *Backpacker Magazine* in 2000 as one of the top five hiking

trails in the U. S. overall. There are an additional 180 miles of adjoining trails in the Long Trail System.

Founded in 1910, the Green Mountain Club (GMC) maintains the Long Trail in cooperation with the Vermont Department of Forests, Parks and Recreation, U.S. Forest Service, National Park Service, Appalachian Trail (AT) Conference (in 2005 to be called the AT Conservancy), and private landowners. The GMC has more than 7,500 members across the state, and these are organized into 14 local units. Although GMC primarily cares for the Long Trail, the club's advocacy and education efforts also safeguard many of Vermont's other hiking trails. GMC volunteers and staff teach low-impact practices and safety skills to outdoor enthusiasts.

Progress has continued to be made on the Long Trail Protection Campaign, which began in 1986. Between 1990 and 2004, the Vermont legislature appropriated \$4.4 million from the capital budget for the trail, while GMC raised \$4.5 million from other sources. As a result of state funding, most of the land GMC acquires is transferred to public ownership as part of a state forest. In all, GMC has protected more than 55 miles of the Long Trail System and 16,000 acres of adjacent forest land.

For the past decade, GMC's Stewardship Program partnered with the Green Mountain National Forest and the State of Vermont to rebuild, renovate and/or replace nearly 1/3 of the 70-site overnight camping infrastructure of the Long Trail.

Over the last 10 years, some GMC staff members have received training in "Leave No Trace" principles, and its caretakers have spread this message to hikers.

In 2000 GMC began a group use initiative to raise awareness about group size and rules to follow in the LT system.

Cross-Vermont Trail

More than half of the Cross Vermont Trail (CVT), 44 of its 75 miles, was officially designated between 1993 and 2004. The CVT was envisioned as a four-season, multi-use trail to span the state east to west, connecting Newbury on the Connecticut River and Burlington on Lake Champlain. The trail crosses 17 communities, providing direct on and off-road links between 10 village centers, 10 state parks and recreation areas, and at least 10 schools. When completed, 50 percent of Vermont's population will be a bike ride away from the state capital.



Issues

Improved access is needed to trails, including parking areas.

Protection of public access to trails.

Damage to trails from overuse and illegal motorized use.

Protection of viewsheds.

Protection of trail corridors from development.

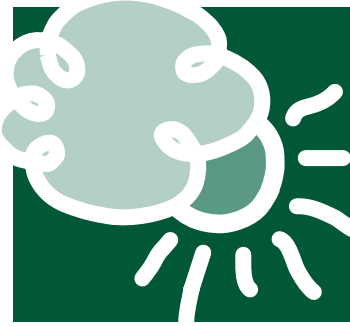
Minimizing ridgeline development.

Increased funding for maintenance of trails.

Increased use of trails in winter has resulted in human waste management problems in some areas.

The growing popularity of hiking with dogs has resulted in dog waste management problems and conflicts with other users along many trails.

Appendix A: Trends Affecting Outdoor Recreation in Vermont



This appendix of the *Vermont Outdoor Recreation Plan 2005-2009* presents the most important trends that are likely to affect outdoor recreation in Vermont. It is divided into four sections:

1. Some demographic statistics and changes in the state, primarily between 1989 and 1999, based on U.S. Census reports, including some county information;
2. Other changes which are likely to impact, and may already be impacting, outdoor recreation in the state, including posting of private land against public use and increases in the number of visitors to Vermont;
3. A summary of some outdoor recreation trends on a regional and national scale that could affect participation in individual activities in Vermont; and
4. What these changes may mean for outdoor recreation in Vermont.

1. Vermont Demographic Changes

Population

The number of people living in Vermont has increased steadily for the past 60 years. It increased between 1990 and 2000 by 8.2 percent to 608,827, an increase of 46,069 individuals. This increase was evenly split between in-migration and natural population increase.

County Data

The total number of people living in each county increased between 1990 and 2000. The county with the highest percentage growth was Grand Isle at 29.8 percent, representing an increase of 1,583 individuals for a total of 6,901. Chittenden County had the largest population increase of 14,810 to a total of 146,571 individuals, a growth rate of 11.2 percent. Double digit percentage increases occurred in Franklin (13.6 percent) and Lamoille (17.7 percent) counties. At 2 percent or less, Bennington, Essex, and Rutland counties saw the least growth.

Age Distribution

The age distribution of Vermonters changed significantly between 1990 and 2000 and continues to change.

Adults

The number of people 60 years of age and older in Vermont increased between 1990 and 2000 by nearly 15 percent to 101,825, representing 13,181 individuals. The number of those aged 65 or older increased by 17.2 percent to 77,510, representing 11,347 additional people. By July 1, 2003, this number had increased another 3.4 percent to a total of 80,132 individuals.

Chittenden and Lamoille counties saw the largest percentage increases of people 60 years of age and older. In Chittenden County, 18,499 more adults fell into this category in 2000 than in 1990, a 25.9 percent increase, representing 3,710 individuals. In Lamoille County, 723 more individuals were in this age bracket, a 25.2 percent increase to 3589 individuals.

Between 1990 and 2000, the number of people living in Vermont aged 40 and older increased by about 68,000, and those between 20 and 39 years decreased by about 25,000.

Youths

In 2000, the number of individuals in Vermont less than 20 years of age, 166,257, was less than one percent fewer than the number in 1980. Since 1990, the numbers of youths in Addison, Chittenden, Franklin, Grand Isle, Lamoille, and Windsor counties increased, while decreases occurred in all other counties. The decreases in Bennington, Orleans, and Rutland counties were greater than three percent, while the decreases in the remaining counties were 2.5 percent or less. While Orleans County experienced the highest percentage decline between 1990 and 2000 in youth, it also experienced the highest percentage increase in those over 60, resulting in 239 fewer youths and 828 more elders.

Between 2000 and 2003, the number of children younger than five in Vermont decreased by 8.71 percent, and the number aged five to 13 decreased by 9.1 percent. These declines were faster than any other state in the nation.

Economic Factors

The median household income in Vermont increased 37.1 percent between 1989 and 1999, from \$29,792 to \$40,856. One expense that could have reduced the positive effect of this increase involved health care. The DHHS/Health Care Financing Administration estimated that personal health care expenditures increased between 1980 and 1998 by 9.6 percent annually.

U.S. Census figures indicated that 19,000 more individuals in Vermont were below poverty level in 2001 than were in 1996. This change represents a decline in the percentage of the total Vermont population in poverty--from 12.6 percent in 1996 to 9.7 percent in 2001. In 1999 the percentage of children in Vermont families receiving Food Stamps was 13.7.

Race

Between 1990 and March 2000, the number of foreign-born people who migrated to Vermont was 8,217. Between 1995 and 2000, the number of foreign-born people who migrated to Vermont from abroad was 4,555. In 2000 96.8 percent of the population was white, while each of the other races represented in the state were less than one percent.

Disability Status

Youths in Vermont with a disability and between five and 20 years of age numbered 11,693 or 8.3 percent of those between those ages in 2000. There were 57,181 adults between 21 and 64 years of age with a disability, representing 16.2 percent of those in that age bracket. About 60 percent of these disabled adults were employed. Of those ages 65 and older, 28,293 had a disability, representing 38.6 of those in the same age bracket.

2. Other Changes that Could Affect Vermont

There are many recreation-related factors that influence outdoor recreational experiences. Some of those that affect Vermont are grouped and described in six categories below. Any applicable changes or trends are included.

Environmental Quality Factors for Recreation

Vermonters' opinions of many environmental quality factors for recreation improved or stayed the same between the 1992 and 2002 recreation surveys of Vermont residents. The factors included the quality of lakes and ponds, rivers and streams, scenic resources, and wetlands.

Posting of Private Land against Public Use

When formally surveyed, Vermonters did not indicate they were more concerned in 2002 than in 1992 about the posting of private land against public use. However, more than 62 percent responded in 2002 that the posting of private land against the public interest was a problem. Official posting is an annual two-step process that includes listing the land with the town clerk and putting up signs on the property according to Vermont Fish and Wildlife regulations.

Public Ownership of Resources and Uses of Public Lands

When surveyed in 2002, 55.2 percent of Vermonters agreed that government at any level should acquire more land for recreation. Although this represented a decline when compared with survey responses in 1992, it indicates continued support for public land acquisition. A 1997 survey of Vermonters regarding conservation of state lands managed by the Vermont Agency of Natural Resources revealed that 61 percent thought the relative amount of state-owned conservation land in Vermont should increase.

The 2002 recreation survey of Vermont residents posed a number of questions about activities that could occur on public lands. Although the responses did not indicate any obvious trends, broad support for numerous and diverse uses of public lands presents challenges as to how those lands are managed. With regard to opening up more trails on public lands for horseback riding, 74.3 percent of Vermonters agreed or strongly agreed. With regard to opening up more trails on public lands for riding mountain bikes, 55.9 percent of Vermonters agreed or strongly agreed. With regard to designating more areas for non-motorized wilderness-like recreation in Vermont, 68.5 percent of Vermonters agreed or strongly agreed with doing so. With regard to considering publicly-owned mountains and ridgelines for siting commercial wind energy developments, 57.9 percent of Vermonters agreed or strongly agreed in 2002 via the survey. However, when a wind energy policy was developed in 2004 for public lands managed by the Vermont Agency of Natural Resources, public opinion on this issue clearly was divided and did not favor overwhelmingly using state-owned public lands for large-scale wind energy development.

The 2002 survey also revealed that more Vermonters in 2002 than in 1992 would like designated areas for all-terrain vehicles (ATVs) to be established on any public lands. In 2002, 67.3 percent of Vermonters agreed or strongly agreed with this idea. A 1997 survey of Vermonters regarding conservation of Vermont Agency of Natural Resources (ANR) state lands revealed that 67 percent thought it unimportant or inappropriate for ANR lands to provide for motorized recreation. (Note: Given the increase in popularity of ATVs and the various management issues associated with their use, Governor Douglas appointed a study committee in 2004 to look into this issue and develop recommendations.)

Visitors to Vermont

Although at this time there is no way to accurately compare overall visitor numbers and the dollars they spent in Vermont between the 1990s and early 2000s, there are other records that suggest increasing numbers of visitors to the state, as follows:

Because of Vermont's relatively small size in the larger scheme of the national travel industry, the figures from year to year are highly volatile and frequently do not track with other known trends. The Travel Price Index rose 12.4 percent from 1997 to 2003. Since Vermont's taxable receipts for rooms increased 30 percent over the same time frame, it suggests that the real growth was approximately 17 percent over those six years. Whether that translates into a people count is not necessarily a correlation, but it is similar in range to the other figures cited below.

The number of passengers boarding commercial airlines at Burlington International Airport increased more than 25 percent between 1997 and 2003 from 431,934 to 550,050.

Traffic recorder reports from U.S. Route 4 in West Rutland and I-91 in Vernon together indicated an increase of more than 10 percent between 1997 and 2003.

The numbers of Welcome Center visitors counted at Guilford, Fair Haven, and Highgate combined increased about 123 percent between 1997 and

2003. Inconsistencies in counting methods mean that these numbers are not completely accurate. Nevertheless, the reported increase is large and may be seen as a general indicator of increased tourism.

Increased Participation in Outdoor Recreation in the State

Many outdoor recreation-related organizations in Vermont have not maintained formal records that document the increase in participation in these types of activities in Vermont. Those that are available, however, indicate significant increases. Membership in the Vermont Association of Snow Travelers (VAST) increased by more than 200 percent from 18,000 in 1993 to more than 45,000 in 2003. Membership in the Green Mountain Club (hiking the Long Trail) nearly doubled between 1994 and 2003 from 4,085 in 1994 to 8,125 in 2003. The Columbus Day weekend of 2003 set the all-time, one-day and one-weekend records for hikers on Mt. Mansfield and Camel's Hump. Membership in the Catamount Trail Association (cross-country skiing through Vermont) increased by more than 200 percent between 1994 and 2003, from 532 to 1650.

Other indicators of increased participation involve new activities and organizations that were not yet formed ten years ago. Skateboard parks have sprung up, the statewide snowmobile trails system increased from 2,700 to 4,600 miles, there were increases in miles of other trails and new types of them including canoeing and birding trails, thousands of acres of land were conserved at least in part for recreation, facilities were built and existing ones upgraded, increasing numbers of outdoor sports races and events to raise money for charities, the paper for Vermont's biggest city added a page devoted to outdoor recreation in 2004, more citizen water quality monitoring efforts got started, and stewardship efforts expanded for many organizations. All these indicate greater interest and participation in outdoor recreation activities in Vermont overall.

Health Concerns

As indicated in this section, some statistics indicate the need for Vermonters to become more active.

The number of deaths in the U.S. attributed to poor diet and physical inactivity rose between 1990 and 2000. The Center for Disease Control estimated that nearly two-thirds of deaths of adults over the age of 25 in the U.S. are caused by

chronic disease: heart disease and stroke (41 percent) and cancer (24 percent).

A 2001 report by the Surgeon General of the U.S. included treatment and prevention of obesity as a national priority.

In 2003 11 percent of Vermont students were considered overweight, 26 percent of Vermont youths in grades eight and twelve were above the recommended weight for their age.

About 35 percent of Vermont students in grades eight and twelve spend three or more hours per school day watching television, playing video games, or using the computer for fun.

Estimates indicate that 60 percent of adult Vermonters do not get the recommended amount of physical activity and that 25 percent are not active at all.

3. Regional and National Outdoor Recreation Trends

National Trends

With Vermont receiving national and international attention via publications like National Geographic's *Traveler* magazine, *Audubon* magazine, *Backpacker Magazine*, and *Sports Illustrated* and via awards such as the 2004 World Legacy Awards, it's important to look at potential impacts of national trends on Vermont outdoor recreation.

Between 1982 and 2003, the population of the United States increased, and the proportion of people participating in at least one outdoor recreation activity rose during that period from 89 to 97.6 percent. This resulted in an increase in the numbers of participants in almost all outdoor recreational activities. Participation in most outdoor recreational activities is expected to continue to increase nationally over the next 45 years at rates greater than the projected population increase (44 percent).

The National Survey of Recreation and the Environment (NSRE) consisted of telephone interviews of Americans to learn about the outdoor recreation activities of people aged 16 and older in this country. Sets of surveys were conducted between 1994 and 1995 and again between

1999 and 2002. Survey results showed that nearly all activities experienced an increase in participation between 1994 and 2002. The highest percentage increases occurred for backpacking at 50 percent and hiking at 48.3 percent. Two activities showed a decrease--sightseeing, down by 2.6 percent and water skiing, down by 3.4 percent. Due to the increase in popularity of specialized outdoor recreation activities since 1994, such as orienteering, rock climbing, and caving, a wider variety of activities were included in the 1999-2002 surveys.

International tourism to the United States grew about 66 percent between 1987 and 1997 to 46.2 million visitors. In 1998 the U.S. Department of Commerce identified tourism as the third largest industry in the United States. During the decade beginning in 1986, surveys and interviews were conducted of people in 24 countries throughout the world regarding their interests in traveling to the United States. The importance of forests and parks toward their decisions ranged from 91 percent of travelers from Venezuela to 70 percent of those from Japan. Strong interest in the natural environment and outdoor recreational activities was consistent during the 10 years in which the studies were done.

Regional Trends and Projections

A summary and evaluation of the NSRE data for Vermont and for the Vermont market region was prepared in 2004 by the Outdoor Recreation and Wilderness Assessment Group of the Southern Research Station of the U.S. Department of Agriculture's Forest Service in Athens, Georgia. The Vermont market region consisted of Vermont along with the adjoining states New York, Massachusetts, and New Hampshire.

Nearly all the outdoor recreational activities experienced an increase regionally in participation between 1995 and 2003. The highest percentage changes occurred for kayaking at nearly 322 percent (320,000 to 1.35 million), snowmobiling at more than 88 percent (970,000 to 1.83 million), and backpacking at 63.8 percent (1.63 to 2.67 million).

Activities for which the percent change in participation by people in the Vermont market region between 1995 and 2003 exceeded participation nationally and for which data were available included the following: bird watching,

backpacking, primitive camping, developed camping, off-road driving, bicycling, motor boating, and sailing.

With tens of millions of people living in the northeastern U.S. and southern Quebec regions within one day's drive of Vermont, the following findings of a 2002 family vacation study by the Meredith Corporation are worth considering:

86.3 million American adults took a family vacation in 2002;

70 percent of family vacationers used their own automobile or truck for vacations;

The types of family vacations that have increased in popularity since 1996 include mountain, adventure, and resort; and

50 percent of family vacations included small town or rural destinations, and 46 percent included historic sites.

4. What These Changes May Mean for Outdoor Recreation in Vermont

As a comparatively rural state with a total population in 2000 of less than 609,000, Vermont may struggle to develop the infrastructure required for its recreation industry to keep pace with increasingly rapid changes occurring in the world. By protecting its greatest assets--unique character and healthy natural environment--Vermont may be able to find a balance between its need to attract outsiders to support the recreation industry and the need to make recreational services available to residents.

One of the most dramatic changes in the state is the aging of the population. At this time there appears to be a deficiency of outdoor recreational programs specifically geared to the needs of elders in Vermont. Likewise, the decreasing number of youths means that towns will still need to provide services and infrastructure but most likely with fewer resources available to do so.

An increase in those living in poverty in the state by 19,000 individuals between 1996 and 2001 indicates an ongoing problem for many people getting their basic needs met. This factor will need to be considered when

recreation programs are set up so that all who wish to may participate.

Vermont is generally considered to be among the least racially diverse state in the U.S. However, as the population of the nation continues to diversify and more people from all over the world visit the state and make it their home, Vermont will need to make available outdoor programs and vacation options which are attractive to people of all cultures.

Disabled Americans are considered one of the fastest growing segments of the population. Recreational opportunities that help people with various types of disabilities get outside will continually need to be developed to improve their quality of life. In addition, as 60 percent of those in Vermont who are disabled and between 21 and 64 years of age are employed, creating job opportunities for these Vermonters may be an important component of the growing recreation industry in the state.

The expectation that existing public resources and lands in Vermont, which represent about 15 percent of the state, should provide for an increasing number of recreational activities, many of which conflict with each other, may be unrealistic. Vermonters may wish to consider purchasing new sites and lands to accommodate the needs of sports that are growing rapidly than to compromise existing public lands that are sensitive to some of these uses. In addition, cooperation between users will be necessary so that negative impacts to the natural resource base can be avoided.

Appendix B: Outdoor Recreation Resources-- Achievements and Issues



This appendix of the *Vermont Outdoor Recreation Plan 2005-2009* contains a summary of various resources and issues that have been identified by those who participate in and by those who supply outdoor recreational opportunities in Vermont.

The outdoor opportunities

included in this plan occur on land and in water. Air-related recreational activities are not included. Please refer to Chapter 4 (the trails and greenways plan) for similar information pertaining to trails-, roads-, and greenways-related recreation. Paddlers' trails are included in the water resources section of this chapter. Birding trails are included in the wildlife-based recreation section of this chapter.

Many of the challenges faced by Vermont's recreation industry will be articulated and discussed in this chapter. While considering these challenges, it's also important to keep in mind that nearly 85 percent of Vermont residents, when surveyed in 2002, agreed that the outdoor recreation opportunities being offered in the state satisfied their needs.

This appendix organizes various activities and suppliers into a few major headings, as follows:

1. **Public Recreation Resources**
2. **Fish- and Wildlife-Based Recreation**
3. **Water-Based Recreational Opportunities**
4. **Winter Recreational Activities**
5. **Private Lands**
6. **Commercial Recreation Providers**
7. **Field Sports**
8. **Court Sports**
9. **Camping**
10. **Outdoor Recreation Opportunities at Historic Sites**
11. **Other Activities**
12. **Special populations**

More information is included about some activities that are relatively new or may be misunderstood. As this is a statewide plan, organizations mentioned represent the entire state or are regional organizations with statewide

significance. Overlaps occur with many activities and resource suppliers, and efforts have been made to avoid duplication. Organizations included here would be the first to credit the many partnerships and collaborations that are needed to make things happen, but all of them cannot be mentioned in this plan.

1. Public Recreation Resources

An inventory of various recreational resources was conducted for the state between 1990 and 1997. Published in 1999, it is known as the Vermont Recreation Resources Inventory. Through this inventory, 1,909 publicly operated sites for outdoor recreation were identified. Of these, 987 were operated by municipalities, counties, or school districts; 648 were operated by the State of Vermont; and 104 were operated by federal agencies.

Significant increases in public property holdings in Vermont occurred after 1990. Although these provided permanent public access opportunities for recreation and other uses, serious challenges remain for managing these lands and facilities. The next three sections will discuss the current situation for municipal, state, and federal recreation suppliers.

a. Municipal Recreational Providers

Each of the state's 251 organized towns, cities, and villages offers many outdoor recreational opportunities. The 1999 *Vermont Recreation Resources Inventory* identified publicly operated sites for outdoor recreation in Vermont. Of those, 91 were operated by a city, 525 by a town, 22 by a village, and 338 by a school district. These ranged by county from lows of 7 in Grand Isle and 24 in Essex to highs of 95 in Rutland, 100 in Windsor, 106 in Washington, and 166 in Chittenden.

There are a few types of public recreational facilities that are most often provided by municipalities. These include outdoor swimming pools, sports fields, outdoor courts, and playgrounds. The 1999 *Vermont Outdoor Recreation Inventory* revealed that the state has 43 outdoor public swimming pools. With regard to sports fields, the inventory indicated there are 255 public baseball fields, 288 public softball fields, 182 public Little League fields, 265

public soccer fields, and 73 public football fields. The inventory showed there are 130 public tennis courts, 207 public basketball courts, and 105 public volleyball courts in the state. With regard to playgrounds, the inventory revealed that there are 304 public playgrounds in the state.

There are a number of mechanisms that support efforts of municipalities to provide outdoor recreation opportunities. These are described next in two sections: financial support and other assistance.

Financial Support

In 1912 Vermont was among the first states to pass legislation that enabled communities to use tax dollars to purchase public playgrounds and lands as well as to construct and maintain buildings and equipment for public recreation.

The most reliable, single source of funding for outdoor recreation projects for Vermont municipalities since 1965 (excluding 1995-1999) has been the Land and Water Conservation Fund (LWCF). By 2004, the program provided more than \$30 million in matching funds to this state.

For the years 2000 to 2004, the LWCF program awarded more than \$1.7 million in grants to over 53 cities and towns for acquisition, conservation, and development of public parks and outdoor recreational facilities. Of the 55 projects funded by LWCF between 2000 and 2004, 20 of them included the development of new playgrounds. Most of these playground projects replaced old, outdated and unsafe playground equipment with new playground equipment. Each project included ADA accessibility components. Additional details about LWCF are presented in Chapter 1 (Introduction) of the plan. One fact about the status of towns and LWCF funds remains constant: the number of projects and funds that are requested each year exceeds what is available to be awarded.

In 2003 an additional source of funds for recreation facility development became available to municipalities and not-for-profit organizations for three years--the Recreational-Educational Facilities Grants Program from the Vermont Department of Buildings and General Services, providing more than \$500,000 during that period towards such projects.

Other Assistance

Since the 1960s, the Vermont League of Cities and Towns (VLCT) has provided technical assistance to towns, including their municipal call center. Specific examples of VLCT's support for outdoor recreation concerns are their 2003 and 2004 day-long workshops regarding outdoor recreation grant opportunities available to municipalities.

The Vermont Department of Forests, Parks and Recreation (FPR) has long provided outdoor recreation-related assistance to Vermont communities. Since 1965, FPR has administered the grants for the Land and Water Conservation Fund program and prepares the required Statewide Comprehensive Outdoor Recreation Plan (SCORP) every five years.

Since the late 1990s, the Vermont Recreation and Parks Association (VRPA) has offered a weekly email networking communication to its members. It coordinates the annual Governor's Conference on Recreation. Other activities include holding workshops such as the 2002 National Playground Safety Institute. As a result of this training, 35 people were certified to conduct playground safety audits and inspections.

Achievements

The following are a few achievements indicating the breadth of outdoor recreational offerings of municipalities throughout the state:

More than 30 towns created conservation commissions between 1994 and 2004, for a total of 94 towns. Besides conservation activities, many commissions also get involved with development of trails.

In 1997 the towns of Barnard, Bridgewater, Stockbridge, and Killington appointed town representatives to develop a plan to conserve about 60,000 acres of public and private lands where the towns meet, known as the Chateaugay No Town Area.

The City of Barre's after-school program Cityscape was recognized in 1998 by the Mott Foundation as a exemplary school-community collaboration. It was also awarded one of the

original 21st Century Schools grants. Outdoor program activities included clearing bike trails of debris, snowshoeing, and cross-country skiing.

Beginning with one school in 1999 to 17 in 2003, students from across the state celebrated International Walk to School Day, which educates children, parents, and motor vehicle operators about keeping walkers safe.

In 1999 some schools around the state began sponsoring the Girls on the Run[®] program for third to fifth graders. This is an 8- to 12-week experiential physical training program, culminating in a 5-kilometer run or walk event. By 2004, 500 girls participated.

In 2000 the annual “Bike the Bed” event was instituted by the Twinfield Union School on part of the Cross Vermont Trail on an abandoned railbed between Plainfield and Marshfield. In 2003, nearly 100 students “biked the bed” to and from school.

In 2001 the Run Girl Run! program, free to middle-school aged girls for leading healthy, active, and outgoing lives, created a survey entitled “Is Your Town a Heart-Healthy Town?”

In 2002 the Burlington Department of Parks and Recreation became responsible for the Burlington Conservation Legacy Program, which was designed to maintain and acquire natural areas including parks, gardens, and shoreline along Lake Champlain and the Winooski River.

Royalton first received funding from the Land and Water Conservation Fund in 2003 to build a new playground. The town surveyed local children to help determine how the project would be done. The new custom design equipment cluster included all eight components voted most desirable by the children.

The Town of Brighton and the Northern Vermont Resource Conservation and Development Program collaborated for 12 years

towards the 2003 dedication of the Island Pond Pedestrian Timber Bridge.

In 2003 the Upper Valley Trail Alliance received a five-year grant to support “Upper Valley Trails for Life,” a local partnership to increase active living and encourage healthier life styles. Partners include local schools and recreational departments, Dartmouth Hitchcock Medical Center, Dartmouth Medical School, and the National Park Service.

The Burlington and Colchester Trail Bridge across the Winooski River near the mouth of Lake Champlain connected the two towns in 2004 for recreational purposes and handicapped access. Demand for the bridge became clear after a ferry crossed the river for three years with about 20,000 boardings per year.

In 2004 the Safety and Health Promotion Program of Vermont League of Cities and Towns sponsored a step-counting initiative “Adventure.” About 1,800 employees and family members from 74 municipalities participated.

Issues

A brief presentation of just a few of the issues and concerns that municipalities face in delivering recreational services to today’s recreationists illustrates how inadequate the supports are for this sector of the industry in Vermont. As part of the information gathering for this plan, each of Vermont’s 12 (now 11) regional planning commissions prepared a report about the outdoor recreational needs of the towns in its region. When compared with 1993, more towns included some discussion of recreation in their town’s plan. Overall, however, these reports indicate that towns face growing and unmet needs in providing outdoor recreational opportunities for their residents and visitors. Some major concerns include the following:

The demand for outdoor recreational opportunities is growing in every town. Unfortunately, the majority of Vermont’s municipalities, other than in the schools and larger towns, have no staff dedicated to recreation. Some towns have volunteer committees instead, and these especially need

assistance to organize, build capacity, and plan for and establish outdoor recreation facilities.

Formal recreational services in some towns exist only at school facilities. At a minimum, towns need to find ways of coordinating use of existing facilities to serve multiple towns, organizations, schools, and the public.

Although regional planning commissions have produced more accurate and informative maps via use of spatially-related databases and Geographic Information Systems (GIS) technology, they do not have the ability to provide staff dedicated to assisting towns with regard to their recreational needs and concerns.

Approximately two full-time recreation positions were lost when the Vermont Department of Forests, Parks and Recreation's recreation division was eliminated due to budget cuts in the mid-1990s. The Vermont Recreation and Parks Association (VRPA) picked up some of the functions of those jobs, but other support and planning services previously available free to towns were lost.

Many towns stated that access to recreation lands was an issue. Finding and retaining open space for public recreation is becoming more difficult, partly because many new landowners post their land, effectively closing out acres that were traditionally used by the public.

Many towns cited the need for more facilities that are accessibility by handicapped persons.

Many towns need different types of sports fields, courts, playgrounds, and trails.

Some towns have need for multiple fields and open space in town centers and along travel corridors.

In summary, nearly all municipalities in Vermont would like to provide additional outdoor recreation opportunities and require assistance with planning, improving facilities, staffing, grant writing, and securing funding for operations, maintenance, and capital improvements.

b. State-Managed Recreational Opportunities and Support

The 1999 Vermont Recreation Resources Inventory identified 648 public outdoor recreation sites operated by the State of Vermont. Agencies and departments in Vermont state government that directly supply recreational opportunities or that support the outdoor recreation industry in some way include the Agency of Natural Resources, Agency of Development and Community Affairs, Division for Historic Preservation, Agency of Transportation, Agency of Agriculture, Food and Markets, Department of Aging and Disabilities, and Department of Public Safety. Please refer to the chapter representing the Vermont Trails and Greenways Plan for information regarding transportation related achievements and issues.

Vermont Department of Tourism and Marketing

In the mid-1990s, following the direction of new brand studies, the Vermont Department of Tourism and Marketing (VDTM) began a promotional focus based on five themes: Agricultural Heritage; Natural Heritage; Cultural Heritage; Quality Vermont Made Products; and Four Season Outdoor Recreation. In fiscal year 1997, the department established 12 marketing regions to enhance marketing efforts from the local level. Consolidated to 11 regions in 2002, the program then developed more cooperative marketing efforts between and across regions.

Under Act 190, passed by the legislature in 1996, other state agencies and departments engaged in marketing activities could enter into agreements with VDTM for coordinated marketing, promotion, and advertising services.

In 1997 development of an Intelligent Transportation System (ITS) began in Vermont. The ITS uses technology to assist travelers throughout the state. Components include a website, signage, and the 511 project, in which Vermont joined with some other states to pilot a telephone number providing directional information. By 2003 the Welcome Centers in Guilford and Fair Haven offered computer terminals for travelers to get directions to places throughout the state.

As part of Vermont's Intelligent Transportation System (ITS), the Vermont Tourism website, the Vermont Travel Planner, was initiated in 1997 and officially launched in

2001. It is one feature of www.VermontVacation.com which averages about a half million page views per month.

In 2003 the Vermont Department of Tourism and Marketing created the Heritage Tourism Coordinator position, which provides training for outdoor recreation providers in the use of marketing resources.

Vermont Agency of Natural Resources

The agency has three departments: Environmental Conservation; Fish and Wildlife; and Forests, Parks and Recreation. It is responsible for administration of major natural resource programs and regulations in Vermont. Public outdoor recreation sites identified through the Vermont Recreation Resources Inventory included 56 parks, 38 forests, 86 wildlife management areas, 151 fishing access areas to lakes and ponds, and other properties managed by the Vermont Agency of Natural Resources (ANR). The fee and non-fee lands managed by ANR total more than 480,000 acres. Please refer to the section on Fish and Wildlife-Based Recreation found later in this appendix for more information about the Department of Fish and Wildlife's achievements and issues.

Achievements

Between 1994 and 2003, the Vermont Agency of Natural Resources (ANR) acquired more than 70,000 acres of lands in fee and conservation easements on an additional 120,000 acres. More detailed inventories began taking place in 2000 for many of the resources found on ANR lands.

In 1994 there was one program to prevent the spread of aquatic nuisance species (ANS). By 2003, Parker, Island, and Joes ponds and Caspian, Seymour, and Maidstone lakes had such programs.

In 1996 minimum flow standards for streams were established so that development operations can maintain sufficient water in streams to protect aquatic habitat and organisms. The Vermont Agency of Natural Resources developed these in collaboration with the Vermont Ski Areas Association. By 2004, five ski areas had snowmaking systems that met these standards, five others had plans in place for meeting the standards, and nine operated under old permits that allowed lower standards for streamflow.

Recommendations for shore land and streamside buffer protection, as developed for the 1997 Connecticut River Corridor Management Plan, were adopted by some towns on both the Vermont and New Hampshire sides of the river.

In 1998 the Department of Environmental Conservation created a Rivers Management Section with the addition of eight full-time staff positions by 2004. The section manages, restores, and protects river corridors and helps educate people to use a variety of bioengineering techniques for restoration projects. A protocol for stream geomorphology and physical habitat assessment was developed to evaluate rivers throughout the state.

The Department of Environmental Conservation began the process of developing watershed-wide plans for the 17 major water basins throughout the state.

In 1999 the Vermont Department of Forests, Parks and Recreation published the *Vermont Outdoor Recreation Inventory Summary Report*, which summarized the availability and accessibility of outdoor recreational opportunities provided by both the public and private sectors.

In 1999 game wardens from the Vermont Department of Fish and Wildlife began receiving some financial compensation for more actively enforcing laws for all terrain vehicles, snowmobiles, and boats. Wardens have a complete set of outdoor skills that make them well-suited to these activities, and they are in the out-of-doors in the course of their normal work. They are the law enforcement unit able to do this work most efficiently.

The Vermont Agency of Natural Resources (ANR) adopted "Uses of State Lands" as a policy in 1999. This policy provides criteria and guidelines for commercial use of ANR lands. On an annual basis, the Land Division issues or oversees over 100 licenses and special use permits for appropriate uses of ANR lands, including compatible commercial uses.

In 2001 the Vermont Department of Fish and Wildlife sponsored a wildlife congress which helped define a land ethic for the state and developed ideas for how to implement it.

A Lands and Facilities Trust Fund was created in 2001 to assist the stewardship and management of ANR properties. The fund receives receipts from timber sales on state forests and accepts donations. Expenditures from the trust fund were expected to begin in 2005.

In 2002 Vermont adopted a quarantine regulation for noxious weeds. The movement, sale, and distribution of 32 designated noxious weeds, including some invasive aquatic plants, became illegal. Federal grant dollars were allocated to game wardens and state police to write tickets for the civil offense of spreading Eurasian watermilfoil and water chestnut. Other species include purple loosestrife and common reed (non-native phragmites), which compromise many wetlands in the state.

In 2002 the Vermont Agency of Natural Resources adopted a procedure whereby river corridors may be protected from development that could cause flooding. With this procedure, limits of floodways became a consideration under Act 250 criterion 1(D).

As a result of growing recognition that dams can impede streams' ability to transport flow and sediment, cause streambank erosion and flooding problems, degrade, alter fisheries habitat, create barriers to migratory fish passage, and degrade water quality, the legislature passed an act in 2003 to encourage private and municipal dam owners to remove their dams voluntarily, where appropriate. The Vermont Dam Task Force, a statewide cooperative effort among agencies and private organizations, started up in the past decade to restore streams by removing dams that no longer have economic or social value.

In 2003 the state adopted a Clean & Clear Water Action Plan to foster efforts, including finding financial resources, to ensure that Vermont's waters meet high water quality standards.

In July 2003, a nature center was opened at Molly Stark State Park in the Town of Wilmington.

Issues

Between 1994 and 2003, the Vermont Agency of Natural Resources (ANR) increased its land holdings by about 60 percent. With just three staff positions added during this period for stewardship of these lands, managing these holdings has become increasingly challenging.

Since the late 1990s, demands on law enforcement personnel for search and rescue operations have increased. More skiers and hikers appear to be going off trails.

In a 1997 survey of Vermont residents for the Agency of Natural Resources Land Conservation Plan, 67 percent responded that the percentage of state-owned lands should increase, while 2.7 said it should decrease.

In 1998 State Parks infrastructure needs were assessed through an independent study and found to be in excess of \$31 million. The legislature appropriated \$4 million subsequently to begin remedying the problems, but much more needs to be done to address these critical needs and provide safe and satisfying experiences.

Changing recreational interests and behavior, such as the trend toward shorter trips and demand for more amenities, have contributed to a gradual decline in visitation to Vermont State Parks over the past ten years, especially with respect to day use.

Illegal use of all-terrain vehicles caused extensive damage to many sensitive areas on ANR lands. There are not enough law enforcement officers to stem the tide of illegal use. Refer to the trails and greenways plan, Chapter III, for more information regarding this.

Conflicts have continued to occur between motorized and non-motorized recreation activities, especially between snowmobiles and cross-country skiers in winter and between users of personal watercraft and those who wish for more quiet experiences on lakes and ponds.

The possibility of using certain ANR lands for large-scale wind energy development was the subject of much controversy and debate in Vermont. In 2004 ANR solicited public comments on this issue as part of a comprehensive policy development effort on this subject.

Lack of roadside pull-offs and handicapped access to ANR lands are issues in certain areas.

Vandalism of signs and facilities at ANR sites continues to be a problem.

Illegal dumping of trash and possibly toxic waste occurs sometimes at access points.

c. Federally Managed Recreational Opportunities

U.S. Fish and Wildlife Service

Please refer to the wildlife-based recreation section found later in this appendix for more information about issues related to fishing.

The U.S. Fish and Wildlife Service maintains two refuges in Vermont. The Missisquoi National Wildlife Refuge, located in Swanton, includes 6,560 acres along the Missisquoi River delta where it empties into Lake Champlain. The Silvio O. Conte National Fish and Wildlife Refuge was established by Congress in 1991 for key portions of the Connecticut River Valley from the Canadian border through the states of New Hampshire, Vermont, Massachusetts, and Connecticut.

Achievements

From 1991 to 2001, the U.S. Fish and Wildlife Service's Partners for Wildlife Program, along with many partners, restored 935 acres of wetlands and 102 miles of stream-banks across Vermont.

Missisquoi National Wildlife Refuge:

721 acres were added to the refuge between 1994 and 2004.

A handicapped-accessible fishing access area was created at the Missisquoi refuge in 1994.

A new Refuge Headquarters/Visitor Contact Station will open in 2005.

A new 2300-foot long trail was constructed from the Old Railroad Passage trailhead parking area to Stephen J. Young observation platform. Many refuge trails now are constructed of a gravel base topped with "rock fines" providing a firm surface that can be used by many people including mobility impaired and wheelchair confined visitors. An elevated observation platform and handicapped accessible ramp were constructed at Stephen J. Young Marsh.

A floating dock was purchased to accommodate access to boats for refuge boat tours.

Silvio O. Conte National Wildlife Refuge:

In 1999 26,250 acres were added in Vermont to the Conte National Wildlife Refuge. These lands are located in the state's Northeast Kingdom, are known as the Nulhegan Basin Division, and provide public access for wildlife-based recreation on previously private lands.

Issues

Silvio O. Conte National Fish and Wildlife Refuge:

National refuges were not fully funded in 2003, which made setting up and managing the Nulhegan Basin Division in Vermont particularly challenging.

Some user groups are concerned that their activities are not compatible with these new public lands due to the mission of the Fish and Wildlife Service to offer wildlife-based recreation opportunities.

Private camp owners are concerned about their leases expiring in 50 years and the subsequent loss of the hunting experience and culture in this area of the state.

Missisquoi National Wildlife Refuge:

No law enforcement personnel on staff.

Illegal use of all-terrain vehicles and snowmobiles enter closed areas and cause damage to sensitive habitats and disturb other recreational users.

Conflicts occur between motorized and non-motorized recreation activities, especially between users of motorized watercraft and those who wish for more quiet experiences in canoes and kayaks; conflicts occur between big game hunters; conflicts occur between waterfowl hunters.

Visitation has increased each year while staffing and funding have not.

There is great need for more funding to manage and protect wildlife species, conduct programs, and find and train volunteers.

Illegal camping.

Access areas are being used for a variety of activities other than the intended fishing and wildlife-based recreation pursuits.

Littering, trash dumping, and inconsiderate behavior. In some places and instances, water-based recreationists access closed areas of the refuge.

Dogs off leash and conflicts with other users.

U.S. Army Corps of Engineers

The U.S. Army Corps of Engineers (Corps) maintains eight flood protection dams in Vermont, five in the Connecticut River basin and three in the Winooski River basin. On many of its more than 6,000 acres, the Corps operates recreational facilities in conjunction with each of the Connecticut River dams--Union Village Dam, North Hartland Lake, North Springfield Lake, Townshend Lake, and Ball Mountain Lake.

The Corps conducts two water releases, one in spring and one in fall, from Ball Mountain Lake Dam specifically for recreational purposes. The releases provide excellent whitewater boating opportunities on the West River.

The Corps maintains fish passage facilities at Ball Mountain and Townshend Dams to allow for upstream and downstream migration of Atlantic Salmon.

The Corps regulates dredge and fill activities on wetlands and navigable waterways by issuing permits [Rivers and Harbors Act of 1899, Section 10; the Federal Water Pollution Control Act; and the Clean Water Act, Section 404. These permits are needed for establishing recreation paths and greenways.

Achievements

Over the past decade, the Corps added trails and shelters and implemented the National Recreation Reservation System for these facilities, including the eight-mile West River Trail.

A three-year agreement, between the Corps, U.S. Fish and Wildlife Service, and the Vermont Agency of Natural Resources, for maintaining river flow and ramping rates (gradually change in water levels) at dams in Vermont, to reduce negative impacts of rapid changes of flow on fish and other aquatic wildlife, was put into effect in 2004.

The Corps changed their bioengineering standards to take a more geomorphic systems approach to river restoration projects.

Issues

Corps dam facilities in southeastern Vermont receive particularly heavy recreational use due to the relative scarcity of large lakes and ponds there.

Reduction of the fall whitewater release at Ball Mountain Dam to one day from two days in 2003, to comply with Vermont Water Quality Standards, resulted in concern by kayakers that this would reduce opportunities and threaten recreational businesses in the area. In 2004, American Whitewater and New England F.L.O.W. commissioned a study of the economic impacts of the ACOE fall release schedule changes.

National Park Service

The National Park Service (NPS) administers a number of recreation-related facilities and programs in Vermont, and a brief description of each of them is given here.

National Historic Park

Vermont's single national park, the Marsh-Billings-Rockefeller National Historical Park, opened in Woodstock in 1998. Besides tours of the mansion, the estate features a 550-acre forest. Working in partnership with the Billings Farm and Museum, it chronicles three generations of stewardship and the emergence of a national conservation ethic.

River and Trails Conservation Assistance Program

This program provides technical assistance to local communities and organizations for the conservation, planning, and management of rivers and trails in Vermont.

National Register of Historic Places, National Historic Landmarks, and National Natural Landmarks Program

The National Register of Historic Places and the National Historic Landmark Program are administered by the NPS through the Vermont Division for Historic Preservation. All three programs provide public recognition and protection of significant historic and natural resources. More than 8,000 sites in Vermont are listed on the National Register of Historic Places. Ten sites are designated as National Natural Landmarks.

Appalachian National Scenic Trail (AT)

The Vermont sections of this trail are managed in partnership by the NPS, the U.S. Forest Service, the State of Vermont, the Appalachian Trail Conference, the Green Mountain Club, and the Dartmouth Outing Club. Refer to Chapter 4 regarding trails and greenways for more information about this.

Land and Water Conservation Fund Program

The NPS administers the Land and Water Conservation Fund program in Vermont through the Vermont Department of Forests, Parks and Recreation. Refer to the Introduction chapter for more information about this program.

Historic Preservation Fund

The NPS administers this fund, which provides technical assistance for partial funding of historic preservation programs in every state.

Green Mountain National Forest

The U.S. Forest Service is a branch of the U.S. Department of Agriculture and is responsible for managing the nation's national forests. The 383,000-acre Green Mountain National Forest (GMNF) is located entirely within Vermont, making the Forest Service the largest single landowner in the state. In 1992 the Proclamation Boundary of this forest was extended into the Taconics region of the state, encompassing all of Bennington County. Since that time, some lands in that region have been added to the forest, including Dorset and Grass mountains. More than 37,000 acres in all were added to the forest between 1994 and 2003.

Like other national forests, the GMNF is managed for multiple uses. The 1987 Land and Resource Management Plan for the forest cited recreation as a major use. Developed recreation opportunities include campgrounds, about 600 miles of trails, day-use areas, alpine and nordic ski areas, and picnic areas. Dispersed activities include hunting, fishing, and wilderness hiking and backpacking. The forest has six federally-designated Wilderness Areas and a 36,400-acre National Recreation Area, which includes 13,600 acres of wilderness area.

A revised plan for the forest has been in progress over the past few years, involving a great deal of public input

through meetings in towns throughout the forest. An additional area designated for wildlife habitat has been proposed for the new plan. The primary purposes of lands under this designation would be to: (1) provide a mix of different-aged forest habitats for wildlife species, from early successional to mature; (2) employ a full range of timber management techniques as the primary tool for manipulating habitat; and (3) de-emphasize recreational uses to minimize disturbance to wildlife.

Issues

Revising the plan for the forest is a long process. A draft plan based on the preferred alternative is expected to be released in 2005.

The plan will need to cover 90,000 more acres than the previous plan, representing a 20 percent increase in the area of the forest.

Conflicts continue to exist between those who wish to access the forest via roads and have timber production be a top priority and those who favor more wilderness and creation of old growth forests in the state.

2. Fish- and Wildlife-Based Recreation

For the purposes of this plan, wildlife-based recreation refers to fishing, hunting, trapping, and observing or photographing wildlife. Wildlife-based recreation consists of consumptive (hunting, fishing, and trapping) and non-consumptive (viewing, tracking, photographing, and studying) activities.

Significant new funds have been made available for wildlife-related projects, including many with recreational ties, from conservation license plates and federal wildlife grants. From 1998 to 2004, Vermont's Conservation License Plate program made available to not-for-profit organizations and other entities more than \$350,000. State Wildlife Grants monies provided more than \$1.35 million to Vermont in 2004 and 2005.

Residents' attitudes toward the quality of fish and wildlife habitats in Vermont from recreation polls conducted in 1992 and 2002 remained relatively constant. Additionally, Vermonters indicated that the loss of wetlands was less of a

problem in 2002 than in 1992. Still more than 84 percent of respondents indicated that destruction of wildlife habitat was a problem, and nearly 70 percent said loss of wetlands is a problem in the 2002 resident recreation survey.

There are a number of organizations that represent hunting, fishing, and trapping interests in Vermont. The Vermont Federation of Sportsmen's Clubs had a membership of 48 organizations by 2003. The Hunters, Anglers, and Trappers Association of Vermont and the Vermont Traditions Coalition were both formed in 2003 as statewide organizations dedicated to furthering traditional recreation uses and multiple use management of public lands in the state.

a. Hunting

The 2002 Vermont resident recreation survey revealed that 16.3 percent of respondents indicated that hunting was one of the top two outdoor recreational activities they engage in between November and April. Between May and October, this percentage was 7.6. Statistics are available from the National Survey on Recreation and the Environment for the numbers of people who hunt from the combined states of Vermont, New Hampshire, Massachusetts, and New York. The number of people from those states who engaged in this activity increased by nearly seven percent between 1995 and 2003, from 1.29 million to 1.38 million. This survey found that the national increase in participation in hunting for this period exceeded 29 percent.

The U.S. Fish and Wildlife Service's 2001 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation found that the number of Vermont residents who hunted in 2001 (75,000) was statistically identical to the number in 1991 (70,000). The number of U.S. residents who hunted in Vermont in 2001 (100,000) was statistically the same as the number in 1991 (101,000). Likewise the number of days U.S. residents hunted in Vermont was statistically the same in 2001 (1,510,000) as in 1991 (1,778,000).

In a 1997 survey of Vermont residents for the Agency of Natural Resources Land Conservation Plan, 65 percent responded that it was important "to provide public hunting opportunities."

Just over half the respondents in the 2002 Vermont resident recreation survey gave the hunting experience in the state a grade of A or B. It's important to note that approximately one-third of those surveyed said they did not know the quality of the experience, indicating unfamiliarity with the hunting experience by a large segment of the population. More than 84 percent of that survey's respondents said the destruction of wildlife habitat was a problem in Vermont, while nearly 70 percent said the same for loss of wetlands.

White-tailed deer is the most popular game species in the state. The 2002 Vermont Deer Season Report of the Department of Fish and Wildlife stated that 53 percent of deer hunting in Vermont occurs during the regular season with the rest of hunting divided between archery, muzzle loader and youth seasons.

Achievements and issues of hunt testing and field trials for dogs are presented in section 11f, dog-based recreation, of this appendix.

Achievements

Vermont's first moose hunting season was held in 1993 in certain areas of the state. The season was extended from four to six days in 2003. Moose hunting was allowed in additional areas of the state incrementally over the years as the moose population expanded. The number of permits more than doubled between 2003 and 2004 from 365 to 850.

The number of resident turkey hunting licenses sold increased steadily from 1994 to 2002. Resident sales in 2003 of 14,098 exceeded 1994 sales by nearly 61 percent.

In 1996 the VDFW started the Becoming an Outdoors Woman (BOW) program, patterned after the national program. BOW is designed for women with little or no experience in traditional outdoor activities and offers hands-on learning in a safe, supportive, and non-competitive environment.

In 1999 legislation requiring landowner permission to place a tree stand for hunting purposes became effective.

In the fall of 2002, the National Wildlife Federation brought together interested parties from a wide spectrum

of opinions for a “Conversation on the Conservation of Wildlife.” Additional meetings were held around the state during 2003.

In 2003 the states of Vermont and New Hampshire initiated a reciprocal license agreement and established a new zone for waterfowl hunting in the Connecticut River Valley.

In 2003 public access to the 1200-acre Blueberry Hill Wildlife Management Area was greatly enhanced as a result of efforts by the Vermont Federation of Sportsmen’s Clubs to purchase a strategically located parcel adjoining this property.

Authority for deer herd management was returned to the Vermont Fish and Wildlife Board in 2004 by the Vermont Legislature.

In 2004 the Vermont Department of Fish and Wildlife created a lands management biologist position to oversee habitat management projects on 131,000 acres of wildlife management areas.

A cooperative venture between the Vermont Department of Fish and Wildlife and the University of Vermont’s Cooperative Extension resulted in 4-H Shooting Sports being added to 4-H offerings in Vermont. In 2004 45 Vermont boys and girls aged 8-18 competed at the National Jamboree in rifle, shotgun, muzzleloader, archery, and wildlife hunting.

Issues

Hunting license sales provide the primary source of revenue and match dollars for the Vermont Department of Fish and Wildlife. The net decline of both resident and non-resident hunting license sales between 1994 and 2003 is projected to continue and, if it does, will negatively impact wildlife management by the state.

Broad demographic and social changes including family structure, an aging population, and urbanization may prove challenging to the long-term survival of the sport of hunting in the U.S. as well as the culture of hunting in Vermont.



Overbrowse by ungulates poses problems in some areas of the state. Deer overbrowse occurs in areas where the number of deer per square mile is rising. Some deer hunters would like to see more than 20 deer per square mile. However, more than 10 deer per square mile can affect regeneration of red oak and ash. Higher numbers than these can affect other species. In some areas of southeastern Vermont, high deer populations have changed the species composition of the forest. Moose are reported to be doing serious damage to thousands of acres of recently regenerated forest stands in the Northeast Kingdom.

Some deer hunters in Vermont have called for a change in the way the deer herd is managed in the state to quality deer management. In 2004 the Vermont Department of Fish and Wildlife held meetings about managing the deer herd, and a nonprofit organization the Quality Deer Management Association was formed.

b. Fishing and Ice Fishing

There is considerable overlap between water quality and fisheries issues. However, this section will focus on water quality issues that relate more directly to fishing. Refer to the section on water-based recreation below for a discussion of more general water quality issues.

Fishing continues to be a popular outdoor recreation activity in Vermont. Through the recreation survey of Vermont residents in 2002, 17.7 percent indicated that fishing was one of the top two outdoor recreation activities they engage in between May and October. Between November and April, the percentage who reported ice fishing as a top activity was 6.9.

Statistics are available from the National Survey on Recreation and the Environment for the numbers of people who fish from the combined states of Vermont, New Hampshire, Massachusetts, and New York. The number of people from those states who engaged in this activity increased more than 22 percent between 1995 and 2003, from 4.71 million to 5.77 million.

The U.S. Fish and Wildlife Service's 2001 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation found that the number of Vermont residents who fished (anywhere in the U.S.) in 2001 (104,000) was

statistically identical to the number in 1991 (110,000). The number of U.S. residents who fished in Vermont was statistically the same in 2001 (171,000) as in 1991 (181,000). Likewise the number of days U.S. residents fished in Vermont was statistically the same in 2001 (2,321,000) as in 1991 (2,258,000).

The 2000 Vermont Angler Survey by the Vermont Department of Fish and Wildlife found that the average number of days Vermont resident anglers fish did not change between 1990 and 1999 (open water was 27, ice was 11). In the same survey, nonresident mean open water fishing days decreased from 12 to 9, while nonresident ice fishing days increased from 7 to 9.

In a 1997 survey of Vermont residents for the Agency of Natural Resources Land Conservation Plan, 89 percent responded that it was important "to provide public access to fishing areas." The 2000 Vermont Angler Survey found that resident satisfaction with fishing in 1991 was 2.35 (on a 1 to 4 scale), and increased to 2.51 in 2000. However, the 2002 recreation survey of residents revealed that Vermonters were concerned with the destruction of fish habitat. More than 84 percent indicated that this was a problem.

Organizations representing angler interests in Vermont include Lake Champlain International, the Vermont B.A.S.S. Federation, and Trout Unlimited.

Achievements

Monitoring of the lake sturgeon in Lake Champlain, a state-listed endangered species in Vermont, between 1998 and 2004 revealed that spawning activity was occurring at all four of their historic spawning sites--tributaries to Lake Champlain--the Lamoille, Winooski, and Missisquoi rivers and Otter Creek.

Lake Champlain International continued to organize America's oldest and largest annual freshwater fishing derby, the LCI Father's Day Derby, which started in 1981. Lake Champlain International (LCI) started a number of new initiatives: in 1994 the All Season Tournament, in 2000 the LCI Lake Champlain Bass Open; in 2001 the LCI Little Anglers; and in 2001 "It's All about the Fish" fundraising raffle.

Vermont Resident Anglers Opinions on Fishing Issues

	No Problem or Minor Problem	Moderate or Severe Problem
Access	82.6	17.4
Crowding	68	32
Conflict with Other Uses	59.3	40.7
Contaminant Levels	44.7	55.3

Source: Vermont Department of Fish and Wildlife, 2000

The “Trophy Trout” regulation was put into effect in the mid-1990s to provide good fishing on stretches of Otter Creek and the Black (south), Lamoille, and Winooski Rivers.

In 1999 the Vermont Department of Fish and Wildlife hired an aquatic habitat biologist, whose primary responsibilities include providing outreach and technical assistance to landowners, conservation groups, and local communities on the protection and restoration of aquatic habitats and working with other government agencies on policies and programs that affect aquatic habitats.

Native plant nurseries began producing plants to restore riverbanks and floodplain forests. The Vermont Riparian Project of the Intervale Foundation’s Conservation and Restoration Program began in 2001. In 2002 The Nature Conservancy and the Poultney-Mettawee Watershed Partnership started the Champlain Valley Native Plant Restoration Nursery.

Lewis Creek was treated to kill sea lamprey in 2002 as part of the Lake Champlain salmonid restoration program. In 2003 the Winooski River was determined to be a major producer of sea lamprey. The lamprey control program was expanded to include the Winooski River up to the Winooski One Dam in 2004.

New baitfish regulations were enacted in September 2003 to decrease the chances of exotic species, which could negatively impact native species, being introduced to Vermont waters.

A reciprocal license agreement began in 2004 so that anglers who held a fishing license from either New York or Vermont were able to fish in most of Lake Champlain.

A ban on the sale of lead sinkers in the state will go into effect on January 1, 2006. A ban on the use of lead sink-

ers for taking of fish in Vermont waters will go into effect on January 1, 2007.

Walleye restoration was undertaken in Lake Champlain by the Vermont Department of Fish and Wildlife and the Lake Champlain Walleye Association. Over a six year period, 540,000 walleye fingerlings were introduced into the lake.

Issues

The 2000 Vermont Angler Survey by the Vermont Department of Fish and Wildlife revealed that access to fishing was less problematic to anglers than crowding, user conflicts, and contaminant levels in fish as shown in the table above.

The survey also found that Vermont anglers believed the top five factors affecting fish health and fishing quality were (1) excessive aquatic plant growth; (2) poor water quality; (3) barriers to fish migration; (4) over-fishing; and (5) erosion.

In 1997 the non-native fish alewife was first found in Lake St. Catherine in Rutland County. It may have been released from a bait bucket or deliberately (illegally) introduced. In 2004 alewives were found in northern sections of the Lake Champlain in Vermont and Quebec. Once established, alewives could out-compete native smelts for food and cause problems for lake trout and landlocked Atlantic salmon.

Sea lamprey is a species believed to have found its way into Lake Champlain from the Great Lakes in the mid-1800s. Although lamprey control efforts have been underway in major tributaries to the lake since 1990, the treatment program was interrupted on the Vermont side between 1998 and 2002. The lamprey wounding rate on native fish in Lake Champlain seems to be increasing. If not kept in check, lamprey could threaten the lake trout,

salmon, northern pike, walleye, and bass fisheries. In recent years, Lake Champlain supported 30 full-time charter fishing boats. There are just two now, with three or four operating on a part-time basis.

A 1998 report issued by the Vermont Department of Fish and Wildlife indicated that populations of brown trout in the Batten Kill, one of Vermont's most famous trout streams, declined by as much as 70 percent in a decade.

The only access point to many waterbodies in the state is provided by the Vermont Department of Fish and Wildlife's 151 Access Areas. Creation of these access areas was made possible through fishing license sales and an excise tax on angling equipment that has been in place for decades. Beginning in 1993, the legislature added 50 percent of Vermont motorboat registration fees to be used for access areas. Many more people now wish to access Vermont's lakes and ponds, and some of these users do not fish, hunt, or engage in other wildlife-related activities. Commercial uses of the access areas are not allowed under existing laws, but this issue is currently being reviewed. Fish and Wildlife game wardens have issued a few tickets to outdoor guides in the past year, and the media has reported on this situation as being problematic. Rulemaking (changing the law) is being considered so that there would be more money available to set up and maintain access areas. Sources of funds could come from licenses to businesses, registration fees for canoes and small, non-motorized boats, or other user fees.

Sales of the total of both resident and non-resident fishing licenses declined overall from 1993 to 2003 by nearly 16 percent from 97,399 to 82,116.

Numerous invasive fish species have become established in Lake Champlain via the Hudson River and Champlain Barge Canal, such as white perch, blueback herring, and gizzard shad. Populations of these species have exploded throughout the lake in recent years, and native fish species in the lake may be negatively impacted. Studies are being conducted as to the feasibility of placing a barrier at the southern end of Lake Champlain, in the Champlain Barge Canal, as a method of preventing the introduction of invasive species from the Hudson River system into the lake.

The Connecticut River Atlantic Salmon Restoration Program continues to work toward the restoration of this species to Vermont tributaries. However the number of returning adults has been disappointing.

Ice fishermen report the need for more public access sites during winter and more frequent plowing of existing access sites.

c. Trapping

Participation in trapping in Vermont remained fairly steady between 1991 and 2003 according to trapping licenses sold during that period. License sales since 1991 averaged around 530 and increased to over 600 licenses sold in 2004.

Achievements

In 2001 the Vermont Department of Fish and Wildlife instituted the Advanced Trapper Weekend to communicate skills and best management practices to trappers beyond their mandatory basic class. Since 1997, Vermont trappers have participated every fall in a national study to test a variety of trap types and designs for efficiency, animal welfare, safety, and practicality. The resulting Best Management Practices will be implemented into Vermont's trapping programs.

Issues

Reducing and/or eliminating real and perceived problems associated with trapping.

Continuing to improve traps and trapping methods.

Conserving habitat for furbearers.

Minimizing conflicts between humans and wildlife, such as beavers flooding roads and trails, coyotes taking sheep, and raccoons in homes.

d. Viewing Nongame Wildlife and Supporting Their Habitats

Vermont continued to support many species of nongame wildlife and their habitats, but the state's ability to increase knowledge about these species and conserve their habitats remained a challenge. The U.S. Fish and Wildlife

Service's 2001 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation found that the number of Vermont residents who watched wildlife away from their homes (109,000) was the same in 2001 as in 1991. The number of U.S. residents who participated in nonresidential wildlife watching in Vermont in 2001 (307,000) is considered statistically the same as the number in 1991 (303,000). Likewise the number of days U.S. residents participated in nonresidential wildlife watching in Vermont was statistically the same in 2001 (3,717,000) as in 1991 (2,364,000).

Achievements

Osprey, common loon, and peregrine falcon are uncommon bird species in Vermont and were listed as endangered in the state during most of the past decade. All three species met their recovery plan benchmarks for delisting by 2004, and a proposal is being submitted to remove them from the State Endangered Species List.

In the early 1990s the Nongame and Natural Heritage Program of the Vermont Fish and Wildlife Department added a temporary position to assist full-time staff in reviewing various activities that could impact significant natural communities and rare, threatened, and endangered species. These included recreation projects being funded by the Land and Water Conservation Fund and permits required for shoreland encroachments, developments through Act 250, and the potential spread of aquatic nuisance species (ANS).

The acquisition of the 625-acre Alburg Dunes State Park on Lake Champlain in 1996 conserved the longest as well as one of the state's few remaining sandy shorelines. This beach provides habitat for shoreline birds, and research may reveal its value as nesting habitat for turtle species and rare tiger beetles.

In 2000 the Vermont Department of Fish and Wildlife created a State Lands Ecologist position to improve knowledge and conservation of natural communities and habitats for a variety of species on Agency of Natural Resources lands.

A pilot study to map vernal pools, which provide breeding habitat for a number of amphibian species, occurred in 2003 and 2004. Infrared photography was used to

identify them and then field observations were conducted. Studies of nesting beaches and basking habitats for turtle species, including map, painted, snapping, and the state threatened spiny softshell turtle, were begun in the early-2000s.

Five-year studies to document the distribution of butterflies and breeding birds throughout the state were underway in the early-2000s.

To jump start bald eagle recovery efforts in Vermont, in 2004 six eaglets were released into the wild from man-made hack boxes through efforts of the U.S. Fish and Wildlife Service, the Vermont Department of Fish and Wildlife, the National Wildlife Federation, Outreach for Earth Stewardship, and others.

Issue

The identification of locations of nongame species and the management and conservation of their habitats is not sufficient to keep pace with pressures for human use of the landscape.

e. Wildlife Tracking and Educational Efforts

The number and quality of non-consumptive wildlife-related recreational opportunities in Vermont increased during the past decade due to many organizations' successes with projects and programs.

Achievements

The *Vermont Wildlife Viewing Guide* was published in 1994 and offered details about many wildlife species which can be seen at 50 locations throughout the state.

Keeping Track, Inc. was founded in 1994 and provided training in tracking wildlife species to thousands of adults and children in its first nine years. The program developed a project and data management protocol in 2000, a guide to photographing animal tracks and sign in 2001, and launched a website in 2003.

The Vermont Institute of Natural Science (VINS) assists communities and individuals throughout the state to better understand ecological principles and the natural world. VINS regional education centers conduct programs and are

located in Woodstock, Quechee, Montpelier, and Manchester. The Manchester office was opened in 1993, with a two year break between 1999-2001. This office manages an 850-acre nature preserve for the Equinox Resort. In 1996 its North Branch Nature Center was opened on 28 acres in Montpelier along the North Branch of the Winooski River.

In 1998 Audubon Vermont opened High Pond Camp, a residential summer camp for 11 to 18 year olds in Brandon. More than 100 campers attend its four 10-day sessions every summer.

The University of Vermont Extension's annual Outdoor Family Weekend was first held in 1998 at Groton State Forest to provide families the opportunity to camp together and build wildlife-related outdoor skills.

Birding trails began in the Champlain Valley and along the Connecticut River. The Lake Champlain Birding Trail, which indicates sites for both land- and water-based viewing, was first publicized through a brochure in 2001. The trail was featured in *Audubon* magazine in the fall of 2002 as a top birding destination in the country. The Connecticut River Birding Trail was first publicized in 2002 with an itinerary spanning both sides of the river. The Connecticut River Joint Commissions are providing funding to help extend the trail to the Canadian border.

3. Water-Based Recreational Opportunities

Vermont's 819 lakes and ponds and 5,000 miles of major rivers and tributaries offer many exciting and scenic recreational opportunities. More than 200 of these lakes and ponds are larger than 20 acres. The 1999 Vermont Recreation Resources Inventory revealed 647 sites throughout the state that provided access to water. Of these, 348 were state-operated, 8 were operated by a county, 112 were operated by a city, town, village, or school district, 26 were operated by a federal agency, 37 were quasi-public/non-profit, 89 were commercial operations, and 27 were private.

Most water-based recreational pursuits are increasing in popularity. This section provides some details about available resources, participation in these activities, some achievements

of the past decade, and concerns related to these activities. Before presenting information about individual boating activities and swimming, some significant state achievements and water quality issues will be discussed.

Achievements

In 1995 the Vermont River Conservancy (VRC) was formed to conserve lands adjacent to streams and lakes. From then until 2003, they took the lead or supported the purchase and/or conservation of 1,200 acres for water-based activities. These included Lyman Falls State Park on the Connecticut River, Buttermilk Falls in Ludlow, Twenty Foot Hole in Reading, and Lower Clarendon Gorge, all now managed by the Vermont Agency of Natural Resources. The VRC coordinated the Berlin Pond Watershed/Irish Hill Conservation Project with the Montpelier and Berlin Conservation Commissions. VRC is also coordinating the development of a Swimming Area Management Network of volunteers across the state.

Recent acres added to public lands managed by the Vermont Agency of Natural Resources included Alburg Dunes State Park on Lake Champlain in 1996; Green River Reservoir State Park, consisting of more than 5,100 acres of land surrounding the 653-acre reservoir, in 1999; 10 ponds in the 22,000-acre West Mountain Wildlife Management Area in 1999; the 296-acre Round Pond State Park in North Hero in 2001; and Bingham Falls in Stowe in 2003.

Between 1990 and 2004, 24 dams on nine Vermont rivers were re-licensed by the Federal Energy Regulatory Commission. The re-licensing process involves extensive public input and the development of a recreation plan for each facility. Most of these projects involved enhancements for recreation, including upgrades to boat launches, picnic areas, canoe carries and take outs, beaches, toilets, and hiking trails.

In support of water-based recreational activities, a number of new funding sources for efforts to improve water quality became available in recent years, including the following:

A new entity for managing Lake Champlain the Lake Champlain Basin Program (LCBP) was created in 1991 as a partnership of government agencies from New York, Vermont, and Quebec,

private organizations, communities, and individuals. Millions of dollars have been administered and issued by the LCBP to support various research and management efforts in the basin.

Between 1992 and 2004, the Connecticut River Joint Commissions' Partnership Program disbursed more than \$1 million in support of 373 local projects throughout that watershed.

In 1993 the Vermont legislature established the Motorboat Registration Fund to ensure that motorboat registration fees and penalties would assist the protection and maintenance of the state's water resources. These funds supported the Department of Environmental Conservation's Aquatic Nuisance Control Grants-in-Aid Program. In 2002 the Vermont legislature instituted a surcharge on motorboat registrations to provide additional funds for this program. The grants program consistently received more requests for funds than were available.

From 1998 and 2004, Vermont's Conservation License Plates program made available to towns and not-for-profit organizations a total amount in excess of \$350,000 for projects to improve the quality of Vermont's waters and water-based recreational activities.

In 2004 \$7.6 million were appropriated by the Vermont Legislature for water pollution improvements as part of the state's new Clean and Clear initiative.

Besides these funds allocated, organizations throughout Vermont put thousands of dollars and enormous staff and volunteer efforts towards monitoring and improving water quality. Many watershed organizations got started during this period. Existing organizations expanded their activities and increased numbers of members. Many towns began monitoring E. coli bacteria at local beaches and in rivers, and others cooperated with watershed organizations, which set up monitoring and educational programs in schools in their area.

a. Water-Based Recreation Issues

Access areas of the Vermont Department of Fish and Wildlife are being used for a variety of activities other than the intended fishing and wildlife-based recreation pursuits.

Conflicts among anglers, floaters, landowners, and swimmers, especially during high use periods (hot summer weekends) exist in many areas. These include littering, trash dumping, and inconsiderate behavior.

Public access is a top concern for water-based recreational uses.

Some existing and improvised access sites have erosion problems.

There is a need for legal portage sites where there are obstacles to floaters who have no legal way to portage past them.

In some places and instances, water-based recreationists access waters from private property without permission.

Adequate boat speed enforcement is needed.

b. Water Quality Issues

There is a great deal of overlap between water quality and fisheries issues. However, issues that relate more directly to fishing are included in the fishing section of wildlife-based recreation above.

Issues

Problems still exist with the quality of Vermont waters, including the following:

Invasive exotic plants and animals, referred to as aquatic nuisance species (ANS), pose a major problem to water and other resources throughout the world. Zebra mussels were first identified in Lake Champlain in 1993 and since that time have spread throughout the lake. Fourteen of Vermont's 17 native species of mussels have been negatively impacted by the zebra mussel. In many waters throughout the state, plants of major concern included Eurasian watermilfoil, purple loosestrife, and water

chestnut. Between 1994 and 2003, the number of lakes infested increased: Eurasian watermilfoil from 37 to 57 lakes; water chestnut from two to six lakes; and the alewife is now found in Lake St. Catherine and sections of Lake Champlain.

Mercury contamination occurs in still waters throughout Vermont. In 1995 the Vermont Health Department advised pregnant women, breast-feeding mothers, and children age six and younger against eating even small quantities of several fish species caught in Vermont waters due to the amount of mercury detected in these species.

As of 2003, there were 37 lakes, representing 4,400 acres, in Vermont that were severely impacted by acid rain, with an additional 6,790 acres in danger of becoming severely impaired if acid rain continues. Fortunately current indicators suggest that levels of acidifying pollutants may be declining.

Even though there were reductions in point source loading of phosphorus into Lake Champlain between 1991 and 2001, overall reductions in tributary loads and decreases in lake phosphorus concentrations were not observed as of 2003. Severe outbreaks of blue green algae occurred during the summers of 2003 and 2004 in Misquiquoi Bay and other northern areas of the lake.

Lakeshore residents and riverbank owners tend to clear their shorelines of trees, shrubs, and woody debris, but these provide many benefits for water resources.

c. Motor Boating and Personal Watercraft

Through the recreation survey of Vermont residents in 2002, 6.4 percent indicated that motor boating was one of the top two outdoor recreation activities they engage in between May and October. The National Survey on Recreation and the Environment showed that the percent change in participation in motor boating by people who live in the region--Vermont along with the adjoining states New York, Massachusetts, and New Hampshire--between 1995 and 2003 exceeded the change in participation nationally during that period. The increase of those living in the region who participated in motor boating exceeded 16 percent and represented 4.13 million participants in 1995 and 4.81 million in 2003.

The National Survey on Recreation and the Environment for 1999-2004 estimated that 19,000 Vermonters, or 3 percent of the population, use personal watercraft (jet skis) per year in the U. S.

Vermont motor boat registrations declined overall between 1993 and 2003 from 39,907 to 33,260. However, these figures include an increase of inboard motors from 7734 to 8517 and a decrease of outboard motors from 32,173 to 24,743. Findings of the 1996 Vermont Lake and Pond Recreation Survey revealed that 47% of primary use boats were powered by internal combustion motors and 81% of power boats had over 90 horsepower.

The 1999 *Vermont Outdoor Recreation Inventory* looked at boat launch sites, docking slips and moorings, and pumpouts across the state. There were 228 paved or gravel ramps, of which 187 were publicly available. The state has 155 cartop boat launches, of which 116 are publicly owned. There are 556 public and 1,634 private boat docking slips, and 1,444 moorings, of which 90 are publicly owned. The state has 5 public and 18 private pumpout areas for waste disposal and three Mooring Management Areas designated by the Vermont Water Resources Board in Newport, Shelburne Bay, and Burton Island.

The findings of the 1996 Vermont Lake and Pond Recreation Survey revealed that boaters preferred restrictions on the speed of boats, rather than reduction in horsepower as well as designation of separate zones for uses, rather than setting certain times for certain uses.

Achievements

The allocation of motorboat access funds was increased from 12 1/2 to 15 percent in 1998 with the passage of TEA-21 (Transportation Equity Act for the 21st Century). It provides a more equitable allocation of federal excise tax receipts because, over the years since the Wallop-Breaux Amendment in 1984, the contribution from the motorboat fuels excise tax had grown to nearly 50% of the total receipts.

In 1999 the Vermont State Police received an \$800,000 boating safety grant from the U.S. Coast Guard for improved enforcement of boating laws, of which \$35,000 was allocated to the Vermont Department of Fish and Wildlife.

In 2000 Vermont participated in a multi-state survey of registered boaters. Results showed that education and outreach efforts in Vermont have been effective in raising boater awareness of aquatic nuisance species. Signs at boat access areas and newspaper articles topped the list of best sources of information. The majority of boaters surveyed are willing to pay more for boat registration if the extra funds were used for activities which prevent the spread of aquatic nuisance species.

The City of Newport created a mooring management ordinance for Lake Memphremagog in combination with the Water Resources Board's ruling that authorizes the city to manage moorings.

Issues

The 1996 Vermont Lake and Pond Recreation Survey found that, in terms of lake and pond user conflicts, motorboats and personal watercraft (e.g. jet skis) interfered most often with other people's recreation.

Boating in parts of some lakes negatively impacts wildlife.

Invasive plants can be spread from one waterbody to another when boats are not cleaned after each use.

Recreational use conflicts occur at large mooring fields, particularly in Lake Champlain.

Gasoline marine engines used at the time of this plan emitted smog-forming air pollutants and discharged unburned oil and gasoline directly into lakes and ponds, polluting them with MtBE, benzene, and other toxic chemicals.

d. Paddle Sports: Canoeing, Kayaking & Rafting

Through the recreation survey of Vermont residents in 2002, more than 10 percent indicated that canoeing/kayaking was one of the top two outdoor recreation activities they engage in between May and October. The highest percentage change of participation in outdoor activities by those living in the region (Vermont along with the adjoining states New York, Massachusetts, and New Hampshire) between 1995 and 2003 occurred for kayaking, which showed an increase of nearly 322 percent from 320,000 to 1.35 million participants.

A 2002 study by the Outdoor Industry Foundation found that Vermont has more whitewater boaters per capita

than any other state in the nation. The American Canoe Association, founded in 1880, is the nation's most active nonprofit paddle sports organization. Membership in the organization increased from 5,000 in 1993 to more than 50,000 in 2002. In 1994 it established a website which provides information about these sports throughout the country. Other paddle sports organizations include American Whitewater with 80,000 members, the Appalachian Mountain Club with 96,000 members, New England FLOW with 5,000 members, and the Vermont Paddlers Club with 250 members.

American Whitewater's website posts flow levels on 57 reaches of 45 separate rivers in Vermont. The information is updated multiple times each day throughout the year so that the thousands of whitewater boaters who travel to Vermont are aware of current conditions.

Whitewater releases from dams provide some exciting paddling opportunities. In Vermont paddlers are especially attracted to the rapids in the West River when water is released from the Ball Mountain Dam. In 2003 the U.S. Army Corps of Engineers determined it should abide by the Vermont Agency of Natural Resources 1996 policy on minimum stream flow standards at the dam. It was determined that this structure cannot contain enough water to support a two-day release of whitewater for paddlers in September.

The Green Mountain Power Company's (GMP) hydro-power facility below the Waterbury Dam on the Little River in Waterbury, Vermont is being relicensed. With GMP's cooperation, this reach of the Little River could provide reliable boatable flows for whitewater paddlers throughout the summer months as well as an important economic opportunity outside of the winter skiing season for which this area is most known. There are 10 outfitter and paddling shops within a 25-mile radius of the Little River.

Achievements

The Lake Champlain Paddlers' Trail began taking shape in the early 1990s. By 2004 there were 30 locations providing campsites or day-use sites for paddlers on the lake.

Research for the route of the Northern Forest Canoe Trail (NFCT), 740 miles along Native American and historic

travel routes from New York to Maine, took place in the mid-1990s. The NFCT was established as a not-for-profit organization in 2000. In Vermont the NFCT is expected to follow Lake Champlain, the Missisquoi River, North Branch of the Missisquoi River, Lake Memphremagog, and the Clyde, Nulhegan, and Connecticut Rivers and involve the 45 towns through which the trail passes by 2005.

Issues

The 2003 September whitewater release from the Ball Mountain Dam was cut from two days to one without involvement of paddlers and without an explanation. Some paddlers believe that agencies made the decision without adequate studies and public input and feel that dam releases for river recreation should be undertaken with a balanced view of the impacts to both the environment and local economies.

A study of the ecological impacts of the whitewater releases at Ball Mountain Dam is needed to provide more detailed information about affected species and natural communities. A study of the river's pre-dam and post-dam flow regime in relation to the river's species and natural communities would refine our understanding of allowable whitewater releases and limits to those releases.

Campsites or day-use sites for paddlers need to be sited about every eight to ten miles on the Lake Champlain Paddlers' Trail. The Northern Forest Canoe Trail needs to involve all the towns along that route in determining additional access points and day-use sites.

User groups need funds and willing landowners to establish access points as well as campsites and day-use areas for paddlers on these trails.

User groups need to develop a method for determining the maximum usage the trails can supply, in anticipation of the popularity and resulting increased usage of access points.

e. Sailing

Sailing has taken place in Vermont for hundreds of years. It was first used as a means of transportation, commerce, and for war battles. Sailing has evolved to a sport loved by many who participate in the activity on Lake Champlain and other bodies of water located through the state. The National Survey on Recreation and the Environment

showed that the percent change in participation in sailing by those living in the region (Vermont along with the adjoining states New York, Massachusetts, and New Hampshire) between 1995 and 2003 exceeded the change in participation nationally during that period. The increase in participation by residents in the region was more than 33 percent, from 1.36 million participants in 1995 to 1.82 million in 2003.

Some sailboats need mooring slips, while others do not. Boats can be moored for free in Lake Champlain as long as the site is not a shipping lane.

Currently there are more than seven sailing schools on Lake Champlain. They are a combination of both private and publicly run schools with programs for all ages. For example, the Lake Champlain Community Sailing Center (LCCSC), a not-for-profit public-access sailing and paddling center with more than 5300 user visits per year, has operated from the Moran building in Burlington for 10 years. It is the home for the University of Vermont and Northern Vermont High School sailing teams and hosts several regattas each year.

Numerous regattas are held each year on Lake Champlain, including a collegiate level USSA-sanctioned regatta hosted by the University of Vermont. Top level sailors like Andy Horton have come out of the Vermont sailing community.

Achievements

Special needs individuals have been able to sail at a public facility since 1998 due to Vermont Adaptive Ski and Sports teaming up with the Lake Champlain Community Sailing Center.

Youths are participating more frequently in this sport due to camp programs and boats becoming more user-friendly.

Various fleets of boats are developing at boat clubs across the state, and when enough boats are available, races can occur. For example the University of Vermont has a fleet of 420s, and Mallets Bay has a growing fleet of Lazars.

Regattas are held at various boat clubs each year. Lake Champlain events include the Mayors' Cup from Burl-

ington to Plattsburgh, the oldest competition the Ladies Cup, and the Regatta for Lake Champlain which started in 2004 as a spin-off of the MS Regatta.

Issues

Since non-motorized boats are not registered with the state, it is impossible to get a correct estimate on the number of sailboats used in Vermont.

There are many challenges in Vermont in maintaining races for big boats over 24 feet.

In order for races and regattas to take place, there is a need to continue to build fleets so there are adequate competitors for each boat class.

It is important to find ways of increasing the number of youths exposed to the sport.

f. Sail Boarding and Kite Surfing

The sports of sail boarding and kite surfing are both relatively new sports to the state of Vermont. Kite surfing became popular and widely accessible around the mid-1990s. Sail boarding has been around since the 1970s, and has seen a resurgence starting in the mid-1990s.

Kite surfing, also known as kite boarding, uses a kite for a medium to harness the wind. Participants are strapped in to either a snowboard, or kiteboard, depending on if they will be riding on water or snow. By holding a bar which is attached to the kite strings, the rider can maneuver the kite, and thus be pulled by it, enabling the user to surf on the water or snow. Sail boarding, like kite surfing, uses the wind to provide momentum. A sail boarder uses a sail attached to a board. This enables the individual to travel over water.

Currently kite surfing on the water appeals most to couples between the ages of 32-45. On the snow, men between the ages of 29-42 have been the largest user group. Sail boarding is most popular with couples between the ages 28-40 and tends to be more popular with women overall.

Issues

The main challenge for both sports is the issue of access.

Public access to waterbodies is needed, along with parking that is close to the water. This is due to the challenges of carrying the equipment to the water when close lakeside access is not available.

Areas suitable for beginners require shallow water with a cross-shore breeze, and there is a need to secure public access points suitable for beginners.

Participants hope to promote awareness of and introduce more people to both sports.

g. Swimming

Statistics are available from the National Survey on Recreation and the Environment (NSRE) for the numbers of people from the combined states of Vermont, New Hampshire, Massachusetts, and New York who swim in lakes and streams. The number of people from those states who engaged in this activity increased more than 12 percent between 1995 and 2003, from 9.27 million to 10.41 million. The NSRE indicated that the number of Vermonters who swim in outdoor pools annually between 1999 and 2004 is 215,669 or 45 percent of the population. Through the recreation survey of Vermont residents in 2002, 21 percent indicated that swimming was one of the top two outdoor recreation activities they engage in between May and October. Only hiking was more popular at 43 percent.

The 1999 Vermont Outdoor Recreation Inventory revealed that there are 43 public outdoor swimming pools in the state. The counties of Essex, Grand Isle, and Orleans had no public outdoor pools. Rutland and Windsor counties had the most with nine in each. The state has 61,618 total linear feet of beach areas, of which 43,693 feet are publicly owned. Due to Lake Champlain along Vermont's northwestern border, Chittenden, Grand Isle, and Franklin counties have the most public beach footage, with 12,397; 8,550; and 6,275 feet, respectively.

h. SCUBA Diving

SCUBA Diving is a sport which has increased in popularity in recent years. The Vermont bodies of water that are most commonly dived are Lake Champlain and Lake Willoughby. However, dozens of other lakes and ponds such

as Lake Memphremagog, Sunset Lake, Lake Bomoseen, Lake Dunmore, and Caspian Lake are explored each year.

Vermont's most significant dive attraction is the Lake Champlain Underwater Historic Preserve (VDHP). The seven available dive sites are designed to give SCUBA divers access to appropriate state-owned shipwrecks in Lake Champlain. Each shipwreck is equipped with a mooring system, eliminating the need to drop an anchor to secure the dive boat to the site. A descriptive brochure was produced to share each site's history, provide basic diving guidelines, and emergency response information.

The preserves are used by approximately 500 divers each season (June through October). VDHP employees perform on-water monitoring activities including registration and answering divers' questions. Additional support for the program is provided by the Lake Champlain Maritime Museum (LCMM) whose staff members manage the database and web site and store equipment during the off-season.

Issues

Increased funding to support the addition of more shipwrecks sites in to the Vermont Underwater Historic Preserve.

Dive sites are threatened by infestations of non-native aquatic nuisance species such as zebra mussel and Eurasian watermilfoil.

4. Winter Recreational Activities

See the trails plan, Chapter 4, for snowmobiling, dog sledding, and downhill skiing. See the preceding wildlife-based recreation section for information on ice fishing. Refer to the camping section later in this appendix for information about winter camping.



a. Ice Skating: Outdoor Rinks, Nordic Skating, Inline Skating, Speed Skating, and Skate-Skiing

There is an increasingly wide variety of ice skating techniques, equipment, and opportunities becoming available in Vermont. Nordic or cross-country skating is popular in Europe and becoming more so in Vermont. The sport uses a more flexible kind of skate, which look like cross-country ski boots to which narrow platforms with long blades underneath are clipped on at the toe. Speed skates must be sharpened by hand, not machine, with a skate sharpening jig.

Three big January events are held at Lake Morey in Fairlee: a Winterfest, Marathon, and Skate-athon. To prepare for the Marathon, the track is swept with ice grooming equipment and water is pumped out of the lake to smooth the surface. A skating trail on that lake is the longest in the U.S--a four-mile round trip. Groups have skated 30 miles on Lake Champlain between South Hero and Shelburne, 10 miles on Lake Memphremagog, and up and down the Connecticut River between Hanover and Norwich as well as between Fairlee and Orford.

b. Ice Boating and Ice Sailing

Traditional ice boating has existed for centuries. These are built with sails and metal runners and can reach speeds of

100 miles per hour, but they have difficulties with bumpy ice conditions. New designs are being tried, including one by a Franklin County Vermont resident. This features a five-foot wide wooden compartment affixed to two pairs of cross-country skis. One pair of skis is attached to the narrow front and the other to the broader back.

Issues

Ice boaters and sailors report the need for more access sites for the public during winter.

Suitable ice conditions for engaging in these sports are not predictable, so the locations of competitive events cannot be announced in advance.

There are no winter recreation facilities on Lake Champlain that can host the national and international world champion ice boat races, especially with regard to rest rooms and other facilities.

c. Backcountry Skiing and Snowboarding

Backcountry skiing and snowboarding are becoming more popular off-trail activities in open areas, often extending from hiking trails and resort ski trails. Getting to areas where there are fewer people offers participants a more remote experience.

Issues

Illegal cutting of trails.

Illegal glading results in more accidents and calls for Search and Rescue teams.

As this is a relatively unorganized activity, efforts toward making people aware of legal opportunities to participate would be desirable.

5. Private Lands

Private lands comprise about 85 percent of lands in Vermont. It's been a long-standing Vermont tradition for private landowners to allow the public access to their land for hunting and fishing, as Vermont's constitution gives people the right to hunt and fish on unposted land throughout the state. Many private landowners do not post their land, thereby allowing such access.

The Vermont Woodlands Association (VWA), a statewide organization of forest landowners, informally surveyed their 500 members about private land ownership issues in 2003. Most of the 50 landowners who responded indicated that they hoped to continue to keep their land open to the public or allow access by permission only for certain uses. Some believed that keeping the land open maintains good community relations and is in keeping with Vermont traditions.

The VWA conducted another informal survey of their members regarding all-terrain vehicles earlier in 2003. The majority of VWA survey respondents did not want ATVs on their properties, were not comfortable with their liability insurance protection, and regarded ATV use as the most frequently observed unauthorized use of their properties.

Recreational user groups encourage their members to be respectful to landowners who allow public access. Many groups provide brochures and/or informational workshops to their members when they join to encourage them to thank landowners and treat their lands with respect.

Achievements

Vermont passed landmark legislation in 1998 that restricts the liability of the landowner with regard to injuries sustained by users of their property to circumstances where the landowner willfully caused injury. A brochure, which explained landowner liability issues for landowners, was revised and updated to reflect the increased protections afforded by revisions to the law. The Vermont Trails and Greenways Council's Summer 2003 newsletter included a supplement entitled "Trails and Landowner Liability in Vermont." Brochures and newsletters with information about the law were produced and distributed by the state and user groups after the law was passed.

Some user groups have raised money for landowners who may need to defend themselves against recreationists who falsely claim a landowner is liable for injury sustained on the owner's property.

Public access for traditional recreational activities is assured on at least 141,000 acres of private working forestlands in Vermont through easements made possible by a variety of funding sources and partnerships. Between 1993 and 2004, the federally funded Forest Legacy

Program provided more than \$6.7 million toward the conservation of over 44,000 acres of forestland in Vermont, including 31,000 acres of privately held Hancock Insurance Company lands. As a result of Champion International's sale of 130,000 acres of its holdings in the Northeast Kingdom of the state in 1999, 84,000 acres in parts of 14 towns continue to be privately held and managed by the Essex Timber Company, subject to public access and working forest easements.

The Vermont Woodlands Association (VWA) was organized in 1996 as a merger of the Vermont Timberland Owners Association, founded in 1915, and the Vermont Woodland Resources Association, founded in 1993. Some of VWA's accomplishments on behalf of owners of woodlands include coordination of the Tree Farm Program in the state, a quarterly newsletter, and cooperation with other forestry organizations. Its membership more than doubled between 2002 and 2004 from 127 to 358.

Issues

With two notable exceptions (landowner liability and departure of large lumber companies in areas of the state), the issues that private landowners face have not changed much during the past decade. For a more thorough articulation of most of the issues presented below, readers should refer to the task group report on this subject in the 1993 *Vermont Recreation Plan*.

Since the 1993 plan, discussions by a variety of organizations and agencies have occurred and recommendations have been made for ways of compensating landowners who allow recreational uses. However, no action has been taken regarding this.

Many landowners are not aware of the 1998 legislation that restricts the liability of the landowner with regard to injuries sustained by users of their property. Surveys conducted in 1992 and 2002 revealed that more Vermont residents were concerned about this issue in 2002 than in 1992. In 2002, 66 percent of Vermonters believed landowner liability was a problem. Despite the distribution of brochures and newsletters about the law, more outreach appears needed to make landowners aware of this law.

Organizations that negotiate with landowners for easements granting permission to use land find that landown-

ers are more likely to grant permission for non-motorized and non-mechanized activities. However, inappropriate ATV use and mountain biking negatively impact the willingness of some landowners to allow any public access.

Some landowners who have traditionally allowed free recreational access have seen increased economic hardship and can't afford to hold onto their land. Those in this situation are more likely to subdivide and sell the land, perpetuating the cycle of new landowners who may not be familiar with Vermont traditions.

A few large timber companies have sold their lands. When such transactions occur, property values may rise dramatically and quickly, making it more difficult for average wage-earning households to survive in those towns.

When large timber holdings are purchased by private landowners or for public use, some are concerned that the traditional culture associated with these lands may be lost.

Any decrease in private lands available for public recreational use in Vermont would result in more pressure for use on other private lands and on public lands. Although there is no clear trend that demonstrates that more landowners are posting their land, there are many reasons why landowners post their land. The reasons include the following list:

Some people who post their land came to Vermont from other states with different traditions regarding private land.

Many landowners are concerned about the public's lack of respect for their property and the need for more law enforcement to handle complaints.

Landowners may be concerned about the number of users of their property or object to certain types of use. Illegal ATV use was mentioned as a problem by many contributors to this plan.

Some landowners feel that recreational uses they allow could become institutionalized and result in restrictions to their right to do what they wish on their land, such as cut timber, farm the land, or derive income from other uses or from the sale or development of their property.

Landowners may be concerned about the impacts that recreational uses might have on their property and whether user groups will be reliable in taking care of problem areas.

6. Commercial Recreation Providers

Vermont has many businesses that provide places and facilities where people can enjoy outdoor recreational activities. These offerings include campgrounds and youth camps, alpine and cross-country skiing facilities, golf courses, and marinas. Many of the achievements and issues associated with these types of businesses are found in other sections of this appendix. There are many other businesses, such as outdoor guides, commercial tour outfitters, retail outfitters, and lodging and inn facilities, which provide services and equipment designed to enhance outdoor recreational experiences. Many of these business members of the outdoor travel industry serve tourists who are not from Vermont.

Some landowners allow recreational use of their land or property for which they charge a fee. Liability issues differ for landowners who charge a fee and those who allow free access.

Commercial businesses provide benefits to the state and local economies through increased employment, revenues, and tax receipts. At the same time, outdoor recreation business owners recognize that their success depends upon the conservation and enhancement of Vermont's natural resources and recreation infrastructure. Initiatives that protect and enhance these resources are essential to the long-term sustainability of the outdoor travel industry.

Achievements

Since 1993, the Vermont Outdoor Guide Association (VOGA) was created to provide technical support to guides and other business owners and organizations and to provide up-to-date information to the public regarding outdoor education, recreation, and nature-based opportunities and vacation planning in Vermont.

In 1997 the Outdoor Task Force, representing many business, non-profit organizations, and agencies, developed and presented to the Vermont Department of Tourism and Marketing an Action Plan to identify outdoor tour-

ism resources and to unify businesses, organizations, and agencies in the protection, enhancement, and promotion of Vermont's unique outdoor resources. Many of the recommendations have been implemented.

The Vermont Agency of Natural Resources (ANR) adopted "Uses of State Lands" as a policy in 1999. This policy provides criteria and guidelines for commercial use of ANR lands. On an annual basis, the Lands Division issues or oversees over 100 licenses and special use permits for appropriate uses of ANR lands, including compatible commercial uses.

In 2003 the University of Vermont Extension and School of Natural Resources hosted "Managing Woodlands for Recreational Enterprises," a workshop for landowners who would like to charge user fees.

Issues

Recreation-related businesses would like more support from the state for assistance with advertising and reaching new markets.

New stormwater and septic regulations that may pertain to some of these businesses may make it more difficult for them to continue operating due to increased costs.

The permit system for changes to businesses should be streamlined.

The state should continue to be sensitive to the private sector by avoiding competition with recreation-related businesses.

When occupancy or enrollments are down, there is more pressure to close or sell. This could then cause some open land to be developed.

Other states provide a central contact person who can assist small recreation-related businesses.

7. Field Sports

Information about different field sports will be presented first. Since many of the issues for these are similar, they will be summarized at the end of this section.

a. Baseball/Softball

The traditional sports of baseball (hardball) and softball have been enjoyed for over a century by thousands of Vermonters. The National Survey on Recreation and the Environment (NSRE) for the period 1999-2003 indicated that 37,383 Vermonters (7.8 percent of the population) participated in baseball each year and 41,217 (8.6 percent of the population) participated in softball each year.

Youth programs for boys and girls, high school teams, and adult leagues are part of the sports and recreation landscape across the state. Little League is the world's largest and most respected youth sports program for 5-18 year old players. The organization provides support, including for safety information and insurance coverage, for local clubs that compete in regular season play and offers an international competition for more advanced teams.

b. Soccer

The sport of soccer (known elsewhere in the world as football) has become a fixture of the outdoor recreation scene for decades. Participation has been steadily increasing since the 1970s in both youth and adult organizations. The National Survey on Recreation and the Environment (NSRE) for the period 1999-2003 indicated that 65,659 Vermonters (13.7 percent of the population) participate in soccer outdoors each year. The Vermont Youth Soccer association (VYSA) reports their current level of registered participants to number between 10,000 and 11,000. This number does not represent those participating in town-run recreation soccer programs, which would increase that number substantially. Meanwhile there has been an increase in organized adult soccer participation, which is the result of youth soccer participants wishing to continue playing soccer as adults. Also, there has been a boom in the number of women soccer participants over the past 10 years. The Vermont State Soccer Association (VSSA) reports that there are over 50 teams participating in adult soccer leagues all around the state.

Soccer has basically two distinct seasons: fall is generally the domain of school and town soccer programs, while the amateur season (both youth and adult) runs in spring and summer.

Achievements

Better organization of the sport in Vermont has helped develop higher levels of play, coaching, and officiating as well as providing uniform standards for participation on a national amateur level.

Expanded involvement by Vermont players with U.S. youth and adult soccer associations has improved insurance coverage and resulted in adoption of new techniques that promote the health and safety of all participants.

c. Football

Football is ingrained in the fabric of the American sporting culture. The National Survey on Recreation and the Environment (NSRE) for the period 1999-2003 indicated that 20,608 Vermonters (4.3 percent of the population) participate in soccer each year. In Vermont, Only 31 Vermont high schools have football programs while over 80 offer soccer. This is due primarily to the prohibitive costs of running a football program, as witnessed by the decision of the University of Vermont to end its participation in intercollegiate football back in the 1970s.

Other limiting factors for football include the early onset of cold and snow and the rural nature of the state in that its small population centers tend to restrict participation in organized football to the largest high schools and communities in the state.

There are youth and adult Flag Football leagues emerging and developing all around the state. These provide Vermonters with the opportunity to participate in the sport on some level. This is a non-tackle form of the game where players wear a belt which has two "flags" (basically long plastic strips) attached to it by Velcro. A player is down, or tackled, when one of the flags on his belt is pulled off by the opposing team.

d. Rugby

Like soccer, this internationally popular sport was imported to the U.S. and caught on at colleges around the state beginning in the late 1970s. Rugby clubs, affiliated with many Vermont colleges, attract participants from the school as well as the surrounding community. The sport is

growing rapidly, and rugby players are a demographically diverse group. The sport is enjoyed by men and women of all ages, backgrounds, and professions. It is played during the spring and fall at colleges that sponsor programs.

e. Lacrosse

Even though lacrosse is a sport with ancient roots in Native American culture, only in the past 15 years or so has the sport enjoyed widespread participation in Vermont. As recently as the 1980s, only two high schools had organized lacrosse teams. That began to change in the early 1990s, growing to more than 25 high schools currently offering boys and girls teams as well as an equal number of youth and recreation programs located around the state.

This intense period of growth has predominately taken place on the youth and scholastic levels, while adult lacrosse participation remains a loose confederation of informal recreational opportunities held at four to five locations around the state.

Achievement

The development of strong, well-organized youth lacrosse programs around the state has increased participation, helped feed scholastic and recreational programs, and put the sport on solid footing in Vermont.

f. Frisbee

This well-known backyard family game has evolved into a variety of organized sports, both individual and team oriented. *Ultimate frisbee* is a fast-paced team game that combines elements of football, soccer, and basketball. Frisbee has enjoyed growing popularity since the 1970s.

Frisbee golf, or *disc golf* as it is known, has become a popular new sport in the U.S. during the last ten years and is discussed further in the section on golf.

Currently Vermont has a number of leagues and venues where organized and pick-up games take place.

Issues for All Field Sports

Access to playing fields is a major and ongoing problem because of the limited number of community fields and school district fields available. Creating more partnerships

between youth sports programs and communities could improve the situation.

The fields are overused and become stressed, creating sub-standard conditions for play.

There is a need for more qualified coaches and referees, especially at the community level, where numerous coaches and officials are needed to accommodate teams of various age groups.

Developing more and better coaches with an emphasis on adopting the principles and philosophy of the Positive Coaching Alliance. These principles emphasize Honoring the Sport™ by playing hard while respecting and honoring teammates, opponents, coaches and referees. Full participation by all who wish to play is a cornerstone to this coaching philosophy, which places its highest value on respect for the sport and all its participants over winning and losing.

Collegiate teams need to maintain high standards of conduct, including discouragement of hazing practices and illegal activities when not playing.

Background checks must be required for all coaches, volunteers, and seasonal staff who are given access to children.

8. Court Sports

Court sports include outdoor tennis, basketball, and volleyball.

a. Tennis

Participation numbers of the U.S. Tennis Association (USTA) from the past 20-years indicate that tennis is growing in Vermont. Current estimates are that about 40,000 residents (8 percent of the total population) currently participate in tennis at some level. The adult USA League Tennis program grew steadily in Vermont in the last decade. By 2003, there were 95 teams, representing about 1,300 adult participants in a variety of age and skill divisions.

In 2002, Vermont reported to the USTA that over 300 children participated in beginning instruction, and 1,197

participated in an on-site or traveling USA team tennis program. More than 200 Vermont juniors are members of the USTA and many play in competitive USTA-sanctioned tournaments throughout New England. Thirty-six (36) of the 70 Vermont high schools offer varsity and/or junior varsity tennis programs. In two areas of the state, recreational USA team tennis youth has taken hold. There is a six-team league in Middlebury and a 24-team Champlain Valley league.

USA Tennis New England lists about 200 courts in the state in its membership database. There are an estimated 33 tennis clubs and resorts with courts available. One-third of these sites offer seasonal programs only on outdoor courts. In addition, nearly 35 sites that offer some kind of outdoor tennis programming in their community, usually through a park and recreation department or a Community Tennis Association (CTA) of which there are seven throughout the state. These are groups of local tennis enthusiasts (volunteers) who promote and grow the game of tennis in their towns. The Upper Valley CTA started in 2001 with 17 women playing informally. Three years later, 23 teams with 233 men and women participated.

Since tennis is a sport that people can play throughout their lives and offers excellent health benefits, it holds a unique place in our country's overall health. It is one of the few sports that offer families the opportunity to bridge the generation gap by practicing, playing, and competing together.

Other advantages of tennis over some other sports include the following facts: tennis players don't need a whole team to participate and tennis is reasonably affordable.

Achievements

In 2004 just over 12 percent of the Vermont population participated at some level in the sport of tennis, the highest percentage per capita of all New England states.

Due to new developments in building technology by the United States Tennis Court (USTC) and Track Builders Association (TBA), tennis courts built in the last 10-15 years generally are in great condition and are good evidence regarding court longevity. New court technology provides a better return on investment. by

allowing courts to last a very long time--often eight to ten years before any maintenance or repair is needed. New courts can be beneficial to communities as they are big and, when visible, can boost the image of a park and attract participation.

The USTA and NRPA offer matching grant money up to \$5,000 a year for tennis programming through an initiative called Tennis in the Parks.

A new initiative called Tennis Welcome Centers (TWCs), offers reasonably priced, multi-session group lessons for beginners at existing facilities.

School districts may have free, three-hour, in-service trainings for physical educators to teach tennis in schools. Included in the workshop is a step-by-step USA school tennis curriculum.

The USTA has also developed a community-based workshop for the inexperienced summer instructor or volunteer parent-coach.

A John Hopkins University study published in 2002 supports the notion that tennis is the sport for a lifetime. Tennis had the highest participation in mid-life, and those playing tennis had a lower incidence of cardiovascular disease and heart attack compared to those not playing tennis.

Issues

Courts are a costly investment and the number of people that can play on a court is limited.

Many public courts are in need of repair. Many city and town courts were built in the late 1970s and early 1980s when there were no published standards for their construction.

Towns need to become aware of new construction technology standards.

b. Basketball and Volleyball

The National Survey on Recreation and the Environment (NSRE) for the period 1999-2003 indicated that 71,890 Vermonters, about 15 percent of the state population,

participate in basketball outdoors every year. The same survey found that 39,779 Vermonters, 8.3 percent of the population participate in volleyball outdoors every year.

The 1999 *Vermont Outdoor Recreation Inventory* indicated that there were 207 public and 32 private outdoor basketball courts in the state. For volleyball, the inventory listed 105 public and 56 private courts.

9. Camping

This section contains some information about various camping opportunities in Vermont. The issues associated with these are grouped together at the end of the section.

a. Campgrounds

The National Survey on Recreation and the Environment (NSRE) for the period 1999-2003 indicated that about 158,157 Vermonters use developed camping sites each year. Regional NSRE data, combined for the states of Vermont, New Hampshire, New York, and Massachusetts regarding developed camping showed an increase of 36 percent in this activity by residents of these states between 1995 and 2003 from 3.61 to 4.91 million. In the 2002 recreation survey of Vermont residents, more than 13 percent indicated that camping was one of the top two activities they engage in between May and October.

Vermont has approximately 77 privately-owned campgrounds, 40 state park campgrounds, 8 federal campgrounds, and more than 6,000 campsites throughout the state. Accommodations and amenities offered at campgrounds vary. Tentsites and recreational vehicle (RV) sites are provided with or without hookups for water, electric, and sewer at privately-owned campgrounds only. Leantos and cabin rentals are available at some state parks. Some privately-owned campgrounds offer room and RV rentals.

In order to retain their rustic and natural setting and minimize competition with the private sector, the state park campgrounds do not offer on-site hookups but do have modern bathrooms with water, hot showers, and flush toilets. There may be a time limit staying at State Parks (three weeks at the writing of this plan), whereas private campgrounds offer campers the opportunity to

stay nightly or seasonally. There are a variety of outdoor recreational activities on site or nearby all State Parks and privately-owned campgrounds.

Sheltered camping has been a tradition in Vermont State Parks since the original Adirondack lean-tos were built by the CCCs. Lean-tos have been added to the system over the years, bringing the current total to 597 of 2,200 total campsites. The occupancy rate and cost per night are higher than standard tent sites, which indicate the campers' preference and provide additional revenue. In recent years, three small pump house buildings at Grand Isle and Lake Carmi State Parks were converted to rental cabins. These are one-room buildings with electricity, but no other utilities, and are of a size and style in keeping with the Vermont State Park's atmosphere and experience. Cabins offer a level of comfort and convenience beyond lean-tos that make them more desirable to people who may not be as well-equipped for camping and make them more desirable in the "shoulder seasons" when weather tends to discourage other forms of camping.

An association of private campground owners was organized around 1964 to cooperatively promote the use and enjoyment of private campgrounds as well as to encourage standards for service to the public.

Achievements

In 1990, the Vermont Campground Association invited Vermont State Parks to participate as a full single member to cooperatively promote Vermont as a place for camping. In 1992 a unique partnership between the two entities was established, resulting in better political and promotional representation and serving as a model.

Many handicapped accessible upgrades were made at state park facilities including lean-tos, ramps, water fountain platforms, restrooms, access roads, and paths. By 2004, 35 of the 40 state parks in 2004 were partially handicapped accessible, while three were fully accessible.

After a 1998 assessment of Vermont State Parks, the legislature appropriated \$4 million to begin remedying their \$31 million infrastructure problems. A Lands and Facilities Trust Fund was created in 2001 to assist the rehabilitation and management of ANR properties. Expenditures from the trust fund were expected to begin in 2005.

To provide more diverse recreational experiences in State Parks, funding was appropriated by the legislature so that cabins could be built in a few parks in various regions throughout the state. In addition, horse camping was encouraged at a few parks.

The experience at some State Parks was further enhanced by naturalists who interpret the resources and evening musical concerts.

b. Camps for Children

A wide variety of camping experiences in all seasons exists for children in Vermont. In 2004 there were 62 camps licensed by the Vermont Department of Health, and 53 were members of the Vermont Camping Association. These camps range day camps to resident camps; from outdoor adventures to circus training; and from family camps to religious camps. These numbers do not include camps run by municipalities. In addition, the Vermont Department of Fish and Wildlife operates a summer Conservation Camp for children ages 12-16.

Achievements

Many camps saw their best enrollment ever in 2003.

In 1998 Audubon Vermont opened High Pond Camp, a residential summer camp for 11 to 18 year olds in Brandon. More than 100 campers attend its four 10-day sessions.

A new day camp for youths age 12-21, Partners in Adventure Camp, was founded in 2000 and held activities primarily in Chittenden County. This camp stresses a community learning experience and had a waiting list for disabled participants for its summer programs until it expanded to nine weeks in 2004. Non-disabled students attend the camp as co-existing participants in such activities as horseback riding, sailing, and tennis as well as ice fishing during February winter vacation.

Since 1977 the Fresh Air Fund, an independent, not-for-profit organization, has provided free summer vacations to children from low-income New York City communities. Communities from 13 states offer nearly 10,000 inner city children two-week visits with host families. In the summer of 2004, Vermont volunteer families hosted 293 children in the communities of Barre, Bennington,

Brattleboro, Burlington, Colchester, Essex, Manchester, Middlebury, Montpelier, Newport, Randolph, Rutland, Springfield, St. Albans, St. Johnsbury, Swanton, Vergennes, and Woodstock.

c. Winter Camping

Advancements in equipment make this activity much more accessible to a broader group of people. Off-season camping is allowed at all state parks with the permission of the parks regional manager (state park rules). No reservations are needed but groups require a Special Use Permit.

Achievement

Staff members and volunteers with the Green Mountain Club began offering winter camping workshops to train people with gear and how to stay warm.

d. Primitive Camping

Primitive camping is camping in a forest with no developed facilities and leaving the site with little or no evidence of human visitation. The National Survey on Recreation and the Environment (NSRE) for the period 1999-2003 indicated that 115,503 Vermonters, about 24 percent of the state population, go primitive camping each year. This is nearly double the rate of participation by residents of the region consisting of Vermont, Massachusetts, New Hampshire, and New York. However participation increased in the region between 1995 and 2003 by 30 percent from 2.10 to 2.73 million participants. The related activity of backpacking also increased regionally during that period by nearly 64 percent from 1.63 to 2.67 million participants.

Issues for All Types of Camping

Changing lifestyles are resulting in more people desiring recreational experiences in a stress-free environment with better, more convenient services. Double wage-earning families are taking shorter vacations than in the past, such as three-day weekends instead of a week or longer. These demands are impacting the camping industry more rapidly than in the past, as evidenced by decline in tent camping and greater popularity of recreational vehicles (RV).

There is a concern that State Parks will compete with private campgrounds especially if State Parks were to create sites with RV hook-ups. However, the number of nights per stay that are reserved for camping at State Parks is declining, and RV hook-ups in some parks might reverse this trend.

Many campgrounds have experienced increases in violations of rules and regulations.

RV manufacturers, dealers, and owners should produce or demand alternative sources of independent energy, including solar power and longer-lasting batteries.

The University of Vermont Extension System closed its operation of 4-H Summer Camps in various locations around the state.

Camps have issues similar to those of many other small businesses. Those that want to expand may face new standards involving water and septic, which can be costly. A more easily navigated permit system would help camp owners when they face this situation.

The youth summer camping industry is subject to population demographics, due to its serving primarily 9-15 year old children, and to the state of the economy, as camps require the ability to have discretionary money to spend.

When occupancy or enrollments are down, there is more pressure to close or sell camps. This could then cause some open land to be developed.

Unlike some other states, Vermont does not have staff to assist small recreation groups and businesses with services like networking and website building.

Many primitive campers are not aware of “No Trace Camping” techniques, including the recommended distance from streams or trails and properly disposing of human waste.

Large groups may not be aware of regulations and realize a permit is required for primitive camping on public land.

Overuse of popular campsites may cause soil erosion and aesthetics problems.

10. Outdoor Recreation Opportunities at Historic Sites

There are many possibilities for linking the exploration of historic resources in Vermont with outdoor recreational activities, as the following examples indicate.

a. Lake Champlain Underwater Historic Preserve

See the section on SCUBA diving at the end of the Water-Based Recreational Activities section earlier in this appendix.

b. Military Roads

Military Roads were among the first long-distance roads that were constructed in what was to become Vermont. They were significant both as military highways and as subsequent routes of settlement. The three main military roads were as follows:

Crown Point Military Road

Built in 1759 and 1760, this road extended from the northernmost fort on the Connecticut River to the garrison at Crown Point on Lake Champlain. This route corresponds to a route through present day Springfield, Weathersfield, Cavendish, Plymouth, Mount Holly, Shrewsbury, Clarendon, Rutland, Proctor, Pittsford, Brandon, Sudbury, Shoreham, and Bridport. The Crown Point Road Association is dedicated to promoting interest in this and the Mount Independence-Hubbardton Military Road (see below). Many sections of these roads pass through private land, and efforts are underway to protect them.

Mount Independence-Hubbardton Military Road

This 40-mile long road extended from Mount Independence through Orwell, Benson, Hubbardton, Castleton, Ira, and West Rutland and connected with the Crown Point Road at Rutland Falls.

Bayley-Hazen Military Road

This road extended 54 miles from Wells River to Hazen's Notch through the present day towns of Newbury, Ryegate, Barnet, Peacham, Danville, Cabot, Walden, Hardwick,

and Westfield. Much of this road today is used as part of the state road system, and intersections are marked with special signs. The Northeastern Vermont Development Association has an account of the history of the road and maps to assist those who wish to travel it.

c. Post Roads, Turnpikes, Stage Roads, and Market Roads

Most of the first roads in the state followed river valleys and known Native American trails. Post roads had a post placed in the ground to mark a certain distance. They were first constructed in the 1780s as a means for riders to deliver mail. Around the turn of the 19th century, privately owned and constructed toll roads known as turnpikes improved the quality of travel. The stage coach business, in its prime from 1820 to 1830, capitalized on the turnpikes. By 1850 most turnpikes had been transferred to town ownership, and the railroad eliminated stage coaches as a major means of mail delivery and passenger and freight transportation.

d. Mount Independence Historic Site

Built in 1776 to protect American troops and to repel British forces from advancing into Vermont, Mount Independence was a strategically located fort complex of the Revolutionary War overlooking Lake Champlain. The remains of its batteries, blockhouses, hospital, and barracks are located in Orwell, Vermont and across the lake from the fort at Ticonderoga in New York. This National Historic Landmark has been called one of the most interesting and important historic sites in Vermont. The well-preserved remains of the complex are jointly owned and managed by the State of Vermont, Division for Historic Preservation and the Fort Ticonderoga Association. Several trails on the site pass through nearly 300 acres of pasture and woodlands, providing great hiking opportunities and beautiful vistas of the Champlain Valley.

Issues

Special signage may be needed for the Mt. Independent site to let hunters know they cannot hunt there when the facility is open.

People digging for artifacts without a permit.

People using metal detectors which are prohibited.

11. Other Activities

a. Climbing

Rock and ice climbing have a long history in Vermont, where there is a large inventory of resources and facilities. Technically, climbing cliffs is referred to as rock climbing. Ice climbing and bouldering also fall under the general sport of climbing. The differences come about not so much from the resource type, such as rocks or boulders, but more from the difficulty of the climb. Cliffs (rocks), ice, and boulders all can be rated according to climbing difficulty, and that is the distinction that matters to most climbers. The difficulty determines the technical skill and equipment needed to undertake any type of climb.

The National Survey on Recreation and the Environment for 1999-2003 indicated that 18,691 Vermont residents, representing nearly four percent of the population, participate in rock climbing every year.

Most of the climbing resources in the state are located on private lands, with a small percentage found on state property at Smugglers Notch and the south end of Lake Willoughby. Historically, there has been an adequate supply of places to climb due to the small, slow growing participant base. Traditionally the sport of climbing has been informally organized into a network or close knit community of participants. However, in the last five years or so, there has been a sharp rise in participants, especially younger climbers who are learning to climb at gyms and indoor facilities. This spike in demand for outdoor climbing resources has presented the sport with some unique challenges, especially the issue of access.

Achievements

In an effort to deal with access and other issues confronting the sport, a non-profit organization Climbing Resource Access Group (CRAG) was formed in 1999 which has as its mission “to preserve the climbing resource” in the state of Vermont.

CRAG provides outreach and education programs to foster better landowner relations, to advocate for environmental protection and conservation, and to create an awareness of etiquette and ethics for improved safety and enjoyment by all participants. To achieve these aims they

have created a website and outreach programs to educate newcomers in all of the areas mentioned above, e.g. proper communication with landowners, awareness of environmental impacts (carry-in, carry-out policies) and climbing etiquette and safety.

Partnering with state parks and environmental agencies. Many climbers observe and report peregrine falcon nesting and habitat information to assist agencies in closing climbing areas where falcons are found.

Promoting more access to Vermont's climbing resources through purchases of property, obtaining conservation easements, and by negotiating landowners agreements. Two areas in Bolton are included in their purchase plan. The Lower West Cliffs have already been obtained and the Quarry Cliffs are next on the purchase agenda.

Providing education in the areas of stewardship, through trail maintenance and clean-up, and environmental conservation, through species and habitat protection, remain high priorities as well.

Issue

There is need for more funding for access and to sustain educational programs.

b. Skateboarding and Inline Skating

Skateboarding involves riding a piece of wood with wheels over different mediums. Tricks known as kick flips, grinds, hand grabs, and rail slides are typically performed. Inline skating involves modified rollerblades, enabling an individual to grind rails, go down ramps, and do front flips.

The sports of skateboarding and inline skating continue to be enjoyed by a growing number of people in Vermont. Currently the majority of skateboarders and inline skaters are between the age 12 and 18, with individuals partaking in the sport as young as three and through their 50s. The late 1990s saw increased growth to both sports, in part due to media publicity of world renowned skateboarder Tony Hawk, winner of numerous X Games. The X Games is an international competition for so-called "extreme" sports.

Both of these sports can be performed in the street, or in

areas specifically designed for these sports known as skate parks. The state of Vermont has seen a growth in skateboarding venues since 2000 throughout the state. Construction of more indoor parks would enable participation in these sports year round.

Achievements

In 2004 four of 27 youths chosen to compete in the Mountain Dew Free Flow Challenge (skateboarding), held in California, were from Vermont.

By 2004 there were 15 outdoor skate parks located throughout the state.

c. Golf

This section includes both golf and disc golf.

Golf

Golf as an organized sport in Vermont dates back to 1902, when the Vermont Golf Association (VGA) was formed and included seven member clubs. Today, there are 63 member and 12 non-member golf clubs operating in the state, as well as numerous driving ranges and practice areas which provide access to the game by people of all skill levels and demographic groups.

In the 2002 recreation survey of Vermont residents, 5.3 percent indicated that golfing was one of the top two activities they engage in between May and October. This represented the tenth highest activity engaged in. The National Survey on Recreation and the Environment for 1999 to 2004 indicated that 19.4 percent or 92,977 Vermonters participate in golfing every year. Participation numbers, measured by rounds played, have grown steadily since the 1980s, while membership levels at clubs have remained relatively unchanged during that same period. This indicates an increase in new players.

As demand for golf in Vermont has increased, so have the number and types of courses developed over the past twenty years. The 1999 Vermont Recreation Resources Inventory found that, of the 873 regulations holes in the state, 117 are open to the public and 756 are on private courses. The counties of Rutland, Chittenden, and Bennington had the most holes at 144, 135, and 117, respectively, while Essex County had none. The inventory also showed that statewide there were 56 executive par 3 holes, 39 driving ranges, and 17 miniature golf sites.

The rate of new course development seems to be reasonable and responsive to demand, while adhering to strict environmental standards and oversight by the state. The sport's continuing development and popularity has been accompanied by an acute awareness of the need for responsible growth and respect for state environmental standards and values.

Achievements

Tourists now recognize Vermont as a quality golf resort destination.

Golf has seen steady and responsible growth in the number of golf facilities.

Golf facilities have provided increased access to the sport by demographic groups across the board.

Improvements in golfing opportunities have been accomplished in partnership with state and local environmental regulators.

Golf facilities generate increased tourist revenues for towns, resorts, and the state as a whole.

Issues

It is challenging to stay profitable in this highly regulated and costly business.

Regulations for water and pesticide use are complicated and may be costly.

Excessive or inappropriate use of fertilizer can impair water quality.

There is a need to have participants speed up the pace of play, as many golfers find it more difficult to fit four- to five-hour rounds into their schedules.

Youth participation (junior golf) should be promoted with increased funds and programs.

Disc Golf

Disc golf is one of the world's fastest growing new sports. Every year thousands of players take up the game because it is easy, fun, and affordable for people of all ages and skill levels. The professional Disc Golf Association

(PDGA) has more than 20,000 members, including 7,000 members who compete in big money PDGA-sanctioned events all over the world.

There are now more than 1,300 disc golf courses in the U.S., and there are over 300 courses in several other countries. Not surprisingly, the sport grows fastest in places where disc golf courses already exist. Many large metropolitan areas and small towns have now installed multiple courses because of public demand and the positive experience of disc golf. Disc golf courses are found in several Vermont towns including Calais, Randolph, and Waterbury.

New discs are being invented and manufactured with specific shapes, weights, and grooves designed for this sport.

d. Orienteering and Geocaching

Orienteering

Orienteering is the sport of navigation with map and compass. The object is to run, walk, ski, or mountain bike to a series of points shown on a map. The points on the course are marked with orange and white flags and punches, so you can prove you've been there. Each "control" marker is located on a distinct feature, such as a stream junction or the top of a knoll. Detailed five-color topographic maps that have been developed especially for this sport can be used. These may show boulders, cliffs, ditches, and fences, in addition to elevation, vegetation, and trails.

Orienteering is a fairly new and growing outdoor activity. It is a sport for anyone who likes maps, exploring, and the great outdoors, regardless of age or experience. More than 600 days of orienteering events took place in the U.S. last year. Most events provide courses for all levels from beginner to advanced. The sport has been adapted for small children and people in wheelchairs. Both non-competitive and competitive events are available. Competitions involve choosing routes, both on and off trail, which enable finding all the points and getting back to the finish in the shortest amount of time.

Geocaching

Geocaching is a new and growing recreational activity. "Caches" are typically a box with various items in it.

These are placed on the ground in an interesting location to find. Then their geographical location is made available for others to find via the coordinates of the site, often posted on the Internet. Global Positioning System (GPS) users then use the location coordinates to find the caches. The cache visitor may take items from and leave items in the cache, and sign the cache log book. This high-tech version of orienteering gets people outdoors and can offer participants a rewarding outdoor recreation experience.

Achievement

The Vermont Agency of Natural Resources (ANR) adopted a policy on Geocaches and Geocaching on ANR lands in 2004.

Issues

Caches can have impacts on sensitive natural or cultural areas. It is important to minimize potential resource damage and conflicts with other uses and to ensure that the activity does not pose any safety or health risks to participants and others who could be in the area.

Encourage use of virtual caches, such as unique natural features or existing signs, instead of placing new containers which may require some searching to find.

e. Remote, Back-Country Recreation

Many people have identified the appreciation of wild places, exposure to nature in relatively undisturbed settings, an experience of peace and quiet, and exploration of new terrain as the main characteristics of remote, back-country recreational experiences. In Vermont this type of experience is found primarily in forested areas, and people who enjoy the back-country find that roads and motorized recreation are not compatible with their experience.

In Vermont, this remote, back-country experience is associated frequently with the federally-designated “Wilderness Areas” in the Green Mountain National Forest (GMNF). Federally-designated Wilderness Areas are open to recreational uses such as camping, hiking, hunting, fishing, snowshoeing, and skiing. Roads, motorized recreation, logging, and most permanent structures are not allowed in these areas.

Issues

The creation of more federally-designated Wilderness

Areas in the GMNF could result in loss of traditional recreational access and forest management opportunities found there.

The plan revision process for the GMNF currently underway will evaluate and recommend Wilderness Study Areas.

More studies are needed to determine if other remote, back-country recreational experiences can and should be provided in the state.

f. Dog-Based Recreation

Please refer to the winter recreation section of the Vermont Trails and Greenways Plan, Chapter 4 of this document, for information about mushing, which refers to a variety of dog-powered sports for all seasons.

Hunt Testing and Field Trials for Dogs

Many Vermonters and people from out-of-state are members of hunt test and field trial clubs found throughout the state. Clubs are organized for retrievers, hounds, and bird dogs (setters and pointers). These sports train and socialize dogs and prepare them for hunting experiences. However these are also recreational experiences themselves for some dog owners, who do not participate in the hunt.

Some Vermont clubs sponsor competitive events around the state that are judged--some by club rules and other events by the standards of national clubs like the American Kennel Club and the United Kennel Club. Owners from all over the country come to Vermont, especially during summer months, to train their dogs and enter them in the performance events, where the dogs compete for the straightest line to their quarry. Since 1999, the numbers of registrants in Vermont’s May to September field trials have increased dramatically.

Many Vermont clubs also provide dog demonstrations for the public and offer scholarships, such as the Lake Champlain Retriever Club (LCRC) which sends children to the Vermont Conservation Camp of the Fish and Wildlife Department.

Achievements

Some clubs have drawn up rules and protocols for their

own competitions that are more generic than the rules of the national clubs.

One Vermonter was recently given the Lifetime Achievement Award by the American Kennel Club.

Two Vermont members of the LCRC were chosen to judge national events, which is quite an accomplishment as well as unusual that two were chosen.

Issues

Clubs find it challenging to manage the increasing participation in field trials, especially as the majority of competitors come from outside the state.

Some organizations and people who are opposed to hunting continue to protest these sports, sometimes providing misleading information about them.

Dog Parks

Many people like to take their dogs with them when they recreate outdoors. As town and city centers become more populated and the amount of open space diminishes, dog owners are finding it increasingly difficult to find open areas to walk, run, and play with their pets off-leash. Consequently, dog parks are becoming popular and occurring in various ways. While the approaches may vary, the purpose is to create a space for dogs and their owners where they won't disturb other people. Dog parks also offer a place for dogs to socialize with each other, an important aspect of their growth.

Achievements

In 2001 the City of Burlington created two fenced, off-leash areas for dogs and their owners known as "Dog Parks." Initial funding was established through a surcharge added to the cost of a dog license fee, which generated between \$15,000 and \$20,000. This surcharge continues to fund the parks and allows for metal dispensers of plastic poop pick-up bags, trash cans, dumpster service, and basic maintenance.

Burlington's "Urban Reserve" dog park provides access to Lake Champlain, is a walk-in area only, and is open year-round, 24 hours a day. The "Starr Farm" park in northwest Burlington offers convenient parking and water available at the site. It is open daily in April through Oc-

tober from 8 a.m. to 8 p.m. and from 8 a.m. to 6 p.m. in November through March.

Issues

The numbers of dog owners appear to be increasing, and recreation managers are reporting more problems with dog waste and conflicts with other users.

There are many concerns that needed to be dealt with before a park can be created such as permits to comply with city ordinances, financing, noise from barking dogs and people shouting at dogs, dogs biting other dogs, droppings not being picked up and waste becoming hazardous, waste receptacles, night access, suitable seating, structures for dogs to play on, adequate water supplies, finding and training volunteers to oversee that rules and regulations are being adhered to, and adequate parking spaces.

g. Paintball

Paintball consists of competing teams attempting to capture a flag by means of shooting opposing team members with pellets filled with paint. As each person is hit by the pellet he is eliminated from the contest. Occasionally, paintball games involve reenacting historical combats.

Since the late 1980s, paintball has enjoyed increased interest. There are several facilities in Vermont towns, including Colchester, Middlesex, Shoreham, and Whiting, and they operate from April to November.

Issues

Some who play the game in unofficial places leave empty pellets, which causes unsightly litter.

There is concern about the warring aspects of the game by those who would like to shoot and dodge paint pellets just for the fun of it.

h. Sky Observations

An increasing number of people are interested in viewing the sky outdoors at night. Membership in the Vermont Astronomical Society (VAS) is growing. Thousands of Vermonters of all ages participate in outdoor astronomy events every year. This outdoor activity is threatened by increasing artificial nighttime light pollution as developed areas add more lights and development expands into more

remote areas throughout the state. The International Dark Sky Association promotes the conservation of land, public use of land, and recreational opportunities, and VAS, as a member of that association, hopes that astronomy is another use of land that Vermonters can support.

Issues

The ability of people to make night sky observations is threatened by encroaching artificial nighttime light.

The continuing interest in astronomy by Vermonters warrants exploration of some Dark Sky Preserves in Vermont.

12. Special Populations

a. People with Disabilities

According to the U.S. Census 2000, 53 million of the total U.S. population of 281 million people have disabilities. This group represents one of the nation's largest constituencies. The Census 2000 found that, for the population five years of age and older in Vermont, 17.1 percent self-reported a disability using a standard definition. As the population of the state continues to age, this percentage is likely to increase. In addition, approximately 9.7 percent of working-age Vermonters reported a disability that impacts their employment.

The 1990 Americans with Disabilities Act (ADA) and the Federal Rehabilitation Act of 1973 specify that no qualified person with a disability, on the basis of disability, should be excluded from participation in, be denied the benefits of, or be subject to discrimination for any program or activity. Vermont responded by making many improvements to its recreation infrastructure to accommodate people with disabilities. Progress was apparent by comparing the Vermont residents' recreation surveys of 1992 and 2002. Fewer Vermont residents were concerned about a lack of opportunities for special populations in 2002 than in 1992.

Outdoor recreation opportunities for people with disabilities currently focus more on individual recreation needs than on team sports. Efforts are being expanded to improve the quality of life for people with disabilities, including inclusion in the community, equality of experiences, and independence.

Achievements

The nonprofit organization Vermont Adaptive Ski and Sports (VASS) has served Vermonters of all ages with disabilities for 17 years by providing year-round seasonal activities seven days per week. The organization will try to make any activity happen for anyone who asks. In 1999 the organization began expanding its programs in Southern Vermont and the Rutland area. In 2003 VASS had 1500 clients, with 300 volunteers logging 12,000 volunteer hours. Activities provided include skiing, snowboarding, sailing, canoeing, camping, and water-skiing.

Governmental initiatives to provide outdoor recreation opportunities for people with disabilities included the following:

In 1998 access by disabled persons to lands managed by the Vermont Agency of Natural Resources (ANR) was enhanced. Reasonable accommodations included limited use of all-terrain vehicles by qualified people with disabilities for recreational access to certain ANR lands.

Handicapped accessibility was improved at facilities of the Green Mountain National Forest and the Vermont State Parks System. Improvements include lean-tos, ramps, water fountain platforms, restrooms, access roads, and paths. Thirty-five of the 40 state parks in 2004 were partially handicapped accessible, while three were fully accessible.

At Camel's Hump State Park in Duxbury, the handicapped-accessible Camel's Hump View Trail was created in 1990. This .8 mile easy access, low elevation loop offers spectacular views.

Some criteria, which allow more points to be awarded to the score of applications that meet or exceed the needs of physically challenged, elderly, low income, and other special population groups, were added to applications for Vermont Recreation Trails Program grants starting in 2000.

Other examples of achievements to aid people with disabilities in participating in outdoor recreational activities during the past decade include the following:

The Sensory Trail for use by visitors who are blind or visually impaired to the Green Mountain Audubon Nature Center was re-developed and signed in large print and Braille in 1997.

The day camp Partners in Adventure Camp was founded in 2000 for youths age 12-21. It offers community learning experiences mostly in Chittenden County. Non-disabled students attend the camp as co-existing participants, not helpers. Outdoor activities include horseback riding, sailing, and tennis, as well as ice fishing during winter vacation.

A 1600-foot long paved roadway for people in wheelchairs, connecting to existing roadways and trails, was created in 2000 at Camp Thorpe in Goshen.

The organization Hunt of a Lifetime provides hunting and fishing experiences in Vermont for terminally ill children.

The Billings Farm and Museum hosts an annual Down's syndrome buddy walk on the property and attracted 350 participants in 2003.

The first highly competitive Level I adaptive ski race was held in Vermont at Sugarbush Ski Resort in 2004. The Diana Golden Adaptive Ski Race was part of a six-race series designed to introduce athletes with disabilities to alpine ski racing in a supportive environment.

In 2004 University of Vermont women's swim team members provided individual instruction to members of the Special Olympics Chittenden Delegation Swim Team.

In 2004 Vermont Adaptive Ski and Sports began serving as the Vermont chapter for Paralympic, a branch of the International Olympics for athletes with disabilities to get them involved and more competitive.

A 12-foot high tree house was built in 2004 at Oakledge Park in Burlington with an ADA compliant ramp with wheelchair bumpers and rails.

The ramp runs through a cedar bog to a 450-square-foot octagonal structure. The nonprofit group Forever Young Treehouses was founded to facilitate building universally accessible tree houses.

Issue

Background checks must be required for all staff and volunteers who are given access to people with disabilities.

b. Youths

Please refer to the preceding sections on camping for information about youth camps and on individual sports for more details about youth participation in many of those.

Although the number of Vermont residents under the age of 18 is declining overall, providing outdoor recreation opportunities for them remains important, especially for good health. In 2003 11 percent of Vermont students were considered overweight, and 26 percent of Vermont youths in grades eight and twelve were above the recommended weight for their age. About 35 percent of Vermont students in grades eight and twelve reported that they spent three or more hours per school day watching television, playing video games, or using the computer for fun.

Keeping children safe from abuse is a major concern of all outdoor recreation providers. The State of Vermont has provided funding for background checks through the VCIC. The Vermont Department of Social and Rehabilitative Services provides background checks for municipal recreation departments.

There are many statewide programs and initiatives of the past decade that are designed to assist youths in outdoor activities, including the following:

Playgrounds

From 2000 to 2005, of the 61 outdoor recreation projects funded with Land and Water Conservation Funds, 27 of them included the development of new playgrounds. Most of these playground projects replaced old, outdated and unsafe playground equipment with new playground equipment. Each project included ADA accessibility components. In 2002 the Vermont Recreation and Parks Association (VRPA) hosted a National Playground Safety

Institute, as a result of which 35 people were certified to conduct playground safety audits and inspections. Royalton surveyed local children to help determine how to develop a new playground in 2003. The custom design equipment cluster included all eight components voted most desirable by the children.

Vermont Youth Conservation Corps (VYCC)

The Vermont Youth Conservation Corps (VYCC) is a nonprofit, statewide youth service organization, which unites Vermont's human and natural resources. Under experienced adult leadership, teams of youths and young adults between the ages of 16 and 24 work on trail maintenance, watershed restoration, and parks management projects throughout the state. The projects enable the youths to gain valuable work skills while helping the environment and enhancing outdoor recreation opportunities.

National Alliance for Youth Sports (NAYS)

The National Alliance for Youth Sports (NAYS) is America's leading advocate for positive and safe sports and activities for children. The goal of the NAYS is to make sports and activities safe and positive by providing programs and services that add value to youth sports. NAYS believes this can only happen if:

Children receive positive instruction and build basic motor skills.

Administrators (both professional and volunteer), volunteer coaches, and officials are well trained in their roles and responsibilities.

Parents understand the important impact sports have on their child's development.

The National Standards for Youth Sports are used as a guide for operating youth sports programs.

Youth sports programs are conducted in accordance with the Recommendations for Communities.

Girls on the Run®

In 1999 some schools around the state began sponsoring the Girls on the Run® program for third to fifth graders. This is an 8- to 12-week experiential physical training program, culminating in a 5-kilometer run or walk event. By 2004, 500 girls participated.

Run Girl Run!

The program Run Girl Run! was started in 1998 and is free to middle-school aged girls. It encourages them to lead healthy, active, and outgoing lives. In 2001 the program created a survey for girls to research entitled "Is Your Town a Heart-Healthy Town?"

Governor's Fit & Healthy Kids Initiative

In order to reverse the burgeoning problem of obesity in children and reduce the burden of chronic disease, the Fit & Healthy Kids Program was begun by the Vermont Department of Health and Governor Jim Douglas in 2004. The initiative promotes physical activity and healthy nutrition for children and their families. Through joint efforts of the Departments of Health, Education, Transportation and the Governor's Council on Physical Fitness and Sports, a comprehensive approach to this complex issue is being taken. Statewide strategies include support for community efforts with funding, training, technical assistance, and other tools for implementing better health programs. Also planned are outdoor games and activities through Fit & Healthy Kids Day and Green Mountain Winter Games for Children. The Governor's Awards program will recognize those schools whose policies and practices reflect a high priority on improving student health. Additionally, through the use of the Vermont Fit WIC Activities Kit, young people will be provided play activities that will encourage their health and development through daily physical play.

Vermont Out-Of-School Time Network

The Vermont Out-of-School Time (VOOST) Network is a partnership of organizations building and supporting accessible, out of school time with high quality opportunities to learn for young Vermonters. VOOST hopes to improve coordination between efforts of the after school community and create forums for sharing ideas and resources through regional meetings and a statewide conference. Strategies include training after school providers in developing a peer support/mentorship system, offering more after school programs, and promoting the concept of positive youth development to VOOST providers throughout the state.

Issue

Background checks must be required for all staff and volunteers who are given access to children.

c. Older Adults

People over the age of 60 in Vermont increased between 1990 and 2000 by nearly 15 percent to 101,825, representing 13,181 individuals.

Many older adults enjoy socializing at the senior centers located throughout the state. Due partly to the wide range of abilities of seniors at these centers, not many outdoor recreation opportunities are offered at them. Many younger seniors are still in the workforce, prefer a different social atmosphere, and seek out more physically challenging experiences, including outdoor activities.

Achievements

Vermont's statewide Successful Aging and Independent Living task force began meeting in 2002.

The year 2004 marked the 22nd anniversary of the Green Mountain Senior Games. Friendly competition in indoor and outdoor sports occurs for citizens over 50 years of age throughout the year in different areas of the state, and at an annual State Games event.

Senior Play Days programs were offered in Chittenden County in 2004.

Heaton Woods, an assisted living residence in Montpelier held its first annual Walkerthon in 2004 to benefit the residence's activities program and to raise awareness about the difficulties of using walkers for mobility. Eighteen people joined in the event, including staff members and the mayor. Participants used decorated walkers to wend their way through the city to the State House.

Issues

Improved distribution of information about all recreational programs available to older adults.

Diverse opportunities and ability levels are desired to meet different needs.

As Vermont's population continues to age, more outdoor recreational opportunities will be needed for its older citizens.

Background checks must be required for all staff and volunteers who are given access to the elderly.

Appendix C: Vermont Wetlands Conservation Strategy: 2005 Update



The Emergency Wetlands Resources Act of 1986 (P.L. 99-645) requires that each state include in its comprehensive outdoor recreation plan guidelines for the acquisition of important wetlands. The *Vermont Wetlands Conservation Strategy*, published in 1994, was prepared for the 1993 *Vermont Recreation Plan* by the Department of Environmental Conservation in the Vermont Agency of Natural Resources. The 1994 document continues to serve as the state's plan for conserving and managing Vermont's wetlands. The first update of the strategy was included as the Wetlands Priority Component in the Vermont Recreation Plan, 2000. This appendix to the 2005 outdoor recreation plan serves as the second update to the 1994 wetlands strategy document.

Wetlands are identified as one of five natural resource features on Vermont's Conserved Lands Database, which indicates in GIS format the distribution of these features by acre and percentage of state, federal, and other conserved lands categories. Of the more than 200,000 acres of wetlands in Vermont, more than half are forested and the remainder are either scrub-shrub or emergent wetlands such as marshes or fens. Wetlands occur throughout Vermont but are more concentrated in the Lake Champlain Basin and the northeastern corner of the state. About one-third of Vermont's original wetlands have been lost since European settlement.

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A. Major Accomplishments since the Previous Plan toward Conserving Wetlands in the State

Some important efforts occurred in recent years to conserve, restore, protect, and better manage wetlands and raise awareness about the importance of wetlands. Accomplishments of the past decade for each of those efforts are summarized within the topic headers below.

1. Conservation of Priority Wetlands and Other Wetlands

Many agencies and organizations have contributed to conserving Vermont's wetlands, including the examples mentioned here.

During the years between 1991 and 2004 in Vermont, most of the wetlands that were protected for public use had been identified as priority wetlands for acquisition by the State of Vermont in a supplement to the Wetlands Component of the 1988 *Vermont Recreation Plan*, as follows:

Approximately 9,400 acres of wetlands and their upland buffers were conserved through acquisition by the Vermont Agency of Natural Resources and The Nature Conservancy.

The transfer of 131,000 acres of Champion International lands in 1999 to three entities--the West Mountain Wildlife Management (22,000 acres) managed by the Vermont Agency of Natural Resources, the U.S. Fish and Wildlife Service's Nulhegan Basin Division of the Silvio O. Conte National Wildlife Refuge (26,250 acres), and the privately owned Essex Timber Company lands (84,000 acres) with a public access easement--resulted in the conservation of numerous wetlands with their adjacent uplands.

Other public lands acquired during this period resulted in the conservation of additional acres of wetlands. More than 37,000 acres were added to the U.S. Forest Service's Green Mountain National Forest (GMNF) in Vermont between 1994 and 2003, and many acres of wetlands are found there.

The Wetland Reserve Program (WRP) is administered by the U.S. Department of Agriculture's Natural Resource Conservation Service. Since 1994, 235 acres of wetlands have been conserved on private lands through this program. By 2004 more than 1000 acres were covered by 11 WRP projects, 10 of which are perpetual easements and one of which is a 10-year agreement.

In 1998, the River Management Section of the Water Quality Division in the Vermont Department of Environ-

mental Conservation was created by combining the Rivers Program Coordinator with the Stream Alteration Permit Program and adding eight full-time staff members by 2004. The top priority of this section was river corridor protection. The section coordinated the development of a protocol for stream geomorphology and physical habitat assessment to evaluate rivers throughout the state. The U.S. Department of Agriculture's Natural Resources Conservation Service and the U.S. Army Corps of Engineers also reviewed their standards to take a geomorphic systems approach to river restoration projects. This focus on natural channel design has resulted in the protection and restoration of a number of oxbow wetlands in the state.

2. Improvements in Managing and Restoring Wetlands

From 1991 to 2001, the U.S. Fish and Wildlife Service's Partners for Wildlife Program, with many partners, restored 935 acres of wetlands and 102 miles of streambanks, primarily on private lands.

The Federal Agricultural Improvement and Reform Act of 1996 authorized the creation of the Wildlife Habitat Incentives Program (WHIP). WHIP provides cost-share funds to landowners to develop wildlife habitat on their property. The U.S. Department of Agriculture's Natural Resources Conservation Service administers this program, and many sections of streambank along Vermont rivers, as well as other wildlife habitats, have been restored as a result.

Purple loosestrife has been identified as an invasive species in many of Vermont's wetlands. In 1996 the Vermont Department of Environmental Conservation's Wetland Office initiated the Vermont Purple Loosestrife Biological Control Program. This work includes introduction of biological controls, documentation of populations, and education and outreach. Annual reports started in 1998.

In 2002 The Nature Conservancy and the Poultney-Mettowee Watershed Partnership started the Champlain Valley Native Plant Restoration Nursery. Through this collaborative effort, seeds from local floodplain trees are grown for two to three years and used to restore these natural communities in the Champlain Valley. At least two other plant nurseries were started in the last few years

in Vermont to provide native vegetation for streambank restoration projects.

3. Legal Protections

The following legal developments have occurred recently with respect to wetlands in Vermont:

With regard to improving the quality of Vermont's wetland resources, in March 2002 Vermont adopted a quarantine regulation for noxious weeds. The movement, sale, and distribution of 32 designated noxious weeds, including purple loosestrife and common reed (non-native phragmites), which compromise many wetlands in the state, became illegal.

Wetlands to be given the highest level of protection, which involves a 100-foot buffer, in Vermont must go through a reclassification process. This is the Class One designation, and it is assigned by the Vermont Water Resources Board in response to interested parties who provide justification based on a function assessment that reveals "exceptional or irreplaceable" values. Of the four Class One wetlands in Vermont, three were successfully petitioned since 1998. These are the Lake Bomoseen Marsh in Castleton and Hubbardton; the North Shore (Lake Champlain) Wetland in Burlington; and Tinmouth Channel in Tinmouth.

A workshop for town conservation commissioners regarding the wetlands reclassification process was held at the annual meeting of the Association of Vermont Conservation Commissions in 2002.

The Vermont Water Resources Board, with assistance from the Vermont Agency of Natural Resources' Vermont Wetlands Office, produced the handbook *A Citizen's Guide to the Wetland Reclassification Process under the Vermont Wetland Rules* in 2002.

A few towns in Vermont have passed local buffer ordinances for streams and wetlands.

4. Inventories Conducted

Statewide inventories of many wetland community types have been conducted, and exemplary examples of these



communities have been cited in the database maintained by the Nongame and Natural Heritage Program (NNHP) in the Vermont Department of Fish and Wildlife. The approximately 650 records in the database indicate the significance of each wetland based on its size, condition, and landscape context. The following list provides summary of these inventories:

Northern white cedar swamps and red maple-northern white cedar swamps were inventoried by NNHP statewide between 1996 and 1998. Funding came directly from the EPA and from DEC through a Performance Partnership with the EPA.

Wetlands of the Lake Memphremagog Watershed were inventoried by NNHP from 1998 to 1999 with funds from the EPA.

In 1998, using EPA Wetland Grants to the state, the NNHP inventoried four natural community types of floodplain forests. This effort resulted in the identification of many new state significant sites. The acquisition of the Lemon Fair floodplain forest in Bridport by the Vermont Department of Fish and Wildlife is an example of wetlands conservation related directly to these findings.

Lakeside floodplain forests, an uncommon wetland type found almost exclusively along Lake Champlain and threatened by shoreline development, were also inventoried as part of NNHP's 1998 floodplain forests study.

A bioassessment of vernal pools and northern white cedar swamps was conducted by the NNHP between 1998 and 2003 in cooperation with DEC. Funding came directly from the EPA and from DEC through a Performance Partnership with the EPA.

Five natural community types of hardwood swamps were inventoried between 1999 and 2003 by the NNHP with funding directly from the EPA and from the Vermont Department of Environmental Conservation (DEC) through a Performance Partnership with the EPA.

Four natural community types of softwood swamps were inventoried between 2003 and 2005. Funding came directly from the EPA and from DEC through a Performance Partnership with the EPA.

The towns of Barnard, Brattleboro, Charlotte, Hinesburg, Jericho, Middlebury, Norwich, Richmond, South Burlington, and Springfield have created maps of all the wetlands in their towns, including the use of color infrared photography. A few towns have focused their wetland mapping efforts on vernal pools.

5. Information Available

A variety of educational materials and methods have been used in recent years to help people understand the importance of wetlands, as the following examples indicate:

In 1996 the Wetlands Office of the Vermont Department of Environmental Conservation began providing more formal training about protecting wetlands to the Logger Education Workshops.

Some towns have produced maps showing the watersheds in their towns and have held public meetings to show these maps and how the natural resources of the towns, including wetlands, can be protected.

Additional publications related to wetland conservation and management in recent years include the following:

Best Management Practices for Resolving Human-Beaver Conflicts in Vermont, Vermont Departments of Fish and Wildlife and Environmental Conservation, 2002.

Sources of Native Plant Materials in Vermont, Vermont Department of Environmental Conservation, 2002 update. Vermont's Purple Loosestrife Biological Control Program, 2003 Annual Report, Vermont Department of Environmental Conservation.

The first field guide to Vermont's natural communities, *Wetland, Woodland, and Wildland: A Guide to the Natural Communities of Vermont*, was published in 2000. It describes the eight biophysical regions of the state and provides information about the 80 natural community types, 40 of which are wetlands, recognized in Vermont. The book includes the ecology, physical setting, and characteristic plants for each type.

B. Actions for Continuing Wetlands Conservation, 2005-2009

1. Current Status of Vermont Wetlands

A review of the Vermont Department of Environmental Conservation's Wetlands Program database for 1990 to 2003 revealed declines in three Palustrine types of wetlands in Vermont. Palustrine emergent and Palustrine emergent/scrub-shrub wetlands experienced the greatest loss and impairment, while Palustrine scrub/shrub wetlands were lost or impaired at a moderate rate during that period. The decline in emergent types might seem surprising, given that only 11 percent of National Wetlands Inventory mapped wetlands in Vermont are emergent. However, emergent wetlands are often associated with areas of prior agricultural use that tend to be developed for residential and commercial use.

Forested wetlands in Vermont may also be declining at a moderate rate. Impacts to Palustrine forested wetlands are probably not adequately represented by existing tracking systems. Furthermore, some logging operations result in wetland loss and impairment, and this is not reported because logging is an allowed use.

An evaluation of biological diversity in the state by the Vermont Biodiversity Project, comprised of partnering organizations from government, academia, and non-profit groups, revealed that more wetland community types may need increased conservation. Some of the findings contained in the report Vermont's Natural Heritage: Conserv-

ing Biological Diversity in the Green Mountain State are pertinent to wetlands. While 88.8 percent of the biological diversity resources found in Vermont at elevations over 3,000 feet are conserved, just 10 percent of those resources from 0 to 600 feet are conserved. Due to their ecology, many wetlands are located at lower elevations.

2. Criteria for Selecting Wetlands for Conservation

This wetlands component to the recreation plan incorporates wetland conservation priorities determined in the U.S. Fish and Wildlife Service's *National Wetlands Priority Conservation Plan* of 1989. These national acquisition criteria consist of three factors: (1) historic loss of wetlands; (2) threat of future loss of wetlands; and (3) wetland functions and values.

Three factors are used to determine threats to wetlands, and these are type, degree, and imminence of a threat or threats. Types of threats include development, drainage and filling, groundwater withdrawal, water pollution, and removal of vegetation. Degree of threat involves the percentage of a wetland's functions and values likely to be lost or degraded by all types of wetland threats. Imminence of threat involves the time period within which the wetlands are likely to be destroyed or altered.

The degree of threat varies considerably with the type of activity. Although, pond construction in wetlands has been identified as resulting in the largest annual area of wetland impairment, it is not expected to have nearly the degree of threat to wetland functions as are projects that result in wetland filling. Similarly, although logging activities in wetlands may alter wetland functions, these activities may not result in long-term adverse effects on the state's wetland resource.

The imminence of threat to wetlands is largely a factor of population trends and geographic growth areas in the state. Other factors affecting the imminence of wetland threat are addressed through the Vermont Wetland Rules adopted in 1990, revised implementation practices for Section 404 of the Clean Water Act, the Swampbuster Program, and the development of local wetland zoning regulations.

Putting all these factors together it is possible to make some generalizations concerning the geographical loca-

tions of identifiable threats to Vermont's wetlands. The counties where threats are most imminent are:

1. *Chittenden, Rutland, Grand Isle and Washington Counties due to high population growth and history of wetland loss and impairment;*
2. *Addison and Franklin Counties due to high projected population growth, high levels of agricultural activity, high wetland acreages; and the associated threat of wetland loss.*

Important functions and values identified in the plan include fish and wildlife habitat, threatened and endangered species, surface and ground water supply, water quality protection, flood reduction, shoreline stabilization, outdoor recreation, education and research, and scenic and open space qualities. Wetland functions and values vary according to type, location, and human modification. According to the national plan, no one of these functions and values should be given greater priority than any other.

Vermont has taken the acquisition criteria from the national plan into consideration when developing the following lists of wetlands for acquisition:

Vermont Department of Forests, Parks and Recreation, *A Characterization of Vermont's More Important Wetlands, Technical Appendix to the 1988 Vermont Recreation Plan*, draft, 1989.

Vermont Department of Environmental Conservation, *Vermont Advanced Wetlands Planning and Protection Project Report for the Lake Champlain Basin*, 1997. This document includes a map of 141 wetlands in 26 towns, approximately 1000 square miles, in the Lake Champlain Basin. These wetlands were identified as high priorities for conservation.

Wetland managers should consider the following general guidelines when considering wetlands for acquisition:

The threat of wetland loss and degradation is difficult to quantify for large geographic areas. Regional, watershed, and local analyses of threat are more reasonable for identifying priority wetlands for acquisition. Any

future proposal for wetland acquisition should clearly identify the type, degree, and imminence of threat affecting that particular wetland and its functions.

In the event that a forested wetland is proposed for acquisition, evidence should be provided that the specific wetland type is declining at a moderate or high rate, or has declined from historical levels, in the area of the proposed purchase.

In general, priority for acquisition will be given to high quality wetlands that provide most of the protected functions at a highly significant level, or are outstanding examples of state significant wetland types.

Based on the increased ability to identify wetland threats and values at regional and local scales and on the success of the Lake Champlain Basin wetlands planning and protection report, Vermont should strive to update its list of priority wetlands for acquisition in other geographic areas of the state. These efforts should include consultation with the Nongame and Natural Heritage database so that the most up-to-date information about significant wetland natural communities is included in the analysis.

3. Other Wetlands Conservation Efforts

Various entities in Vermont are committed to continuing the conservation of the state's wetlands via the following strategies:

Underway in 2004, the Clean and Clear Action Plan, a comprehensive statewide strategy for reducing both point and nonpoint source pollution to Lake Champlain and other state waters, identified the protection and restoration of threatened or impaired wetlands as an important action to be done.

Inventories of wetland communities will be done for the following types: softwood swamps on a statewide basis as well as an isolated softwood swamp inventory of Vermont's Northern and Southern Piedmont Biophysical Regions. Additional wetland community types that have not yet been systematically inventoried should be studied, including bogs, marshes, river and lake shorelines, and shrub swamps.

Endorse and build on an unofficial list of potential Class One wetlands in Vermont, for which the case that they exemplify "exceptional or irreplaceable" values could be made.

This list of wetlands was compiled by Vermont Agency of Natural Resources staff members in 2002, as follows:

Barnard Fen
Barton River Marsh, Coventry
Black River Marsh, Coventry
Chickering Bog, Calais
Clyde River marshes, Charleston and Brighton
Colchester Bog
Cornwall Swamp wetland complex, possibly including
Brandon and Salisbury swamps
Dennis Pond, Brunswick
East Creek wetlands, Orwell
Flagg Pond Cedar Swamp, Wheelock
Franklin Bog
Little Otter Creek and Lewis Creek wetlands, Ferrisburgh
Maple Grove Swamp, Pownal
Middle Pownal Road Swamp
Missisquoi Delta wetlands
Molly Bog, Morristown
Moose Bog, Ferdinand
Mud Creek wetlands, Alburg
Otter Creek wetlands
Peacham Bog
Pherrins River wetlands complex, Morgan
Pownal Bog
Sandbar wetlands/Mouth of Lamoille River
Shelburne Pond wetlands
Stoddard Swamp, Peacham
Vernon Black Gum Swamp
Victory Basin wetland complex
Winooski River wetlands, including Half Moon
Cove and Derway Island
Yellow Bogs, Nulhegan Basin, Essex County

Wetlands given the second highest level of protection in Vermont--a 50-foot buffer--are designated as Class Two. Wetlands eligible for this status are unmapped palustrine wetlands with function(s) and value(s) so significant that they merit such protection. In 2002, an unofficial list of potential Class Two wetland types in Vermont was compiled by Vermont Agency of Natural Resources staff members, as follows:

Alpine peatlands
Black gum swamps
Bogs
Fens
Vernal pools

The Vermont Agency of Natural Resources should produce a fact sheet about vernal pools with guidelines for managing them, including recommended buffer distances.

Provide assistance to towns in identifying all their wetlands.

Build on the educational outreach efforts which have been started.

Agencies should work together to set priorities for conservation of wetlands generally and wetland types of greatest concern of being lost or damaged.

Continue research, management, and monitoring efforts regarding invasive species such as the common reed (non-native) and purple loosestrife.

C. Statement of Compliance with Section 303 of the Emergency Wetlands Resources Act of 1986

This recreation plan is consistent with the National Wetlands Priority Conservation Plan, prepared by the U.S. Fish and Wildlife Service.

Preparation of this plan involved coordination with the Vermont Department of Fish and Wildlife and the U.S. Fish and Wildlife Service.

The Vermont Agency of Natural Resources will continue to make the acquisition of wetlands for fish and wildlife habitat a priority as stated in the *Vermont Wetlands Conservation Strategy, 1994*.

Appendix D: Publications Used in Developing the Plan



Lake Champlain Basin Program, *Opportunities for Action: An Evolving Plan for the Lake Champlain Basin*, 1996 and updated version in 2003.

MACRO International, Inc., *Vermont Lake and Pond Recreation Survey Report and Technical Appendices*, for the Vermont Department of Forests, Parks and Recreation, May 1996.

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Outdoor Industry Association, "Human Powered Outdoor Recreation; State of the Industry Report," 2002.

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Outdoor Task Force, *Action Plan*, presented to the Vermont Department of Tourism and Marketing, March 1997.

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“We do not quit playing because we grow old;
we grow old because we quit playing.”

*--Oliver Wendell Holmes,
U.S. physician, poet, and humorist, 1809-1894*

